OVERSIGHT OF THE FEDERAL GOVERNMENT'S YEAR 2000 EFFORTS

JOINT HEARING

BEFORE THE

SUBCOMMITTEE ON GOVERNMENT MANAGEMENT, INFORMATION, AND TECHNOLOGY

OF THE

COMMITTEE ON GOVERNMENT REFORM AND OVERSIGHT

AND THE

SUBCOMMITTEE ON TECHNOLOGY

OF THE

COMMITTEE ON SCIENCE

HOUSE OF REPRESENTATIVES

ONE HUNDRED FIFTH CONGRESS

SECOND SESSION

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OVERSIGHT OF THE FEDERAL GOVERNMENT'S YEAR 2000 EFFORTS

WEDNESDAY, MARCH, 18, 1998

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON GOVERNMENT MANAGEMENT, INFORMATION, AND TECHNOLOGY, COMMITTEE ON GOVERNMENT REFORM AND OVERSIGHT, JOINT WITH SUBCOMMITTEE ON TECHNOLOGY, COMMITTEE ON SCIENCE,

Washington, DC.

The subcommittees met, pursuant to notice, at 9:37 a.m., in room 2154, Rayburn House Office Building, Hon. Stephen Horn (chairman of the Subcommittee on Government Management, Information, and Technology) presiding.

Present: Representatives Horn, Morella, Sessions, Davis, Sununu, Ehlers, Kucinich, Barcia, Maloney, Gordon, Rivers, and Stabenow.

Subcommittee on Government Management, Information, and Technology staff present: J. Russell George, staff director and chief counsel; John Hynes and Bob Alloway, professional staff members; Matthew Ebert, clerk; Ellen Rayner, minority chief clerk; and Faith Weiss, minority counsel.

Subcommittee on Technology staff present: Richard Russell, staff director; Ben Wu, counsel; Michael Bell, staff assistant; Adrienne Woodward, deputy communications director; Mike Quear, minority professional staff member; and Mary Sanchez, minority staff assistant.

Mr. HORN. The Subcommittee on Government Management, Information, and Technology will come to order, a quorum being present. This is a joint meeting with the Subcommittee on Technology of the House Committee on Science.

When the Subcommittee on Government Management, Information, and Technology began hearings on the year 2000 computer problem, on April 16, 1996, we didn't see everything that was going to be before us, but we knew something had to be done very rapidly. Considerable progress has been made in alerting the administration, and we will have this morning as our first speaker on the subject the individual the President's brought back out of private life in order to give some leadership to this which has been lacking in the executive branch.

What we're talking about here, for the uninitiated, is the problem created by the two-digit year versus the four-digit year. Those of us that were in graduate school in the fifties or early sixties, remember we were looking for more capacity in the computers we were using. This whole room would now be a laptop in terms of

what the storage capacity is; that wasn't so then. So, somebody had the bright idea, "Let's use a two-digit year." In other words, 67, not 1967, and that will add up over time, and we could put more information in our data bank. So, we did that. They knew there would be a problem in the year 2000, and they thought, "Well, technology will solve that." Well, technology isn't going to solve it; hard work is what's going to solve it.

So, we've established that the problem is real and substantial. We've raised awareness in the Federal Government and in the private sector. We've initiated agency quarterly progress reports and the Office of Management and Budget followed that lead and has been doing that on a quarterly basis since Dr. Raines took over as Director. We've graded agency progress, thereby, stimulated increased progress. We've induced the White House to act, and as I note, that major step is forwarded today by Mr. Koskinen, former Deputy Director for Management at OMB, and we're glad to see him, and we're happy to welcome him here, because he is a highly respected official of the Federal Government, and his 6-month retirement was really all he needs. He's still energized. [Laughter.]

These accomplishments, however, of the subcommittee and OMB are simply the prelude; they're necessary but not sufficient to finish the year 2000 conversion. We begin, today, the next phase. We've gone from questioning the reality of this problem to deploying thousands of technical and managerial professionals. We've expanded from looking only at mission-critical systems to considering possible problems in data exchanges with other governments, both domestic and foreign. We've recognized there are critical connections between public and private computer systems, and that vital infrastructure such as the electric utilities' power distribution could be vulnerable to disruption.

It has been 701 days since our first 2000 hearing on April 16, 1996. There are 653 days remaining until the inevitable, unmovable deadline. Over 50 percent of the available time has expired, but only 35 percent of the mission-critical systems are compliant. We're behind schedule in the executive branch.

It will require the cooperation of Congress, the White House, and Federal departments and agencies to solve the problem on time. And the key is managerial leadership. These are not just technical problems. They are managerial leadership problems, and the ones that have been successful have had first rate people, and we'll have some of those here today who have been chief information officers and really provided leadership in their agencies. We have no choice, at this point, but to double our rate of progress. Then we must double our rate of progress again.

As we look at the year 2000 conversion effort today, we must constantly remind ourselves that the mission-critical systems we talk about are but the tip of the iceberg; approximately one-eighth of the installed base of systems. Roughly speaking, within the executive branch there are 8,000 mission-critical systems plus 60,000 second and third tier systems. In addition, there are thousands of data exchanges with foreign, State, and local governments, as well as businesses and citizens. There are telecommunications systems, biomedical devices, millions of unaccounted embedded computer chips. The Department of Defense, alone, has 600,000 embedded

computer chips. We cannot allow all of these so-called nonmission-critical systems to fail, but we must first deal with the mission-critical systems and properly so.

The mission-critical systems cannot be the only systems fixed; they must be the first but not the last. We cannot ignore thousands and thousands of these secondary systems. The collective confusion of the tens of thousands of secondary systems failing would be catastrophic. The standard of acceptable year 2000 conversion must realistically be high enough to protect the American people. It needs to include the completion of 100 percent of all mission-critical systems in the Federal Government and key economic sectors such as banking; thorough and complete testing of all mission-critical systems; contingency plans for all mission-critical functions, even those with finished and tested systems; completion of 100 percent of all data exchanges; and a reasonable certainty that the Nation's telecommunications systems and public infrastructure such as electric utilities will continue to function through the date change.

An overly pessimistic recovery plan, frankly, is needed as a backup. We have a responsibility to the American people to minimize the effect of this situation on their livelihood. We must live up to this responsibility, we must really move ahead very rapidly, and we're talking about 24-hour days in many of these agencies. We must develop contingency plans for the systems that are finished and tested. We must develop a recovery plan for possible failures. It's our responsibility to be careful, very careful, with the economic well-being of America.

It's amazing, but true, the year 2000 computer bug could harm the world's largest and most robust economy. It's our responsibility to squash this bug; to fix it; test it, and test it again; to finish it, and to have a contingency plan.

[The prepared statement of Hon. Stephen Horn follows:]

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"Governmentwide Year 2000 Issues and the Department of the Treasury"

March 18, 1998

OPENING STATEMENT
REPRESENTATIVE STEPHEN HORN (R-CA)

Chairman, Subcommittee on Government Management, Information, and Technology

The Subcommittee on Government Management, Information, and Technology began hearings on the Year 2000 computer problem on April 16th of 1996. Working with the Technology subcommittee chaired by Mrs. Morella, we have made considerable progress since that time.

We have established that the problem is real and substantial. We have raised awareness in the Federal Government and private sector. We have initiated agency quarterly progress reports. We have graded agency progress and, thereby, stimulated increased progress. We have induced the White House to act – a major step forward that is illustrated by Mr. Koskinen's presence here today. We are all happy to welcome our respected friend to this challenge.

These accomplishments, however, are the prelude. They are necessary, but not sufficient, to finish the Year 2000 conversion. We begin today the next phase. We have gone from questioning the reality of this problem to deploying thousands of technical and managerial professionals.

We have expanded from looking only at mission-critical systems to considering possible problems in data exchanges with other governments both domestic and foreign. We have recognized that there are critical connections between public and private computer systems and that vital infrastructure such as electric utilities and power distribution could be vulnerable to disruption.

It has been 701 days since our first Year 2000 hearing on April 16, 1996. There are 654 days remaining until the inevitable, unmovable deadline. Over 50 percent of the available time has expired, but only 35 percent of our mission-critical systems are compliant. In short, we are behind schedule and it will require the cooperation of Congress, the White House, and the Federal Departments and the agencies themselves to solve this problem on time.

We have no choice but to double our rate of progress. Then, we must double our rate of progress again. As we look at the Year 2000 conversion effort today, we must constantly remind ourselves that the mission-critical systems we talk about are but the tip of the iceberg – approximately one eighth of the installed base of systems.

Roughly speaking there are 8,000 mission-critical systems plus 60,000 second and third tier systems. In addition, there are thousands of data exchanges with foreign, State, and local governments, businesses, and citizens. There are telecommunications systems, biomedical devices, and uncounted millions of embedded computer chips. We can not allow all of these so-called non-mission-critical systems to fail.

We have focused our efforts on mission-critical systems -- and properly so. However, mission-critical systems can not be the only systems fixed – they must be the first, but not the last. We can not ignore thousands and thousands of secondary systems. The collective confusion of tens of thousands of secondary systems failing could be catastrophic.

The standard of acceptable Year 2000 conversion must be high enough to realistically protect the American people. It must include:

1) completion of 100 percent of all mission-critical systems in the Federal Government and key economic sectors such as banking
2) thorough and complete testing of all finished mission-critical systems
3) contingency plans for all mission-critical functions (even those with finished and tested systems)
4) completion of 100 percent of all data exchanges
5) reasonable certainty that the Nation's telecommunications systems and public infrastructure such as electric utilities will continue to function through the date change
6) an overly pessimistic recovery plan as back-up.

We have a responsibility to the American people to minimize the effect of this Year 2000 computer problem. We can not live up to this responsibility if we are overly optimistic. Rather, we must be overly pessimistic. We must test and re-test mission-critical systems that are supposedly finished. We must develop contingency plans for systems that are finished and tested. We must develop a recovery plan for possible failures in key sectors such as finance, utilities, and transportation.

It is our responsibility to be careful, very careful, with the economic well-being of America. It is amazing, but true, that the Year 2000 computer bug could harm the world's largest and most robust economy. It is our responsibility to squash this bug. To fix it, test it, and test it again. To finish it <u>and</u> have a contingency plan. Our responsibility requires over-kill.

We have a lot of work to do and little time remaining. Our first panel today will discuss governmentwide actions to improve overall Federal efforts. We are facing a governmentwide problem that demands a governmentwide strategy. That strategy must set clear priorities and begin focusing intense attention, expertise and resources on the most critical systems. The goal must be to make certain that the most important systems at the most important agencies can function in the new century.

Our second panel will discuss a specific example of this need for prioritization: the Department of the Treasury. The Financial Management Service, within the Treasury Department, writes the checks for virtually every Federal agency. This means that it is not good enough for Social Security or the Small Business Administration to fix all their computers when Treasury, and the Financial Management Service within it, are lagging behind and are not fixed. We look forward to a substantive discussion on this and other Year 2000 issues at the Treasury Department.

Mr. HORN. We have a lot of work to do and little time remaining. We will go into the various panels, but I'd like at this time to yield to the chairwoman of the Technology Committee of the House Committee on Science for her opening remarks and then we will ask the ranking minority members on each of those committees for theirs and any other Member that wants to put in some remarks.

I now recognize the gentlewoman from Maryland, Mrs. Morella, the chairwoman of the Subcommittee on Technology.

Mrs. MORELLA. Thank you, Mr. Chairman. Talk about timing for the year 2000, my timing today was just perfect. I hope we'll also be ready in the year 2000 with that timing. Today, we are heralding the beginning of a new era in our Nation's ability to timely and effectively correct that year 2000 problem. With the arrival of John Koskinen to chair the newly created "President's Council on the Year 2000 Conversion," a ray of hope is now piercing through the clouds of doubt and gloom that had shrouded over questions about the readiness of our public and private sectors to the year 2000 compliance by the beginning of the new millennium. Congratulations to us, Mr. Koskinen.

Mr. Koskinen brings to his new position a level of experience and the skills for government management that has very few peers. I'm also very pleased that Sally Katzen, with her institutional knowledge and background on this issue, has accepted the role of the Vice Chair of the Council. Additionally, the Council will be well served with the technical expertise of Federal chief information officers and the very capable Office of Management and Budget staff.

Yet, while I have great faith and confidence in the Council's ability and motivation to get the job done by the immovable deadline of January 1, 2000, I just hope it's not too late. The job before the Council is both gargantuan and thankless, and the executive branch, to paraphrase Robert Frost, still has many promises to keep and miles to go before it can sleep.

I don't need to remind the Council that as we ring in the 21st century, we'll be ushering in the mother of all computer glitches, one which could cripple critical government functions such as air traffic control systems, veterans' benefits, Social Security, and student loans, as well as the everyday conveniences of modern life like home security systems, video recorders, and elevators in high rise buildings. It's clear that without greater urgency and aggressive agency management, Federal agencies are at risk of being unable to provide services or to perform functions that are critical to their mission and vital to the American people.

The reports that we've received from Federal agencies in our congressional reviews are quite disturbing, prompting many to grimly cast dire predictions about the failure of the government and industry to operate effectively on the first business day of the new millennium, Monday, January 3, 2000. That's why we have urged the President for over a year to forcefully attack this impending catastrophe. We repeatedly appealed to him to create a year 2000 czar with the mandate of making solving the problem the highest priority for both the public and private sector. At last, with his Executive order forming the Council, the President has finally given this issue the attention it deserves. Now that this important step has been undertaken, I am looking forward to working collaboratively

with the Council to do everything we can to avert catastrophic failure of government and industry computer systems.

Minimizing the year 2000 problem will require a major technological and managerial effort. Not only must the Council act to ensure that no critical Federal program experiences disruption because of the problem, but it must also assist State and local governments; cooperate with the private sector in important national and local systems including the financial, telecommunications, health, transportation, and energy sectors; as well as communicate with our international allies to raise awareness and generate cooperative international arrangements to address this problem. In the coming months, I intend to work very closely with the Council; especially assisting in the development of initiatives to ensure that the private sector is moving forward with necessary dispatch.

Meanwhile, Congress, not just the Science Committee and the Government and Reform and Oversight Committee, but also a number of other committees, will continue to hold hearings to determine the scope and impact of the problem on the American public and to monitor agency progress. The Council and Congress must jointly seek solutions. It's clear that we can't meet a new era of opportunity if 2 years from now our Nation's computers are moving backward instead of forward. We must create a new paradigm of collaboration or we all know that we're facing an unforgiving deadline and time is running out. The American people are expecting no less from us, and I yield back, Mr. Chairman, and thank you also for the kind of gargantuan work that you have undertaken also with regard to correcting this problem.

[The prepared statement of Hon. Constance A. Morella follows:]

SUBCOMMITTEE ON TECHNOLOGY
COMMITTEE ON SCIENCE
U.S. HOUSE OF REPRESENTATIVES
WASHINGTON D.C. 20515

Opening Statement of Chairwoman Constance A. Morella

Government Wide Year 2000 Issues and the Department of Treasury
March 18, 1998

Today we are heralding the beginning of a new era in our nation's ability to timely and effectively correct the Year 2000 problem.

With the arrival of John Koskinen to chair the newly created President's Council on the Year 2000 Conversion, a ray of hope is now piercing through the clouds of doubt and gloom that had shrouded over questions about the readiness of our public and private sectors to be Year 2000 compliant by the beginning of the new millennium.

Mr. Koskinen brings to his new position a level of experience and a skill for government management that has very few peers.

I am also very pleased that Sally Katzen, with her institutional knowledge and background on this issue, has accepted the role of Vice Chair of the Council.

Additionally, the Council will be well served with the technical expertise of federal Chief Information Officers and the very capable Office of Management and Budget staff.

Yet, while I have great faith and confidence in the Council's abilities and motivation to get the job done by the immovable deadline of January 1, 2000, I just hope it's not too late.

The job before the Council is both gargantuan and thankless, and the Executive Branch, to paraphrase Robert Frost, still has many promises to keep and miles to go before it can sleep.

I don't need to remind the Council that as we ring in the 21st Century, we will be ushering in the mother of all computer glitches -- one which could cripple critical government functions, such as air traffic control systems, veterans' benefits, Social Security, and student loans, as well as the everyday conveniences of modern life, like home security systems, video recorders, and elevators in high-rise buildings.

It is clear that without greater urgency and aggressive agency management, federal agencies are at risk of being unable to provide services or to perform functions that are critical to their mission and vital to the American public.

The reports that we have received from federal agencies, and our own Congressional reviews, are quite disturbing, prompting many to grimly cast dire predictions about the failure of the government and industry to operate effectively on the first business day of the new millennium, Monday, January 3, 2000.

That is why we have urged the President for over a year to forcefully attack this impending catastrophe.

We repeatedly appealed to him to create a Year 2000 Czar with the mandate of making solving the problem the highest priority for both the public and private sector.

At last, with his Executive Order forming the Council, the President has finally given this issue the attention it deserves.

Now that this important step has been undertaken, I am looking forward to working collaboratively with the Council to do everything we can to avert catastrophic failure of government and industry computer systems.

Minimizing the Year 2000 problem will require a major technological and managerial effort.

Not only must the Council act to ensure that no critical federal program experiences disruption because of the problem, but it must also: assist state and local governments; cooperate with the private sector in important national and local systems, including the financial, telecommunications, health, transportation, and energy sectors; as well as communicate with our international allies to raise awareness and generate cooperative international arrangements to address the problem.

In the coming months, I intend to work very closely with the Council, especially assisting in the development of initiatives to ensure that the private sector is moving forward with necessary dispatch.

Meanwhile, Congress – not just the Science Committee and the Government Reform and Oversight Committee, but also a number of other committees – will continue to hold hearings to determine the scope and impact of the problem on the American public and to monitor agency progress.

The Council and Congress must jointly seek solutions.

It is clear that we cannot meet a new era of opportunities, if two years from now, our nation's computers are moving backwards instead of forward.

We must create a new paradigm of collaboration, for we all know that we are facing an unforgiving deadline and time is running out.

The American people are expecting no less from us.

Mr. HORN. I thank the gentlewoman and now yield to the ranking minority member on the Subcommittee on Government Management, Information, and Technology. We're glad to welcome Mr. Kucinich of Ohio.

Mr. KUCINICH. Thank you, Chairman Horn, and as a courtesy, I would like to yield, first, to the ranking member of the subcommittee on Technology, Congressman Barcia of Michigan.

Mr. BARCIA. Thank you very much, Mr. Chairman, and I want to thank you, Mr. Kucinich. I want to welcome everyone to this morning's hearing, and I want to commend you for making it here so early. I want to congratulate Mr. Koskinen on his new position as Chair of the President's Council on the Year 2000 Conversion. He has a challenging and daunting task before him.

I am particularly pleased by the administration's recent efforts to coordinate its activities with States and other parties which exchange date sensitive information with the Federal Government. There is a high degree of information and system interdependence between the Federal, State, and private sectors. These interdependencies increase the risk that a cascading wave of failures or interruptions of essential services could occur. The latest OMB quarterly report and GAO's latest assessment indicates much work has been done and that much work remains to be done.

I am encouraged by the administration's efforts to develop a more comprehensive Y2K plan as well as moving compliance deadlines forward. The council has laid out an ambitious agenda with not much time to complete it. However, at this point, these are just plans, and the devil will be in the implementation details.

Our two committees have been at the forefront of raising awareness of the Y2K problem and, in general, we have been very critical of the administration's efforts. In preparing for this hearing, I wanted to know what Congress is doing to address the Y2K problem in its own computer systems. I reviewed the House Inspector General's reports on House efforts to fix its computer systems, and I was dismayed by what I learned.

According to a December 1996, IG report, House Information Resources does not have a plan to address the year 2000 issue. In a followup report issued almost a year later, the Inspector General found that HIR has not established effective project management controls; met general Government year 2000 milestones; prepared a comprehensive year 2000 plan covering critical stages of the initiative or disposition of all systems; adequately estimated the year 2000 initiative costs or budgeted sufficient funds; sufficiently coordinated year 2000 efforts with external groups; incorporated year 2000 warranty language in its procurement contracts to guarantee compliance on future information technology purchases; and secured software tools or contracts for support to assist in the conversion effort.

I understand that HIR has hired a year 2000 coordinator subsequent to the latest IG report and that a comprehensive management plan will be completed shortly. However, once again, the devil will be in the implementation details.

These two IG reports indicate that we are behind the curve in addressing the Y2K problem. If we intend to take a leadership role, we must lead by example and get our own house in order. Many

of the criticisms leveled at the administration are the same failings of House efforts. I hope that we will spend as much time critically evaluating our own strategies to fix House computer systems as we have been of the administration's efforts.

The year 2000 computer problem is not a Republican versus Democratic issue. It is not an administration versus Congress issue. The Y2K issue is a technical problem which unless it is fixed in both the executive and legislative branches will seriously compromise the Government's ability to serve the people who elect us to office and who pay their taxes. Thank you, Mr. Chairman.

[The prepared statement of Hon. James A. Barcia follows:]

Statement

Hon. James A. Barcia

Subcommittee on Technology
Government Wide Year 2000 Issues and the Department of Treasury

18 March 1998

I want to welcome everyone to this morning's hearing and I want to commend you for making it here so early.

I want to congratulate Mr. Koskinen on his new position as Chair of the President's Council on Year 2000 Conversion. He has a challenging task before him. I am particularly pleased by the Administration's recent efforts to coordinate its activities with States and other parties which exchange date-sensitive information with the federal government. There is a high degree of information and system interdependence between federal, state, and private sector. These interdependencies increase the risk that a cascading wave of failures or interruptions of essential services could occur.

The latest OMB quarterly report and GAO's latest assessment indicates much work has been done and that much work still remains. I am encouraged by the Administration's efforts to develop a more comprehensive Y2K plan, as well as moving compliance deadlines forward. The Council has laid out an ambitious agenda with not much time to complete it. However, at this point these are just plans and the devil will be in the implementation details.

Our two Committees have been at the forefront of raising awareness of the Y2K problem and in general, we have been very critical of the Administration's efforts. In preparing for this hearing, I wanted to know what the Congress is doing to address the Y2K problem in its own computer systems. I reviewed the House Inspector General's reports on House efforts to fix its computer systems and I was dismayed by what I learned.

According to a December 1996 IG report, "HIR Does Not Have A Plan to Address The Year 2000 Issue." In a follow-up report issued almost a year later, the IG found, "that HIR has not 1) established effective project management controls, 2) met general government Year 2000 milestones, 3) prepared a comprehensive Year 2000 plan covering critical stages of the initiative or disposition of all systems, 4) adequately estimated the Year 2000 initiative costs or budgeted sufficient funds, 5) sufficiently coordinated Year 2000 efforts with external groups, 6) incorporated Year 2000 warranty language in its procurement contracts to guarantee compliance on future information technology purchases, and 7) secured software tools or contractor support to assist in the conversion effort." I understand that HIR has hired a Year 2000 coordinator subsequent to the latest IG report and that a comprehensive management

plan will be completed shortly. However, once again the devil will be in the implementation details.

These two IG reports indicate that we are behind the curve in addressing the Y2K problem. If we intend to take a leadership role, we must lead by example and get our own House in order. Many of the criticisms leveled at the Administration are same failings of House efforts. I hope that we will spend as much time critically evaluating our own strategies to fix House computer systems as we have been of the Administration's efforts.

The Year 2000 computer problem is not a Republican versus Democratic issue. It is not an Administration versus the Congress issue. The Y2K issue is a technical problem, which unless it is fixed in both the Executive and Legislative Branches will seriously compromise the Government's ability to serve the people who elect us to office and who pay their taxes.

Mr. KUCINICH. Thank you very much, Chairman Horn, and as the ranking member of this subcommittee, it's a pleasure to join with you on this issue. I think that it's obvious that we have a practical problem here that needs to be fixed, and if any committee and any subcommittee can help, it's this one under the leadership of the very able Chairman Horn. Certainly, the subtext of this debate is the role of technology in society and government, and I also wonder as I am reading the testimony and following the evolution of this problem if it doesn't raise questions about a crisis in linear thinking.

We have a challenge of a paradigm shift in the new millennium and it's certainly going to call for new thinking as well as an evaluation of the role that technology has played in the evolution of our information age. Meeting the challenges presented by the year 2000 conversion will require the commitment of significant resources from both the public and private sectors. The Federal Government, in particular, must take a leadership role. It's not enough that the Federal Government fix its own systems, the Government must also facilitate private sector conversion.

And I commend, once again, Chairman Horn's leadership on the year 2000 conversions. Oversight by this subcommittee has served to increase public awareness of potential problems facing the Federal Government. Moreover, the GAO has provided invaluable assistance on the Federal year 2000 conversion, and I want to thank the GAO for its role in that regard.

The President's recent decision to establish the Council on the Year 2000 Conversion is a much needed step, and I agree with Congresswoman Morella's views on that. This council can provide high level guidance for executive branch agencies. It will also be able to develop national policies to assure coordination with other governments and private sector entities. It will serve as the Federal liaison to the international community.

Converting all the Federal computer systems requires the attention and dedication of senior level management within each agency. Federal agencies currently are addressing the technology changes that must be made to their systems to minimize disruption by the century change. However, it appears from the information I've received, Mr. Chairman, that they're not all working quickly enough to complete their tasks by the year 2000. Many agencies have only just begun to identify noninformation technology systems such as building security, telecommunications, heating, transportation systems that present conversion problems. Now, computer chips embedded in personal computers, printers, phones, vehicles, weapons systems, laboratory equipment, or other machinery must be located and modified if they're noncompliant.

Some of the most significant issues involve the ability of the Government to prioritize its systems so that mission-critical systems will not suffer undue disruptions. Agencies should consider the need for independent verification and validation of their systems and assure efficient time for end-to-end system testing. Coordinating data exchanges with other public and private entities, and assuring seamless transitions across agency jurisdictions will be a Governmentwide challenge. Retaining qualified year 2000 staff capable of converting systems at each agency is going to be essential,

and we have to recognize it's also going to be difficult, but staff is going to be critical to this.

Moreover, as we move toward the next millennium, certain vital economic sectors may fall behind in their year 2000 conversion. The Federal Government must be prepared to prevent a potential national crisis arising from a failure of an economic sector such as the utility industry or the banking community.

Mr. Chairman, it is crucial that we succeed. To fail, would jeopardize the health and the safety of Americans. Benefit checks, upon which so many Americans rely, could be delayed or could be erroneous; air travel could be impacted; missile systems can be affected; electric power could be interrupted; phone service could be disturbed. Clearly, the potential consequences can be enumerated far into the future. They're far reaching; they're dramatic.

I, once again, want to thank the chairman and all the witnesses who are here today for their hard work on the year 2000 conversion. I look forward to a productive working relationship, and, again, thank you very much, Mr. Chairman.

[The prepared statement of Hon. Dennis J. Kucinich follows:]

The Honorable Dennis J. Kucinich

Opening Statement
"Oversight of the Federal Government's Year 2000 Efforts"

Meeting the challenges presented by the Year 2000 conversion will require the commitment of significant resources from both the public and private sectors. The federal government, in particular, must take a leadership role. It is not enough that the federal government fix its own systems, the government must also facilitate private sector conversion.

I commend the Chairman's leadership on the Year 2000 conversion. Oversight by this Subcommittee has served to increase public awareness of potential problems facing the federal government. Moreover, the GAO has provided invaluable assistance on the federal Year 2000 conversion.

The President's recent decision to establish the Council on the Year 2000 Conversion is a much needed step. This Council can provide high level guidance for Executive Branch agencies. It will also be able to develop national policies to assure coordination with other governments and private sector entities. It will serve as the federal liaison to the international community.

Converting all the federal computer systems requires the attention and dedication of senior level management within each agency. Federal agencies currently are addressing the technological changes that must be made to their systems to minimize disruption by the century change.

However, it appears that they are not all working quickly enough to complete their task by 2000. Many agencies have only just begun to identify non-information technology systems such as building security, telecommunication, heating, and transportation systems that may present conversion problems. Computer chips embedded in personal computers, printers, phones, vehicles, weapon systems, laboratory equipment, or other machinery must be located and modified if they are non-compliant.

Some of the most significant issues involve the ability of the government to prioritize its systems so that mission critical systems will not suffer undue disruption. Agencies must consider the need for independent verification and validation of their systems and assure sufficient time for end-to-end system testing. Coordinating data exchanges with other public and private entities and assuring seamless transitions across agency jurisdictions will be a government-wide challenge. Retaining qualified Year 2000 staff capable of converting systems at each agency will become increasingly difficult.

Moreover, as we march towards the next millennium, certain vital economic sectors may fall behind in their Year 2000 conversion. The federal government must be prepared to prevent a potential national crisis arising from a failure of an economic sector such as the utility industry or the banking community.

It is crucial that we succeed. To fail jeopardizes the health and safety of Americans. Benefits checks upon which so many Americans rely could be delayed or erroneous. Air travel could be drastically curtailed. Entire

missile systems may be rendered useless. Power could be interrupted in the middle of winter. Telephones may go dead. Clearly, the potential consequences are far-reaching and dramatic.

I thank the Chairman and all the witnesses here today for their hard work on the Year 2000 conversion. I look forward to a productive working relationship.

Mr. HORN. I thank the ranking gentleman, and I'm going to yield to Mr. Davis who in turn will yield to Mrs. Morella for the insertion of a statement and a comment.

Mr. DAVIS. I'd be happy to yield to my friend from Maryland.

Mrs. MORELLA. Oh, I thank you. I thank the gentleman for yielding. I really was going to ask my good friend, Mr. Barcia, to yield, but it went too quickly, because I heard him comment on the fact that we, in Congress, are derelict in moving to become more compliant, and I have a statement here which I would like to ask to be inserted in the record, Mr. Chairman.

Mr. HORN. Without objection, so ordered.

Mrs. MORELLA. Basically, it says the GAO is working with Members, committees, and offices of the House to make sure that personal computers, the software running on them, and other office equipment are compliant and all House supported software, with one exception. Lotus 1–2–3 accounting is already year 2000 compliant and software necessary to check the basic input, output system, the IOS, our personal computers have been selected; will be made available to all House offices. Just synopsizing, basically, there is a strategy. We have selected a full-time year 2000 project manager. That was done on September 29, 1997. A year 2000 project team has been established as well. There's a Technology Coordination Task Force [TCTF] to coordinate technology projects and to ensure interoperability of GAO systems. A TCTF also oversees of the work of the year 2000 project manager. So, we have a methodology bases on government and private industry. We have a baseline program—the baseline program will be due March 31, 1998.

All of this, and what we will have in the record, Mr. Chairman, will point out that we are in a stage of readiness and do have that strategy, so Congress will be ready, and I thank the gentleman for yielding.

[The information referred to follows:]

House of Representatives Year 2000 Activities

1 CAO is working with Members, Committees and Officers of the House to make sure that personal computers, the software running on them and other office equipment are compliant. All House-supported software, with one exception (Lotus 1-2-3 accounting) is, already, Year 2000 compliant. Software necessary to check the basic input output system (BIOS) of personal computers has been selected and will be made available to all House offices. This will enable every personal computer at the House to be checked and, if non-compliant, either upgraded or replaced well before the year 2000. All suppliers of other date-sensitive equipment, such as telephones, office copiers, fax machines, pagers, and the like, have also been contacted and a comprehensive vendor report is being prepared. A comprehensive Member and Committee office outreach campaign will begin in May, 1998.

2. Generally, have completed the assessment phase and are into the renovation and validation phases of the program.

--Completed renovation of the Legislative Information Management System, a key system used by the Clerk to track and report the business of the House. Validation testing is under way.

--Contracted with Booz-Allen & Hamilton to undertake a requirements/needs analysis and business process engineering study on the House payroll system which is not Y2K compliant. Completion of both due by mid-April. Concurrently, an interim contingency Y2K fix for the present payroll system is being tested jointly by House Information Resources and the House Inspector General.

--Contracted with Grant Thornton to undertake a requirements/needs analysis and business process re-engineering study on the House inventory systems which are not Y2K compliant. Both have been completed and the House expects to issue a Request for Proposals in March.

--Completed renovation of 5 other major mainframe applications (House Recording Studio, Lobby, Photography, Labels and Financial Disclosure) that will need to run until the mainframe migration is completed. All services requiring renovation are scheduled for completion by the end of 1998.

--Begun migration of Member Information Network (MIN) and ISIS services and will have over 40 of the 150 services migrated by the end of March, 1998. The remaining are on schedule for migration by the end of calendar 1998.

2. Selected a full time Year 2000 project manager on September 29, 1997. A Year 2000 Project team has been established as well.

3. Formed a Technology Coordination Task Force (TCTF) to coordinate technology projects and ensure interoperability of CAO systems. TCTF also oversees the work of

the Year 2000 project manager.

4. Adopted a Year 2000 methodology based on Government and private industry best practices. Conducted training in project management methodology for Year 2000 projects.

5. Developed System Development Life Cycle procedures for all CAO technology projects. This will ensure good business practices in all renovation or replacement for Year 2000 work as well as all other technology activities.

6. Marshaled CAO-wide resources for the Year 2000 effort and established specific responsibilities for the 31 major projects that comprise the bulk of the Year 2000 work. Conducting ongoing project review meetings for those 31 projects to identify any obstacles to completion of responsibilities on time.

7. Developed a standard for information exchanges within the Legislative branch and coordinating all exchanges outside the legislative branch to ensure operability with all partners who rely on data exchanges with the House.

8. Completed a program assessment, December 24, 1997, of the House's Y2K program and identified the critical next steps. Identified 718 systems for the assessment.

9. Developing a baseline program plan, due March 31, 1998, to schedule all required activities for the year 2000 program. This plan will be the baseline for measuring performance in the future.

(March 17, 1998)

Mr. DAVIS. Well, thank you, Mrs. Morella. I appreciate you making those points, because I was going to make them myself. It's interesting that Congress—and I appreciate the gentleman from Michigan raising these issues—we had a full-time Y2K coordinator before the Federal Government, and, yet, we're not nearly as interconnected or as dependent, and I hope that the House Oversight Committee that has jurisdiction and not these committees will continue to stay on top of that situation.

Just a couple quick points, because I want to get to the cast we have. First of all, to Mr. Koskinen, I can't think of a better person for the administration to bring in at this time. You're very well respected up here. I just think it's a huge task ahead of you, because, in my judgment, going in, talking to agencies and people, there are some agency heads who give them lip service but still don't seem to get the enormity of this problem and the cost.

Because we have delayed so long and we're bidding up the cost of programmers and the like, these costs are going to be far more significant, I think, than they had to be and that maybe we had earlier anticipated, but I think there's still time, and we just will pledge to you up here we're going to work with you in every way to try to make sure that this gets completed, at least the critical things. There will be some small details that probably don't get ironed out for years, but if we can get the critical path laid here; get plenty of time for testing, particularly, with State and local governments who are behind the Federal Governments in some ways but we talk to on a daily basis and interconnect with and run some of those and get the bugs out there, I think that will be significant.

I know we'll talk, today, about the embedded chip problem in some of the programs and the equipment that we have purchased and how we handle that, but the testing helps work through some of those issues as well. I just look forward to the hearing today, which I think is going to be informative and will continue to keep us on the right track and we're just really glad to have you on board. Thank you. I yield back.

Mr. HORN. I thank the gentleman, and now I'd like to ask does Ms. Stabenow of Michigan or Mr. Gordon of Tennessee have any comments to make?

Ms. STABENOW. Thank you, Mr. Chairman. I would, first, yield a moment to my good friend from Michigan, Congressman Barcia.

Mr. BARCIA. Mr. Chairman, I would request, also, that information be submitted for the record, and it would be the audit report of the General Accounting Office dated December 12, 1997, in which my comments were lifted directly from this report, and I'd just like to have it submitted for the record——

Mr. HORN. Without objection.

Mr. BARCIA [continuing]. And I think that we, in the Congress, ought to lead by example and work with the administration.

[The information referred to follows:]

John W. Lainhart IV
Inspector General

Office of Inspector General
U.S. House of Representatives
Washington, DC 20515–9990

MEMORANDUM

TO: James M. Eagen III
Chief Administrative Officer

FROM: John W. Lainhart IV
Inspector General

DATE: December 12, 1997

SUBJECT: Audit Report - Despite CHO And CAO Mandates, HIR Has Not Begun Development Of A Mainframe Migration Plan (Report No. 97-CAO-15)

This is our final report containing the results of our audit of HIR's mainframe migration plan. The original objective of this audit was to evaluate the adequacy and effectiveness of HIR's mainframe migration planning process. However, preliminary survey work revealed that there was no mainframe to client/server migration plan, nor were there any known long-term planning efforts related to this issue. As a result, the original objective of this audit was revised to (1) identify the course of management actions that have led up to this condition, and (2) determine their effects. In this report, we noted inconsistencies with regard to mainframe migration that involve planning, budgeting, communications, and a general misconception regarding the Committee on House Oversight's (CHO) intentions with regard to mainframe migration. As a result, the House is now in a position of having to first implement costly Year 2000 solutions, and then readdress migration for these very same legacy systems, rather than accomplishing both tasks in unison, as originally envisioned.

In response to our July 18, 1997 draft report, your office fully concurred with our findings and recommendations. Your October 14, 1997 management response is incorporated in this final report and included in its entirety as an appendix. The corrective actions taken and planned by your office are appropriate and, when fully implemented, should adequately respond to the recommendations. Further, the milestone dates provided for implementing corrective actions appear reasonable.

We appreciate the courtesy and cooperation extended to us by your staff. If you have any questions or require additional information regarding this report, please call me or Robert B. Frey III at (202) 226-1250.

cc: Speaker of the House
Majority Leader of the House
Minority Leader of the House
Chairman, Committee on House Oversight
Ranking Minority Member, Committee on House Oversight
Members, Committee on House Oversight

DESPITE CHO AND CAO MANDATES, HIR HAS NOT BEGUN DEVELOPMENT OF A MAINFRAME MIGRATION PLAN

I. INTRODUCTION

The retirement of the U.S. House of Representatives' (House) legacy systems was identified as a high priority in the House Information Systems Program Plan (ISPP). This plan noted that the House legacy systems were outdated and no longer able to support critically important activities effectively. In the one and a half years since its endorsement by the Committee on House Oversight (CHO), migration planning attempts have experienced false starts, misleading direction, disagreement, and eventual inaction. In actuality, there is no mainframe to network-centric or client/sever migration plan. **As a result, the House is now in a position of having to first implement costly Year 2000 solutions, and then readdress migration for these very same legacy systems, rather than accomplishing both tasks in unison as originally envisioned.** The omission of strategic planning by management resulted in reactive planning practices that limited management efforts to coordinate and implement timely and cost-effective solutions. Strategic planning and the lack of management direction, which were cited as internal control weaknesses in our review of House Information Resources (HIR) management[1], appear to be the basic problems with respect to the mainframe migration initiative as well.

Background

At the start of the 104th Congress, a vision was established by the Speaker for a CyberCongress. The vision involved transforming the House from its reliance on cumbersome, paper-based information, to an institution supported by universally available electronic information. Once implemented, it would remove restrictions of time and space for Members, Committees, and staff, allowing them the flexibility to perform their work at the best time and place. At the same time and using the same technologies, timely access to House information and activities would be available. At the request of the Speaker, a special group was formed by the CHO and named the Computer and Information Services Work Group (CISWG). This Group, which was comprised of three Members, concentrated its efforts primarily on computer technology and infrastructure issues and reported directly to the CHO. On November 15, 1995, the CHO approved, in concept, the House Information Systems Program Plan presented by the CISWG. The ISPP, and the accompanying resolution, were intended to provide HIR the impetus for translating the Speaker's CyberCongress vision into reality.

Through the ISPP, the CHO had requested HIR to identify the elements surrounding the retirement of, and migration from, the mainframe computer system. In response, HIR identified mission-critical applications that would be migrated to a client/server[2] architecture based on a network-centric[3] approach to information

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[1] HIR Management Practices Undermine The House's Ability To Keep Pace With Technological Changes (Report No. 97-CAO-09, May 9, 1997).

[2] Client/server is an architecture in which a system's functionality and its processing are divided between the client personal computer (the front end) and a database server (the back end). System functionality, such as programming logic, business rules, and data management, is segregated between the client and the server machines. The end user uses the front-end application to request information from the database server. The database server receives these requests, processes them, and sends the results back to the client to be displayed.

[3] Network-centric, or what is now known as distributed client/server computing, can be defined as all clients, servers, and Local Area Networks (LAN) being connected and controlled through the network backbone.

creation, storage, access, and delivery. HIR further stipulated that a migration strategy had to be adopted prior to retirement of the mainframe. This migration plan would need to answer key questions and identify critical decision points relating to the establishment of a client/server network in order to ensure support for the new client/server systems.

The ISPP called for the House to begin planning for the retirement of the mainframe legacy systems several years in advance of actual replacement. The migration plan would thus need to outline the retirement of the mainframe processor as well as place a high priority on the retirement of legacy systems, and outdated desktop systems that would have otherwise continued to drain resources needed for new programs. This planning effort was especially needed for the IBM mainframe processor, since it was not expected that this processor would be required to run any mission critical applications once MIN (Member Integrated Network), ISIS (Integrated Systems and Information Services), LIMS (Legislative Information Management System), and FMS (Financial Management System) were replaced. In the case of the House, a well-conceived migration plan would be especially important since it had to include not only a plan to provide continued service for its mission-critical systems until they could be replaced, but also a plan for retiring formal agreements with outside clients, such as the General Accounting Office (GAO) and the Congressional Budget Office (CBO), as well as provide alternative services for those systems, such as the National Change Of Address (NCOA), that are not regarded as mission-critical.

Objective, Scope, And Methodology

The original objective of this audit was to evaluate the adequacy and effectiveness of HIR's mainframe migration planning process. However, preliminary discussions with the Directors of Integration and Enterprise Computing, as well as follow-up discussions with the Associate Administrator, HIR[4] (hereinafter referred to as the Administrator), revealed that there was no mainframe to client/server migration plan, nor were there any known long-term planning efforts related to this issue. As a result, the original objective of this audit was revised to (1) identify the course of management actions that have led up to this condition, and (2) determine their effects. The audit was conducted from April 18, 1997 to July 3, 1997.

We interviewed staff members in the Clerk's Legislative Computer Systems Office; the Acting Associate Administrator, as well as the Director of Budgeting for the Office of Finance; the Acting Associate Administrator for Media and Support Services; and the Legal Counsel within the Office of the Chief Administrative Officer (CAO). We also interviewed the Administrator, Group Directors, and selected staff in HIR. We visited and conducted interviews with the Director, Information Systems Services and staff, for the Small Business Administration, as well as the Information Systems Audit Manager for the Federal Home Loan Mortgage Corporation - Freddie Mac.

We conducted this audit in accordance with the *Government Auditing Standards* prescribed by the Comptroller General of the United States and included such tests as we considered necessary under the circumstances. While we are aware that the House is not required to follow Executive Branch guidance, we applied this guidance, as well as standard industry practices, because we believe they establish a reasonable framework or reference for best management practices.

Internal Controls

During this review, we evaluated internal controls over management practices and the planning process involved in the development and implementation of HIR's mainframe migration plan. The internal control weaknesses we identified are discussed in the *Results of Review* section of this report.

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[4] It should be noted that the Associate Administrator at the time of this audit resigned on August 4, 1997.

Prior Audit Coverage

Improvements Are Needed In The Management And Operations Of The Office Of The Chief Administrative Officer (Report No. 96-CAO-15, dated December 31, 1996). One of the areas reviewed during this audit was the HIR mainframe migration project. This resulted in a determination that additional research in this migration project was required. The audit report recommended the CAO conduct a comprehensive needs and cost/benefit analysis to determine the best approach to mainframe migration, and adopt an implementation plan that balances the need for an aggressive timeline with user needs, hardware and software, personnel and budget requirements. The Acting CAO concurred with the recommendations and indicated that HIR will adopt an implementation plan based on the migration strategy and direction provided by the CHO using the analysis which HIR would provide by March 1, 1997. During follow-up discussions with the Administrator, we were told that HIR had not performed a needs and cost/benefit analysis and had no plans to do one in the future.

HIR Management Practices Undermine The House's Ability To Keep Pace With Technological Changes (Report No. 97-CAO-09, dated May 9, 1997). Among the significant points identified in this audit report, we noted that HIR had not fully implemented fundamental management practices or established a fully functional information systems planning process. The related audit recommendations directed the CAO to develop a detailed HIR strategic and operational plan based on the ISPP vision; adopt a more proactive leadership approach that requires formal communication and documentation of key decisions; develop and implement a mix of effective control mechanisms that ensure compliance with management-approved plans and policies; and formalize the process and improve the information and reports provided to upper management to facilitate more informed decision-making. With regard to the problems involving planning, we recommended the CAO establish a formal, integrated planning and budgeting policy that requires management involvement at all levels; and formulate a comprehensive HIR budget package that links individual Groups' budgets and operational plans according to the strategic objective(s). The Acting CAO fully concurred with these findings and the accompanying recommendations and indicated that corrective actions have been initiated for some areas and are planned for the remaining areas.

II. RESULTS OF REVIEW

Contrary to a key recommendation in the ISPP and a proviso of the CHO's November 1995 House Resolution that HIR develop a mainframe migration plan, no such plan exists today. Furthermore, our review disclosed that (1) neither HIR nor the CAO provided a response to the original CHO Resolution requesting a mainframe retirement issue report; (2) the CAO justified procurement of a smaller mainframe processor indicating it was an integral part of the House's mainframe migration plan; (3) HIR's FY98 budget request included an increase of $323,000 to migrate services from the mainframe to a 3-tier client/server architecture in FY98, despite the fact that there is no migration plan; (4) HIR management ignored the CAO's agreement to prepare a comprehensive needs and cost/benefit analysis to document the agreed upon migration plan; and (5) HIR's Associate Administrator at the time of this audit considered the question of retiring the mainframe an open policy issue. **As a result, the House is now in a position of having to first implement costly Year 2000 solutions, and then readdress migration for these very same legacy systems, rather than accomplishing both tasks in unison, as originally envisioned.**

CHO Directives End In False Starts

HIR was directed by the CHO Resolution to submit a report on the specific issues that must be addressed in order to retire the IBM mainframe system following retirement of the major legacy systems (MIN, ISIS, LIMS, and FMS). The ensuing HIR draft report, dated September 5, 1996, was submitted to the CAO for review prior to submission to the CHO. In its report, HIR recommended that prior to the retirement of the mainframe, the House should adopt a client/server migration strategy that included applications on the mainframe, support for external customers, and pre-retirement maintenance issues for the mainframe. However, the then CAO's response to HIR, dated October 1, 1996, rejected the report noting that it lacked "... an objective cost and time-driven presentation of concrete alternatives." The then CAO noted that he would recommend to the CHO the retention of a reputable outside organization to provide a mainframe retirement plan to replace the mainframe applications with commercial off-the-shelf (COTS) client/server solutions in the shortest possible time-frame. Subsequent action on the part of the then CAO to formally request approval from the CHO to implement this recommendation was never carried out. These false starts and inactions indicate that the existing HIR and CAO management oversight process was inadequate to ensure that the goals and objectives were accomplished.

HIR Procurement And Budget Documents Misrepresent HIR's Mainframe Migration Position

In November 1996, a $257,319 purchase order request from the CAO was approved by the CHO authorizing the replacement of the mainframe processor with a smaller and less expensive CMOS[4] mainframe processor. The justification given by the CAO was that this proposal was an integral part of "... the mainframe migration plan to be forwarded by December 15, 1996." Though the purchase order was approved and the CMOS processor installed, we found no further correspondence between the CAO and the CHO regarding the mainframe migration plan.

During our HIR management review, the HIR Strategic Planning manager told us that HIR's position was that no formal decisions concerning whether or not to migrate from the mainframe had been made. This appears to be in conflict with the HIR FY98 budget proposal[5] which states that a $323,000 increase in the Integration Group's budget would be "... to migrate services from the mainframe to the 3-tier client/server architecture in FY98." When we pointed out this discrepancy, HIR officials indicated that the increase was primarily due to the request for contract services for the Year 2000 conversion effort. However, the Office of Finance's Budget Director told us that they thought the funds were earmarked for the client/server solution as documented in the budget request. When we informed the Budget Director of HIR's response to that question, he noted that other funds were clearly identified in the budget for Year 2000 purposes, and this was the first Budget had heard of this claim by HIR.

The justification provided for the $257,319 purchase order for the CMOS server and the $323,000 budget increase for a migration effort that does not exist, certainly brings into question the degree of reliability the House can place on prior HIR budget requests--the justifications were not what they appeared to be.

House Strategic Vision Of Retirement And Migration Of House Legacy Systems Disputed By HIR Management

The then Administrator stated that the Year 2000 plan was, in fact, a migration plan whose objective was to move toward a network-centric environment. He also told us that part of the Year 2000 plan was to conduct a cost/benefit analysis for each mainframe system and decide the best course of action to take, i.e., migrate to client/server platform, outsource to another agency, or remain on the HIR mainframe. There was some confusion, however, in that the Year 2000 project leader informed us that there were no resources available to carry out such an analysis. Furthermore, when asked his opinion as to whether a formal decision had been made to retire the mainframe, the then Administrator stated "that prior political

[4] CMOS--Complementary Metal Oxide Semiconductor IBM Multiprise 2000 Model 135 enterprise server.

[5] HIR Budget Justifications Fiscal Year 1998, Integration Group, Fiscal Year 1998 Non Personnel Budget Request, p.28.

decision makers called for a retirement of the mainframe and movement toward a client/server environment; this political decision was made prior to my tenure at HIR." In his opinion, "the question of retiring the mainframe is still an open policy issue."

When questioned about the short- and long-term direction of House application systems in relation to the client/server platform, the then Administrator responded by restating that the Year 2000 process would address the overall migration plan. He added that no one had been pushing him to get off the mainframe, but they had been pressing HIR on the Year 2000 issue. We reminded him that the directive to retire the legacy systems had been outstanding since November 1995. Even so, he commented that a significant client/server migration would not be considered by HIR before all systems are made Year 2000 compliant, since they were understaffed and facing an issue that could not be postponed. Ironically, the Year 2000 project and associated costs may have been avoided or mitigated somewhat if the migration issue had been addressed as originally directed.

In response to the audit report on the Office of the CAO,[6] the Acting CAO directed HIR to prepare a comprehensive needs and cost/benefit analysis to document the mainframe migration plan to be presented to the CHO by March 1, 1997. The Acting CAO further stated that HIR will adopt an implementation plan based on the migration strategy and direction provided by the CHO using this analysis. During follow-up discussions with the Director of Integration, he acknowledged that he was unaware of these directives and that there were no resources available to work on such an analysis. During similar discussions with the then Administrator, it was noted that HIR had not performed a needs and cost/benefit analysis and had no plans to do one in the future.

Missed Migration Opportunity Leaves House With Limited And Costly Options

The most immediate consequence of the absence of a House migration plan is the limited options available to management regarding the Year 2000 problem. Instead of solving this issue with a proactive approach as originally envisioned, management is left with reactive, short-term solutions. As a result, the Year 2000 initiative will now have to be undertaken with a sense of urgency. In addition, management may be forced to implement systems that neither fully meet user needs nor are cost-effective.

The Year 2000 plan has identified the projected disposition of the mainframe legacy systems as either (1) remaining on the mainframe (Group A); (2) being replaced with a COTS client/server system, outsourced or retired (Group B); (3) migrating to a desktop system (Group C); or (4) those servicing outside client systems such as CBO, GAO and ProPAC[7]. Figure 1 on page 7 depicts each group's processing usage as a percent of total processing capacity. (See Exhibit A for a complete list of system names, descriptions and dispositions.)

The legacy systems in Group A, for example, will remain on the mainframe following Year 2000 modification efforts at an estimated cost of $670,000. Using LIMS as an illustration, the Office of the Clerk had intended to replace its older system with a client/server system that was to contain improvements in both business design and operations. This objective, which the Clerk believed would solve the Year 2000 problem as well, was not achieved in time and the House found itself behind on the migration issue and looking into the face of a fast approaching Year 2000 deadline. As a result, LIMS migration has now been placed on hold awaiting

[6] Improvements Are Needed In The Management And Operations of The Office Of The Chief Administrative Officer (Report No. 96-CAO-15, December 31, 1996).

[7] The Prospective Payment Assessment Commission (ProPAC) is a Congressional Commission that provides recommendations to Congress for Medicare funding.

completion of the Year 2000 compliance efforts for the current system. Failure to take advantage of migration has burdened the House with both the cost of modification as well as requiring the continued support of the mainframe system[8] until these legacy systems can eventually be replaced.

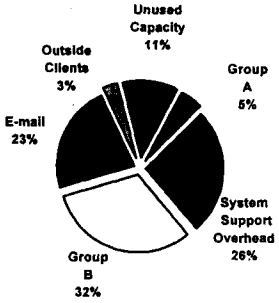

Figure 1 - Current Mainframe Processing Usage

Of the three legacy systems that make up Group B, the FMS payroll system and the OSM/OES system have been identified by management as either replacement or outsource candidates and are included in the CAO's FY98 budget request at $2 million and $800,000, respectively. The remaining system, MIN/ISIS is slated to be retired by the end of 1998 and current functionality replaced by Web browsers. With regard to the OSM/OES system, Media and Support Services officials have known since the early 1990's that their system was not Year 2000 compliant. Their solution to this Year 2000 problem, as well as how they intend to address overall system improvements, is replacement. However, at this late date, such fundamental SDLC practices as assigning responsibility for the project, conducting a current needs/requirements analysis, as well as the naming of a project manager and team has yet to be accomplished. This inactivity and the lack of direction may limit management's opportunities to choose the most effective course of action, thereby resulting in a potential stop-gap interim solution, where the new system selected does not adequately meet management's needs, and may need to be replaced. The Ad Hoc systems contained in Group C (see Exhibit A) are currently scheduled to be migrated to standalone Desktop systems. Since the type of systems contained in Group C are Ad-Hoc, and therefore by definition only are used on a periodic basis, they are not included in the mainframe processing measurement statistics. Also representing a significant percentage of mainframe processing usage is the current mainframe E-mail system, which is scheduled to be removed within the 1997 calendar year. The category identified as System Support Overhead, represents those executive systems such as the operating and communication systems for example, that support and maintain the application systems. Finally, the Unused Capacity category (currently 11 percent) represents that potion of the mainframe processor that is not being used.

Final Mainframe Disposition Requires Careful Management Analysis

The Group A application systems depicted in Figure 2 are the only systems that will without question reside on the HIR mainframe after the Year 2000 project is completed, with the possible exception, albeit temporary, of the FMS payroll and OSM/OES systems if they are not replaced before the deadline. With the backdrop of such management directives as the House Resolution, and the CAO audit response to the OIG audit of the CAO, management needs to identify benefits to be derived from these systems with respect to future user needs and their continuing support costs. As an example, one might question the purpose for continuing to support such minor systems as the Photography or Recording Studio systems on a mainframe platform when there may well be other, less costly and more effective options available.

[8]The replacement of HIR's large scale mainframe with the CMOS server (which is actually a small mainframe) resulted in a change in processing capabilities from 114 mips (millions of instructions per second) to 77 mips. HIR has the option of reducing the CMOS' processing capacity even lower - to 55 mips - but (a) has not done so and (b) does not have a documented, short-term strategy for doing so.

The House's primary purpose for leasing computer resources is to supplement costs by maximizing excess capacity, not to provide computer services for outside clients. However, using FY92 as the baseline as noted in Figure 3, the benefit of the revenue generated by the House mainframe system has steadily declined from a high of $12.7 million to a projected revenue of $2.8 million in FY98. This declining revenue is in stark contrast to the increasing unused processing capacity of 65.7 percent[9]. Figure 4 on page 9 shows costs and revenues for continuing the support of the mainframe. These numbers were obtained from the CAO's proposed FY98 budget and costs/revenue estimates that were supplied by HIR officials. They show that the continued use of the mainframe will have an estimated annual cost of $4.9 million for FY98. The downsizing of the mainframe processor to the current CMOS processor (with its associated system software), as well as the replacement of the direct access storage devices with new RAID (Redundant Array Of Inexpensive Disks)

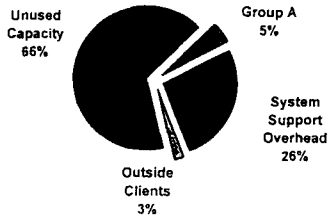

Figure 2 - Mainframe Processing Usage After Completion Of The Year 2000 Project

Figure 3 - Mainframe Revenues[10] ($000,000) for FY92 thru FY98

technology, has resulted in an estimated overall decrease in system support costs of $516,000 (see total support costs in Figure 2). Therefore, the projected net expense for continuing the support of the mainframe and the remaining systems for FY98 will be approximately $2.1 million.

[9] It should be noted that the total capacity of the HIR CMOS processor is based on the current 1997 configuration of 77 MIPS (million instructions per second). HIR has anticipated that the future configuration of the CMOS processor will allow for a decrease in total MIPS, thereby lessening support costs.

[10] Source: Legislative Branch Appropriations for 1995, Hearings Before a Subcommittee of the Committee on Appropriations, House of Representatives; H.I.S. Funding History FY92 thru FY95; Enterprise Computer Group, estimated revenues for FY96 thru FY98.

Revenues Generated	FY97	FY98
GAO, Social Security Administration - NCOA, CBO, ProPAC	($2,900,000)	($2,800,000)
Total Revenue	($2,900,000)	($2,800,000)
Systems Support Costs		
System Hardware / Software[11]	2,528,000	2,012,000
VTAM[12]	22,560	22,560
NCOA[13]	120,000	120,000
MONIES	50,000	50,000
Total Support Costs	2,720,560	2,204,560
Personnel Costs (FTEs)		
Enterprise Computing	1,530,000	1,530,000
Integration	1,586,250[14]	1,163,250[15]
Total Personnel Costs	3,116,250	2,693,250
Total Costs	5,836,810	4,897,810
Net (Income)/Expense	**2,936,810**	**2,097,810**

Figure 4 - Estimated Mainframe Costs for Fiscal Years 1997 and 1998.

Although support costs have recently decreased, the Year 2000 project as now planned, will result in the House having to retain the mainframe system well into the first decade of the 21st century. Rather than having solved both these issues in one step, the House will now be forced to address the migration process in a costlier, multi-step approach later on. As an example, HIR management estimates that the LIMS system will need to continue to reside on the mainframe system to at least 2004, when it is anticipated to be migrated to a LIMS client/server system.

Conclusion

The issues discussed in this report demonstrate the negative consequences that the absence of a viable strategic plan has had on HIR. These events began with the still outstanding CHO request for analysis of the retirement of the mainframe; to the short-term and costly solutions contained in the Year 2000 project; and ended in HIR management's indecisiveness regarding the future direction of House information systems. As cited in our HIR management review, the underlying cause for these deficiencies implies a lack of strategic planning, as well as management direction and oversight that would be used to guide HIR's information management teams. As documented within this audit report, and culminating with the

[11] These figures have been reduced by the annual cost for the NCOA system, since this cost is displayed separately within the table.

[12] Virtual Telecommunication Access Method - A set of programs that maintain control of the communications between terminals and application programs running under certain operating systems.

[13] As a result of the automated correction processes contained within the NCOA system (e.g., detection of duplicate addresses), Members of the House have experienced regular mail savings benefits, for example the House realized a cost avoidance of $3.5 million in calendar 1996.

[14] This figure represents an adjustment of budgeted/actual personnel costs of the authorized 61 staff for the Integration Group. HIR advised that they have actual staff of approximately 50, of which approximately 30 are designated as supporting mainframe systems.

[15] This figure represents an adjustment of budgeted personnel costs of the documented 61 staff for the Integration Group. HIR advised that they are in the process of implementing a new reorganization of the Integration Group, pending formal CHO approved. The new Integration Group will then only consist of about 22 mainframe support staff.

then Administrator's comments that the retirement of the mainframe was still an open policy issue, the issue as to the future direction of the House mainframe migration appears very much undecided.

Recommendations:

We recommend that the Chief Administrative Officer:

1. Assign a project leader with sufficient resources and appropriate authority to determine what has been done and what still needs to be done with respect to the directive from the CHO regarding development of a mainframe migration plan.

2. Present the results of the assessment developed in recommendation 1 to the CHO with recommendations as to how to proceed.

3. Direct the Year 2000 project leader to incorporate specific mainframe migration issues for consideration into the current Year 2000 plan.

4. In concert with existing Year 2000 planning and implementation efforts, develop a mainframe migration plan and present it to the CHO for approval, supported by a comprehensive, in-depth needs analysis, that reflects the wishes of the House--as elaborated in the ISPP, the CHO November 1995 directive, and/or feedback from recommendation 2 above.

Management Response

On October 14, 1997, the CAO concurred with the recommendations in this finding (see Appendix).

The CAO agreed to implement the recommendations in collaboration with the OIG mainframe migration study pursuant to the House Report 105-196 (Legislative Branch Appropriations Bill for 1998) on behalf of the House community. An HIR study group has been appointed and participants have been identified to work with the OIG to provide a comprehensive data center inventory of all information systems hardware and software. The HIR study group will work closely with, and assist the OIG with study tasks involved in estimation of costs of viable technical alternatives for each mainframe system, as well as other tasks that may be required to complete the mainframe migration study.

An outside contractor has been retained to perform project leadership of the Year 2000 effort. Mainframe migration issues and recommendations from the OIG study will be taken into consideration, and incorporated in updates of the Year 2000 implementation plan. Scheduling and deliverables contained within the Year 2000 implementation plan will adhere to requirements set by the outcome of the mainframe migration study.

Office of Inspector General Comments

The CAO's current and planned actions are responsive to the issues we identified and, when fully implemented, should satisfy the intent of our recommendations.

EXHIBIT A

Legacy System Descriptions and Disposition

Legacy System	Functional Description	Year 2000 Disposition[16]
Group A		
LIMS - Legislative Information Management System	A composite of mission critical systems that support House legislative data collection and processing functions.	Remain on mainframe until 2004, then replace with client/server system
NCOA - National Change of Address	Supports updates of Member office mailing lists.	Remain on mainframe, no planned replacement*
MONIES - Management of Network, Income, Expense, and Services	Supports the collection and pricing of individual call records from the House of Representatives System 85 Switch and the 1000 district offices.	Remain on mainframe, no planned replacement*
HIR Inventory	Maintains records of all hardware and software items acquired by the House offices.	Minor ADABAS system, to remain on mainframe, no planned replacement
Photography	Billing system for the Office of the Photographer which charges House offices for photography services.	Minor ADABAS system, to remain on mainframe, no planned replacement
Recording Studio	Automated scheduling, tracking and billing system for the House Recording System.	Minor ADABAS system, to remain on mainframe, no planned replacement
Lobby Act	Provides for tracking and logging of lobbyists and the quarterly reports they are required to file.	Minor ADABAS system, to remain on mainframe, no planned replacement
Parking	Tracks parking stickers issued by the Office of the Garage.	Minor ADABAS system, to remain on mainframe, no planned replacement
Group B		
FMS Payroll - Financial Management System Payroll	Supports the House Human Resources Office with the production of the House payroll.	Either replace with COTS client/server system or outsource
OSM/OES - Office Systems Management/ Office Equipment Systems	Supports and maintains the House-wide inventory system for office equipment.	Replace with COTS client/server system
MIN/ISIS - Member Information Network / Integrated Systems and Information Services	A composite of information and research sources especially designed for House Members, committees, and staff.	Retire and replace with Web browsers
Group C		
Ad Hoc Systems	These systems are only critical to small groups of users, e.g., Page Profiles, Franking Standards, and Press Gallery.	Migrate to desktop systems

*These applications are commercial off-the-shelf software (COTS) products.

[16] Source of disposition comments is HIR's May 16, 1997 Year 2000 Plan (revised).

EXHIBIT B

Status Of Implementation Of Prior Audit Report Recommendations

Audit Report/Recommendations	Implementation Status	Comments on Corrective Actions Taken And/Or Planned	Scheduled Date of Completion
Improvements Are Needed In The Management And Operations Of The Office Of The Chief Administrative Officer (Report No. 96-CAO-15, dated December 31, 1996)			
1. Conduct a comprehensive needs and cost/benefit analysis to determine the best approach to mainframe migration.	No Action	Agreed upon March 1, 1997 delivery date was not met, nor needs or cost/benefit analysis performed.	March 1, 1997
2. Adopt an implementation plan that balances the need for an aggressive timeline with user needs, hardware and software, personnel and budget requirements.	No Action	Without a migration analysis supplied by HIR, the CIIO was unable to provide a strategic direction for mainframe migration.	No date given. Action dependent on Rec. No. 1

Office of the
Chief Administrative Officer
U.S. House of Representatives
Washington, DC 20515–6860

MEMORANDUM

TO: John W. Lainhart, IV
Inspector General

FROM: Jay Eagen
Chief Administrative Officer

DATE: OCT 14 1997

SUBJECT: Draft Audit Report - Inspector General Audit

Thank you for the opportunity to comment on your draft report. The draft audit report, "Despite CHO And CAO Mandates, HIR Has Not Begun Development Of A Mainframe Migration Plan" has been reviewed with consideration to the four recommendations contained therein. We appreciate the in-depth analysis provided in the document, and are supportive of the recommendations.

Our specific responses to the recommendations are as follows:

Recommendations:

1. Assign a project leader with sufficient resources and appropriate authority to determine what has been done and what still needs to be done with respect to the directive from the CHO regarding development of a mainframe migration plan.

CAO Response: Concur.

Subsequent to the publication of this draft audit report, House Report 105-196 (Legislative Branch Appropriations Bill for 1998) requested that the House Inspector General study this issue "to determine if the House could be better served in the future by either out-sourcing the operation of the mainframe computer to a vendor or relocating the final mainframe systems to another legislative branch agency."

We would like to collaborate with you on this study on behalf of the House community. In anticipation of our collaboration, an HIR study group has been appointed to work with the OIG's designated leader for the study. The internal HIR group is made up of the following participants: Dianne Jordan (staff sponsor), Jerry Boho (HIR project leader), Sander Zaben, Lea Fowlie, and Jim Daley.

The HIR study group will work with the designated OIG study leader to provide a comprehensive data center inventory of all information systems hardware and software. The HIR study group will work closely with, and assist the OIG study leader with study tasks involved in estimation of costs of viable technical alternatives for each mainframe system. The systems under consideration in the audit are:

Group A	Group B	Group C	External Customers
LIMS NCOA MONIES HIR inventory Photography Recording studio Lobby Act Parking	FMS Payroll OSM/OES MIN/ISIS	Ad Hoc Systems - Page Profiles, Franking Standards Press Gallery	Congressional Budget Office General Accounting Office Prospective Payment Assessment Commission NCOA - Executive Branch Agencies

Using the current Year 2000 Plan as a baseline consideration, the proposed migration paths for these systems are as follows:

- Group A will be modified to become Year 2000 compliant.
- Group B is scheduled for replacement by COTS, out-sourcing , or Web interface.
- Group C are small, custom systems that can be migrated to COTS desktop systems.
- External Customers is a list of Non-House users who purchase time on the HIR mainframe—this study will address the prognosis of these systems, and be incorporated into the Year 2000 planning effort.

2. Present the results of the assessment developed in recommendation 1 to the CHO with recommendations as to how to proceed.

CAO Response: Concur.

We will collaborate with the OIG study leader by performing background research and other tasks that may be required to complete the mainframe migration study requested in House Report 105-196.

3. Direct the Year 2000 project leader to incorporate specific mainframe migration issues for consideration into the current Year 2000 plan.

CAO Response: Concur.

An outside contractor has been retained to perform project leadership of the Year 2000 effort. Mainframe migration issues and recommendations from the OIG study will be taken into consideration, and incorporated in updates of the Year 2000 implementation plan.

4. In concert with existing Year 2000 planning and implementation efforts, develop a mainframe migration plan and present it to the CHO for approval, supported by a comprehensive, in-depth needs analysis, that reflects the wishes of the House— as elaborated in the ISPP, the CHO November 1995 directive, and/or feedback from recommendation 2 above.

CAO Response: Concur.

The efforts of the mainframe migration study group will be coordinated with all Year 2000 planning efforts for the development of an analysis of mainframe alternatives based on the data center inventory, and the technical alternatives (COTS, out-sourcing, client-server solutions) for Groups A, B, C and External Customers listed above. Scheduling and deliverables will adhere to requirements set by the outcome of the mainframe migration study.

John W. Lainhart IV
Inspector General

Office of Inspector General
U.S. House of Representatives
Washington, DC 20515-9990
MEMORANDUM

TO: James M. Eagen III
Chief Administrative Officer

FROM: John W. Lainhart IV
Inspector General

DATE: September 29, 1997

SUBJECT: Audit Report - House Needs To Refocus It's Efforts To Meet The Year 2000 Deadline (Report No. 97-CAO-13)

This is our final report of our audit of HIR's progress in identifying and resolving Year 2000 issues. The objectives of this audit were to (1) evaluate the adequacy of the House's Year 2000 plan, (2) assess the status, allocation of priorities and resources, and timetable for completion of the Year 2000 initiative, (3) determine whether generally accepted project management techniques have been established, and (4) identify whether vendor supported hardware/software products will be Year 2000 compliant. In this report, we identified Year 2000 management controls involving planning, budgeting, internal and external coordination issues, procurement, and conversion practices that can be improved. We also found that the House is only at the initial stages for OSM and FMS Payroll replacement efforts which leaves no time for unanticipated problems or delays.

In response to our September 11, 1997 draft report, your office concurred with our findings and recommendations. Your September 9, 1997 management response is incorporated in this final report and included in its entirety as an appendix. The corrective actions taken and planned by your office are appropriate and, when fully implemented, should adequately respond to the recommendations contained in this report and other long-standing recommendations contained in prior OIG reports. Further, the milestone dates provided for implementing the corrective actions appear reasonable.

We appreciate the courtesy and cooperation extended to us by your staff. If you have any questions or require additional information regarding this report, please call me or Robert B. Frey III at (202) 226-1250.

cc: Speaker of the House
Majority Leader of the House
Minority Leader of the House
Chairman, Committee on House Oversight
Ranking Minority Member, Committee on House Oversight
Members, Committee on House Oversight

HOUSE NEEDS TO REFOCUS ITS EFFORTS TO MEET THE YEAR 2000 DEADLINE

I. INTRODUCTION

The Year 2000 date change is one of the most significant changes ever faced by the Information Technology industry. It will have an enormous impact on business applications, package solutions, and system software, potentially even putting some companies out of business. The date change has the potential to cripple an organization's ability to execute its critical business functions. It impacts everything from payroll and pension calculations to budgeting to electronic data transfer. Failures can include programs ending abnormally, or worse, returning incorrect results. Even applications that do not use dates are at risk, as they may depend on others that do. It is estimated that companies in the United States will spend billions of dollars addressing the software changes required by the coming millennium. What makes this problem so daunting is its magnitude, not its technical complexity. The biggest challenges to be faced by the House of Representatives (House) are keeping tight project control of the effort and securing active House-wide participation. The Year 2000 initiative has a deadline that cannot be extended.

House Information Resources' (HIR) April 1997 Year 2000 plan represents the House's first, formal attempt to present an organized response to a problem facing the rest of the Federal government and private sector entities that depend on computers to sustain their operations. The information presented in this report will show that, while the House is addressing this issue head-on, it is ill-prepared to handle the problems that have been identified. The House is not prepared to implement its Year 2000 initiative from the project management, planning, budgeting, resources, and priorities perspective that would ensure success in this time-critical endeavor.

Background

The cause of the Year 2000 problem is relatively simple. Until very recently, computer storage was at a premium, so programmers were encouraged to save space and eliminate redundant data wherever possible. Date information was a prime candidate for space reduction because a date such as January 31, 1997 could be represented by six numbers: 970131. However, the continued use of the current two-digit year representation will cause many basic functions of computer systems to fail in the Year 2000. For example, an automated pension program may calculate a person's retirement by subtracting the birth year from the retirement year (i.e., 1997 minus 1942 equals 55 years). However, the computer actually subtracts 42 from 97 to get 55. But in the year 2000, the same 2-digit computer calculated retirement age will be 00 minus 42 which equals a negative 42--the computer does not 'know' that "00" represents "2000." Vast amounts of stored data and program instructions are still in this old format. No one commissioning or writing code in the 1970's and 1980's thought their systems would survive into the 21st century, yet they are still in use in many organizations today, including the House.

If corrective actions are not taken before the Year 2000 arrives, most, if not all, of the House's systems, including the mission-critical ones (e.g., Legislative Information Management System

(LIMS), Office Systems Management (OSM), and Financial Management System (FMS Payroll)), may fail or produce erroneous data. House systems that project future dates such as HIR's MONIES (Management Of Network, Income, Expense, and Services) and OSM have already experienced Year 2000 date recognition problems. Before the Year 2000, the House must complete a comprehensive Year 2000 initiative which includes identifying its computer systems and software and converting problematic date fields using appropriate system development life cycle techniques. While the problem is primarily mainframe-based, it also affects client/server networks, workstations, distributed systems, telecommunication systems, networks, and computer-controlled devices. Possible solutions to the problem include either system migration, modification, replacement (e.g., commercial off-the-shelf systems), or system retirement. No matter which solution or combination of solutions is employed, the House needs to ensure that it is ready for the Year 2000.

Objectives, Scope, And Methodology

Due to the increasing urgency of preparing for the Year 2000, the Office of Inspector General has initiated this first of a series of periodic "snapshot" reviews of HIR's progress in identifying and resolving Year 2000 issues. Our December 31, 1996 audit report entitled, "*Improvements Are Needed In The Management And Operations Of The Office Of The Chief Administrative Officer*," (Report No. 96-CAO-15), included a recommendation for the Acting Chief Administrative Officer (CAO) to prepare a comprehensive Year 2000 strategy. We consider this December 1996 audit report a baseline for Year 2000 issues against which this and follow-up audits will be targeted. This audit focused on HIR's newly developed Year 2000 plan to determine if the House is positioned to resolve Year 2000 issues in a timely manner. We plan to conduct additional reviews at critical phases throughout the House's Year 2000 initiative.

The objectives of this review were to (1) evaluate the adequacy of the House's Year 2000 plan, (2) assess the status, allocation of priorities and resources, and timetable for completion of the Year 2000 initiative, (3) determine whether generally accepted project management techniques have been established, and (4) identify whether vendor supported hardware/software products will be Year 2000 compliant. In light of the managerial deficiencies identified in our recent audit of HIR's management practices (*HIR Management Practices Undermine The House's Ability To Keep Pace With Technological Changes*, report no. 97-CAO-09, dated May 8, 1997), we also looked at techniques employed and decisions made by those given the responsibility for managing the Year 2000 initiative. Successful implementation of this initiative requires a similar level of project management and techniques as in a single, large information system development effort.

Our audit covered the period April 1997 through June 13, 1997, and was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States. Since the House has recently prepared its Year 2000 plan, only limited documentary evidence was available. Thus, most of the information provided was based on numerous interviews with officials involved in the Year 2000 issue. Also, since this review was meant to be a "snapshot" in time, it may not include management actions taken after our cutoff date to remedy problems reported herein. Our next review will address any such issues in full.

Internal Controls

During this review, we evaluated internal controls over the Year 2000 initiative. The internal control weaknesses we identified are described in the *Results of Review* section of this report.

Prior Audit Coverage

Improvements Are Needed In The Management And Operations Of The Office Of The Chief Administrative Officer (Report No. 96-CAO-15, dated December 31, 1996). This audit addressed Year 2000 activities and determined that HIR had not yet developed a plan for minimizing the potential impact that the Year 2000 will have on the House. This report concluded that the House had not assigned a team leader, assessed the office level systems within the House environment, or conducted an analysis to determine the impact of phasing out the legacy application systems. The report recommended that the Acting CAO prepare a comprehensive strategy addressing the potential impact of the Year 2000 issue for review and approval by the Committee on House Oversight (CHO). The Acting CAO concurred with the audit recommendation. In response, he instructed HIR to develop project management policies and procedures to ensure appropriate planning and conversion for the Year 2000 issue addressing the establishment of priorities and target dates for the phases of conversion including adequate testing for all the systems. The Acting CAO also agreed to appoint a project manager to oversee the conversion team, which will have representatives from all areas of HIR.

HIR Management Practices Undermine The House's Ability To Keep Pace With Technological Changes (Report No. 97-CAO-09, dated May 8, 1997). This audit concluded that HIR has failed to timely address and develop a viable solution/plan to minimize the impact of the Year 2000 problem, and that HIR has not established certain minimal control practices such as project management, quality assurance, and change control. In response to the report, the Acting CAO agreed to improve the HIR management processes which, in turn, should positively impact the Year 2000 effort.

II. RESULTS OF REVIEW

HIR[1] has recognized and is working towards meeting the Year 2000 challenge. To date, HIR has (1) prepared a high-level Year 2000 plan for approval by the CHO, (2) appointed a project leader and assigned personnel to work on the initiative, (3) estimated some costs, prioritized tasks for mission-critical projects, and prepared broad target dates, (4) sent survey letters to commercial vendors asking if their products will be Year 2000 compliant, and (5) initiated action to reprogram date fields for LIMS. In addition, the House is continuing its efforts to replace the FMS Payroll system through the preparation of a contractor statement of work that will result in a needs analysis and the development of a request for proposal (RFP). However, House

[1] In some instances we refer to HIR as the organization responsible for Year 2000 tasks and in others we refer to the House. When we initiated this audit, we anticipated dealing with a Year 2000 project manager having responsibility for all House Year 2000 issues. We quickly discovered that many Year 2000 tasks were being addressed by various organizations throughout the House with limited coordination and the Project Leader had no authority outside his immediate organization within HIR.

management has to refocus its objectives, dedicate additional resources, and reassess its priorities in order to meet the Year 2000 challenge.

Additional Actions Needed Which Are Critical To The Year 2000 Initiative

In attempting to recognize the positive aspects of the work HIR has done in preparation for the Year 2000, we should also point out that its efforts to date have merely scratched the surface of an issue that should have been addressed years before. Because the urgency of this issue was not adequately recognized, HIR may have to redouble its efforts in order to become Year 2000 compliant. Specifically, we found that the HIR has not (1) established effective project management controls, (2) met general government Year 2000 milestones, (3) prepared a comprehensive Year 2000 plan covering critical stages of the initiative or disposition of all systems, (4) adequately estimated the Year 2000 initiative costs or budgeted sufficient funds, (5) sufficiently coordinated Year 2000 efforts with external groups, (6) incorporated Year 2000 warranty language in its procurement contracts to guarantee compliance on future information technology purchases, and (7) secured software tools or contractor support to assist in the conversion effort. We also found that the House is only at the initial stages for OSM and FMS Payroll replacement efforts which leaves no time for unanticipated problems or delays.

Effective Project Management Controls Are Needed

Effective project management controls have not been established. The Year 2000 solution is not strictly, or primarily, a technical challenge. It requires sound planning and good management to be successful. While a project leader has been assigned, this official has not been given the formal authority to lead the overall effort and is only acting as a "coordinator" for internal HIR issues. Moreover, the project leader spends only 15 percent of his time on Year 2000 issues, and, according to him, 90 percent of that time is focused on mainframe application systems. In our view, the Year 2000 project leader position is more than a part-time job; it requires a full-time effort at critical stages. We also found there are at least 16 employees (including those working on the physical conversion of the LIMS date fields) involved in the Year 2000 effort in some capacity, yet no formal charter outlining their specific roles and responsibilities exists. In addition, HIR has not instituted regular meetings (internal or external to HIR) to track progress and share information on Year 2000 readiness, nor have status or progress reports been utilized to keep senior management informed on an ongoing basis. Thus, no organized attempt has been established to track and measure the progress in addressing the Year 2000 effort. Omitting such key project management elements could hinder the success of the Year 2000 initiative.

When we asked the project leader about the status of OSM and FMS Payroll replacements, he indicated that he has not taken the lead on these and referred us to OSM and Finance, respectively. If, in fact, these systems are outside the purview of the project leader, this fact needs to be acknowledged in the charter. Also, the project leader told us he has no authority over the internal HIR Year 2000 groups such as those in Communications, Enterprise Computing, Client Services, and the Internet Services Group. He told us his role as project leader was only to coordinate with these other HIR groups and did not see these groups playing a big role in the effort. Discussion with Communications and Enterprise Computing personnel indicated that they

are keeping the project leader informed on their progress, but that there was no mandatory hierarchy that requires them to directly report to him while the initiative is ongoing. As a result, the tasks attributed to the project leader have not been adequately addressed. For instance, the responsibility has not been taken for concurrent tasks, prerequisites (e.g., addressing operating systems changes before applications are integrated), internal and external coordination, and Year 2000 language for procurements. Also, while many of the HIR groups have issued letters to vendors requesting the status of Year 2000 products they distribute or support, the Client Services group has not sent letters to vendors of products listed on the "House Supported Software List." Instead, they are looking to an Internet web site that posts software products that are, or will become, Year 2000 compliant. While this may be an acceptable, supplemental tool, it cannot match the completeness or timeliness of vendor letters. This type of oversight would normally have been identified by the project leader. While HIR had good intentions in appointing a Year 2000 project leader, the effort is somewhat diminished if the project leader's primary role is oriented towards mainframe application efforts, rather than focusing on other, more "global" aspects of the initiative.

Fixed Year 2000 Deadline Leaves Little Time For Delays

Based on general government Year 2000 milestones,[2] we believe the House is behind in its efforts to remedy the Year 2000 problem. The government milestone for completion of the awareness phase, where the overall Year 2000 strategy is approved and which is the first of five phases, was December 1996. HIR's Year 2000 plan, which is a high-level plan containing few detailed steps (and which has only recently been submitted to the CHO for approval on May 19, 1997), is still undergoing changes. Further, while HIR has completed portions of the assessment or second phase, it has not developed detailed system plans and schedules for which the recommended milestone is June 1997. Delays in these initial two phases places the timeliness of completion of the final three phases in question.

While most of the 200 systems in the House will be affected by the Year 2000 problem, the Year 2000 plan highlighted 3 high priority, mission-critical projects--replacement of OSM and the FMS Payroll module, and the conversion of LIMS. We were told by the Year 2000 project leader that the House is "rapidly approaching the behind stage" on implementing Year 2000 solutions for these systems. Immediate decisions and actions are needed on the OSM and FMS Payroll module replacement efforts to ensure a timely solution. While the initial conversion work for LIMS has begun, such major steps as retaining contractor assistance and obtaining appropriate software tools need to be initiated. Further, the Year 2000 project leader indicated that the time-frames in the Year 2000 plan for these mission-critical systems and other systems are only general estimates that still need to be refined. Many of the smaller systems will not be made compliant until 1999. Moreover, while we generally found a sense of urgency regarding the Year 2000 initiative, that sense of urgency was not apparent for the OSM replacement or the smaller systems. If the House expects to meet the Year 2000 deadline, the CAO needs to make it clear that the Year 2000

[2] Office of Management and Budget, in consultation with the Chief Information Officer Council, has set government-wide milestones for completion of each phase of Year 2000 activities. These include Awareness--December 1996, Assessment--June 1997, Renovation--December 1997, Validation--January 1999, and Implementation--November 1999. (See Exhibit, page 14, for an explanation of each of these phases).

initiative should be one of their highest priorities, and provide or request sufficient resources to carry it out.

Renovation, Validation (Testing), And Implementation Phases
Not Sufficiently Detailed In The Year 2000 Plan

The generally accepted makeup of a successful Year 2000 plan includes five distinct phases that provide an organized approach to identifying and implementing a solution. (See Exhibit, page 15). However, the House's Year 2000 plan primarily covered only the first two phases (Awareness and Assessment). While we did find broadly stated elements of the other three phases (Renovation, Validation, and Implementation) in the Plan, these phases were neither spelled out in detail, nor were there references to future provisions in the Year 2000 plan for their completion. Of the five phases involved in a Year 2000 plan, the last three generally account for about 75 percent of the time and cost of the initiative. The Validation phase alone, which includes testing, may take over a year to complete and may actually consume about half of the Year 2000 budget and resources. Since these phases primarily drive budget and resources requirements, it is critical to incorporate them early on in the Year 2000 initiative.

Detailed implementation plans for the Renovation phase need to be developed immediately for all systems. These plans should help in determining the resource requirements and detailed schedules. Pre-requisites for the Validation phase need to commence as well, including the development of detailed test methodologies and test plans. Methodologies should be developed to run different tests which ensure that corrections are functioning according to design and that ties to external customers and systems do not compromise the effectiveness of the House's Year 2000 compliant systems. Furthermore, plans need to be made to ensure effective quality assurance and system, integration, and acceptance testing are carried out. These tests should be as rigorous as tests used in initiating new systems. While we were told testing capacity within HIR should not be a problem and that they have budgeted for software testing tools, capacity planning and scheduling requirements need to be determined and verified to ensure sufficient computer resources can be allocated for testing purposes.

Since Year 2000 is a phased process and detailed implementation plans are not available on a system-by-system basis, we believe HIR would benefit by preparing a follow-on document to the existing Year 2000 plan which addresses in detail the latter three phases of the initiative. One source of information on strategies for these three phases is the Chief Information Officer (CIO) Council Subcommittee on Year 2000, which provides group sessions on Year 2000 issues. Participants have gained valuable information and excellent opportunities to share experiences and ideas with others engaged in similar efforts.

Cost Estimates May Fall Short Of Actual Funds Needed

Based on current industry practices/standards covering Year 2000 conversion costs, it is possible that HIR's cost estimates[3] may fall short of actual funds needed for this initiative by as much as $2,387,000. HIR's Year 2000 plan estimates costs for the initiative at $1,243,000--which equates to roughly $1.00 per line of code times 1.25 million lines of code.[4] We found that HIR's estimate for lines of code and rate per line for the initiative may be understated as follows.

	Lines of code	Rate per line	Totals
HIR estimate	1,250,000	$.9944	$1,243,000
OIG estimate	1,650,000	$2.20	$3,630,000
HIR understatement			($2,387,000)

While a November 1996 Year 2000 contractor report estimated the lines of code at 1.29 million, the same contractor indicated a change in the number of lines to 1.65 million in a March 1997 update to its initial report. The second report attributed the line increase to the fact that certain House applications were not included in the initial inventory. When presented with these contradictory numbers, the Year 2000 project leader said the 1.65 million was incorrect, but provided no rationale for this position. (The contractor did not provide HIR with any of the supporting work papers for the original or the updated numbers so neither HIR nor we can determine the accuracy of the contractor's numbers.) Even if we use HIR's lower rate per line,[5] at 1.65 million lines, the estimate is still short by about $400,000.

Moreover, the $1.00 rate per line of code may be understated. The Gartner Group's 1997 estimate[6] puts the rate per line of code at $2.20.[7] This rate can be used with the actual number of lines of code in an organization to determine a rough Year 2000 cost estimate for budget purposes. We used the $2.20 rate because it represents one of the most current, comprehensive, generally accepted industry benchmarks available. Also, since HIR has limited actual cost data for the remaining three project phases--which account for the majority of a Year 2000 initiative costs--we felt that the $2.20 rate should be used until better cost data is available. One method that can reduce this rate is to use in-house resources rather than contracting-out, however, the mix of services needed has not as yet been determined. In addition, the number of lines could be reduced if certain Group 3 support systems are not converted, a decision which has yet to be made.

In addition, the Gartner Group also estimates needing one FTE for every 100,000 lines of codes. At 1.6 million lines of code, this would equate to approximately 16 FTE's. HIR's Year 2000 plan indicates that eight FTE's are available in FY 1997, but in our discussions with HIR we were told that there are a number of employees participating in the initiative on a part-time basis from various groups and that five of them are working on LIMS, but only on a part-time basis. HIR's

[3] Estimates do not include the FMS Payroll module and OSM replacement costs.

[4] A generally accepted method of estimating Year 2000 costs is to multiply the number of lines of source code in an application(s) by the current rate per line. Programmers, with the assistance of available software tools, review the individual lines of source code to locate and convert date fields.

[5] HIR said it was purely coincidental that the 1.25 million lines equated to about $1.00 rate per line.

[6] Gartner Group, Inc. is recognized as one of the authorities on the Year 2000 issue.

[7] The Gartner Group estimated rate for converting a line of code was at $1.10 in 1996 and the current rate is $2.20 a line. Other estimates per line are as high as $8.80 as the Year 2000 deadline approaches.

approach, which involves converting from a 2-digit to a 4-digit date field, requires the greatest amount of resources since all date related files and programs which handle date routines would have to be identified and then altered. However, HIR has not prepared a level of effort analysis for this initiative which would help solidify resource requirements for individual tasks. While our cost estimates may be high, we would rather ensure that the level of funding and the number of resources are adequate to complete this critical initiative, as opposed to using what we believe are unsupported and unrealistic estimates.

HIR Has Not Budgeted Sufficient Funds For The Year 2000 Conversion Initiative

HIR estimated the Year 2000 initiative will cost about $1,243,000 but has not ensured adequate funds have been budgeted for this initiative. The Year 2000 plan calls for $368,000 in 1997 to initiate the work, however, this amount was not incorporated into HIR's FY 1997 budget request. In fact, HIR did not specifically request any funds in FY 1997 for the Year 2000, but has subsequently made $20,000 available.

The Year 2000 plan also calls for $755,000 for FY 1998, but to date no funds have been approved for 1998. Again, the total amount anticipated for FY 1998 was not incorporated into HIR's budget justification process. We found that HIR's FY 1998 budget submission to the CAO requested only $450,000 for the Year 2000 conversion effort, but contained no details to support this cost estimate. We were told this amount represented all the money HIR could "scrape together" without disrupting other projects. Because this estimate appeared low, the Acting CAO subsequently added $500,000 to the request before it was submitted to the Subcommittee on Legislative of the Committee on Appropriations. The Year 2000 plan estimates that $120,000 is needed for FY 1999, however, the FY 1999 budget process has not started. The chart below illustrates the funds planned, requested, and funded to date for Year 2000.

Year	Year 2000 Plan[8]	Budget Request	Funded
FY 1997	$368,000	--	$20,000
FY 1998	755,000	$950,000	--
Subtotal	$1,123,000	$950,000	$20,000
FY 1999	120,000	--	--
Totals To Date	$1,243,000	$950,000	$20,000

Because HIR has not ensured the budgeting of sufficient funds, they have not procured the necessary resources critical to the Year 2000 initiative. For example, HIR has not been in a position to purchase any software tools to assist with software conversion or hire a contractor for LIMS to assist with the Year 2000 renovation. Even if the FY 1997 funds and the FY 1998 requested funds (totaling $970,000) are available, this funding level falls short of HIR's projection ($1,123,000) by $153,000.

Coordination Of Year 2000 Solutions Outside The House Is Needed

[8] These numbers first appeared in an April 1997 draft HIR's Year 2000 Plan and do not link to HIR's budget process.

The House, like other organizations facing the Year 2000 issue, is vulnerable in areas outside of its control, such as interfaces with the automated systems of other Legislative and Executive Branch agencies, and software and hardware provided by commercial vendors. While the Year 2000 plan generally addresses the coordination issue through the issuance of compliance letters with vendors and other organizations (e.g., Library of Congress, Congressional Research Service, etc.), we suggest that a more formal coordination effort be employed in dealing with the latter group. This is especially needed since some of the Legislative modernization efforts are going on concurrently. While the House works on making its systems compliant, they still face the possibility of failure if they interface with other non-compliant systems. For example, if communication software at any of the Legislative Branch agencies (such as the Architect of the Capitol, Government Printing Office, Congressional Budget Office, and Library of Congress) on CAPNET[9] is not Year 2000 compliant, this may adversely impact the entire network. We raised this issue at a June 12, 1997, meeting of the Legislative Branch Financial Managers Council to find out if this possibility had been considered as part of their Year 2000 planning efforts. The possibility of someone else's non-compliant system adversely affecting the operation of the CAPNET had not been considered. Architect of the Capitol representatives indicated there had been no Year 2000 discussions or considerations regarding CAPNET. (CAPNET is managed by a committee comprised of representatives of each Legislative Branch organization and is currently chaired by a Senior Engineer of HIR Communications. CAPNET has traditionally fallen under the umbrella of the Legislative Branch Telecommunications Network, a working group comprised of each Legislative Branch Information Systems Organization, chaired by the Architect of the Capitol.) Members of the Council expressed concern that action had not been taken with respect to CAPNET and the Architect of the Capitol representatives promised to arrange a meeting as soon as possible to discuss this matter. (That meeting had not been scheduled at the time this report was completed.)

Also, since LIMS receives data from several external sources, including the Executive Branch, LOC, Senate, and Government Printing Office, it is essential to coordinate data interfaces with all these groups. We found that some coordination efforts have been initiated. For example, the Year 2000 project leader mentioned that the Office of the Clerk was currently setting up a task force to address legislative data transfers--which would include data exchanges involving LIMS. Also, HIR's Internet Services Group participates in joint, weekly meetings to ensure a smooth and coordinated Member Information Network (MIN) migration. However, contact with other entities that exchange data with the House should be initiated and coordinated by appropriate House officials to ensure a complete transition to Year 2000 compliance.

Warranty Language Needs To Be Put Into House Contracts

The Year 2000 plan states that the House will acquire only Year 2000 compliant information technology products using standard "Year 2000 Contract Protection and Warranty Language." However, the House has not adopted the standard language (e.g., compliance definitions and warranty) and thus has not incorporated it into their solicitations and contracts. The Year 2000

[9] CAPNET is an electronic means for exchanging documents, files, and messages among all Legislative Branch entities and for providing access to shared information resources, including image data.

project leader indicated that he does not plan to issue standard contract language or procurement guidance because most of the vendors will be compliant by the Year 2000. Without incorporating standard warranty language in vendor contracts, the House is unnecessarily exposing itself to the costs of premature software replacements and potential Year 2000 compliance upgrades. Warranty language would place the burden on vendors to make their products Year 2000 compliant, and would protect the House with its interim hardware and software purchases. Subsequent discussions with other HIR officials indicated that any contracts they let will contain a modified version of the General Services Administration standard contract language. However, we were told that the House's version of the language is not ready for incorporation into House contracts to date because it is undergoing review by OPP and legal counsel. Nevertheless, we recommend that the House establish procedures requiring incorporation of Year 2000 language into the boilerplate section of all procurements relating to information technology purchases as soon as possible.

Systems In The Year 2000 Plan May Not Need To Be Converted

While the Year 2000 plan makes recommendations on individual system dispositions, HIR has not yet determined, through a needs study or contact with users, whether all systems are necessary or on which platforms they will ultimately reside. These individual systems are classified in the Year 2000 plan in priority Groups 2 and 3, and include such systems as Lobby, Photography, and Studio Billings. For instance, several Year 2000 plan recommendations involving individual systems include the annotation "replace, for instance, with Foxpro" however, other alternatives need to be considered such as Program Office Desktop. Other, smaller House systems are identified as "outsourcing candidates," but this option needs further clarification. Thus, formal studies need to be conducted immediately to assess the disposition of these systems and the true scope of the initiative. Since our initial inquiries, we were told that the Integration Group initiated a needs survey for those systems listed in the Year 2000 plan under MIN migration. This effort needs to be expanded to the other systems listed in the Year 2000 plan as well. Also, the Year 2000 plan assigns completion dates for many of these systems in late 1999. HIR should determine whether these time-frames can be shortened through increased resources or re-prioritization to make sure these systems are compliant by the Year 2000.

Software Tools And A Detailed Implementation Plan Are Needed For LIMS

Because HIR had not ensured adequate funding, it could not take advantage of any of the Year 2000 software tools to help assist them in the LIMS date expansion effort. LIMS has approximately 766,000[10] lines of code which need to be examined in order to change affected date fields, and HIR is handling the process manually. In our view, manually examining the code, line-by-line, will result in more errors or omissions involving date changes and date interdependencies than would result in an automated review, aided by software tools, that would require a fraction of the time to complete. Although there are no fool-proof automated solutions, the software tools available are set up to identify as much as 90-95 percent of the dates in a system and to help track their flow as they are passed from field to field. In addition, software tools should provide

[10] A March 1997 contractor report stated LIMS contains 766,155 lines of code; HIR officials told us LIMS has approximately 600,000 lines of code, and the Year 2000 plan states 504,000 lines of code for LIMS.

an added level of assurance when converting date fields. Further, the use of a software tool could assist with date field conversions in the smaller House systems, the total of which exceeds 881,000 lines of code.

Although the Year 2000 plan contained high level conversion strategies, the Year 2000 project leader indicated that detailed implementation plans will be prepared for each individual system conversion. We obtained and examined the three-page LIMS detailed implementation plan and found it contained a limited number of detailed steps and milestones to monitor the preliminary conversion phase, but did not contain programs, data issues, file conversions, resources, and continuous milestones as prescribed in the higher level Year 2000 plan. Additionally, as in the Year 2000 plan, the Validation (testing) and Implementation phases were not covered sufficiently in the detailed plan. Because LIMS is a highly integrated system, HIR officials indicated that problems are already anticipated with the testing phase of LIMS. Moreover, the Year 2000 plan identified eight full-time employees to be assigned to the LIMS project in FY 1997, however, to date only five HIR Integration Group personnel are working on this effort--all on a part-time basis. The existing detailed implementation plan needs to be expanded and standardized for LIMS and the other systems needing Year 2000 attention. These detailed implementation plans should be prepared when decisions are made about the disposition of each system. Together, the Year 2000 plan covering the five conversion phases, and the detailed implementation plans should serve as a basis for successfully completing the Year 2000 initiative.

Immediate Action Needed On OSM System Replacement

While $800,000 has been identified as being needed for the OSM system replacement and preliminary inquiries have been made on alternatives, the House has not taken significant action to ensure timely replacement. Although the Acting Associate Administrator, Media and Support Services was aware that the system needs to be replaced because it is not Year 2000 compliant, she told us that she believed HIR was taking the lead on the replacement project. As previously mentioned, the Year 2000 project leader indicated that HIR had not taken the lead on this effort, and in turn, referred us to OSM. The Acting Associate Administrator, Media and Support Services agreed that OSM, HIR, and the Office of Procurement and Purchasing (OPP) needed to get together to develop a replacement plan, but, to date, that has not happened. In our view, planning for this should be done immediately. This would include, but not be limited to, appointing a project leader to report and oversee the progress of the OSM replacement effort, assigning formal roles and responsibilities, and establishing milestones for the replacement project. The actual system replacement effort should be planned--from the initial stages (i.e., complete a needs analysis, requirements definition, and RFP, etc.) to system implementation. We suggest extremely close monitoring of this project, and again recommend that a contingency plan be developed in case the replacement effort goes beyond the Year 2000.

No Slack Time For FMS Payroll System Replacement

Although the FMS Payroll replacement project has identified $2 million dollars as being needed for funding, its status remains in the preliminary planning stage. A discussion with the Acting Associate Administrator, Office of Finance indicated that a statement of work has been prepared

to obtain a contractor for a needs assessment, requirements analysis, system specifications, RFP, and an initial evaluation. A contract for this initial phase is scheduled to be awarded by October 1997 with an estimated completion date of June 1998. Once this initial phase is completed and a contractor is selected, actual system replacement will commence. The replacement is estimated to take 18 months and be completed by December 1999. In effect, the entire implementation schedule for the replacement equates to 27 months, and as of October 1997, the Year 2000 deadline will also be 27 months away. Our concern is that this schedule has no slack time and leaves no room for errors or unforeseen circumstances. If any delays occur, the critical path of the project will be affected. As in the OSM replacement effort noted above, we suggest extremely close monitoring of this effort, and recommend that a contingency plan be developed (i.e., contracting with a service provider to issue payroll checks for a short-term period) to safeguard the House in the event that the replacement project goes beyond the Year 2000.

Conclusions

The House has recognized and is attempting to meet the Year 2000 challenge. However, in order to be successful, i.e., institute changes that guarantee Year 2000 compliance so that systems will be running smoothly on January 1, 2000, the House needs to take this effort to a higher level. HIR management has to refocus its objectives, dedicate additional resources, and raise its priorities in planning, budgeting, technology, and every other facet of project management in order to address the Year 2000 issue. Considerable work has been expended but not all of it is focused or channeled in the right direction. Problems still exist and management needs to take immediate action to correct them.

Recommendations:

We recommend that the CAO:

1. Establish formal project management controls and techniques as follows.

    a. Define the role of the Year 2000 project leader and establish it as a full-time position.

    b. Prepare a Year 2000 charter which formally assigns the authority and responsibilities for the Year 2000 initiative to the project leader and staff within HIR, and defines the project leader roles and responsibilities with respect to organizations/activities outside HIR whose systems may be affected by the Year 2000 problem.

    c. Institute a status reporting mechanism to inform upper management of Year 2000 progress.

    d. Conduct a detailed level of effort analysis which estimates the resources needed to complete the initiative.

e. Purchase software tools and secure a contractor, as necessary, to assist with conversions and testing.

f. Determine whether all systems are needed and on which platform they will reside.

g. Attend the CIO Council Subcommittee on Year 2000, as appropriate.

2. Revise and prepare follow-on document(s) to the Year 2000 plan which include the following activities.

   a. Prepare a schedule of Year 2000 tasks (e.g., PERT[11] chart concept) showing milestones and interdependencies of issues/organizations.

   b. As necessary, re-prioritize and accelerate out-year projects in the Year 2000 plan to meet remaining government milestones.

   c. Develop detailed implementation plans for each system to be converted.

   d. Expeditiously develop a follow-on document to the Year 2000 plan which addresses, in detail, the last three phases of the Year 2000 effort for review and approval by the CHO.

   e. In preparing the follow-on document, as recommended in 2.d. above, develop testing strategies, plans, milestones, and ensure testing capacity is available, and quality assurance is an integral element.

3. As necessary, revise the Year 2000 cost estimates and prepare revised budget requests based on these new figures.

[11] Program Evaluation and Review Techniques.

4. Coordinate data exchange issues with the external organizations that interact with the House's systems.

5. Adopt the standard Year 2000 contract language and incorporate this language into all procurements relating to information technology purchases.

6. Expedite decisions regarding OSM and FMS Payroll replacement efforts, closely monitor these activities to ensure timely completion, and prepare contingency plans, as necessary.

Management Response

On September 9, 1997, the CAO concurred with the recommendations in this finding (see Appendix).

The CAO agreed to establish formal project management controls and techniques. Specifically, the role of the Year 2000 project leader and its establishment as a full time position will be addressed at two levels within the CAO. First, the CAO will form a Technology Coordination Task Force (Task Force). This group will report to the CAO and consist of each Associate Administrator and one of their staff, with the chairman being appointed by the CAO. The mission of this group will be to ensure that information technology issues, including the Year 2000 project, are coordinated throughout the CAO. Under the guidance of the Task Force charter and with CHO input, they will develop a CAO strategy for the deployment of mission critical administrative applications, and will work to ensure that the plans and initiatives of each CAO organization are consistent with overall CAO goals, including interoperability. As part of this strategy, the Task Force will solicit input from Member, Committee and House Officer users and it will honor user needs criteria. In addition, the Task Force will examine industry best-practices to determine the best approach for the House and will use an acceptable SDLC process. The CAO plans to have the Task Force operational by the first week of October 1997. Second, the HIR Associate Administrator will designate a project manager who will be responsible for the management and coordination of Year 2000 issues across the HIR groups, the CAO, and external organizations with which they exchange data. This position will ensure that the technical details of the Year 2000 project are fully addressed. The project manager will be responsible for ensuring the timely completion of all Year 2000 work and oversee development of detailed system plans for each application--releasing updates of Year 2000 plans as necessary. The project manager's first tasks will be to establish schedules, milestones, and priorities, including addressing the Year 2000 audit recommendations. Working with the HIR Associate Administrator, the project manager will establish priorities and resource availability within the HIR groups. Critical issues will be escalated to the CAO as necessary. This position will be a full time assignment, staffed by either an HIR employee or a contractor. The CAO plans to have the project manager established by the end of October 1997.

In addition, the Task Force Charter will include the authority and responsibilities for the Year 2000 initiative. This charter will define the role of the group in developing an overall Information Technology strategy for the CAO organization. The primary objective will be to ensure that new

systems follow the strategic direction of the CAO. The Task Force will review all major information projects within the CAO, including the Year 2000 project, the Payroll and OSM replacement projects, and new procurement systems. Also, the CAO will develop a Statement of Work for the Year 2000 project manager. This statement will detail the specific duties, responsibilities, timelines, and deliverables of the project. The project manager will provide staff support for the Task Force, be responsible for the technical aspects of the process to determine the technical needs of the House, and coordinate resources within HIR. Further, the Year 2000 project manager will develop a standard reporting mechanism that will advise management of progress and inform them regarding issues and problems as necessary.

In the next phase of the Year 2000 Plan, detailed plans for each application will be developed. The first step will be to develop a master schedule of when each individual plan will be completed. The detailed plan for each system will include the proposed solution, detailed analysis of the impact, and an implementation plan. Major milestones for each major phase will be established and intermediate milestones will be detailed. The estimates of computer resources will be compared with available resources as early in the process as possible. The plans will be reviewed and updated regularly. The objective is to have an implementation plan in place by the end of March 1998. Also, HIR is actively researching the market for Year 2000 tools. The CAO plans to hire contractors who are experts with the software tool and who can train CAO staff on optimum use of the tool, as well as assist with the conversion effort. This effort will proceed based upon the availability of funding and resources. Final decisions on most of the applications identified in the Year 2000 Plan should be made over the next 6-8 months with guidance and coordination from the Task Force. For replacements of retired systems, the necessary analysis will be completed to determine the system that best meets requirements. Subsequent versions of the Year 2000 Plan will document these decisions. The CAO will also involve both management and staff in Year 2000 groups. The CIO Council has been contacted, and the CAO will begin participating in the activities of this Council.

The CAO also agreed to revise and prepare follow-on document(s) to the Year 2000 Plan, including additional levels of detail, as needed. Milestones, dependencies, and issues will also be documented, and appropriate charts prepared to illustrate project resources, milestones, dependencies, and overall sequence. In addition, the Task Force will continue to monitor the Year 2000 project and make any necessary adjustments. Those applications that are mission critical to the entire House will continue to receive the highest priority.

In addition, the CAO agreed to revise the Year 2000 cost estimates and prepare revised budget requests based on these revised figures. Updates of the Year 2000 Plan will be released regularly. These updates will reflect any policy changes, new requirements, and necessary revisions to overall time and cost estimates. Updates to the plan will drive the budget requests for FYs 1999 and 2000.

Also, the CAO will coordinate data exchange issues with the external organizations that interact with the House's systems. The CAO is a member of the Legislative Branch Technical Coordination Group that is addressing Year 2000 issues among Legislative branch organizations. The Year 2000 project manager, in conjunction with the Task Force, will coordinate activities

with outside organizations that exchange data with the CAO and keep them informed of the CAO's progress and plans. Communication Services is already planning for the readiness of remote networks (including CAPNET). An inventory of files that are exchanged with outside organizations has been compiled. Items on this inventory will be monitored, and a dialog with the organization will be maintained.

The CAO has adopted the standard Year 2000 contract language and incorporated this language into all procurements relating to information technology purchases. HIR, in conjunction with the Office of Procurement and Policy (OPP), has already modified the GSA standard Year 2000 Warranty language for incorporation into solicitations for contracts drafted by HIR. This language was used in the House's Wide Area Data Communications solicitation. OPP will develop similar, appropriate language for incorporation into the standard House Terms and Conditions applicable to purchase orders.

The CAO agreed that progress is needed on OSM and FMS Payroll replacement initiatives. The Task Force will closely monitor both projects and work to expedite the process. HIR expects to work closely with OSM and Human Resources on the replacement of both of these systems. OSM and Human Resources will have the lead role in their respective projects, and HIR will assist on technical and requirements issues. The Task Force will work to ensure that these projects are coordinated and receive the required resources. The implementation of these new systems is critical to the overall HIR Year 2000 conversion effort. Both systems represent a major software conversion effort, and failure to implement new systems before Year 2000 would adversely impact the success of the Year 2000 Plan.

Office of Inspector General Comments

The CAO's current and planned actions are responsive to the issues we identified and, when fully implemented, should satisfy the intent of our recommendations.

Exhibit

YEAR 2000 DATE CONVERSION PHASES[12]

The Year 2000 problem is the most challenging project in terms of size and scope ever undertaken by any Information Technology organization. In order for the project to be successful, government and private industry sources recommend the following five project management phases be adhered to.

AWARENESS: Define the Year 2000 problem and gain executive level support and sponsorship. Establish Year 2000 program team and develop an overall strategy. Ensure that everyone in the organization is fully aware of the issue.

ASSESSMENT: Assess the Year 2000 impact on the enterprise. Identify core business areas and processes, inventory and analyze systems supporting core business areas, and prioritize their conversion or replacement. Develop contingency plans to handle data exchange issues, lack of data, and bad data. Identify and secure the necessary resources.

RENOVATION: Convert, replace, or eliminate selected platforms, applications, databases, and utilities. Modify interfaces.

VALIDATION: Test, verify, and validate converted or replaced platforms, applications, databases, and utilities. Test the performance, functionality, and integration of converted or replaced platforms, applications, databases, utilities, and interfaces in an operational environment.

IMPLEMENTATION: Implement converted or replaced platforms, applications, databases, utilities, and interfaces. Implement data exchange contingency plans, if necessary.

[12] The Phases were derived from the General Accounting Office "Year 2000 Computing Crisis: An Assessment Guide."

Office of the
Chief Administrative Officer
U.S. House of Representatives
Washington, DC 20515

MEMORANDUM

TO: John W. Lainhart, IV
Inspector General

FROM: Jay Eagen
Chief Administrative Officer

DATE: SEP 09 1997

SUBJECT: Draft Audit Report - **Year 2000 Audit**

Thank you for the opportunity to comment on your draft report. We have carefully reviewed the draft audit report, "**House Needs to Refocus Its Efforts To Meet The Year 2000 Deadline**" and carefully considered the recommendations contained therein. We appreciate the thought that has gone into the document and we are generally supportive of the recommendations.

Our specific responses to the recommendations are as follows:

Recommendations:

1. Establish formal project management controls and techniques as follows.

(a) Define the role of the year 2000 project leader and establish it as a full time position.

CAO Response: Concur

This recommendation will be addressed at two levels within the CAO.

First, the CAO will form a Technology Coordination Task Force. Each of the CAO AA's and one of their staff will participate. The chairman of the task force will be appointed by the CAO with input from the HIR AA. The mission of this group will be to ensure that information technology issues are coordinated throughout the CAO, including the Year 2000 project. Under the guidance of the charter described in 1(b) and with CHO input, they will develop a CAO strategy for the deployment of mission critical administrative applications, and will work to ensure that the plans and initiatives of each CAO organization are consistent with overall CAO

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Committee and House Officer users and user needs criteria will be honored . Industry best-practices will be examined to determine the best approach for the House and an acceptable SDLC process will be used. This group will report to the CAO. We plan to have the task force operational by the first week of October 1997.

Second, the HIR AA will designate a project manager who will be responsible for the management and coordination of Year 2000 issues across the HIR groups, the CAO and external organizations with which we exchange data. He will ensure that the technical details of the Year 2000 project are fully addressed. The project manager will be responsible for insuring the timely completion of all Year 2000 work. He will oversee development of detailed system plans for each application and release updates of the Year 2000 plan as necessary. The first tasks will be to establish schedules, milestones, and priorities, including addressing the Year 2000 audit recommendations. Working with the HIR AA, he will establish priorities and resource availability within the HIR groups. Critical issues will be escalated to the CAO as necessary. The position will be staffed by either an HIR employee or a contractor, and the Year 2000 project will be a full time assignment. We plan to have the project manager established by the end of October 1997.

(b) Prepare a Year 2000 charter which formally assigns the authority and responsibilities for the Year 2000 initiative to the project leader and staff within HIR, and defines the project leader roles and responsibilities with respect to organizations/activities outside HIR whose systems may be affected by the Year 2000 problem.

CAO Response: Concur

The charter of the Technology Coordination Task Force will include the authority and responsibilities for the Year 2000 initiative.

The Task Force charter will define the role of the group in developing an overall Information Technology strategy for the CAO organization. The primary objective will be to ensure that new systems follow the strategic direction of the CAO. They will review all major information projects within the CAO, including the Year 2000 project, the Payroll and OSM replacement projects and new procurement systems.

A Statement of Work also will be developed for the Year 2000 project manager. It will detail the specific duties, responsibilities, timelines, and deliverables of the project. The project manager will provide staff support for the Technology Coordination Task Force, be responsible for the technical aspects of the process to determine the technical needs of the House, and coordinate resources within HIR.

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(c) Institute a status reporting mechanism to inform upper management of Year 2000 progress.

CAO Response: Concur

The Year 2000 project manager will develop a standard reporting mechanism that will advise management of progress and inform them regarding issues and problems as necessary. The reports will be delivered to the Task Force, the CAO and others as appropriate. Regular reporting will assure House management that milestones are being met and alert them to potential problems. Status reporting will also facilitate resolution of any cross-organizational issues. New or additional work requirements will be documented, assessed, and prioritized.

(d) Conduct a detailed level of effort analysis which estimates the resources needed to complete the initiative.

CAO Response: Concur

The Year 2000 Plan estimates the overall resources to solve the Year 2000 problem. In the next phase, detailed plans for each application will be developed. The first step will be to develop a master schedule of when each individual plan will be completed.

The detail plan for each system will include the proposed solution, detailed analysis of the impact including end user involvement, resources required, unit and integrated test plans, and an implementation plan. Major milestones for each major phase will be established and intermediate milestones will be detailed. Both storage space and processing capacity will be documented within each plan. The estimates of computer resources will be compared with available resources as early in the process as possible. The plans will be reviewed and updated regularly. Our objective is to have an implementation plan in place by the end of March 1998.

(e) Purchase software tools and secure a contractor, as necessary, to assist with conversions and testing.

CAO Response: Concur

HIR is actively researching the market for Year 2000 tools, especially ones that can process Adabas/Natural code. Plans are to hire contractors who are experts with the software tool and who can train CAO staff on optimum use of the tool, as well as assist with the conversion effort. This effort will proceed based upon the availability of funding and resources.

(f) Determine whether all systems are needed and on which platform they will reside.

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CAO Response: Concur

The Year 2000 Plan recommends a disposition for the systems in use at the House. The CHO has provided guidance on LIMS, payroll and OSM Asset Management systems. CHO is in the process of reviewing the remaining recommendations and will advise HIR on how to proceed. Final decisions on most of these applications should be made over the next 6-8 months with guidance and coordination from the Technology Coordination Task Force. For replacements of retired systems, the necessary analysis will be completed to determine the system that best meets requirements. Subsequent versions of the Year 2000 plan will document these decisions.

(g) Attend the CIO Council Subcommittee on Year 2000, as appropriate.

CAO Response: Concur

The CAO will involve both management and staff in Year 2000 groups. The CIO Council has been contacted, and we will begin participating in their activities.

2. Revise and prepare follow-on document(s) to the Year 2000 plan which include the following activities.

(a) Prepare a schedule of Year 2000 tasks (e.g., PERT chart concept) showing milestones and interdependencies of issues/organizations.

CAO Response: Concur

The Year 2000 plan will be expanded to include additional levels of detail. Milestones, dependencies, and issues will be documented. Appropriate charts will be prepared to illustrate project resources, milestones, dependencies, and overall sequence.

(b) As necessary, re-prioritize and accelerate out-year projects in the Year 2000 plan to meet remaining government milestones.

CAO Response: Concur

The Task Force will continue to monitor the Year 2000 project and make any necessary adjustments. Those applications that are mission critical to the entire House will continue to receive the highest priority.

(c) Develop detailed implementation plans for each system to be converted.

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See Item 1d above.

(d) Expeditiously develop a follow-on document, develop testing strategies, plans, milestones, and ensure testing capacity is available, and quality assurance is an integral element.

CAO Response: Concur

See Item 1d above.

(e) In preparing the follow-on document, as recommended in 2d above, develop testing strategies, plans, milestones, and ensure testing capacity is available, and quality assurance is an integral element.

CAO Response: Concur

See Item 1d above.

3. As necessary, revise the Year 2000 cost estimates and prepare revised budget requests based on these new figures.

CAO Response: Concur

Updates of the Year 2000 plan will be released regularly. These will reflect any policy changes, new requirements, and necessary revisions to overall time and cost estimates. Updates to the plan will drive the budget requests for FY1999 and FY2000.

4. Coordinate data exchange issues with the external organizations that interact with the House's systems.

CAO Response: Concur

The CAO is a member of the Legislative Branch Technical Coordination Group that is addressing Year 2000 issues among Legislative branch organizations. The Year 2000 project manager, in conjunction with the Technology Coordination Task Force, will coordinate activities with outside organizations that exchange data with the CAO and keep them informed of the CAO's progress and plans. Communication Services is already planning for the readiness of remote networks (including CAPNET). An inventory of files that are exchanged with outside organizations has been compiled. Items on this inventory will be monitored, and a dialog with

CAO Response to Year 2000 Audit
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the organization will be maintained. The CAO format for this inventory will be used by other legislative branch organizations.

5. Adopt the standard Year 2000 contract language and incorporate this language into all procurements relating to information technology purchases.

CAO Response: Concur

HIR in conjunction with OPP has already modified the GSA standard Year 2000 Warranty language for incorporation into solicitations for contracts drafted by HIR. This language was used in the House's Wide Area Data Communications solicitation. The OPP will develop similar, appropriate language for incorporation into the standard House Terms and Conditions applicable to purchase orders.

6. Expedite decision regarding OSM and FMS Payroll replacement efforts, closely monitor these activities to ensure timely completion, and prepare contingency plans, as necessary.

CAO Response: Concur

The CAO agrees that progress is needed on these two major initiatives. The Task Force will closely monitor both projects and work to expedite the process. HIR expects to work closely with OSM and Human Resources on the replacement of both these systems. OSM and Human Resources will have the lead role in their respective projects, and HIR will assist on technical and requirements issues. The Task Force will work to ensure that these projects are coordinated and receive the resources that they require.

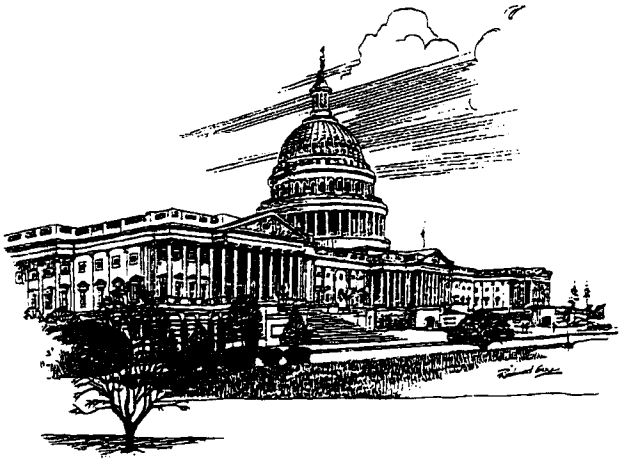
The implementation of these new systems is critical to the overall HIR Year 2000 conversion effort. Both these systems would represent a major software conversion effort, and failure to implement new systems before Year 2000 would adversely impact the success of the Year 2000 plan.

Office of Inspector General

Audit Report

Improvements Are Needed In The Management And Operations Of The Office Of The Chief Administrative Officer

Report No. 96-CAO-15
December 31, 1996



U.S. House of Representatives

John W. Lainhart IV
Inspector General

Office of Inspector General
U.S. House of Representatives
Washington, DC 20515-9990

MEMORANDUM

TO: Jeff Trandahl
Acting Chief Administrative Officer

FROM: John W. Lainhart IV
Inspector General

DATE: December 31, 1996

SUBJECT: Audit Report - Opportunities Exist To Improve The Management Of The Office Of The Chief Administrative Officer (Report No. 96-CAO-15)

This is our final report on the audit of operations of the Office of the Chief Administrative Officer (CAO). This audit was part of our annual audit plan and was approved by the Committee on House Oversight. The objective of our review was to provide an operational assessment of the CAO during the 104th Congress. In this report, we identified 22 findings and made 45 recommendations for corrective action.

In response to our November 15, 1996 draft report, your office fully concurred with our findings and recommendations. The December 30, 1996 management response is incorporated into this final report and included in its entirety as an appendix.

We appreciate the courtesy and cooperation extended to us by your staff. If you have any questions or require additional information regarding this report, please call me or Craig W. Silverthorne at x61250.

cc: Speaker of the House
Majority Leader of the House
Minority Leader of the House
Chairman, Committee on House Oversight
Ranking Minority Member, Committee on House Oversight
Members, Committee on House Oversight

IMPROVEMENTS ARE NEEDED IN THE MANAGEMENT AND OPERATIONS OF THE OFFICE OF THE CHIEF ADMINISTRATIVE OFFICER

Report No. 96-CAO-15
December 31, 1996

RESULTS IN BRIEF

CONCLUSIONS

At the beginning of the 104th Congress, the House of Representatives (House) undertook extensive measures to improve operations and efficiencies, as well as financial reporting and accountability. The position of Chief Administrative Officer (CAO) was established in January 1995 at the beginning of the 104th Congress to take responsibility for the non-legislative administrative operations of the House. Each of the three Officers of the House set baseline objectives in order to prioritize their transition roles. The CAO had 54 baseline objectives when the 104th Congress convened. These baseline objectives are organized into the following broad categories:

- Privatization
- Accountability
- The Open Congress
- Efficiency
- Internal CAO Actions

The CAO's 54 baseline objectives are included in Exhibit A. The CAO fully implemented 37 of the 54 baseline objectives, partially implemented 16 objectives and has not initiated action with respect to one objective during the 104th Congress. In addition, the CAO has completed a number of other significant actions during the 104th Congress to improve operations and resource management. These improvements include the following:

- **Reduced House Administrative Services Operating Costs** - The CAO receives 100 percent of its operating budget from Federal appropriations. For the Fiscal Year (FY) ended September 30, 1995 the CAO's appropriations totaled $69.7 million; however, the office only used $56.8 million. The CAO's appropriations for the FY ended September 30, 1996 was $45.5 million, and appropriations for the FY ending September 30, 1997 is a projected

$44.1 million. This significant reduction was due to effective process streamlining, outsourcing, and downsizing, including:

- Closing the "Folding Room,"
- Privatizing House services including the Shoe Shine, Beauty Shop, and Barber Shop operations,
- Outsourcing internal House mail delivery to Pitney Bowes Management Services (PBMS) and contracting the window operations to the U.S. Postal Service,
- Reducing administrative staff from 1,063 to 600, and
- Canceling an unneeded warehouse lease, and auctioning off old furniture and equipment.

- **Improved Policies and Procedures** - A critical element of the CAO's overall strategy has been the development and implementation of standardized policies and procedures to support key business processes. Prior to the 104th Congress many processes and administrative activities of the House relied on the personal knowledge and experiences of employees. To date, detailed policies and procedures have been implemented to document processes including procurement, human resources, and computer and related equipment acquisition and management.

- **New Training Initiatives** - The CAO has initiated a number of training programs during the 104th Congress, including general training to support overall CAO-wide Total Quality Management (TQM) initiatives, as well as specific training to support detailed initiatives such as the implementation of new procurement policies and procedures, new and enhanced systems such as the Federal Financial System (FFS), and restructured operations such as mail and printing operations.

- **New Human Resources Programs** - Prior to the 104th Congress, comprehensive formal written job descriptions, documented Human Resources policies and procedures, and formal objective setting and performance evaluation systems were not in place. The CAO has since formally documented, in writing, all position descriptions and begun to implement a new goal setting and performance evaluation system. Beginning with the 104th Congress, each CAO employee is required to have a detailed Individual Performance Plan and Evaluation which documents detailed goals and objectives and provides a mechanism for evaluating an individual's performance against goals.

- **New Procurement Activities** - The CAO has designed, developed, and implemented the first comprehensive set of procurement guidelines, systems, and policies and procedures in House history. Prior to the 104th Congress, procurement activity was totally decentralized and oversight was limited. The new systems and guidelines establish an open, competitive, and accountable procurement system that ensures the House receives the best value possible.

- **Prior Office of Inspector General (OIG) Audit Recommendations** - Since the start of the 104th Congress through June 1996, the OIG has issued 24 reports related to the operations of the CAO with a total of 249 recommendations. To date, the CAO has fully implemented 132 (53 percent) of these recommendations, while 68 (27 percent) recommendations are partially implemented or in process, and 49 (20 percent) have not been acted upon. (See Exhibit B for the detailed status of all the audit recommendations.)

Although the CAO has implemented numerous initiatives, improvements are still needed in the management and operations of the Office of the CAO to utilize resources more efficiently, restructure operations, improve performance, and enhance controls. This is demonstrated by the following:

Immediate Office of the Chief Administrative Officer

- Communications, planning, goal setting, and monitoring processes are weak, resulting in inefficiencies, reduced morale, and potentially increased costs.

- Current procedures to track and manage responses to numerous audit findings and recommendations need to be improved to adequately monitor status and document implementation.

Office of House Information Resources (HIR)

- HIR has not updated the House's information systems plan to establish a conceptual direction addressing long-term needs.

- The House lacks adequate policies and procedures to manage system development activities resulting in implementation delays and cost overruns.

- HIR has not completed a comprehensive needs analysis and cost/benefit analysis of its mainframe migration project that could conceivably result in increased costs and decreased service levels as it migrates from legacy mainframe systems to distributed client-server systems.

- HIR's solution for Year 2000 issues relies on the assumption that all systems will be replaced in connection with the mainframe migration project. In the event that mainframe migration stalls, the House would be vulnerable to Year 2000 problems that could generate incorrect data and reports and potentially interrupt normal business operations.

Office of Finance

- The Office of Finance has not prepared performance plans and, while it tracks operational activities in terms of inputs and outputs, expected qualitative outcomes are not identified or measured. Therefore, the CHO is not provided essential information needed to ensure that

Finance operations are effectively planned and executed, and that the much needed improvements are being made.

- The unique nature of the House consists of an unusually large number of high-level customers who require the direct personal attention of Finance's Associate Administrator. Because this direct customer service takes foremost priority, the Associate Administrator is unable to devote a significant amount of time to overseeing financial operations. As a result, financial management operations are not being effectively managed.

- Despite continued reorganizations and re-assignments of personnel within the Office of Finance, the workload exceeds current staffing capabilities. The reason for the imbalance is largely attributable to the recent implementation of FFS. In order to accommodate the excessive on-going workload, contractor staff were hired to perform duties ordinarily carried out by in-house staff; however, continued use of contractor staff for certain functions may not be a suitable long-term solution.

- Recently, Finance improved documentation of its operating policies and procedures, particularly in conjunction with the implementation of FFS. However, while documentation of operational guidelines and manuals was generally adequate, policies and procedures could be expanded upon in some departments, while they should be more refined in others. There is a need for consistency in financial procedures documentation and organization of materials so they can be easily retrieved when needed.

<u>Office of Media and Support Services</u>

- Systems and controls to track capital equipment are duplicative. The House has one system that tracks equipment, maintained by Office Systems Management (OSM), and a separate system that tracks furniture, maintained by FRC. The lack of a single centralized inventory control system creates financial and operational risks to the House.

- Utilization of services provided by Media Services is low, resulting in subsidies of photography and recording studio operations. Fees generated from the Photo Studio and Recording Studio are insufficient to cover expenses.

- Despite prior year audit recommendations -- *Changes In Operation Practices Could Save Office Supply Store And Gift Shop $1.3 Million Annually* (Report No. 95-CAO-07, dated July 18, 1995) -- the Supply Store and Gift Shop have not adequately changed their operating practices. As a result, these House retail stores continue to incur losses from operations.

- Based on the volume of calls received, current ONECall staffing is excessive. Operators in the ONECall office handle less then three calls per hour, resulting in large amounts of downtime.

- There is no system to measure performance such as Member satisfaction and utilization of resources to determine the efficiency and effectiveness of services.

- The current process for Members to acquire computers and related equipment is confusing and duplicative. Lack of communication and coordination between administrative office units, such as HIR, OSM, and the Office of Procurement and Purchasing, can result in poor service to Members.

Office of Human Resources

- Separation of personnel, benefits, and payroll activities has resulted in reduced efficiency and effectiveness overall.

- The need for a new payroll and personnel system has been identified by the Offices of Finance and Human Resources, yet little action has been taken to address the need.

- Decentralization of worker's compensation and unemployment compensation processing leads to potential financial and operational risks. Worker's compensation claims are processed and filed within each office, and unemployment compensation claims are not properly verified prior to payment.

Office of Purchasing and Procurement

- Standard contract management policies and procedures have not been put in place at the House. The lack of standard policies and procedures increases both the financial and operational risk to the House.

- The procurement approval process requires an excessive number of approvals within the CAO organization, for even the smallest purchases. These numerous bureaucratic approvals generate bottlenecks, delay purchases, and create an atmosphere where employees do not perceive that they are empowered and trusted.

Office of Publications and Distribution

- The House approved a standard fee structure for the delivery of publications to Members, Committees, and other House offices. However, this fee structure is not applied to all publications equally. If the House charged all vendors for delivery according to the stated rates, revenue totaling $168,000 would be available to offset postal costs.

RECOMMENDATIONS

We recommend that the Chief Administrative Officer:

Immediate Office of the Chief Administrative Officer

- Strengthen management processes through enhanced communications, standardized planning and decision-making documents, and structured annual goal setting and monitoring.
- Enhance audit tracking and followup processes to support the timely implementation of audit recommendations.

Office of House Information Resources

- Create an updated information technology strategy based on a current needs analysis. Communicate the objectives and goals to all HIR employees and review HIR management and staffing levels to determine that appropriate resources are allocated to effectively implement the strategy.
- Develop detailed project management policies and procedures based on a formal System Development Life Cycle (SDLC) methodology, including appropriate change management controls. Provide appropriate training for employees and require employees to manage HIR projects using this methodology.
- Conduct a comprehensive needs analysis and cost/benefit analysis to determine the most appropriate approach to the mainframe migration project, balancing the aggressive timeline with user needs, available technologies, and budget requirements.
- Prepare and implement a comprehensive Year 2000 strategy that provides for legacy systems which might be required to continue in use beyond the Year 2000.

Office of Finance

- Establish realistic performance measures for key finance processes and establish realistic milestones and targeted completion dates for financial systems projects and process implementations, and track actual performance and accomplishments accordingly.
- Track and report qualitative outcomes (efficiencies and effectiveness) of key performance indicators for financial operations.
- Provide the CHO with sufficient detailed information in order to make informed management decisions regarding Finance operations.
- Expedite the re-submission of Finance's reorganization package including sufficient details in support of the proposed reorganization.

- Reassess the need for continued contractor services after the recently proposed reorganization is approved and implemented, and prepare a new comprehensive contracting proposal for services needed.

- Establish a single point of contact within Finance for documentation, retention, and distribution of all financial operating policies and procedures.

Office of Media and Support Services

- Consolidate inventory control activities within the Asset Management unit of the Furniture Resource Center. Maintain a single physical inventory of all capital equipment and develop appropriate inventory control policies and procedures to ensure accurate inventory management.

- Increase the customer focus of Media Services by addressing the hours of service required by Members, assessing technology needs, analyzing the cost of providing these services to Members, and restructuring the fee schedule accordingly.

- Conduct a cost of service study for the Supply Store to ensure the Store covers all costs. Expedite the privatization of the Gift Shop.

- Combine the ONECall unit with the Food Services' Meeting, Press Conference, and Special Events team to fully utilize available staff.

- Develop service and quality tracking systems for Food Services' Meeting, Press Conference, and Special Events operations and survey customers regularly.

- Develop a plan to streamline and restructure processes related to the purchase of computers and computer related equipment.

Office of Human Resources

- Transfer the Departments of Payroll and Member Services to the Office of Human Resources. Establish a payroll service agreement between the Office of Finance and the Office of Human Resources.

- Expedite the selection and implementation of a new comprehensive Human Resources System to accommodate all of the human resources needs of the House.

- Centralize responsibilities for processing and monitoring worker's compensation claims and unemployment compensation claims in the Office of Human Resources. Appoint a Program Coordinator in Human Resources to manage the worker's and unemployment compensation programs.

Office of Purchasing and Procurement

- Develop and implement improved contract management policies and procedures and a comprehensive contract tracking system.
- Revise procurement approval authorities in the CAO to reduce review levels and distribute small purchase authority to users.

Office of Publications and Distribution

- Modify the proposed delivery service policy to collect a uniform fee, per periodical, for delivering all newspapers, magazines, and publications.

MANAGEMENT RESPONSE

In the December 30, 1996 response to our draft report, the Acting CAO agreed with the findings and recommendations in this report, and indicated that corrective actions have been initiated for some areas and planned for the remaining areas. Details of the response to each finding are summarized under the *Management Response* section at the end of each finding. In addition, a copy of the Acting CAO's full response is provided as an Appendix to this report.

OFFICE OF INSPECTOR GENERAL COMMENTS

We fully concur with the initial and planned actions of the Acting CAO. These actions are responsive to the issues we identified, and when fully implemented, should satisfy the intent of our recommendations.

Finding F: HIR Does Not Have A Plan To Address The Year 2000 Issue

In order to minimize the disruption in services by the Year 2000, private industry and most government agencies have already begun addressing the potential impact by analyzing, planning, and rewriting existing systems, as recommended by technological experts. Although HIR has assessed its systems, it has not yet developed a plan for minimizing the potential impact that the Year 2000 issue will have on the House. HIR planning efforts have not begun because of the expectation that with HIR's migration to a network-centric computing environment, its existing legacy mainframe system will no longer be in use by the Year 2000. However, in light of our recommended needs analysis and cost/benefit analysis in Finding E, it is conceivable that all mainframe operations may not be completely phased out prior to the Year 2000. Affected applications on systems that are not replaced may generate incorrect data, incorrect reports, and completely interrupt normal operations.

The Year 2000 poses one of the most significant challenges ever faced by the information technology industry and will have enormous impact on business applications, package solutions, and systems software. The problem was created because of the limitations of earlier technology and the historically higher cost of storing information. In the 1960s and 1970s, storage space for data was expensive. Assuming that those early systems would be replaced before the new millennium, many companies opted for two-digit date codes to indicate the year, instead of using all four digits, to reduce storage requirements. For example, the Year 1970 would be stored as merely "70", and not as "1970". As a result, the Year 2000 would be stored as "00" and processed by many programs as the Year 1900, rather than the Year 2000, thereby causing many important programs to fail.

Even as organizations moved to newer, more advanced systems, the date structure was not modified to include the century, nor were applications modified or upgraded, because of the significant cost. Most government agencies and private companies have initiated extensive efforts to identify Year 2000 issues and begun recoding existing programs to address these issues.

Computer Associates International, Inc. provided a "Year 2000 Road Map" as part of its testimony before the House Committee on Science's Subcommittee on Technology. It recommended that development and maintenance teams incorporate the following steps into plans, in order to make informed decisions that are in concert with organizational goals:

- Planning;
- Inventory;
- Impact Analysis;
- Source Code Analysis;
- Source Code Conversion;

- Testing and Debugging;
- Regression Testing; and
- Life Cycle Management.

Currently, HIR has begun an initial assessment of Year 2000 issues, but no documented plan exists. Each Director is overseeing the work in their individual areas and systems, but no team leader has been assigned to lead the effort. In addition, there are office level systems within the House environment that are not under the direct control of HIR, although HIR assists in maintaining these systems. However, there is no assessment of these systems being conducted at this time.

HIR has not developed a plan for addressing the Year 2000 issue because of the expectation that conversion to a new distributed client-server architecture will replace its existing legacy mainframe architecture, and the interim new software to be installed will adequately address Year 2000 issues. HIR's "Report on Issues Related to Retirement of the IBM Mainframe" (presented to the CAO on September 5, 1996) recommends not upgrading applications that exist on the mainframe system, since the expectation is that the mainframe and its technology applications will no longer be in use by the Year 2000. Consequently, staff are not doing the work to upgrade applications.

However, no analysis has been done to determine the impact of phasing out the legacy application systems and which legacy application systems should remain. In the case where the House decides to continue using certain mainframe applications, those applications should be examined to correct any Year 2000 deficiencies.

Failure to prepare for the Year 2000 could:

- Generate incorrect data.
- Generate incorrect management reports.
- Halt normal operations of critical systems such as Members payroll, staff payroll, and Human Resources.

In order to minimize the potential impact that the Year 2000 issue will have on the existing mainframe, HIR should immediately begin planning what actions it intends to take to address these issues. As recommended during the House testimony referred to above, HIR should consider a plan which includes a systems inventory, impact and code analysis, code conversion, testing and debugging, regressing testing, and life cycle management. In addition, HIR should:

- Establish target dates for completing different phases of the conversion process and track the achievement of those milestone dates,
- Prioritize issues into critical, secondary, or tertiary issues, and

- Assess the projected costs and human resources and budget for them.
- Allow for one full fiscal year of testing so unforeseen problems can be identified, addressed, and resolved,
- Assign responsibility for the conversion to a Project Leader.
- Create a project team consisting of representatives from all areas within HIR.
- Determine ownership and maintenance responsibilities for office level systems, and
- Ensure that appropriate time and resources are available for implementation of the plan.

Finally, in the event that HIR moves to a distributed client-service architecture, dual plans should be developed, one to address the architecture as it currently exists, and another to address the architecture that will exist as HIR moves to a distributed client-server environment.

Recommendation

We recommend that the Chief Administrative Officer prepare a comprehensive strategy addressing the potential impact of the Year 2000 issue, for review and approval by the Committee on House Oversight. The strategy should include the requirements discussed in this finding.

Management Response

The Acting CAO concurred with the recommendation in this finding. HIR will adopt project management policies and procedures to ensure appropriate planning and conversion for year 2000 issues addressing the establishment of priorities and target dates for the phases of conversion, and adequate testing for all the systems.

Office of Inspector General Comments

The planned actions are responsive to the issues we identified, and when fully implemented, should satisfy the intent of our recommendation.

Mr. HORN. Yes, and, of course, we don't have any jurisdiction over that in this committee. Our jurisdiction is simply limited to the executive branch. House Oversight has that jurisdiction, and, as Mrs. Morella noted, there has been a coordinator appointed even before John was appointed, so we are making progress here, because we had checked that informally months ago. Go ahead, the gentlewoman from Michigan.

Ms. STABENOW. Thank you. First, to Chairman Horn, thank you and Chairwoman Morella. We have held, I know in our Technology Subcommittee, a number of important hearings as has this committee, and this is an incredibly important subject. I would only add that as we take responsibility in the Congress for what we need to be doing that the administration do the same, I would also urge that we work closely with our local units of government and small businesses. I have been very concerned about the lack of awareness in my State of Michigan in terms of the small business community. I'm holding a series of forums on Monday, in fact, to address this and provide information to them. But I think each of us has a responsibility, and rather than deciding who is doing better than the other, I'm hopeful that we will all address this together, so that we will provide the maximum amount of information to local units of government and small businesses so that they may also address the impact of this serious challenge. Thank you.

Mr. HORN. Thank you. Does the gentleman from Tennessee have any comments?

Mr. GORDON. Thank you, Mr. Chairman. On this important issue, I think my best contribution can be to be quiet and let the expert panel go forward. [Laughter.]

Mr. HORN. I thank the gentleman from Tennessee. He always has great wisdom on these comments. [Laughter.]

It's a great pleasure, now, to have the first panel—and gentlemen, you know the routine—we do swear all witnesses before the subcommittee, so if you'll rise and raise your right hands.

[Witnesses sworn.]

Mr. HORN. The clerk will note that all three witnesses have affirmed, and it's a great pleasure to have our friend, John Koskinen, come out of retirement like the Lone Ranger riding out of the shadows to deal with evil doers. So, John, we welcome you here. When I congratulated him on his first day at work last Monday, he said he'd like a week or so to find out what's going on with some of his colleagues. So, we look on this as not the definitive word that you will have but what your strategy is, and we're delighted the President appointed you.

STATEMENTS OF JOHN KOSKINEN, CHAIR, PRESIDENT'S COUNCIL ON YEAR 2000 CONVERSION; GENE DODARO, ASSISTANT COMPTROLLER GENERAL, U.S. GENERAL ACCOUNTING OFFICE; AND MICHAEL P. HARDEN, PRESIDENT, CENTURY TECHNOLOGY SERVICES, INC.

Mr. KOSKINEN. Thank you, Mr. Chairman. I'd like to thank all of you for your kind comments. This may be a classic example of a situation where I should quit while I'm ahead, but, nonetheless, we have a couple of years of hard work ahead of us. With your per-

mission, Mr. Chairman, I will submit my full statement for the record and summarize it here this morning.

Mr. HORN. Yes; without objection, all statements automatically go in the record, and we'd like you to summarize it, and we'll go down all three of you. You have excellent testimony, Mr. Harden and Mr. Dodaro, and then we'll put forth questions to all three of you.

Mr. KOSKINEN. Thank you. I am genuinely pleased to be back before the subcommittees to discuss the year 2000 problem and my new role as chair of the President's Council on Year 2000 Conversion.

I welcome this opportunity, not only because of my prior experience in working with you on a range of issues as Deputy Director for Management at OMB, but because of the ongoing interest you have shown in raising public awareness about the year 2000 problem to help ensure that computer systems are ready for January 1, 2000.

As you know, the President shares your concern, and, as you have noted, last month, he issued Executive Order 13073 creating the Council. He has recently made it clear at a meeting of his cabinet that agency heads bear the full responsibility for the successful preparation of their agencies' mission-critical systems for the transition to the year 2000.

Chairman Horn, I have read your most recent report on year 2000 progress in Federal agencies, and, as you know, last week, OMB submitted to Congress its latest quarterly report. Both reports share a common finding: agencies are making progress, but the rate of progress needs to increase. I think we all agree that no problem facing us is more pressing, especially since, unlike other Washington problems, neither the President nor Congress can push the deadline back. As you note, we have 653 days left until January 1, 2000, and the question is: How we can work together to ensure that the Federal Government, and has been noted State and local governments, those in the private sector, and leaders in other countries are doing all they can to minimize disruption to systems on January 1, 2000?

There's no question that the challenges are great, and I am confident that the Council can play an important role in meeting them. However, we need to carefully structure the Council's activities to maximize its effectiveness. GAO—which has been noted and I totally agree with—has done very valuable work in the year 2000 area generally, has recently circulated a draft report recommending actions for the Council. We will be sharing our detailed comments on the draft with GAO, but we generally agree with most of what they have to say.

From my perspective, I think it is important for the Council not to interfere with or duplicate the good work that is currently under way in the agencies and is being done by the Chief Information Officers Council and other interagency management councils. The Council on the Year 2000 should also build on, rather than try to replace, the important oversight role that OMB is playing in monitoring and reporting information gathered from the agencies. However, as you note, we have an obligation to the public to view this as more than just a Federal systems problem. We need to adopt a

global perspective, and I think the Council's real contribution will be made in coordinating the agencies' work with those outside the Federal Government, whether they be tribal, State, and local governments; private sector organizations; or institutions operating around the world.

To accomplish this, I do not believe the Council should create and directly manage new national forums for specific economic sectors such as financial institutions and the health care industry. Instead, the Council should be a catalyst, using existing structures and resources to create an ongoing dialog on the year 2000 implications for these activities. Individual Federal agencies have a major role to play in this regard. For example, I think that the Council can be more effective by enlisting and supporting an agency like the Treasury Department or the Federal Reserve as the coordinator on outreach to financial institutions, and the Department of Health and Human Services, there's the coordinator on outreach to the health care industry, empowering these agencies to determine the appropriate measures the Government should take to assure progress in these areas to the extent we can.

While the Council will have a global perspective, I would like to reemphasize that it will not be a centralized body that will relieve the agencies and others of their individual responsibilities to actually do the work necessary to fix the problem. Not only would this require an extremely large staff, it would be a misguided effort. The work of fixing the year 2000 problem can only be done by those on the front lines. Senior executives responsible for public and private sector organizations are responsible, as well, for ensuring that their mission-critical systems are ready. As Chairman Horn stated, this is a management challenge as well as technological one.

In short, the President's Council on Year 2000 Conversion needs to be a catalyst, to ensure that individuals in the public and private sector are aware of the problem and doing all they can to fix it. The Council also should be a facilitator, to promote the fruitful exchange of ideas and information on best practices and the resolution of common problems. Finally, the Council should be a coordinator, to ensure that resources are being used effectively across organizational boundaries.

I'd like to turn, for a few minutes, to describe in a little more detail what the Council will be doing. In working with Federal agencies, the Council will monitor the progress of those responsible for fixing the problems in those Federal agencies. I've already begun to embark on what I fondly refer to as my "Agency-of-the-Day Tours," where I'm meeting with agency heads, their deputies, their chief information officers, and those leading their year 2000 efforts to discuss their situations. In each meeting, I have been asking three key questions: What are your major risks? What are the most significant obstacles to removing those risks? And what contingency plans are appropriate in light of that analysis.

I am also talking to the agencies about the external systems with which they interface, particularly, their data exchanges with State and local governments. Even if all the Federal Government's mission-critical systems function effectively on January 1, 2000, the public will still suffer substantial adverse consequences if our sys-

tems cannot communicate with the external systems with which we need to exchange data to operate key Federal programs.

Second, the Council will be working closely with existing interagency councils to increase the coordination of agency year 2000 efforts and better facilitate the exchange of year 2000 information and ideas among the agencies. As I said, I don't believe the Council should be duplicating those efforts, but I do think we can play an important role in energizing and coordinating the good work of these groups and in increasing their visibility to ensure that agencies can benefit from each other's experiences.

Third, and most important, the Council will be reaching out to those outside the Federal Government to increase awareness of the year 2000 problem and to offer appropriate assistance and support. A year ago, if you were to ask me to name our greatest challenge, I would have said—as this subcommittee noted—that it was making those within the Federal Government aware of the problem. I think, in substantial part because of the good work that's been done in the administration and on the Hill, we have now achieved that awareness on the Federal level. A critical challenge over the next 6 months will be to reach out to State and local governments, to the private sector, and to foreign entities to increase their awareness and determine not only how they are dealing with the problem, but whether there is anything the Federal Government can do to help in those efforts.

I've already mentioned the importance of Federal interfaces with State and local governments, but there are other solely State and local services on which people depend—from public safety to payment of State pension benefits—that could be affected by the year 2000 problem. Last October, we made a good start in our dialog with State and local officials when Sally Katzen, who has agreed to be vice chair of the Council, met with representatives from State and local governments at a conference in Pittsburgh. A Federal-State working group has been established, and I look forward to continuing that dialog and seeing how the Federal Government can be of assistance to State and local governments as they work to fix their systems.

Finally, in a global economy that is increasingly dependent upon the electronic exchange of financial and other data, we need to do everything we can to ensure that other nations are devoting the appropriate level of attention to this issue. Having traveled extensively in Southeast Asia prior to my starting to this job, I can tell you from personal experience that many countries are focused on more immediate economic problems than solving the year 2000 problem. While this is one area in which the Council may have the greatest difficulty in exercising influence, we need to do everything we can to raise awareness in other countries. So, the Council will work with Federal agencies to leverage the influence of international organizations like the United Nations, the World Bank, and the International Monetary Fund to increase awareness and facilitate the exchange of information among nations.

There is no doubt that the year 2000 problem poses significant challenges to our Government, our Nation, and the world. Those of us who are committed to solving this problem will have to perform a delicate balancing act over the next 21 months. While it is impor-

tant to increase worldwide attention to the urgent necessity of solving this problem, we need to avoid creating unnecessary panic and precipitous counterproductive activity. The best way for us to spend the next 21 months will be to address the challenges that lie before us, in a very aggressive but measured way, by marshalling the resources at our disposal in the most effective way possible.

I thank the subcommittees for their continued interest in this problem. Your efforts have made, and continue to make, a valuable contribution to the public dialog about this matter. I look forward to working with all of you, and I would be happy to answer any questions you may have after the other statements are made. Thank you.

[The prepared statement of Mr. Koskinen follows:]

STATEMENT OF JOHN KOSKINEN
CHAIRMAN
PRESIDENT'S COUNCIL ON THE YEAR 2000 CONVERSION
BEFORE THE
SUBCOMMITTEE ON GOVERNMENT MANAGEMENT, INFORMATION, AND TECHNOLOGY
OF THE COMMITTEE ON GOVERNMENT REFORM AND OVERSIGHT
AND THE
SUBCOMMITTEE ON TECHNOLOGY
OF THE COMMITTEE ON SCIENCE
U.S. HOUSE OF REPRESENTATIVES

March 18, 1998

Good morning. I am pleased to be back before the subcommittees to discuss the year 2000 problem and my new role as Chair of the President's Council on the Year 2000 Conversion.

I welcome this opportunity, not only because of my prior experience in working with you on a range of issues as Deputy Director for Management at OMB, but because of the ongoing interest you have shown in raising public awareness about the year 2000 problem to help ensure that computer systems are ready for January 1, 2000.

As you know, the President shares your concern. Last month, he issued Executive Order 13073 creating the Council, and has recently made it clear at a meeting of his Cabinet that agency heads bear the full responsibility for the successful preparation of their agencies' mission-critical systems for the transition to the year 2000.

Chairman Horn, I have read your most recent report on year 2000 progress in Federal agencies. As you know, last week OMB submitted to Congress its latest quarterly report. Both reports share a common finding: agencies are making progress, but the rate of that progress needs to increase. I think we all agree that no problem facing us is more pressing, especially since, unlike other Washington problems, neither the President nor Congress can push the deadline back. We have 653 days left until January 1, 2000, and the question is how can we work together to ensure that the Federal Government, State and local governments, those in the private sector, and leaders in other countries are doing all that they can to to minimize disruption to systems on January 1, 2000.

The Council's Role

In the days and weeks following my appointment as Chair of the President's Year 2000 Council, many people have told me that I must be in need of counseling, having resumed my

career in public service by taking on a job that some think is impossible. Senator Moynihan, who has also been concerned about the Federal Government's response to the year 2000 problem for some time, has said that the overall challenge facing me is analogous to the "13th labor of Hercules."

There is no question that the challenges are great, and I am confident that the Council can play an important role in meeting those challenges. However, we need to carefully structure the Council's activities to maximize its effectiveness. GAO, which has done very valuable work in the year 2000 area generally, has recently circulated a draft report recommending actions for the Council. We will be sharing our detailed comments on the draft with GAO, but we generally agree with much of what they have to say.

From my perspective, I think it is important for the Council not to interfere with or duplicate the good work that is currently underway in the agencies and is being done by the CIO Council and other interagency management councils. The Council should also build on, rather than try to replace, the important oversight role that OMB is playing in monitoring and reporting information gathered from the agencies.

The Council needs keep informed of the progress resulting from these efforts, which have been appropriately focused primarily on systems managed by or for the Federal Government. However, we have an obligation to the public to view this as more than just a Federal systems problem. We need to adopt a global perspective, and I think the Council's real contribution will be made by coordinating work by the agencies with those outside the Federal government, whether they be tribal, state and local governments, private sector organizations or institutions operating around the world.

To accomplish this, I do not believe the Council should create and directly manage new national forums for specific sectors of the economy such as financial institutions and the health care industry. The Council should be a catalyst, using existing structures and resources to create an ongoing dialogue on the year 2000 implications for these activities. Individual Federal agencies have a major role to play in this regard. For example, I think that the Council can be more effective by enlisting and supporting someone like the Treasury Department or the Federal Reserve as the coordinator on outreach to financial institutions, and HHS as the coordinator on outreach to the health care industry -- empowering them to determine the appropriate measures Government should take to assure progress in these areas. For example, the agencies may work through existing private sector groups, such as those identified in GAO's testimony, as part of their outreach effort. The senior executives in each agency responsible for the work in such sectors or partnerships will be the agencies' representatives on the Council, which will then be able to monitor and coordinate these agency activities and help ensure that there are not gaps in the coverage.

While the Council will have a global perspective, I would like to emphasize that it will not be a centralized body that will relieve the agencies and others of their individual

responsibilities to actually do the work necessary to fix the year 2000 problem. Not only would this require an extremely large staff, it would be a misguided effort. The work of fixing the year 2000 problem can only be done by those who are on the front lines. Senior executives responsible for public and private sector organizations are responsible for ensuring that their mission-critical systems are ready.

I am adopting this approach in part because it is my experience as a crisis manager in both the public and private sectors that once you get the senior people in an organization asking the right questions -- Do we have a problem? What is the nature of that problem? What should we be doing to fix it? -- the work gets done. I believe that most senior executives in the Federal agencies are asking these questions, and the Council's job is to ensure that leaders outside the government are asking them as well.

In short, the President's Council on the Year 2000 conversion needs to be a catalyst, to ensure that individuals in the public and private sectors are aware of the problem and doing all they can to fix it. The Council also should be a facilitator, to promote the fruitful exchange of ideas and information on best practices and the resolution of common problems. Finally, the Council should be a coordinator, to ensure that resources are being used effectively across organizational boundaries.

Let me now turn to describing more specifically what the Council will be doing.

Working with the Agencies

First, the Council will monitor the progress of those responsible for fixing the problem in Federal agencies. I have already begun to embark on what I fondly refer to as my "Agency of the Day Tours," where I am meeting with agency heads, their deputies, their CIOs, and those leading their year 2000 efforts to discuss their situations. In each meeting, I have been asking three key questions: What are your major risks? What are the most significant obstacles to removing those risks? What contingency plans are appropriate in light of that analysis?

I am also talking to agencies about the external systems with which they interface, particularly their data exchanges with State and local governments. Even if all of the Federal Government's mission-critical systems function effectively on January 1, 2000, the public will still suffer substantial adverse consequences if our systems cannot communicate with the external systems with which we need to exchange data to operate key Federal programs.

In January, OMB instructed agencies to inventory all of their data exchanges with outside parties by February 1, 1998, and to coordinate with those parties by March 1, 1998 to determine a transition plan. The agencies are making good progress in this area. Of the 24 agencies that report regularly to OMB, 19 have completed their inventories of data exchanges and indicated that communication with outside parties either was complete or would be complete by March 1,

1998. OMB is following-up with the remaining five agencies to assure that they complete the discussions soon.

Working Through Interagency Management Councils

Second, we will be working closely with existing interagency management councils to increase the coordination of agency year 2000 efforts and better facilitate the exchange of year 2000 information and ideas among agencies. As I said, I don't believe the Council should be duplicating these efforts, but I do think we can play an important role in energizing and coordinating the good work of these groups and in increasing their visibility to ensure that agencies can benefit from each other's experiences.

To further this goal, I will be meeting on a regular basis with the President's Management Council, the Chief Information Officers Council, the Chief Financial Officers Council, the President's Council on Integrity and Efficiency, the Executive Council on Integrity and Efficiency, and the Interagency Council on Administrative Management to encourage information sharing on best practices and system challenges to ensure there is effective coordination across the Government. I will also be joining the Vice President and the staff of the National Partnership for Reinventing Government as they continue to work with the 32 Federal agencies identified as having a "high impact" on our citizens to improve their customer service. Nothing is more central to improved customer service than a smooth transition to the year 2000.

Outreach: Beyond the Federal Government

Third, and perhaps most important, the Council will be reaching out to those outside the Federal Government to increase awareness of the year 2000 problem and to offer appropriate assistance and support.

The Federal Government has a responsibility to exercise leadership in this area. Everyone has an interest in a smooth transition to the year 2000 by organizations operating independently of the Federal government. The inability of a stock market in another country to open on Monday, January 3, 2000, the slowing of a local mass transportation system to a crawl, or the failure of a medium-sized business could affect us all. A year ago, if you had asked me to name our greatest challenge, I would have said that it was making those within the Federal Government aware of the problem. I think we have now achieved that awareness at the Federal level, and a critical challenge over the next six months will be to reach out to State and local governments, to the private sector, and to foreign entities to increase their awareness and determine not only how they are dealing with the problem, but whether there is anything that the Federal Government can do to help them in their efforts.

I've already mentioned the importance of Federal interfaces with State and local governments, but there are other solely State and local services that people depend on -- from public safety to payment of State pension benefits -- that could be affected by the year 2000 problem. Last October, we made a good start in our dialogue with State and local officials when Sally Katzen, Vice Chair of the Council, met with representatives from State and local governments at a conference in Pittsburgh. A Federal-State working group has been established and I look forward to continuing that dialogue, and to seeing how the Federal Government can be of assistance to State and local governments as they work to fix their systems. In fact, just last week I met with James Lee Witt, director of the Federal Emergency Management Agency, who agreed that his agency will begin to work closely with State and local disaster authorities to determine the status of their year 2000 efforts and offer whatever support they can.

Some have described economic doomsday scenarios that could take place when we reach the year 2000. To ensure that doesn't happen, the Council will work to raise awareness and offer support to private sector firms. Small and medium-sized businesses are of special concern, because many of them do not have adequate institutional resources to devote to fixing the problem. We are also reaching out to them. For example, through its Web page, the Small Business Administration is sharing with small business owners information on best practices for dealing with the transition to the year 2000. And as I mentioned earlier, I think the Council can be effective in using existing structures and resources to create a dialogue between the Federal Government and the private sector in many key areas of the economy.

Finally, the Council will have a world-wide focus. We live in a global economy that is increasingly dependent upon the electronic exchange of financial and other data. Unfortunately, it is not clear that all other nations are devoting the appropriate level of attention to the year 2000. Having traveled extensively in Southeast Asia prior to my starting this job, I can tell you from personal experience that many countries are focused on more immediate economic problems.

While this is the one area in which the Council may have the greatest difficulty in exercising influence, we need to do everything that we can to raise awareness in other countries. Again, once senior leadership begins to ask the right questions, the work will get done. So the Council will work with Federal agencies to leverage the influence of international organizations like the United Nations, the World Bank, and the International Monetary Fund to increase awareness and facilitate the exchange of information among nations.

The Balancing Act

There is no doubt that the year 2000 problem poses significant challenges to our Government, our Nation, and the world. Those of us who are committed to solving this problem will have to perform a delicate balancing act over the next 21 months. While it is important to increase world-wide attention to the urgent necessity of solving this problem, we need to avoid creating panic and precipitous, counterproductive activity. The best way for us to spend the next

21 months will be to address the challenges that lie before us, in a very aggressive but measured way, by marshaling the resources at our disposal in the most effective way possible.

I thank the subcommittees for their continued interest in the year 2000 problem. Your efforts have made, and continue to make, a valuable contribution to the public dialogue about this matter. I look forward to working with you, and I would be happy to answer any questions that you may have.

Mr. HORN. Thank you very much for that most helpful overview and statement. Our next witness is the long-time—probably gets the longtime medal here for appearing before this subcommittee over the years and that's Gene Dodaro, the Assistance Comptroller General of the United States for Accounting and Information Management Division of the U.S. General Accounting Office. So, Gene, welcome, and we look forward to your summary of your statement.

Mr. DODARO. Good morning, Mr. Chairman, Ms. Chairwoman, members of the subcommittee. I'm pleased to be here today to discuss the year 2000 computing crisis.

In February 1997, GAO listed the year 2000 problem as one of the high risk areas across the Federal Government. Since then, we've been working proactively with agencies by providing guidance on how they could structure successful programs and by issuing a series of recommendations to individual agencies to help strengthen their programs.

Like all the commenters this morning, we welcome the creation of the President's Council on Year 2000 Conversion. The Council's objectives of expediting the Federal Government's activities and outreach with State and local governments, the private sector, and the international arena is much needed. As Mr. Koskinen mentioned, to assist the Council in formulating its initial strategy we've advanced, at GAO, a series of recommendations, and this morning I'd like to outline those recommendations that we've made to Mr. Koskinen for his consideration as well as the Director of OMB.

They fall in four themes: one, is the priority that needs to be given to setting priorities across the Government—this is a critical issue; second, is the importance of developing contingency plans to ensure business continuity in the advent of year 2000 failures; third, is the need to ensure adequate resources, personnel in particular, in order to carry out the remediation efforts at the Federal Government level, and fourth, is the value of obtaining the broadest possible perspective on this problem at all levels: the Federal level, the national level, and the international level.

Now, prioritization of the Government's efforts are especially critical, because it's clear to us at the current pace that not all mission-critical systems are going to be fixed on time. As was pointed out this morning, as of last month, only 35 percent of the Government's mission-critical systems were reported year 2000 compliant. This leaves over 4,600 mission-critical systems to be replaced and repaired over the next year. That's not to mention the thousands of other systems that also support and carry out Federal Government activities. It is unlikely that agencies are going to be able to complete this amount of work in the time remaining. Therefore, setting priorities within each agency is especially important, and we've encouraged Mr. Koskinen to work with the agency heads to make sure that priorities are being set, because as with any management challenge, as has been pointed out today, setting the proper priorities is really the first step toward resolving the problem.

In addition to priorities set at individual agencies, however, the system-by-system approach that's been advanced to date of fixing the problems within each agency really needs, also, a Government-wide perspective. Many of the Federal Government systems inter-

act with one another and with the private sector. As was pointed out today, there needs to be Governmentwide priorities.

For example, to pay benefit payments at the Federal level, and even to pay the Government's bill on time, individual agencies need to interact with the financial management service at the Treasury Department. The Treasury Department interacts with a vast network of financial institutions to actually process and carry out those payments. There's a web, a network of systems, that provide that basic Government service. The Government needs to ensure that the priorities are set so all those system efforts are developed at the same time, and agencies can ensure operational end-to-end testing to make sure all the system interfaces operated appropriately. So, Governmentwide priorities are necessary in order to carry that out.

Also, it's imperative that contingency planning be underway right now for all agency activities. As we've discussed before these two subcommittees last month, we recommended that FAA develop contingency plans, because of the difficulties it's facing and the late start that it made. Also, great concern continues to revolve around systems to pay Medicare claims. As you all know, it's about 800 million claims a year. The Health Care Financing Administration continues to be concerned that the Medicare contractors will not be ready; all of them, on time, to meet the March 1999 deadline for completing the implementation phase.

So contingency planning in these areas where we've made specific recommendations to the agencies also needs to be done across the Government. To assist agencies in doing that, we're releasing today an exposure draft of a contingency planning guide. We worked with experts and the chief information officers were consulted to develop this guide to assist organizations in developing business continuity and contingency plans.

In addition, personnel needs must be taken into consideration across the Federal Government. Several agencies in their last quarterly report reported that they and/or their contractors were experiencing difficulty in making sure that they were obtaining and retaining the proper amount of people that are needed to carry out those activities. The CIO Council is meeting today to discuss this issue. We recommend that they complete their strategy, not only for retaining people currently in the Federal Government, but also for eliminating disincentives to bring back experienced Federal retired programmers to help and contribute to public service to help the Federal Government deal with this problem.

Also in terms of perspective, as time draws closer toward the millennium, it is essential that the President's Council and OMB have complete and accurate reports from the agencies to have the best available picture of what's going on at the Federal level. In order to do that, we've recommended that OMB expand the number of agencies that are reporting in to ensure that all critical independent agencies are reporting as well as the 24 major agencies of the Government, and that there be independent testing and validation taking place for critical activities, particularly testing and contingency planning.

It is also important, beyond the Federal Government level, to get a broad perspective on what is going on nationally and internation-

ally. Currently, there exists no complete picture of the Nation's readiness to attack the year 2000 problem successfully. We have recommended that the President's Council attempt to orchestrate such a complete picture as soon as possible in order to see exactly where we are and what the challenges are.

Also, John and the Council face a tremendous coordination challenge in bringing about all the outreach efforts that we've talked about. And I call your attention to an idea we advanced for them as a starting point. Please look to the board on your left. There's also a handout in your package of this organizational structure.

If you think back a few months earlier and look to the right side of the board, we basically had in place a situation where OMB was working with the Federal agencies. Last fall, the outreach activities extended to the States, as Mr. Koskinen mentioned, with Sally Katzen meeting with them in October to start a dialog between the Federal and State governments. In February, the President's Council was created, which we've outlined in the center of the coordination activities there to work with agencies to provide quarterly progress reports to the President.

We've also suggested, because of the time constraints, that the Council use the sector-based approach that was recently used by the President's Commission on Critical Infrastructure Protection as a starting point. So you have key senior Federal officials working with those critical sectors of the economy to assess the Nation's readiness, to provide advice to the Council, and to work through contingency plans if needed. That structure could be augmented with advisory councils and task forces that could be created as well.

And I want to emphasize we're not proposing this as the definitive model, but we thought it would be good to offer this to the Council as it undertakes this enormous effort to coordinate across national and international fora.

In closing, I'd like to emphasize and reiterate GAO's support to continue to help in solving the Nation's computing crisis. I also look forward to working with John, Federal agencies, and others as we all tackle this problem. And I'd like to, as other people have, commend your two subcommittees for bringing attention to this issue. And continued congressional oversight will be essential to solving this unprecedented technology challenge.

Thank you and I'd be happy to answer any questions later.

[NOTE.—The report entitled, "Year 2000 Computing Crisis: Business Continuity Contingency Planning—Exposure Draft" may be found in subcommittee files.]

[The prepared statement of Mr. Dodaro follows:]

Mr. Chairman, Ms. Chairwoman, and Members of the Subcommittees:

We are pleased to be here today to discuss the Year 2000 computing crisis. According to the report of the President's Commission on Critical Infrastructure Protection, the United States--with close to half of all computer capacity and 60 percent of Internet assets--is the world's most advanced and most dependent user of information technology.[1] As a result, the upcoming change of century is a sweeping and urgent challenge for public and private-sector organizations.[2]

For this reason, we designated the Year 2000 computing problem as a high-risk area[3] for the federal government and published guidance[4] to help organizations successfully address the issue. During the past year, we have issued over two dozen reports detailing specific findings and recommendations related to the Year 2000 readiness of a wide range of federal agencies.[5]

While some progress has been made in addressing the federal government's Year 2000 readiness, serious vulnerabilities remain. Many agencies are behind schedule. At the current pace, it is clear that not all mission critical systems will be fixed in time. Much more action is needed to ensure that federal agencies satisfactorily mitigate Year 2000 risks to avoid debilitating consequences. Vital economic sectors of the nation are also vulnerable. These include state and local governments; telecommunications; banking and finance; health, safety, and emergency services; transportation; utilities; and manufacturing and small business.

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[1]Critical Foundations: Protecting America's Infrastructures (President's Commission on Critical Infrastructure Protection, October 1997).

[2]For the past several decades, automated information systems have typically represented the year using two digits rather than four in order to conserve electronic data storage space and reduce operating costs. In this format, however, 2000 is indistinguishable from 1900 because both are represented only as *00*. As a result, if not modified, computer systems or applications that use dates or perform date- or time-sensitive calculations may generate incorrect results beyond 1999.

[3]High-Risk Series: Information Management and Technology (GAO/HR-97-9, February 1997).

[4]Our enterprise readiness guide--Year 2000 Computing Crisis: An Assessment Guide (GAO/AIMD-10.1.14, September 1997)--offers a structured, step-by-step approach for reviewing the adequacy of agency planning and management of a Year 2000 program. This guide was released to the public as an exposure draft in February 1997 and issued in September 1997.

[5]A listing of our publications is included as an attachment to this statement.

While actions by government and industry are underway throughout the nation, the recent creation of the President's Council on Year 2000 Conversion represents a much needed approach to orchestrate the leadership and public/private partnerships essential to confronting the unprecedented challenges posed by the Year 2000 crisis. Our testimony today outlines Year 2000 risks and presents actions that should be taken by the President's Council. We have provided for comment a draft report on these issues to the Chairman of the President's Council on Year 2000 Conversion and the Office of Management and Budget (OMB) and expect to issue it soon.

RELIANCE ON COMPUTERS AND INTERDEPENDENCIES AMONG SECTORS CREATE RISK OF SERVICE DISRUPTION

The public faces a risk that critical services could be severely disrupted by the Year 2000 computing crisis. Financial transactions could be delayed, airline flights grounded, and national defense affected. The many interdependencies that exist among governments and within key economic sectors could cause a single failure to have adverse repercussions. While managers in the government and the private sector are taking many actions to mitigate these risks, a significant amount of work remains, and time frames are unrelenting.

Risk of Disruption to Government Services Is High

The federal government is extremely vulnerable to the Year 2000 issue due to its widespread dependence on computer systems to process financial transactions, deliver vital public services, and carry out its operations. This challenge is made more difficult by the age and poor documentation of the government's existing systems and its lackluster track record in modernizing systems to deliver expected improvements and meet promised deadlines.

Unless this issue is successfully addressed, serious consequences could ensue. For example:

- Unless the Federal Aviation Administration (FAA) takes much more decisive action, there could be grounded or delayed flights, degraded safety, customer inconvenience, and increased airline costs.[6]
- Payments to veterans with service-connected disabilities could be severely delayed if the system that issues them either halts or produces checks so erroneous that it must be shut down and checks processed manually.
- The military services could find it extremely difficult to efficiently and effectively equip and sustain its forces around the world.

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[6] Year 2000 Computing Crisis: FAA Must Act Quickly to Prevent Systems Failures (GAO/T-AIMD-98-63, February 4, 1998).

- Federal systems used to track student loans could produce erroneous information on loan status, such as indicating that a paid loan was in default.
- Internal Revenue Service tax systems could be unable to process returns, thereby jeopardizing revenue collection and delaying refunds.
- The Social Security Administration process to provide benefits to disabled persons could be disrupted if interfaces with state systems fail.

In addition, the year 2000 also could cause problems for the many facilities used by the federal government that were built or renovated within the last 20 years that contain embedded computer systems[7] to control, monitor, or assist in operations. For example, heating and air conditioning units could stop functioning properly and card-entry security systems could cease to operate.

Year 2000-related problems have already been identified. For example, an automated Defense Logistics Agency system erroneously deactivated 90,000 inventoried items as the result of an incorrect date calculation. According to the agency, if the problem had not been corrected (which took 400 work hours), the impact would have seriously hampered its mission to deliver materiel in a timely manner.[8] In another case the Department of Defense's Global Command Control System, which is used to generate a common operating picture of the battlefield for planning, executing, and managing military operations, failed testing when the date was rolled over to the year 2000.

Our reviews of federal agency Year 2000 programs found uneven progress. Some agencies are significantly behind schedule and are at high risk that they will not fix their systems in time. Other agencies have made progress, although risks remain and a great deal more work is needed. Our reports contained numerous recommendations, which the agencies have almost universally agreed to implement. Among them were the need to complete inventories of systems, document data exchange agreements, and develop contingency plans.

Audit offices of some states also have identified significant Year 2000 concerns. Risks include the potential that systems supporting benefit programs, motor vehicle records, and criminal records (i.e., prisoner release or parole eligibility determinations) may be adversely affected. These audit offices have made recommendations including the need for increased oversight, Year 2000 project plans, contingency plans, and personnel recruitment and retention strategies.

Data exchanges between the federal government and the states are also critical to ensuring that billions of dollars of benefits payments are made to millions of recipients.

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[7]Embedded systems are special-purpose computers built into other devices.

[8]Defense Computers: Issues Confronting DLA in Addressing Year 2000 Problems (GAO/AIMD-97-106, August 12, 1997).

Consequently, in October 1997 the Commonwealth of Pennsylvania hosted the first State/Federal CIO Summit. Participants agreed to (1) use a 4-digit contiguous computer standard for data exchanges, (2) establish a national policy group, and (3) create a joint state/federal working group.

Key Economic Sectors at Risk of Year 2000 Failures

America's infrastructures are a complex array of public and private enterprises with many interdependencies at all levels. Key economic sectors that could be seriously impacted if their systems are not Year 2000 compliant are: information and telecommunications; banking and finance; health, safety, and emergency services; transportation; utilities; and manufacturing and small business.[9] The information and telecommunications infrastructure is especially important because it (1) enables the electronic transfer of funds, (2) is essential to the service economy, manufacturing, and efficient delivery of raw materials and finished goods, and (3) is basic to responsive emergency services. Illustrations of Year 2000 risks follow.

- According to the Basle Committee on Banking Supervision--an international committee of banking supervisory authorities--failure to address the Year 2000 issue would cause banking institutions to experience operational problems or even bankruptcy. Moreover, the Chair of the Federal Financial Institutions Examination Council, a U.S. interagency council composed of federal bank, credit union, and thrift institution regulators, stated that banking is one of America's most information-intensive businesses and that any malfunctions caused by the century date change could affect a bank's ability to meet its obligations. He also stated that of equal concern are problems that customers may experience that could prevent them from meeting their obligations to banks and that these problems, if not addressed, could have repercussions throughout the nation's economy.
- According to the International Organization of Securities Commissions, the Year 2000 presents a serious challenge to the world's financial markets. Because they are highly interconnected, a disruption in one segment can spread quickly to others.
- FAA recently met with representatives of airlines, aircraft manufacturers, airports, fuel suppliers, telecommunications providers, and industry associations to discuss the Year 2000 issue. Participants raised the concern that their own Year 2000 compliance would be irrelevant if FAA were not compliant because of the many system interdependencies. Representatives went on to say that unless FAA were

[9]These sectors are compatible with the critical infrastructures identified by the President's Commission on Critical Infrastructure Protection. The Commission deemed these infrastructures so vital that their destruction or incapacity would have a debilitating impact on our defense and economic security.

substantially Year 2000 compliant on January 1, 2000, flights would not get off the ground and that extended delays would be an economic disaster.

- Another risk associated with the transportation sector was described by the Federal Highway Administration, which stated that highway safety could be severely compromised because of potential Year 2000 problems in operational transportation systems. For example, date-dependent signal timing patterns could be incorrectly implemented at highway intersections if traffic signal systems run by state and local governments do not process four-digit years correctly.
- One risk associated with the utility sector is the potential loss of electrical power. For example, Nuclear Regulatory Commission staff believe that safety-related safe shutdown systems will function but that a worst-case scenario could occur in which Year 2000 failures in several nonsafety-related systems could cause a plant to shut down, resulting in the loss of off-site power and complications in tracking post-shutdown plant status and recovery.
- With respect to the health, safety, and emergency services sector, according to the Department of Health and Human Services, the Year 2000 issue holds serious implications for the nation's health care providers and researchers. Medical devices and scientific laboratory equipment may experience problems beginning January 1, 2000, if the computer systems, software applications, or embedded chips used in these devices contain two-digit fields for year representation. In addition, according to the Gartner Group, health care is substantially behind other industries in Year 2000 compliance, and it predicts that at least 10 percent of mission-critical systems in this industry will fail because of noncompliance.[10]

One of the largest, and largely unknown, risks relates to the global nature of the problem. With the advent of electronic communication and international commerce, the United States and the rest of the world have become critically dependent on computers. However, there are indications of Year 2000 readiness problems in the international arena. In September 1997, the Gartner Group surveyed 2,400 companies in 17 countries and concluded that "[t]hirty percent of all companies have not started dealing with the year 2000 problem."[11]

Although there are many national and international risks related to the year 2000, our limited review of these key sectors found a number of private-sector organizations that have raised awareness and provided advice. For example:

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[10]Healthcare Is Far Behind In Year 2000 Compliance (Gartner Group, Document #IGG-020498-02, February 4, 1998).

[11]Year 2000-World Status (Gartner Group, Document number M-100-037, November 25, 1997).

- The Securities Industry Association established a Year 2000 committee in 1995 to promote awareness and since then has established other committees to address key issues, such as testing.
- The Electric Power Research Institute sponsored a conference in 1997 with utility professionals to explore the Year 2000 issue in embedded systems.
- Representatives of several oil and gas companies formed a Year 2000 energy industry group, which meets regularly to discuss the problem.
- The International Air Transport Association organized seminars and briefings for many segments of the airline industry.

In addition, information technology industry associations, such as the Information Technology Association of America, have published newsletters, issued guidance, and held seminars to focus information technology users on the Year 2000 problem.

ADDITIONAL ACTIONS CAN BE TAKEN TO REDUCE YEAR 2000 RISKS

As 2000 approaches and the scope of the problems has become clearer, the federal government's actions have intensified, at the urging of the Congress and others. The amount of attention devoted to this issue has increased in the last year, culminating with the issuance of a February 4, 1998, executive order establishing the President's Council on Year 2000 Conversion. The Council Chair is to oversee federal agency Year 2000 efforts as well as act as spokesman in national and international forums, coordinate with state and local governments, promote appropriate federal roles with respect to private-sector activities, and report to the President on a quarterly basis.

This increased attention could help minimize the disruption to the nation as the millennium approaches. In particular, the President's Council on Year 2000 Conversion can initiate additional actions needed to mitigate risks and uncertainties. These include ensuring that the government's highest priority systems are corrected and that contingency plans are developed across government.

Setting Priorities Is Critical

Agencies have taken longer to complete the awareness and assessment phases of their Year 2000 programs than is recommended. This leaves less time for critical renovation, validation, and implementation phases. For example, the Air Force has used over 45 percent of its available time completing the awareness and assessment phases, while the Gartner Group recommends that no more than about a quarter of an organization's Year 2000 effort should be spent on these phases.

Consequently, priority-setting is essential. According to OMB's latest report, as of February 15, 1998, only about 35 percent of federal agencies' mission-critical systems were considered to be Year 2000 compliant. This leaves over 3,500 mission-critical

systems, as well as thousands of nonmission-critical systems, still to be repaired, and over 1,100 systems to be replaced. It is unlikely that agencies can complete this vast amount of work in time. Accordingly, it is critical that the executive branch identify those systems that are of the highest priority. These include those that, if not corrected, could most seriously threaten health and safety, the financial well being of American citizens, national security, or the economy.

Agencies must also ensure that their mission-critical systems can properly exchange data with other systems and are protected from errors that can be introduced by external systems. For example, agencies that administer key federal benefits payment programs, such as the Department of Veterans Affairs, must exchange data with the Department of the Treasury which, in turn, interfaces with financial institutions, to ensure that beneficiary checks are issued. As a result, completing end-to-end testing for mission-critical systems is essential.

Reporting on Agency Progress Needs to Be Improved

OMB's reports on agency progress do not fully and accurately reflect the federal government's progress toward achieving Year 2000 compliance because not all agencies are required to report and OMB's reporting requirements are incomplete. For example:

- OMB had not, until recently, required independent agencies to submit quarterly reports. Accordingly, the status of these agencies' Year 2000 programs has not been monitored centrally. On March 9, 1998, OMB asked 31 independent agencies, including the Securities and Exchange Commission and the Pension Benefit Guaranty Corporation, to report on their progress in fixing the Year 2000 problem by April 30, 1998. OMB plans to include a summary of those responses in its next quarterly report to the Congress. However, unlike its quarterly reporting requirement for the major departments and agencies, OMB does not plan to request the independent agencies to report again until next year. Since the independent agencies will not be reporting again until April 1999, it will be difficult for OMB to be in position to address any major problems.
- Agencies are required to report their progress in repairing noncompliant systems but are not required to report on their progress in implementing systems to replace noncompliant systems, unless the replacement effort is behind schedule by 2 months or more. Because federal agencies have a poor history of delivering new system capabilities on time, it is essential to know agencies' progress in implementing replacement systems.
- OMB's guidance does not specify what steps must be taken to complete each phase of a Year 2000 program (i.e., assessment, renovation, validation, and implementation). Without such guidance, agencies may report that they have

completed a phase when they have not. Our enterprise guide provides information on the key tasks that should be performed within each phase.[12]

Mr. Chairman, in your December 1997 letter to OMB, you expressed similar concerns that OMB reports be more comprehensive and reliable.

Contingency Plans Imperative

In January 1998, OMB asked agencies to describe their contingency planning activities in their February 1998 quarterly reports. These instructions stated that contingency plans should be established for mission-critical systems that are not expected to be implemented by March 1999, or for mission-critical systems that have been reported as 2 months or more behind schedule. Accordingly, in their February 1998 quarterly reports, several agencies reported that they planned to develop contingency plans only if they fall behind schedule in completing their Year 2000 fixes.

Agencies that develop contingency plans only for systems currently behind schedule, however, are not addressing the need to ensure the continuity of a minimal level of core business operations in the event of unforeseen failures. As a result, when unpredicted failures occur, agencies will not have a well-defined response and may not have enough time to develop and test an effective contingency plan. Contingency plans should be formulated to respond to two types of failures: those that can be predicted (e.g., system renovations that are already far behind schedule) and those that are unforeseen (e.g., a system that fails despite having been certified as Year 2000 compliant or a system that cannot be corrected by January 1, 2000, despite appearing to be on schedule today).

Moreover, contingency plans that focus only on agency systems are inadequate. Federal agencies depend on data provided by their business partners as well as on services provided by the public infrastructure. One weak link anywhere in the chain of critical dependencies can cause major disruptions. Given these interdependencies, it is imperative that contingency plans be developed for all critical core business processes and supporting systems, regardless of whether these systems are owned by the agency.

In its latest governmentwide Year 2000 progress report, issued March 10, 1998, OMB clarified its contingency plan instructions.[13] OMB stated that contingency plans should be developed for all core business functions. Today, we are issuing an exposure draft of a guide to help agencies ensure the continuity of operations through contingency

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[12]GAO/AIMD-10.1.14, September 1997.

[13]Progress on Year 2000 Conversion, U.S. Office of Management and Budget, as of February 15, 1998.

planning.[14] The Chief Information Officer Council worked with us in developing this guide and intends to adopt it for federal agency use.

Independent Verification of Progress Needed

OMB's assessment of the current status of federal Year 2000 progress has been predominantly based on agency reports that have not been consistently verified or independently reviewed. Without such independent reviews, OMB and others, such as the President's Council on Year 2000 Conversion, have no assurance that they are receiving accurate information. OMB has acknowledged the need for independent verification and asked agencies to report on such activities in their February 1998 quarterly reports. While this has helped provide assurance that some verification is taking place through internal checks, reviews by Inspectors General, or contractors, the full scope of verification activities required by OMB has not been articulated.

It is important that the executive branch set standards for the types of reviews that are needed to provide assurance regarding the agencies' Year 2000 actions. Such standards could encompass independent assessments of (1) whether the agency has developed and is implementing a comprehensive and effective Year 2000 program; (2) the accuracy and completeness of the agency's quarterly report to OMB, including verification of the status of systems reported as compliant; (3) whether the agency has a reasonable and comprehensive testing approach; and (4) the completeness and reasonableness of the agency's business continuity and contingency planning.

Ability to Address Governmentwide Issues Could Be Strengthened

The Chief Information Officers Council's Subcommittee on the Year 2000 has been useful in addressing governmentwide issues. For example, the Year 2000 Subcommittee worked with the Federal Acquisition Regulation Council and industry to develop a rule that (1) establishes a single definition of Year 2000 compliance in executive branch procurement and (2) generally requires agencies to acquire only Year-2000 compliant products and services or products and services that can be made Year 2000 compliant. The subcommittee has also established subgroups on (1) best practices, (2) state issues and data exchanges, (3) industry issues, (4) telecommunications, (5) buildings, (6) biomedical and laboratory equipment, (7) General Services Administration support and commercial off-the-shelf products, and (8) international issues.

The subcommittee's effectiveness could be further enhanced. For example, currently agencies are not required to participate in the Year 2000 subcommittee. Without such full participation, it is less likely that appropriate governmentwide solutions can be

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[14]Year 2000 Computing Crisis: Business Continuity and Contingency Planning (GAO/AIMD-10.1.19, Exposure Draft, March 1998).

implemented. Further, while the subcommittee's subgroups are currently working on plans, they have not yet published these with associated milestones. It is important that this be done and publicized quickly so that agencies can use this information in their Year 2000 programs. It is equally important that implementation of agency activities resulting from these plans be monitored closely and that the subgroups' decisions be enforced.

Another governmentwide issue that needs to be addressed is the availability of information technology personnel. In their February 1998 quarterly reports, several agencies reported that they or their contractors had problems obtaining and/or retaining information technology personnel. Currently, no governmentwide strategy exists to address recruiting and retaining information technology personnel with the appropriate skills for Year 2000-related work. To date, the CIO Council has not addressed this issue although it is considering asking the Office of Personnel Management to review the possibility of obtaining waivers to rehire retired federal personnel.

SUCCESS OF THE NEW PRESIDENTIAL COUNCIL IS CRITICAL

Given the sweeping ramifications of the Year 2000 issue, other countries have set up mechanisms to solve the Year 2000 problem on a nationwide basis. Several countries, such as the United Kingdom, Canada, and Australia, have appointed central organizations to coordinate and oversee their governments' responses to the Year 2000 crisis. In the case of the United Kingdom, for example, a ministerial group is being established, under the leadership of the President of the Board of Trade, to tackle the Year 2000 problem across the public and private sectors.

These countries have also established public/private forums to address the Year 2000 problem. For example, in September 1997, Canada's Minister of Industry established a government/industry Year 2000 task force of representatives from banking, insurance, transportation, manufacturing, telecommunications, information technology, small and medium-sized businesses, agriculture, and the retail and service sectors. The Canadian Chief Information Officer is an ex-officio member of the task force. It has been charged with providing (1) an assessment of the nature and scope of the Year 2000 problem, (2) the state of industry preparedness, and (3) leadership and advice on how risks could be reduced. This task force issued a report in February 1998 with 18 recommendations that are intended to promote public/private-sector cooperation and prompt remedial action.

In the United States, the President's recent executive order could serve as the linchpin that bridges the nation's and the federal government's various Year 2000 initiatives. While the Year 2000 problem could have serious consequences, there is no comprehensive picture of the nation's readiness. As one of its first tasks, the President's Council on Year 2000 Conversion could formulate such a comprehensive picture in partnership with the private sector and state and local governments.

Many organizational and managerial models exist that the Conversion Council could use to build effective partnerships to solve the nation's Year 2000 problem. Because of the need to move swiftly, one viable alternative would be to consider using the sector-based approach recommended recently by the President's Commission on Critical Infrastructure Protection as a starting point.

This approach could involve federal agency focal points working with sector infrastructure coordinators. These coordinators would be created or selected from existing associations and would facilitate sharing information among providers and the government. Using this model, the President's Council on Year 2000 Conversion could establish public/private partnership forums composed of representatives of each major sector that, in turn, could rely on task forces organized along economic-sector lines. Such groups would help (1) gauge the nation's preparedness for the year 2000, (2) periodically report on the status and remaining actions of each sector's Year 2000 remediation efforts, and (3) ensure the development of contingency plans to ensure the continuing delivery of critical public and private services.

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In conclusion, while the Year 2000 problem has the potential to cause serious disruption to the nation, these risks can be mitigated and disruptions minimized with proper attention and management. Continued congressional oversight through hearings such as this and those that have been held by other committees in both the House and the Senate can help ensure that the Year 2000 problem is given the attention that it deserves and that appropriate actions are taken to address this crisis.

Mr. Chairman and Ms. Chairwoman, this concludes my statement. I would be happy to respond to any questions that you or other members of the Subcommittees may have at this time.

GAO REPORTS AND TESTIMONY ADDRESSING THE YEAR 2000 CRISIS

Year 2000 Computing Crisis: Business Continuity and Contingency Planning (GAO/AIMD-10.1.19, Exposure Draft, March 1998)

Year 2000 Readiness: NRC's Proposed Approach Regarding Nuclear Powerplants (GAO/AIMD-98-90R, March 6, 1998)

Year 2000 Computing Crisis: Federal Deposit Insurance Corporation's Efforts to Ensure Bank Systems Are Year 2000 Compliant (GAO/T-AIMD-98-73, February 10, 1998)

Year 2000 Computing Crisis: FAA Must Act Quickly to Prevent Systems Failures (GAO/T-AIMD-98-63, February 4, 1998)

FAA Computer Systems: Limited Progress on Year 2000 Issue Increases Risk Dramatically (GAO/AIMD-98-45, January 30, 1998)

Defense Computers: Air Force Needs to Strengthen Year 2000 Oversight (GAO/AIMD-98-35, January 16, 1998)

Year 2000 Computing Crisis: Actions Needed to Address Credit Union Systems' Year 2000 Problem (GAO/AIMD-98-48, January 7, 1998)

Veterans Health Administration Facility Systems: Some Progress Made In Ensuring Year 2000 Compliance, But Challenges Remain (GAO/AIMD-98-31R, November 7, 1997)

Year 2000 Computing Crisis: National Credit Union Administration's Efforts to Ensure Credit Union Systems Are Year 2000 Compliant (GAO/T-AIMD-98-20, October 22, 1997)

Social Security Administration: Significant Progress Made in Year 2000 Effort, But Key Risks Remain (GAO/AIMD-98-6, October 22, 1997)

Defense Computers: Technical Support Is Key to Naval Supply Year 2000 Success (GAO/AIMD-98-7R, October 21, 1997)

Defense Computers: LSSC Needs to Confront Significant Year 2000 Issues (GAO/AIMD-97-149, September 26, 1997)

Veterans Affairs Computer Systems: Action Underway Yet Much Work Remains To Resolve Year 2000 Crisis (GAO/T-AIMD-97-174, September 25, 1997)

Year 2000 Computing Crisis: Success Depends Upon Strong Management and Structured Approach (GAO/T-AIMD-97-173, September 25, 1997)

Year 2000 Computing Crisis: An Assessment Guide (GAO/AIMD-10.1.14, September 1997)

Defense Computers: SSG Needs to Sustain Year 2000 Progress (GAO/AIMD-97-120R, August 19, 1997)

Defense Computers: Improvements to DOD Systems Inventory Needed for Year 2000 Effort (GAO/AIMD-97-112, August 13, 1997)

Defense Computers: Issues Confronting DLA in Addressing Year 2000 Problems (GAO/AIMD-97-106, August 12, 1997)

Defense Computers: DFAS Faces Challenges in Solving the Year 2000 Problem (GAO/AIMD-97-117, August 11, 1997)

Year 2000 Computing Crisis: Time is Running Out for Federal Agencies to Prepare for the New Millennium (GAO/T-AIMD-97-129, July 10, 1997)

Veterans Benefits Computer Systems: Uninterrupted Delivery of Benefits Depends on Timely Correction of Year-2000 Problems (GAO/T-AIMD-97-114, June 26, 1997)

Veterans Benefits Computers Systems: Risks of VBA's Year-2000 Efforts (GAO/AIMD-97-79, May 30, 1997)

Medicare Transaction System: Success Depends Upon Correcting Critical Managerial and Technical Weaknesses (GAO/AIMD-97-78, May 16, 1997)

Medicare Transaction System: Serious Managerial and Technical Weaknesses Threaten Modernization (GAO/T-AIMD-97-91, May 16, 1997)

Year 2000 Computing Crisis: Risk of Serious Disruption to Essential Government Functions Calls for Agency Action Now (GAO/T-AIMD-97-52, February 27, 1997)

Year 2000 Computing Crisis: Strong Leadership Today Needed To Prevent Future Disruption of Government Services (GAO/T-AIMD-97-51, February 24, 1997)

High-Risk Series: Information Management and Technology (GAO/HR-97-9, February 1997)

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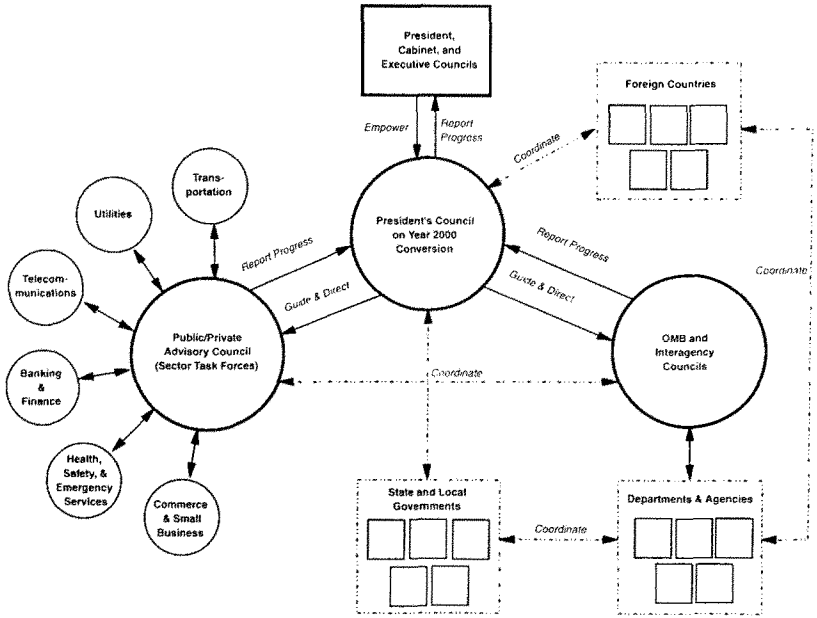
Example of a Year 2000 National Coordination Structure



Mr. HORN. Well, we thank you very much for that statement.

And it is now my pleasure to introduce Michael Harden. Dr. Harden is the founder and president of the Century Technology Services, Inc. It is a company dedicated to conducting research into the year 2000 problem and developing various solutions, tools, and methodologies to deal with that situation. I was particularly pleased to read your testimony since you've been saying what this committee has been saying for 2 years: that the closer we get to that deadline, the scarcer human resources will be. And you've given us some very interesting figures which I hope you will elaborate on in your summary.

Your remarks have been put in the record at this point. Most of us have read them, just give us a summary of that very fine statement that you made.

Mr. HARDEN. Thank you, Mr. Chairman.

I'm pleased to be here today because I believe the issue that we're dealing with in the year 2000, particularly as it applies to the human resources side. I certainly believe that I can state for myself and my colleagues in the industry, that we believe that the Government is faced with an issue here that may certainly impede its ability to effectively deal with the year 2000 problem. That issue is the possible inability to be able to hire, maintain, and to keep in place those resources necessary to actually tackle the year 2000 problem.

With only 653 days remaining, as this timetable compresses itself, the need for resources will become more and more acute. And those resources will be impacted by the laws of supply and demand.

We're already beginning to see this happen. Just in the last year, the number of open Information Technology [IT] positions in this country has doubled. Programmers are now demanding and receiving six-figure salaries, and contractors and other service providers are paying those people retention bonuses to keep them in place so that they won't leave for greener pastures elsewhere. Indeed, it's estimated that computer programmers will see their salaries double every 6 months through the duration of this problem.

There will be a severe impact on this Government's ability to deal with the problem. And specifically, there are five ways—or five areas—that I think will be impacted.

The first is that contractors in the past that have bid contracts for the Government—not necessarily year 2000 contracts, but just Government contracts in general—bid those on a fixed-fee basis. The cost model that they used to create that was based on a salary at that time for programmers. Those salaries have increased rapidly since that time and since they are fixed-fee contracts they can't pass along their increased cost to the Government. That means that for every hour that they work, they may not make a profit; they may actually, in some cases, be losing money. The impact to the Government is that the quality of those contracts will be greatly diminished, or when those contracts come up to be rebid, they won't be bid, or that the cost of that bid will be prohibitive to the Government.

The second area is that Government employees will see the rising salaries outside in the private sector and it may eventually become possible for a Government employee to leave the job they are in today and to find work in a Government contractor or a private sector source and actually be able to make as much money in the next few years as they would have made in 10 or more years of actual service with the Government. That temptation is sometimes too much to resist. And I believe that we are going to see an exodus of Government programming talent into the private sector.

The third thing that will affect the Government is the inability of the Federal Government to retain programming staff and will require that the Federal Government hire contract programmers and go out and find contractors to do the work. The irony of that situation is that the very same Government employee who today may be working on a system could very well leave, come back, sit in the exact same cubicle, work on the exact same system, but be charging the Government three times the salary they were making as a Federal employee.

The fourth point that we have to look at is that the unplanned increase in costs associated with this supply and demand in labor literally throws all the budget calculations that we've made so far to the wind. In fact, the Gartner Group's estimates that the worldwide cost for fixing the year 2000 problem of $600 billion was based on the then current cost for programming talent. As that cost has increased, those estimates have gone up and we're now hearing that the estimate is over $1 trillion. Obviously, that will affect any of the Government's budgets as those prices increase.

And the fifth and final way that I think that we're going to be faced with a problem due to the contention for resources is that as the demand for programmers to fix the year 2000 problem increases, those programmers will be drawn away from other areas that they need to focus on. Can the FAA modernize its systems? Can the IRS implement changes to the Tax Code if the resources are being applied to the year 2000 problem?

And by the way, this is not just unique to the United States. I've traveled to Europe and Asia and the situation there is equally as bad. And in fact, in Europe, the contention for resources based upon the year 2000 problem and the conversion to the European currency necessitates almost doubling the amount of effort to fix the problem. In fact, in the United Kingdom today, what we're finding is that there is only enough resources available to fix the year 2000 problem in about 3,000 of the 12,000 major corporations or major companies there.

The States have faced this problem too. Texas, Missouri, California, and a number of others have already cited the fact that they are unable to attract and retain the resources that they need to fix their problems. And we're finding headhunters out there actually paying bounties to attract that staff.

So, in conclusion, Mr. Chairman, I don't believe that I can overstate the challenge that the Federal Government will face over the next 2 years to actually find and maintain the staff it needs to fix its problem. I urge the subcommittee to focus itself, as one of its many tasks, to determine whether the existing budget projections are indeed accurate and as to what contingencies can take place in this Government to handle the lack of resources that this Government will face.

Thank you.

[The prepared statement of Mr. Harden follows:]

STATEMENT OF

MICHAEL P. HARDEN, PH.D.

PRESIDENT AND CHIEF EXECUTIVE OFFICER

OF CENTURY TECHNOLOGY SERVICES, INC.

BEFORE THE

SUBCOMMITTEE ON GOVERNMENT MANAGEMENT,

INFORMATION, AND TECHNOLOGY

COMMITTEE ON GOVERNMENT REFORM AND OVERSIGHT

HOUSE OF REPRESENTATIVES

MARCH 18, 1998

Mr. Chairman and Members of the Subcommittee:

I am pleased to appear before the Subcommittee to discuss the Year 2000 problem. I appreciate the opportunity afforded me to present to you, and the American people, what I believe to be a critical, and perhaps even fatal aspect of the government's ability to successfully deal with this massive problem. That issue is the possible inability of the Federal government to provide, acquire, or maintain sufficient programming resources to tackle the Year 2000 Problem in the short time remaining before January 1, 2000.

With only 653 days remaining, the prospects of achieving success appear ever more remote. As we move toward the Year 2000, our ability to achieve success becomes more dependent than ever on our ability to apply the necessary resources to the problem. Since there simply aren't enough programmers available to fix every system that may be

affected by the Year 2000, the law of supply and demand takes over. We are already beginning to see this happen. In the last year, the number of open IT jobs has nearly doubled. Programmers are now demanding and receiving salaries in the six figure range, with "retention" bonuses to keep them from leaving for greener pastures elsewhere. As the contention for these resources increases, so will the salaries that must be paid to attract and retain these programmers. Indeed, it is estimated that computer programmer salaries will double every six months through the duration of this problem.

Not applying sufficient resources today to fix the problem means that more resources will be required later to accomplish the fix in time. By increasing the demand for programmers, competitive forces will increase their salaries. So not only will we need more programmers, but the hourly cost for this talent will also rise. Every wasted hour today may cost us three or four times as much later for that same hour of work.

How will the government be affected? In at least five different ways:

1. Contractors that bid and won government contracts a couple of years ago on a "fixed fee" basis, did so on a cost model that did not account for this new, rapid rise in programmer salaries. Today, these contractors find that they must now pay significantly more per hour for the same resources to fulfill their contracts. Since the contracts are "fixed fee," there is no capability to pass the increased labor expense along to the government, so profits are greatly diminished. In some cases, each hour worked on a contract may actually lose money for the contractor. The result is that these contracts will either suffer diminished quality, or that they will not be re-bid as they come up for renewal, or that the bid price will be so high as to make the cost prohibitive to the government.

2. Government employees in Information Technology will see the rising salaries and bonuses in the private sector continue to increase to a point where the temptation to leave the government to take advantage of this opportunity is just too good to

pass up. It may eventually become possible for a government employee to quit, join a commercial corporation, and to make as much money in a few years as they would have in ten years of government service. Today, the Federal government is unable to compete with its private sector counterparts. An exodus of government programming talent will likely occur, thereby making the task of fixing the Year 2000 problem much harder than imagined.

3. The inability of the Federal government to retain its programming staff will necessitate the hiring of contractors to provide this resource. The price for this staff will be significantly more than current budgets have allowed. In fact, it is very likely that the government employee who once worked on a particular system will return as a contract programmer, sitting in the same cubicle, working on the same systems, but at a contractor rate of three times what he was previously paid as an employee.

4. The unplanned increased costs for programmers to work on Year 2000 projects will throw all previous budget projections to the wind. Current estimates in both the government and private sectors were based on the then prevailing programming rates. As these rates increase, expected Year 2000 costs will skyrocket. The obvious result is that current cost estimates are no longer valid. It is interesting to note that the original Gartner Group estimate of a $600 billion worldwide cost for the Year 2000 was based on programmer salaries at that time. Due to the financial competition for talent that is underway, many industry experts are now pushing the figure up to as high as $1 trillion.

5. As the demand for programmers to focus on the Year 2000 problem increases, resources will be shifted away from other programming needs. Maintenance of existing systems will be jeopardized. Computer upgrades, modernization efforts, and many other projects will suffer. How will the FAA or the IRS fix their Year 2000 problems while simultaneously modernizing their systems? Can changes to

the tax code be accomplished while resources are also needed on the Year 2000 Problem? The obvious answer to these questions is that it just isn't possible.

Recently, Capers Jones, a noted authority on the Year 2000 Problem, estimated that the amount of labor needed to find, fix and test all of the Year 2000-impacted software was over 700,000 person-years. With less than two years left, there is no way possible to complete the task for everyone. Many state governments have already felt the pinch. California, Texas, Missouri, Maryland, and many others have reported difficulties in retaining current programming staff or in hiring new staff. They cannot compete with the private sector salaries being offered. Private sector recruiters have resorted to offering "bounties" for trained programmers. And the problem is not isolated to the United States. In the United Kingdom, industry analysts estimate that all available programmers will be working on either the Euro conversion or the Year 2000 problem by April 1, 1998. Out of the 12,000 major UK companies needing assistance, there are only enough resources for 3,000. In Japan, there is an estimated shortfall of 200,000 programmers to fix the problem in time.

In conclusion Mr. Chairman, I cannot overstate the challenge that the Federal government faces in being able to assure itself of having the resources necessary to fix the Year 2000 Problem in time. Nor can I overstate the general industry consensus that the rising costs associated with hiring and retaining talented programming staff will impede the government's ability to achieve success in its Year 2000 battle. I urge the Subcommittee to focus itself on determining whether existing budget projections for the Year 2000 are still valid, and to quickly examine what measures can be taken to allow the government to compete on an equal footing with the private sector for the limited amount of resources available. The government of the United States cannot afford to find itself sitting on the sidelines watching commercial entities lure every possible resource out of the public sector, leaving the government hamstrung in its ability to deal effectively with the Year 2000 Problem.

Background Profile

Michael P. Harden, Ph.D.

Dr. Harden is the founder and President of Century Technology Services, Inc., a company dedicated to conducting research into the Year 2000 Problem, and developing various solutions, tools, or methodologies to enhance the ability of Year 2000 service providers to deal with the problem more effectively.

Dr. Harden has over twenty years of experience in the computer and data processing industry, primarily in the banking and government sectors. He has held high level positions in companies such as Citicorp, Sterling Software, BancTec, Inc., AMR Information Services, and Fiserv, Inc. Dr. Harden has traveled to Asia and Europe to study the Year 2000 Problem in those areas of the world, and to discuss the problem with government officials and local business leaders in those locations.

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Mr. HORN. Well, we thank you. That was a very helpful statement.

Let me begin the questioning. It will be 5 minutes per Member. We'll alternate between majority and minority. When each in the minority has had a turn, then we will give everybody a turn on our side—5 minutes.

OK, let me start, Mr. Koskinen, with you. When you and I chatted last week, I mentioned the thought of a weekly report from the various agencies to keep them tuned up to the fact the Government is very serious about this. What did you think of that idea and are you going to implement a weekly report?

Mr. KOSKINEN. I think it is important for the Government to view the year 2000 problem as critical and of the highest priority. At this stage, I have not decided to ask the agencies for weekly reports, and it's not clear to me that, again, weekly reports to me are the issue. I'm now checking to see whether, in fact, the heads of the agencies are getting weekly or biweekly reports. Because, again, I think the place where this needs to be focused is on an agency-by-agency basis. Thus far in my meetings with Cabinet Secretaries and agency heads, I have been gratified to see the level of senior management involvement. I think the monitoring of the time lines has to be there. It's clear that as we move forward we'll need more than quarterly reports, but at this stage I'm not prepared to suggest that agencies deliver external weekly reports to either OMB or the Council.

Mr. HORN. I think the problem that has come with the quarterly reports is an agency cannot do anything in that quarter, and nobody catches it until it comes in. And what we had in the last little grade exercise, which we will be doing fairly regularly as we near this, we're talking about 653 days from now, we're talking about 7 quarters from now. So if we talk about seven quarterly reports, I suspect some you will not catch up to if we keep it on just quarterly reports until it is too late. And you can't give the management thrust that is needed to get them to focus on the problem, that's what concerns us. There needs to be a real interaction with your office knowing what are they reporting to the Cabinet officer involved, or the under secretary, chief operating officer, whatever you want to call it. And if you do it just on a quarterly basis; as I've said, we looked at the last quarterly reports, some people had done absolutely nothing. And then the way to get ahead, they said: "Well, let's redefine our critical mission systems." So they just redefined them out of the category which gave the illusion that progress was made. They called it a duck by another name.

And I don't think you want to be caught in that situation, so something is needed to keep them on track and to let you know what kind of progress. There's nothing like a weekly report to shape people up, I can assure you, having run a fairly large organization.

Mr. Harden, I think, are we saying here with the six figures that if you are a COBOL programmer and you're happily retired playing golf in Bethesda or something will they be brought out of retirement and given a contract to do the job? Because that's part of the problem, nobody remembers COBOL in some of these agencies. Or nobody can even find the instructions to some of the computers

which have either been lost, but the thing works, and so forth. What's your solution for all of that? Does it mean a lot of contracted work rather than just bringing people back?

Mr. HARDEN. Well, I'm not sure that there is an adequate solution to a problem that's that massive. Bringing COBOL programmers out of retirement is one thing. There's a lot of effort underway now to train newer programmers with crash courses in COBOL, but I'm not sure how many Government agencies or how many private sector companies would turn over their code to programmers who had a 90-day course in COBOL. There is one good thing you could say about the year 2000 problem and that is that it has decreased the rate of unemployment in India. We see a lot of that. We're sending programming offshore to countries like that, but of course that's not an option for this Government, and it certainly is not an option for a lot of other companies in the private sector to send their code offshore.

The only real way to lick this problem as it is today is to start a massive effort now, because as each day goes by, and as I said earlier, as that timeframe is compressed, it becomes harder and harder to find the resources. That in turn drives up the price and you have sort of a catch 22. What you pay today for an hour to fix COBOL code, you may pay four times next year to fix that same code. So the real solution is to start now and do as much as you can before that contention really takes over.

Mr. HORN. I thank the gentleman. And now I'm going to yield back my time and yield what's left of that 5 minutes to give Mrs. Morella a start and then she can get her own 5 minutes later.

Mrs. MORELLA. Oh, that's very good. Thank you, I appreciate it.

I very much valued hearing what all of you said. It was really very much like Robert Frost said when he defined a poem: "It tells me something I didn't know I knew." And of course, we've known what you've said since we've been working on it for 2 years, but to hear it said in terms of the cost escalating. I always thought the Gartner Report cost was inflated, but boy, when you say $1 trillion beyond what Gartner had suggested worldwide, it is shocking. The personnel problem, and you're right, and the offshore labor response that we're getting.

I want to thank GAO. We do rely on you very heavily in terms of the kinds of assessment you do, and I think that your sheet, in terms of outlining how agencies can further put together their report internally with regard to priorities and contingency plans, adequate resources, et cetera, is great.

Mr. Koskinen, in hearing all this, and you know it all, have you been vested with enough authority to be able to handle labor, costs, the reporting, and Chairman Horn mentioned whether or not you thought that one would be more appropriate, you know, every month, or even a weekly kind of report. I wonder about what kind of authority you've been given. Can you issue an Executive order? Can you hire and fire and can you do all of the things that are necessary? Or do you have that sense of: I'm not sure I've got enough, I'll wait and see, and report back?

Mr. KOSKINEN. I'm satisfied I have the necessary authority and visibility because I think ultimately the question is not whether I'm going to walk through the Government hiring and firing people, the

question is whether I can work with the agencies and respond to their needs in this area. For instance the Chief Information Officers Council is meeting with OPM this afternoon to talk about personnel issues. It was done, to some extent, at my request when I was first appointed. So I think, what I will be and what the Council will be is sort of one-stop-shopping point for the agencies to raise critical issues as they come up.

We've received great expressions of support from Congress—from the leadership as well as the minority in both the House and the Senate—that whatever is needed legislatively, you all are prepared to consider it promptly. OPM is looking through all of its authorities and regulations to determine what is necessary.

Clearly, as we move forward, one of our strategies will be to look at resources and ensure that across agency boundaries that we're using them effectively. As one agency completes its work and has personnel or contractors who have completed their work with that agency, it may be important for us, and it may take some legislative or other authority, to move those resources to other agencies that have work that remains. This is not to encourage agencies to wait for somebody else to show up on their doorstep, but that doesn't seem to me to be our problem. Our problem will be, and I think it is appropriate to worry about it, how do we marshal these resources which ultimately are finite, and making sure that we have applied them to the right areas.

So, I'm confident, the President has made it clear that, as Assistant to the President, I have whatever authority I need. And I'm comfortable and satisfied that Congress has made it clear that whatever legislative authority is needed, we will get it. But ultimately, at heart, as you have all stressed from the start, this is a management challenge for the agencies themselves. And one of the things I stressed to the President when I talked to him about this is, I did not want my appointment or the establishment of the Council to be viewed by any agency head as relieving them of responsibility for the day-in-and-day-out operations of their agencies.

Mrs. MORELLA. That sounds very good and I'm encouraged by it. But can you issue an Executive order?

Mr. KOSKINEN. I cannot personally, but no one in the Government can issue an Executive order except for the President. But if I need one, I'm sure the President would be willing to issue it.

Mrs. MORELLA. OK. And how do you respond to the cost estimates, in terms of the escalation? What are you going to do about it?

Mr. KOSKINEN. The cost estimates continue to be a focus. We are stressing with agencies that they need to continually scrub those costs. We're going to encourage the agencies to ensure that when they make those cost estimates, they clear them through their budget offices so that issues like these can be considered.

At this stage, we do not have an indication that there is likely to be a substantial increase in those costs. I think the advice is well taken. And the advice we are giving is that the work needs to be done promptly, not only to allow time for testing, but to avoid the rush at the door as we go forward. In one meeting, a Member of Congress noted the irony of my position is that the more success-

ful I am in increasing awareness around the world, the more aggravated this scrambling for resources will be.

So we have focused the agencies on that issue, but at this point, at this stage, no agency has said their problem is an inability to find enough workers. There are some unique areas. The FAA code in their Host system, the micro-code, is known only by a handful of people. But beyond that, I think that we don't have that issue yet, although it will not surprise me at all as we go forward that that's going to be one of the focal points for our activities.

Mrs. MORELLA. I mean, when you consider that from the beginning, I think I remember, it was $2.3 billion it was going to cost, and then it was 3 point something, and then it was 3.8, and now, I think, in the supplemental, you're asking for 4.7. So I mean, where do we go from here? And is this—I think it was Mr. Harden in his testimony—is this going to take away from some of those other vital information technologies?

Mr. KOSKINEN. That's a different and important point. Because of the finite number of people within agencies doing this work, both for budgetary but certainly for personnel issues, as you devote people to—and companies have the same problem—as you devote your resources to solving the Y2K problem, by definition, those resources are not available for other advancements. So one of the costs to the economy generally is that this is, in many ways, a nonproductive exercise. You are trying to protect your ability to stay in business.

We had encouraged agencies 2 years ago to view this as an opportunity first, not only to inventory their systems, but to make a hard judgment about whether systems were needed at all, and if they were needed, whether the existing system was better replaced than fixed. The numbers show that about 20 percent of Federal systems will either be retired or replaced. So in that case, we'll at least have an improvement in productivity. But for the other 80 percent, and in the private sector as well, is money spent primarily to stand still and not go backward. So that that will in fact, over time, be a nonproductive exercise, but it is critical work.

Mrs. MORELLA. You know, I want to correct what I said about the supplemental. I think $4.7 billion is now the estimate.

Mr. KOSKINEN. Total estimate, yes.

Mrs. MORELLA. But it is not in the supplemental.

Mr. KOSKINEN. It is not a supplemental. That is the agencies' latest estimate of their total costs.

Mrs. MORELLA. So how are you going to handle that?

Mr. KOSKINEN. The $4.7 billion is presently included in their budgets for 1998 and 1999. Those numbers have been reviewed by the agencies in the 1999 budget process that is now moving through the Congress. So there is not a need for additional money beyond. The $4.7 billion is already in those budget numbers. The question is: as we move forward, if those numbers increase——

Mrs. MORELLA. It will go up, it will increase.

Mr. KOSKINEN [continuing]. We will then have to look at where we find the resources.

Mr. HORN. If the Congresswoman would yield back?

Mrs. MORELLA. I was just going to—I yield back to——

Mr. HORN. Just to clarify the record. The administration was asked by Mr. Kolbe's Subcommittee on Appropriations to give us

the figures on what they thought fiscal year 1998—the year we're in—would be devoted to this over the next period up to the year 2000. And the estimate, as I remember, was the $2.3 billion that Mrs. Morella mentioned. And we just didn't believe it, and I think we're right. And we held a hearing on that number alone, practically, and General Page in the Pentagon said: "Well, $1 billion of that is mine; they asked for a figure and I gave them a figure, and we haven't even started ascertaining what the code looks like. And we don't know now." I guess they filled that Assistant Secretary spot over there but we haven't heard much from them. But the agreement of Dr. Raines, certainly, and myself was to take most of this money out of reprogramming at the end of the year.

Now, the appropriations committees did provide some money in some of the areas. But have you had a chance yet to look at the reprogramming situation and the degree to which that could be done and what might be expected around August and September at the end of this fiscal year that could be applied to this?

Mr. KOSKINEN. I have not. I don't have any additional information on that question.

Mr. HORN. OK. I think you're going to be closer to $10 billion when we're done with this.

I now yield 5 minutes to the gentleman from——

Mrs. MORELLA. Mr. Chairman, if I could just add to that question to Mr. Koskinen to think about: would you then ask for a supplemental appropriations if you needed it?

Mr. KOSKINEN. At this point, obviously, the critical issue is to solve this problem and the resources need to be found. As Chairman Horn noted, the process thus far has been for OMB and the agencies and Congress to work within the agencies' present budgetary structures. We don't, at this point, have any reason to go beyond that. There have been needs for additional authority for reprogramming to allow funds to be moved. In most cases, Congress has granted that authority. But OMB in their ongoing management and oversight of the agencies, will continue to review the budget situation. I do not think it is appropriate for the Council to perform for it to become the new budget agency on this issue. I think our function is: if there is a critical need that the agencies have that we will be supportive of and work with Congress to give you our assessment of their needs.

Mr. HORN. I thank the gentleman. I think reprogramming will solve a lot of it.

Five minutes to the gentleman from Michigan, Mr. Barcia.

Mr. BARCIA. Thank you, Mr. Chairman.

I have two questions for Mr. Koskinen. Mr. Koskinen, you mentioned that all agencies completed an inventory of their data exchanges with outside parties by February 1.

Mr. KOSKINEN. That was the goal, yes.

Mr. BARCIA. And will have determined a transition plan by March 1.

Mr. KOSKINEN. Yes. The latest OMB report notes that five agencies are still working on that matter. One of the issues I'm stressing with every agency head and cabinet officer is that it is critical for us to collect that information. We will talk about that issue this afternoon with the chief information officers as well.

Mr. BARCIA. Thank you. You already answered my next one: What agencies have completed transition plans that had been agreed upon by all parties?

Mr. KOSKINEN. All but five, and those five are working on them at this time. Our expectation is that by the time the State CIO's come to Washington next month, that all agencies will be able to provide them with the listings of their interfaces with the States.

Mr. BARCIA. That leads me to my second question, my last question: the General Accounting Office lays out specific recommendations for the Council as well as an assessment of Federal agencies efforts to address the Y2K problem. What is your assessment of the General Accounting Office analysis? And on what specific points do you differ from their recommendations? Highlight what you agree with and what you don't.

Mr. KOSKINEN. That's a good question. I'll be happy to share with you our written response when the process of formulating a written response to GAO is done. As a general matter, I think we're all moving in the same direction. I think it is critical. It is a subtle but important distinction in the chart, as Mr. Dodaro and I have discussed, that I think we need to challenge the agencies to be the sector responsible operations that we can coordinate that at the Council.

If you are dealing with international financial markets, those partnerships and dialogs and discussions have to be headed up by the appropriate Federal agencies, rather than centralized in the Council's operations. But the Council then needs—and the members of the Council will include senior representatives from each of the agencies working in those areas so that we can coordinate across agency lines what happens.

There is an issue on contingency planning as well, in terms of prioritization and how we do that. The resources are tight. I think the focus is exactly right: we need to ensure that, whatever happens, we provide the maximum amount of services we can. What I'm concerned about is that we make sure we don't unnecessarily devote resources to contingency planning in areas where we're reasonably confident that we're going to actually have those problems solved within another few months. But as a general matter, I think as they would say in the law: we're pretty close to being on-all-fours with GAO. I think they have done good work, provided an excellent outline, and we'll need to move forward in these areas. We may implement some of their recommendations in a slightly different way, but I think we're headed in the same direction.

Mr. BARCIA. Thank you for that response.

Mr. HORN. I thank the gentleman from Michigan. I now yield 5 minutes to the gentleman from Virginia, Mr. Davis.

Mr. DAVIS. Thank you. Mr. Koskinen, let me start with you. You know that Chairman Horn is a former university professor. He issues his own report cards on the agencies. OMB currently has their own sort of rankings with tier 1, 2, 3. Will you consider maybe your own report card and making it public to hold agencies accountable?

Mr. KOSKINEN. Again, I think at this stage——

Mr. DAVIS. Not yet, but, I mean, as we move——

Mr. KOSKINEN [continuing]. No, I mean as we move forward. I think the thing we have to avoid is duplicating work that's already going on. As you all know, this challenge is broad enough and involves enough activities that I don't think it is productive for me to have a separate reporting process to the Council in addition to the reporting process to OMB and in addition to the ongoing dialog with Congress. So I think the Council's role is to review the reports, make suggestions where appropriate about changing either the nature or frequency of those reports, but trying to zero in on the obstacles to solving the problems revealed in those reports. I think that——

Mr. DAVIS. Do we get a pass-fail on January 1, I guess, of 2000?

Mr. KOSKINEN. As I've told everyone, the great joy of this problem is that it's not a question of arguing: gee we should have tried harder. The performance measure is the systems either work or they don't. And it is pass-fail. I'm trying to get the agencies to focus on the point that this is not a question of posturing as to who will have the best argument about why they tried hard and it didn't work. The real issue over the next 21 months is to candidly address the challenges we face and to ensure that these systems function.

In some of the critical systems we're talking about, failure is not an option. No matter how hard we try, that won't be good enough. The answer here is some of these major systems have to be functional. And our goal right now is to figure out where those priorities and critical natures are, what the obstacles are, and to take whatever actions are necessary to solve those problems.

Mr. DAVIS. Well, let me turn to the largest agency in the Government, DOD. In the last 3 months, DOD finished 1.7 percent of its mission-critical systems. In the previous 3 months, DOD also finished 1.7 percent of mission-critical systems. Now, that's good consistency, but it's very bad productivity and with no improvement. How do you intend to really address the problem agencies like DOD, Education, or HHS? Obviously some are going to have a little higher priority than others.

Mr. KOSKINEN. Right. Those are clearly three high-priority agencies. I have a meeting with the Secretary of Defense. I've already talked with the Deputy Secretary about DOD activities. I've also talked with Mr. Valletta. I think what we need to do, and the assessment we're making as we go agency-by-agency is: is there the appropriate attention being paid by the senior leadership of the agency? Do they have a management structure in place that is capable of dealing with this situation? If not, what can we all do together to provide additional resources where necessary?

I think, although I have this only on representation, the next quarterly report from the Defense Department will show significant improvement. They have in their representations to me said that they have been very careful and cautious about moving systems from one progress category to another, and they will, they think, make a quantum leap forward in the next two quarters.

All of this raises the issue that GAO and others have raised, and that is, I have talked with the inspectors generals and the agency heads about the need for validation. That we need to ensure that the information we're getting in response to these reporting requests is accurate. And again, one of my concerns is that while I

think it's important to have awareness, I don't want to drive the agencies into a shell during this period, where they are saying things they think will keep them out of the limelight, and in fact, deluding themselves, or us, into assuming that the problem can be solved.

Mr. DAVIS. That's a good point. I've noticed in some of the agencies that come up here that there are a lot of retirements that have gone on during this process. The chairman has called and they've said: they are not around if things go bad. They give great reports at lower levels.

Mr. KOSKINEN. I would like to say, that thus far in my meetings with agency heads, I have been gratified to see the level of interest and concern by the Cabinet Secretaries and their deputies personally in this matter. I think that everyone is increasingly focused on the point that this is not a question as I say of posturing between now and January 1, 2000. It is a question of how do we ensure that basic services to the public and necessary services for the economy are maintained.

Mr. DAVIS. Let me—I'm going to ask you one more question. But if I could move over to Mr. Harden for just a second because I was a senior V.P. at PRC before I was selected—so I'm out of the business a little bit. Fortunately we did very few fixed-fee contracts in our business. So still, you have to come back and get some kind of innovation sometimes to come back as the costs rise for your programmers. How much fixed-fee is going on? What's going to happen to the contracts that are out there right now where the costs of producing the people are going up exponentially almost?

Mr. HARDEN. Well, you're actually seeing, in some cases, where organizations that do a lot of government contracting are announcing record revenues and lower profits. And part of the reason for that is the fixed-fee contract problems they have gotten into where those programmers are now charging so much more that they can't pass that along. I think we'll see less and less of those contracts, and I think when they come up for rebid, we'll see less and less companies wanting to bid on those. And the Government will either have to change the way those contracts are bid, or just throw up their hands and say: we don't even have time to do this or we can't find anybody because our focus is on the year 2000.

Mr. DAVIS. Well something that I have been talking about for a long time, is what is happening. Procurement, of course, has changed markedly over the short period of time, but one of our concerns in terms of getting good people and moving these through the procurement cycle is the Federal Government doesn't have the qualified people, can't afford to keep the qualified people to even oversee some of these. And we have a lot of contracting and outsourcing in this area, but I think it is going to have to increase because I just don't think we can afford to keep it in-house given our pay scales and the way these things are coming up. And that's the way I see it evolving. Any comment on that?

Mr. HARDEN. I think you are absolutely correct in that assumption. There is going to be more and more contracting of this to outsourcers and other service providers. But once again, those providers themselves will be competing for those same resources, which will mean that the prices that they charge to the Govern-

ment—or bid to the Government—will continue to increase as this market demand increases. So either way, the Government is going to pay for that.

Mr. DAVIS. My time is up. I have got more questions, but the chairman will ask them. Thank you.

Mr. HORN. Now I yield 5 minutes to the gentlewoman from Michigan, Ms. Rivers.

Ms. RIVERS. Thank you, Mr. Chair.

I know that Treasury is going to speak on the next panel, but I assume that you have some sort of broad umbrella sort of authority to watch what everyone is doing. And I'm specifically, Mr. Koskinen—what I'm specifically concerned about is concurrent with our march toward the year 2000, and this problem is the desire on the part of several agencies to go to paperless operations, specifically Social Security and the IRS. And I'm concerned about, in 1999, when we start the Social Security system on a paperless operation, within a few months of that we are going to run smackdab into this year 2000 problem. And the same thing with the IRS as we push more people to file electronically. How do you see the problem intersecting with those initiatives in both of those departments?

Mr. KOSKINEN. Well, and they obviously, they are not the only departments trying to harmonize modernization efforts with dealing with the year 2000 problem. Obviously in those agencies where they have completed modernization and moved from legacy systems to new systems, in general they then have avoided the year 2000 problem. FEMA is an example of that, where their new emergency management system will mean that they won't have to deal with the archaic prior system.

The problem you have highlighted, it runs through several major agencies—is that their modernization programs move over and transcend the year 2000 problem. So the very difficult problem is to figure out what part of those systems do you solve the year 2000 problem, trying not to waste time or money on solving the problem for a system that's going to be replaced between now and then. We are encouraging the agencies, and they are doing it on their own, to err on the side of being very conservative. So to some extent, again, this will be an additional expenditure. But we need to make sure that we are not totally reliant on replacement.

In some agencies, it is going to mean that we're going to have to defer and put off some of that modernization because the critical issue is that we need these systems to run on January 1, 2000, and not necessarily be modernized and up and running only on January 1, 2001.

So there is no easy answer. The agencies I have met with thus far are very sensitive and aware of that question. There are a couple of very difficult decisions in some of these agencies that we're going to have to make. But ultimately, the balance has to be drawn on the side of making sure that all the systems can function in the year 2000.

Ms. RIVERS. To go to the Social Security issue, in particular, given that we will have both sides of the equation having difficulty, the Government in trying to update its system, and the individual banks having to update their systems at the same time. And of

course, if everybody's Social Security check goes through the wire to end up in the—there is no way to access it other than to have a system that works. Would it be your recommendation if things have not proceeded as well as you would hope, would your committee recommend that Social Security and/or the IRS would defer implementation of their wireless operations?

Mr. KOSKINEN. That's a judgment that what my committee or I will recommend to the agencies is that they look at this question very carefully and provide all of us with their judgment on it. I don't think there is a way for us to second-guess that judgment. These are very complicated problems. Where we are pushing, already even in my 10 days here, is for people to confront that issue. And there are a couple of places where we need to make sure that the people knowledgeable about those systems and the risks involved in the modernization take a look at it.

Our problem, obviously, with transferring funds is whether it's done electronically or by check. You still have issues with checks: what happens with checks, what's going on with the check-clearing process, where are we going. So that in some ways, if we can get the electronic fund transfers to work, that may be more efficient than loading the system up with more checks. But it is a classic example of our need for the best people in the agencies to be looking at that.

What we don't want to do is take risks. If those systems cannot function effectively, then we need to, in fact, slow down and back off to make sure that there aren't dislocations on January 1.

Ms. RIVERS. Mr. Dodaro, do you want to speak to that?

Mr. DODARO. The critical issue here is going to be at the Treasury Department in the Financial Management Service because it is actually the operation that cuts the checks, Social Security checks, and sends them either through electronic transfer to institutions or in paper checks. And we're in the process of starting an intensive look at the Financial Management Service because it's a central part of paying the Government's benefit payments as well.

I agree with Mr. Koskinen. We need to make tradeoffs. And one of the recommendations that we've made is really setting priorities. And to a certain extent, moving toward the electronic benefit payment, or the all-electronic commerce, is a little bit, in the United States, akin to trying to deal with the European currency issue at the same time the year 2000 issue is occurring in Europe. And priorities are going to have to be set, and we're going to look closely at that issue. Because I believe that the Financial Management Service is not complete yet with all of its assessments, and there is really an intricate set of relationships with both the Federal Reserve as well as financial institutions across the country. So you raise a very good question, and that area needs to be carefully examined.

Ms. RIVERS. In a report from the real world, there is substantial fear in the general population, particularly with seniors, that they are going to get caught up in this thing. The money that they rely on each and every month is going to become unavailable to them, and likewise there is concern that if the IRS is not operating at tip-top form, people are going to get caught up in that and that there

will be penalties and costs assessed to them as individuals through no fault of their own because the system isn't working.

Mr. DODARO. We've made recommendations to FDIC and other banking regulators as well; they are doing an in-depth assessment of financial institutions' abilities, not only in the banks, but credit unions and thrifts, where people could have their accounts, and that is to be completed this summer. And that's one of the issues that we've recommended that the President's Council needs to look across the sectors at a broad level in order to assess readiness and make sure you do end-to-end testing from the time that the files leave the Social Security Administration—actually FMS has master files there of Social Security recipients—until it actually gets to that institution.

Mr. KOSKINEN. I don't want to steal Mr. Flyzik's thunder, especially since I have a set of small agencies waiting for me, but he has a very good story to tell about the FMS resolution of this issue, which is another correlary of contingency planning, because that's what we're really talking about.

If you're in the middle of this maelstrom, what's the appropriate way to deal with it. I think he will be able to give you some reassurances that, at least in that case, they've been aware of the problem and I think are making the right judgments.

Ms. RIVERS. Great. Thank you.

Thank you, Mr. Chair.

Mr. HORN. I thank the gentlewoman. And Mr. Sununu, gentleman from New Hampshire, 5 minutes.

Mr. SUNUNU. Thank you very much, Mr. Chairman.

Mr. Koskinen, do you have any significant disagreements with the report card format that Mr. Horn and the subcommittee has put together, with the general assessments of the level of success, or lack of success at the various agencies we've evaluated?

Mr. KOSKINEN. Well, I'm more aware of the basis and the background for the OMB judgment, so I think I'm a little more knowledgeable about, and therefore comfortable, with the tier I, II and III issues. As a general matter, there aren't major disconnects. There are three or four agencies about which OMB and the subcommittee have different views, and it's probably worth all of us spending a little bit of time together to make sure we're on the same wavelength.

Primarily because my goal is not to give to agencies better grades than they deserve, but it is that if we need to focus all of our attention and theirs on the agencies that really have the most significant problems. So if, in either of those reporting processes, we're picking up the wrong signals, either way, I think it would be helpful for all of us to know that. But at this point I don't have a basis for saying there's a major flaw in that analysis.

Mr. SUNUNU. In addition to the software problem that we've spoken a great deal about, there's also an issue with embedded processors, embedded logic. How do we deal with that problem and how have you sized that problem?

Mr. KOSKINEN. That is a significant problem. In some ways—and degree of severity—obviously the software problems and the major systems we've talked about, in terms of financial transfers, that are

huge and to some extent dwarf that problem, but that doesn't mean it isn't a critical challenge.

I think the only way to deal with the embedded chip issue is to break it down item by item. There is no "embedded chip" answer, so you have to worry about what is the problem in building systems; what is the problem embedded and operating, whether it be in cars or actual hardware systems.

Again, I think the only way we can get a handle on this—and that's what I'm trying to do—is to ask agency by agency say, what in your area of operations, either in your laboratories, in your relationships with private sector people working in those areas, what are the embedded chip problems in those areas and how can we deal with those.

Because you're going to find that there are a number of them, some of which are unknowable. It's clear that we have in various devices embedded chips; it's not clear whether they're date sensitive or not, or whether it matters.

Mr. SUNUNU. But having the agencies size and plan for the embedded system problem is part of the planning process——

Mr. KOSKINEN. Yes.

Mr. SUNUNU [continuing]. That they're going through now.

Mr. KOSKINEN. Yes; the CIO council already in his working groups has set up, in effect, embedded chip subcommittees. GSA is looking at building systems. HHS has already reached out to help their medical device companies to ask them for a review as to their assessment if there are embedded chip problems in anything they are selling to the public, and whether it's being used in health care.

Mr. SUNUNU. Have private sector contractors, people who are procuring equipment, been pretty responsive in trying to identify whether or not their equipment or their systems have problems?

Mr. KOSKINEN. Yes; the reports I've received that, generally, the level of cooperation among private sector vendors, the industry, and the Government is very high. There are some places where we have a bit of a disconnect, but I think there's a private sector view that they cannot afford to have their clients fail, and to the extent that they do a lot of business with the Federal Government, their hope isn't that we create more problems so they have more business. Their concern is that if we get into difficulty, it will be a difficulty for them as well.

So I think the dialog is good and that we're getting appropriate support.

Mr. SUNUNU. I've heard a little bit about a potential problem or a theoretical problem with the September 9, 1999, date. Is that real or imagined? Have you begun to at least look into it as part of your Council, and are the agencies themselves taking a look at whether that September 9 problem is a concern?

Mr. KOSKINEN. I have raised that issue. It is again, in the spectrum the year 2000 problem obviously dwarfs it. As a general matter, the 999 problem, which was used years ago as either a holding area years ago or a way of giving instructions to go somewhere, is much smaller in dimension. It is ultimately not a good programming practice.

When it was done, it was often 99/99/99, which is not a date that would affect people. But I am also advised that this problem, while

some of us have just learned about it recently, is fairly well known in the programming community, and that as people are going through, as they're searching for dates, they are looking for this.

But when you get done with all that, it goes back to what Mr. Dodaro said, it should not surprise any of us, as we go forward that when we get to the year 2000 in some system, there turns out to be a glitch related to that. But these issues are much smaller level of magnitude. For example, the leap year problem in the year 2000 sounds exotic, but when you get at it, turns out to be a less severe problem.

But again, people have known about it and I think we need to continue to advise them to check for it.

Mr. SUNUNU. I think I just have a minute or so left.

I'd like each of you to identify for me, or for the joint committee here, what specific system, domestic or international, public or private, concerns you the most in terms of the potential impact and the risk of noncompliance, or a class of systems?

And obviously I'm asking for a guess. We're a year and a half away from the problem date, but I think it's helpful to us to have a sense of where the real weaknesses lie; not just domestically, but internationally as well.

Mr. KOSKINEN. I slump a little, only because there are a number, a wide range of very critical systems, and I'm not sure it's very functional to say, well I'm really concerned only about that one, because if the IRS or Social Security doesn't function, that's a big problem, even if we've got the FAA out——

Mr. SUNUNU. I didn't use the word "only."

Mr. KOSKINEN. I'm satisfied that the OMB tier I process has identified the agencies in which we have concerns about the level of progress in those agencies. But not every critical system is in a tier I agency.

The Treasury Department—for instance, we have a reasonable level of confidence in terms of their state of progress, although they have very high risk systems.

I think my concern is—and a concern you all have had for some time—is that we are spending a lot of very appropriate time focusing on internal agency systems. But if the Federal systems function perfectly and there are major failures outside the Federal Government, the public will still have a significant problem.

So I think the challenge for us in many ways is not a specific system, the challenge for us is whether we have all of the appropriate organizations and institutions around the world addressing this important issue, dealing with it.

Mr. DODARO. Basically, your question goes to one of the recommendations that we've advanced to the Council, which is to set some governmentwide priorities for these systems. And we laid out some criteria to use.

There are a certain set of issues associated with national defense that are critical to so many systems. We've pointed out the problems of FAA and transportation in general. There are health and safety issues that go to the heart of what the hospitals, health care providers, and emergency services—I think the problem and difficulty in answering your question precisely is the very nature of the problem as to the breadth and depth, and the fact that the

United States is the world's most advanced and most dependent user of information technology, so that it really transcends a lot of vital services.

The key here is what we've advanced in our recommendations, that is to get a complete picture of where the risks are, and right now one does not exist at a national level or international level. And our set of recommendations we're advancing is for the Council to use its auspices and resources to try to pull that together so they can make those type of judgments of where the risks are as they move forward over the next year.

Mr. HORN. I thank the gentleman. Now I yield 5 minutes to the gentlewoman of New York, Mrs. Maloney.

Mrs. MALONEY. I'd like to thank the chairman for having this hearing, and I'd like to welcome back Mr. Koskinen. You've retired with great honors.

Mr. KOSKINEN. I refer to it as a sabbatical, but either way I was gone.

Mrs. MALONEY. And now they have a tough problem, and you're back in the hot seat. So welcome back. I know you have a distinguished career of solving problems, and we're glad you're working on this one.

I know you used to work for OMB, and I understand that now in your new position you'll be sharing resources with OMB with your Council. But what happens Mr. Koskinen if you and OMB disagree? If your Council has one set of plans, and OMB has another, who has the final say?

Mr. KOSKINEN. The President.

Mrs. MALONEY. The President, President of the United States.

Mr. KOSKINEN. The President of the United States appointed me. I am an assistant to the President.

Mrs. MALONEY. So you have a final say.

Mr. KOSKINEN. I do not envision any major disagreements, but ultimately, if there are different conflicting recommendations the President will resolve them.

Mrs. MALONEY. OK. I think it's important to have a clear line of authority.

One of the problems that bothers me is the end testing, the fact that it's actually going to work, and I understand that you're going to be contracting out to private contractors for some of this end testing, and the final analysis. We're getting everyone ready, but the final question, Is it going to work and what are we doing to make sure it works?

You've been talking about end testing, but how do you know the end testing's going to work? What control have you over the private contractors who are trying end test? Could you just elaborate a little bit on end testing, how it works, how it's enforceable, and how are you sure that the testing system that you're setting up is going to work?

Mr. KOSKINEN. Well, you will never be totally sure until you show up on January 1, 2000, and see how the systems operate. What's happening, end testing and validation is as varied as the systems that are out there. The agencies have all agreed that they need independent verification and validation of their systems.

OMB has moved up the deadline for implementation from November 1999 to the end of March 1999, to give people time to ultimately, once systems are implemented, discover where the problems are.

There is an ongoing focus on that. I have talked with all of the inspectors general about their important role in ensuring that the work is done appropriately, but I can again assure you that, in my conversations with the agencies, no one is more focused on this problem than the agencies' senior management team because obviously as I said earlier, in my response to a question from the chairman, this is not a question of good efforts. This is actually a question of actually having the systems work.

So this is an important issue, and I think we will find once we get beyond March 1999, there's going to be a lot of retesting and a lot of additional work necessary, and that's why we need that extra time.

Mrs. MALONEY. My basic question is, you've mentioned you're going to have independent verification that the end testing is working, but who's looking at this independent verification to make sure they know what they're doing? Would that be an appropriate role for GAO to sort of ask these independent contractors, how do you intend to test this and what assurances do you have that it's actually going to work?

I mean, I think this is a critical question, Mr. Chairman, and I think—personally, I would like, if it's all right with the chairman, to request that you get back to us, in writing, exactly how the end testing is going to work, and how the verification of the end testing is going to work, and who's looking at the verifiers?

I mean, if we hire all these private contractors, and they say we're going to verify it works, and they say it's working, and it doesn't, then we're really in a mess. I just think that that's one thing we should be looking at, at the end result now on how we're going to make sure they know what they're doing.

How are you selecting these independent contractors who are making this decision of an independent verification?

Mr. DODARO. Basically, right now the agency heads are deciding what type of independent verification resources they want to bring to bear. Some of them are using the inspectors general; others are hiring private contractors. There's really no one model right now.

There are a couple of things that we've done and are planning to do in this regard. One, our Initial Assessment Guide laid out what the appropriate testing processes should be within the agencies. We're also working on some additional guidance in the testing area that we want to put out through the CIO Council to the agencies.

We're also in the set of recommendations we've just made to Mr. Koskinen and the Council, is the fact that there will be some independent verification of the testing processes that take place. So we're trying to build into the process to make sure that there is a double check within the agency. And then in selected areas where the Congress is interested and ones that are really vital, we will at GAO be looking at that process.

But the basic issue though is I think, our recommendation is first that needs to be built in, that safety check in each agency, which is what we've recommended.

Mrs. MALONEY. Well, I think that's the key point, and I'd like to see sort of in writing how that's trying to be done. I think that's really critical.

[The information referred to follows:]

Although we are giving agencies discretion as to how they will handle end testing, we have asked them to follow the guidance in GAO's guide entitled, *Year 2000 Computing Crisis: An Assessment Guide,* published in September 1997, a section of that guide lays out a sound approach to testing and verification. Of course, the specifics will vary from agency to agency, and neither OMB nor the Office of Year 2000 Conversion can generalize the way that all agencies are dealing with this issue. For example, several agencies are considering running end-to-end testing over weekends or long holidays.

Mrs. MALONEY. My time is running out. I want to ask two quick questions. To follow up on one that I asked the last time we met is, assuming we're doing everything right in the State Department, what about the problems with our allies? That there is a world emergency, and we have to communicate immediately to Britain, and France, and Egypt, or whatever?

What if their systems are down and we can't communicate? We did hear testimony that we were going to be able to communicate from our desk in America to our foreign desk that we control, but there may be a need that we need to reach allies, or communicate very quickly. And what are we doing to make sure that key sources of power and support in the country are there to respond to us?

And very quickly, GAO, you're always on the ball, and I read about your six private sector national economic sectors, and how important they are to interface, both in financial services and health. We've seen a lot of reports in the paper about how the health care industry is really not getting up to the standard that they should in the private sector.

What are we doing, not within government, but reaching out to those key sectors that you identified in your report that were absolutely critical to the functioning of the country?

Mr. HORN. I thank the gentlewoman, and we have one less questioner, and——

Mrs. MALONEY. But can he answer the question?

Mr. HORN. Oh——

Mr. KOSKINEN. In my prepared testimony and in subsequent questions and answers, I've stated that one of the Council's critical roles will be to energize the appropriate Federal agencies to take leadership in those specific areas, and to ensure, to the extent they can, and have control over it, that we keep not only our systems operating, but that we encourage others on whom we depend to have their systems operating as well.

Defense and intelligence are obviously critical, but we also have major issues in financial transactions, and the operation of foreign markets.

Mrs. MALONEY. I'll read your testimony.

But very quickly, what about interacting with our allies?

Mr. KOSKINEN. Yes, that's part and parcel of it, and I have a meeting scheduled with the Secretary of Defense to discuss that issue.

Mr. DODARO. I believe that the Defense Department and State Department have had discussions along those lines, and we're in the process of evaluating those kind of efforts.

Mrs. MALONEY. I'm glad you're back, Mr. Koskinen.

Mr. KOSKINEN. Thank you.

Mr. HORN. I thank the gentlewoman, and now yield to the vice chairman of the committee. He has been very patiently waiting for all of us. Mr. Sessions of Texas. He's done a great job in this area.

Mr. SESSIONS. Thank you, Mr. Chairman. I'm having trouble with my voice today, so if I'm not loud enough, please let me know.

By the way, the gentlewoman from New York, I thought did a great job in her questioning. She's a lot of fun to have around.

Mr. Koskinen, I'd like to ask you several questions. In Texas we relate a lot of things to football, and down in Texas we expect a championship team every year, but it seems like we hire coaches every year.

You've been asked to take over a team to win the championship on January 1, 2000. When should you have been hired as coach?

Mr. KOSKINEN. I'm not sure that there's an easy answer, an answer that I'm aware of. In other words, I think——

Mr. SESSIONS. But you know what I'm talking about. This committee has consistently asked the President to appoint someone for quite some time, and you came on duty March 10.

Mr. KOSKINEN. Yes. As I said, I don't have a view as to when I should have been appointed. I have spent most of my time focusing on what I'm going to do now that I have been appointed.

I don't mean to be flip about it. I think there are a set of questions about how we got to where we are that actually, I think at some point people need to focus on. I don't think it's productive for me to spend a lot of time worrying about how I got this job, and much more time needs to be spent just on going forward. We have a goal line to cross; you're exactly right.

Mr. SESSIONS. I'm still trying to get at, does the administration get it. Do they understand what's ahead, and certainly you would understand that there's some reason to believe that people on this side of the table—not on that side, but on this side——

Mr. KOSKINEN. The only reason I'm here is that the President and the Vice President personally asked me to return to Government to deal with this problem, which they——

Mr. SESSIONS. So in other words, you're saying that in your opinion, two elected officials in the White House, both of them are concerned about this and both of them are responsible and accountable for the activities of the Government.

Mr. KOSKINEN. Surely.

Mr. SESSIONS. We had talked for a few minutes about what agencies are doing and how they're approaching this, and maybe this question is best left for someone like Art Gross or someone like that, because I know we have some very capable people in the audience, but do you believe that when agencies go through these exercises, that there may be some inward thought process to them that maybe they need to, order to meet those dates, come to Congress and say, look, we've got to change some of the ways we operate?

An example might be the IRS. There might be other examples. But do you think they're looking inwardly and bringing those suggestions forward through to you? And is that part of the information process that the President and the Vice President would want and expect from their agency heads?

Mr. KOSKINEN. Again, as I said, in my prior incarnation at OMB one of the things we tried to get agencies to do as they addressed this problem was to look at all of their systems, develop an inventory, and figure out which systems they didn't need anymore, and which systems weren't worth trying to fix, but should be replaced. And I think a lot of that has gone on, and about 20 percent of the systems will be——

Mr. SESSIONS. I'm talking about process.

Mr. KOSKINEN. But the reason you make a judgment that the system isn't necessary is because either the process has changed or should change. You should consolidate operations. Instead of having eight systems, you may only need one or two.

And some of that has gone on. That's an ongoing management process. At this stage, I think the critical issue the agencies are dealing with is the one Mr. Dodaro and I talked about. That is many of them are in the process of changing their processes and modernizing. In the middle of all that, they're going to cross the year 2000 goal line, and the complicated judgment they have to make is whether they then have to defer otherwise important, or even critical, modernization efforts to ensure they can in fact be operating.

The agencies I've met with are focused on that issue. To the extent that it requires them to adjust timelines, I am encouraging them to do that, they need to do that, and I think Congress will be supportive. If it means the system will not be implemented when originally scheduled or may cost more because of the delay, I think we need to be open to those presentations.

Mr. SESSIONS. Good. And I hope that the agencies really do look inward to make sure that there's something that they feel like they need to change that would allow them to become compliant and operate better, that they would know that they could come to Congress, speak with us about it, and have us work together.

There was a lot of discussion today about the type of people that we're hiring, and the marketplace, and some about these contracts.

Can you please talk with me about the liability factor of some of these contractors; what is their liability in the performance of their duties to ensure that the Government will be prepared to operate?

Mr. KOSKINEN. Actually I am not a practicing lawyer in that area, so I——

Mr. SESSIONS. That makes two of us.

Mr. KOSKINEN. That's right. So I can't give you a judgment about their liabilities for past performance or their efforts now. I do know that as we go forward, it's important for us to get the best work we can out of the private sector, without deterring them from being able to provide that work. But as I say, I don't have any knowledge really about what the liability factors are.

Mr. SESSIONS. Well, I would like to have you look at that, because what they are doing is providing—just like if you ask someone to build an airplane and to deliver it, we are asking these peo-

ple who are involved in the software design and implementation to deliver a product. And I'm interested that they are responsible and liable for what they do.

So when you write Mrs. Maloney, if you would just include a little line in there about the liability clause which has to do with accountability, to me.

[The information referred to follows:]

In addition to the normal performance and warranty conditions that apply to all government contracts, we are handling this issue by making sure that agencies acquire information technology (IT) products and systems that are Y2K compliant, as required by law. Implementing procurement guidance was developed for inclusion in the Federal Acquisition Regulations (FAR) with the help of the Chief Information Officers Council's committee on Y2K. This guidance was issued on January 2, 1997, in Federal Acquisition Circular 90–45 (62 FR 273). It requires contractors to supply only Y2K compliant products. We believe that this guidance, along with our general guidance to agency heads that they are personally responsible for year 2000 compliance, is addressing this issue.

Mr. KOSKINEN. Right.

Mr. SESSIONS. I'd appreciate that. And thank you, Mr. Chairman.

Mr. HORN. I thank you very much. And I thank the panel. You've all given us excellent testimony.

And at this point I'm going to turn over the chair to Mrs. Morella, and to swear in the second panel. We do have a call to vote on the floor, so after swearing you in, we're going to have to recess until we can come back, and Mrs. Morella will be presiding or Mr. Sessions as vice chairman will preside.

Mr. KOSKINEN. Thank you both.

Mr. DODARO. Thank you.

Mr. HARDEN. Thank you.

Mrs. MORELLA [presiding]. This is a time where we just have so many things happening simultaneously. So I want to thank the first panel also, and ask the second panel if they will come forward.

Constance Craig, Assistant Commissioner, Information Resources Financial Management Services of the Department of the Treasury; Jim Flyzik, who is the Acting Chief Information Officer, Department of the Treasury, here in Washington; Arthur Gross, Associate Commissioner for Modernization and Chief Information Officer of the Internal Revenue Service, Department of the Treasury; and Dennis Schindel, who is the Deputy Assistant Inspector General for Audit, Department of the Treasury, again here in Washington.

I think we've got everybody here. I'm going to ask you, because it is the policy of this subcommittee to swear in everybody who's going to testify, if you will raise your right hands.

[Witnesses sworn.]

Mrs. MORELLA. Thank you very much. The record will demonstrate affirmative responses. And at this point we're going to recess for 15 minutes so that we can cast votes. So you can relax, unwind, and we'll be ready to go.

[Recess.]

Mr. SESSIONS [presiding]. The Subcommittee on Government Management, Information, and Technology will now come to order.

I want to advise everyone who's in the room, especially those that are on this next panel, if for some reason you do not understand what I'm saying, or if I've said it incorrectly, please correct

me. I'm having trouble with my voice today, and I'm on some medication.

My mother might say it another way, and that is, with me in this chair, God save the United States.

With that said, I would like to begin with the second panel. For the record, I believe that Mrs. Morella has sworn in each of these witnesses that are before us, so I'd please remind you that you are sworn witnesses.

We will start, please, with the first opening statement from Mr. Dennis Schindel, Inspector General of the Treasury.

Sir.

STATEMENTS OF DENNIS SCHINDEL, ASSISTANT INSPECTOR GENERAL FOR AUDIT, DEPARTMENT OF THE TREASURY; JIM FLYZIK, ACTING CHIEF INFORMATION OFFICER, DEPARTMENT OF THE TREASURY; ARTHUR GROSS, ASSOCIATE COMMISSIONER FOR MODERNIZATION AND CHIEF INFORMATION OFFICER OF THE INTERNAL REVENUE SERVICE, DEPARTMENT OF THE TREASURY; AND CONSTANCE CRAIG, ASSISTANT COMMISSIONER, INFORMATION RESOURCES FINANCIAL MANAGEMENT SERVICES OF THE DEPARTMENT OF THE TREASURY

Mr. SCHINDEL. Thank you, Mr. Sessions. I think there is definitely a distinct disadvantage in being the second panel.

I think most of the words of wisdom that you will hear come out of my mouth, you will swear you heard somewhere before, and quite recently. However, I will make my statement brief, and talk primarily about what the Treasury inspector general's doing to oversight the Department of the Treasury's efforts to solve the year 2000 problem.

One thing is definitely clear, the problem must be fixed and failure is not an option. To the bureaus that are represented here today, Internal Revenue Service and the Financial Management Service, along with many other Government agencies, provide services that are not only essential to Government, but to the public as well.

There has been a great deal of focus on this problem in Treasury as well as throughout Government. There are plans in place. There is a process that's been established which defines the various phases for a year 2000 conversion. There are milestone dates set. And there is a progress reporting mechanism in place.

Despite all this, I think that there are at least two factors that present a high risk that problems could occur, and a successful conversion not take place. First the sheer size and magnitude of the problem, and the work that needs to be done, will make it difficult to manage and control. Second, there can be no extension to the deadline; it is January 1, year 2000, and for some operations even sooner. With the amount of work that's left to be done and the scarce resources that are available to do it, and everyone competing for those scarce resources, it presents an enormous challenge.

Having said that, let me briefly describe what we are doing to oversee Treasury's efforts.

Our audit work this year will be in two phases. The first phase is nearing completion. As part of our financial statement audit

work, we have been evaluating the Department's compliance with the year 2000 provisions of the Federal Financial Management Improvement Act, the Brown Bill. We found that the Department is meeting OMB's quarterly reporting requirements, and that those quarterly reports show that the Department as a whole is meeting on these milestones.

While encouraging, these results must be qualified in two respects. First, our results are based primarily on the quarterly status reports that have been provided to OMB. We have not performed extensive tests to verify the accuracy and completeness of those reports. Second, the milestone dates that have been met so far, are not the real meat of the year 2K conversion process. They cover what GAO defines in their Assessment Guide, as the awareness and assessment phases. Completion of the next three phases—renovation, validation, and implementation—will be crucial in making a successful conversion.

In our phase of review we did identify two areas of concern that the Department is already working to address. The first is the need for a standard year 2000 certification process. The second is the need for more complete and descriptive year 2000 contingency plans to ensure the continuity of Treasury's core business processes in the event of a year 2000-induced failure.

In our phase II audit, which is starting this month, we will substantially increase our audit effort. We will look behind the information in the quarterly status reports to verify the progress being reported to OMB. More importantly, we will examine the next two phases in the process; renovation and validation.

Our audit work will focus in three main areas; management oversight both at the Department and the Bureaus; the certification process; and contingency planning. We plan to report deficiencies as they are identified. Our goal is to alert the Department to any significant vulnerabilities that they need to quickly address to reduce the risk of a year 2K failure.

Based on the results of this work, we'll determine the scope of additional audit work for the remainder of 1998, and well into 1999. We as well as the Department and the Bureaus have a great deal of work ahead of us. One of our challenges will be to find a way within our existing resources to give adequate coverage to this area. We will have some help in this regard, especially at IRS.

The IRS Chief Inspector's Office has an extensive audit effort underway at IRS. They recently issued a final report on IRS' project planning and project methodology and made several recommendations for improvement. They have nine additional audits that are either ongoing or planned to cover the various pieces of the IRS Y2K conversion effort. Also, the Department's contractors are providing management support and year 2000 vulnerability assessments.

Finally, we are aware that GAO will be conducting reviews of Y2K conversion in the Department of the Treasury. We are coordinating with both GAO and the IRS Chief Inspector's Office to avoid duplication and to leverage our resources.

Among the three audit groups, we hope to give audit coverage to most, if not all, of the Treasury critical operations.

This concludes my statement, and I'll be happy to answer any questions for the record.

[The prepared statement of Mr. Schindel follows:]

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TREASURY ASSISTANT INSPECTOR GENERAL FOR AUDIT DENNIS SCHINDEL
HOUSE GOVERNMENT REFORM AND OVERSIGHT SUBCOMMITTEE ON
GOVERNMENT MANAGEMENT, INFORMATION AND TECHNOLOGY

Mr. Chairman, Members of the Committee, I am pleased to appear before you today to discuss the Office of Inspector General's oversight of the Department of the Treasury's efforts to address the Year 2000 (Y2K) problem.

One thing is clear: this problem must be fixed, and failure is not an option. The two bureaus represented here today--the Internal Revenue Service (IRS) and the Financial Management Service (FMS)--provide services that are essential not only to government but to the public as well. Those who pay taxes and those who receive tax refunds and other government payments have a great deal at stake in the successful Y2K conversions of these two bureaus.

There is a great deal of focus on Y2K both in Treasury and throughout the Federal government. Plans are in place, a structured approach has been established that defines the various phases for a Y2K conversion, milestones have been set, and a progress reporting mechanism is in place.

Despite these accomplishments, two factors create a high risk that significant problems could occur to prevent a successful Y2K conversion. First, the sheer size and magnitude of the work to be done will make it difficult to manage. Second, the deadline cannot be extended; it is January 1, 2000—and, for some operations, sooner than that. With the amount of work left to be done and everyone competing for scarce information technology staff resources, this presents an enormous challenge. It will take many people working very hard and efficiently between now and the year 2000 to get the job done.

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Having said that, let me briefly describe the OIG's oversight of Treasury's Y2K conversion effort. This year our Y2K audit work will be done in two phases. The first phase is nearing completion. As part of our financial statement audit work, we have been evaluating the Department's compliance with the Y2K provisions of the Federal Financial Management Improvement Act (the Brown Bill). We have found that the Department is meeting OMB's quarterly reporting requirements and that the quarterly reports show the Department as a whole is meeting OMB's milestones.

While encouraging, these results must be qualified in two respects. First, our results are based primarily on the quarterly status reports provided to OMB. We have not yet performed extensive tests to verify the accuracy and completeness of this information. Second, the milestone dates that have been met thus far do not cover the real meat of the Y2K conversion process. They cover what GAO defines in their Year 2000 Assessment Guide as the awareness and assessment phases. The next three phases--renovation, validation and implementation--will be crucial in making a successful conversion.

Our phase 1 review identified two areas of concern that the Department is already working to address. The first is the need for a standard Year 2000 certification process. The second is the need for more complete and descriptive Year 2000 contingency plans to ensure continuity of Treasury's core business processes in the event of a Year 2000 induced system failure.

In our phase 2 audit, starting this month, we will substantially increase our audit effort. We will look behind the information in the quarterly status reports to verify the progress being reported to OMB. More importantly, we will examine the next two crucial phases in the Y2K conversion process--renovation and validation. Our audit work will focus on three main areas:

1. Management Oversight

We will evaluate both the Department's and each bureau's Y2K conversion oversight process. As part of this effort, we will assess how project status is validated, how conversion waivers are managed, and the completeness and accuracy of cost models.

2. Certification Process

We will determine if a certification process exists and is effective for ensuring that a system is Y2K compliant. We will examine data exchanges with external trading partners and the processing of data in an integrated environment. We intend to perform independent testing of certified systems with the help of an outside contractor.

3. Contingency Planning

We will determine if contingency plans exist and are reasonable and complete to effectively mitigate the risk of a Y2K failure. In addition, we will assess the adequacy of the Department's and bureaus' business impact prioritization of their mission critical systems.

We plan to report deficiencies as they are identified. Our goal is to alert the Department and bureaus to any significant vulnerabilities that they need to quickly address to reduce the risk of a Y2K failure. We plan to complete our phase 2 audit work in August and issue a consolidated report to the Department in September. Based on the results, we will determine the scope of additional audit work for the remainder of 1998 and into 1999.

We, as well as the Department and the bureaus, have a great deal of work ahead of us. One of our challenges will be to find a way within our existing resources to give adequate coverage to this area. We will have some help in this regard, especially at IRS.

The IRS Chief Inspector's Office has an extensive audit effort underway at IRS. They recently issued a final report on IRS' project planning and project management methodology and made several recommendations for improvement. They have nine additional audits that are either ongoing or planned, to cover various pieces of the IRS Y2K conversion effort.

Also, the Department's contractors are providing management support and Year 2000 assessments. We used these assessments in our phase 1 audit work and will leverage off of some of this work in phase 2.

Finally, we are aware that GAO will be conducting reviews of Y2K conversion efforts in Treasury. We are coordinating with both GAO and the IRS Chief Inspector to avoid duplication and leverage our resources. Among the three audit groups we hope to give audit coverage to most, if not all, of the critical Treasury operations.

This concludes my opening statement. I will be happy to answer any questions that you may have.

-30-

Mr. SESSIONS. Thank you so much.

Our second witness today will be Mr. Jim Flyzik, CIO at Treasury. And Mr. Flyzik, if I butchered your name, if you will please correct me, I'll attempt to not do that in the future.

Mr. FLYZIK. You've got it exactly correct, sir. Thank you very much. And I appreciate the opportunity to be here. My detailed statement has been submitted. I will synopsize.

Thank you for the opportunity to appear today to discuss the Department of the Treasury's progress in the year 2000 computer problem. The year 2000 problem is our highest priority information technology challenge. I am confident that Treasury has a strong program in place to address this challenge, and while there is much work ahead of us, we have made significant progress to date.

The Assistant Secretary for Management and Chief Financial Officer has the overall responsibility for our year 2000 date transition. As the Deputy Assistant Secretary for Information Systems and the Chief Information Officer, I am the overall program manager for this effort. The day-to-day responsibilities for this program reside in my office. In addition, we have contracted with several firms, specializing in this work to assist us in our oversight and management roles. Attached to my statement, I submitted an overall diagram, depicting the organization of this program for us.

Secretary of the Treasury Rubin is briefed periodically by myself on the status of our year 2000 program, along with the Assistant Secretary for Management; and the Assistant Secretary for Management and I meet each week with bureau heads to review their progress. Working groups meet regularly for the Information Technology Team, the Non-Information Technology Embedded Chip Team, and telecommunications components of our program.

The Department requires each bureau and office to submit detailed monthly status reports. And additionally, the Secretary of the Treasury has mandated that each bureau and office head select an executive official to be in charge of their program. This individual, typically at the CIO or CFO level, or higher, is responsible for ensuring their program is being addressed in a timely manner.

I would like to just describe briefly a status of some of our progress to date. We have now identified 321 mission-critical IT systems, and 272 mission-critical non-IT systems. At present we have completed the assessments for 97 percent of our Treasury mission-critical IT systems. We have renovated 51 percent of the mission-critical IT systems that need to be converted. And we can now report 119 out of 321 of the total mission-critical IT systems are year 2000 compliant. Treasury's largest bureau, the Internal Revenue Service, has renovated 75 out of 126 of its mission-critical IT systems.

I believe that as a department we have made significantly more progress that has been indicated by these figures alone. We are conservatively not reporting progress until entire systems have been renovated and tested.

For example, the Customs Service, like the IRS, manages its renovation efforts by components within systems. Customs reports on three mission-critical systems, all of which require repair, which include 178 components. So although we report none of these overall systems being completed renovation, testing, or implementation,

the fact is that 63.8 percent of the components within these systems have been renovated, 28 percent tested, and 19.2 percent implemented. Over 73 percent of the total Customs inventory of lines of codes has now been converted.

Treasury also operates one of the largest enterprise telecommunications networks in Government. In order to address the year 2000 challenges, a year 2000 Command Center, telecommunications command center, has been established to serve as a central location for telecommunications activities, including the telecommunications executive body and working group meetings; charts and graphs depicting current hardware and software status of each corporate telecommunications program; independent verification and validation testing process; and overall progress tracking are displayed prominently for use by all program managers and executives. Contractors supporting the programs are co-located with our dedicated year 2000 telecommunications program staff to ensure timely communications.

To further promote communications among myself, the executive body, program areas, working groups, and bureaus, we have established a telecommunications site on our internal Treasury year 2000 Intranet website. Current information is published on the website, including schedules, inventories and assessments, correspondence, and all other relevant information.

We have established a test laboratory for testing all components of a system before implementing the changes in an operational environment. In addition, we have engaged a telecommunications company to perform independent verification and validation of all of our telecommunications infrastructure for year 2000 compliance.

As of March 6, 1998, Treasury bureaus and offices identified 6,898 external data exchanges of which 3,169 were incoming and 3,729 outgoing. We have assessed 6,878 of the 6,898 or 99.7 percent of these external data exchanges, and found that 87 percent are year 2000 compliant or have been granted a waiver. Of the 2,551 interfaces with the U.S. private sector, Treasury bureaus and offices thus far have contacted 2,446 of these entities, and reached agreements with 2,391.

The bureaus and offices are working to meet the established milestone date of March 31 for reaching final agreement.

In early 1996, we established September 1998 as a program milestone for the completion of contingency plans. During a series of meetings with bureaus and officers, the Department emphasized a need for contingency planning, and asked the bureaus and offices to accelerate their schedules for the development of these plans.

In spite of our best efforts to date and our aggressive plans for the future, the year 2000 problem is far from solved. Indeed, several significant key issues pose special challenges for us.

One issue concerns vendors' schedules for year 2000 compliant versions of their commercial off-the-shelf hardware and software. Treasury's cost estimates for fixing the year 2000 computer program have also continued to rise. In our submission to OMB on February 13, 1998, we estimated a total cost of $1.43 billion to fix the problem, with the bulk of that cost this fiscal year.

In addition to funding challenges, we must also contend with the increasing rate of attrition with our information systems work

force. Skilled programmers, especially those with skills in legacy system platforms, are in strong demand with the private sector, which can pay significantly higher salaries than Government. The loss of these critical resources represents a risk to the year 2000 program.

Finally, I believe that Treasury has an aggressive overall year 2000 program in place, and we are on target to complete the conversion, testing, validation, and implementation of all mission-critical services in time to avoid disruption to any critical systems. Nothing less than 100 percent compliance will be acceptable to the American public or to me personally.

I recognize that Chairman Horn's ratings suggest that Treasury has significantly greater problems with the year 2000 program than my testimony might suggest. I do not underestimate the challenge of achieving significant compliance; however, we are purposely taking a conservative approach at Treasury with respect to measuring our progress on the year 2000 problem. We are requiring end-to-end testing of all our systems before we will consider any of them to be 100-percent compliant.

Thank you for the opportunity to meet with you today to discuss the actions at the Department of the Treasury. I will be happy to answer any questions you may have on this important matter.

[The prepared statement of Mr. Flyzik follows:]

EMBARGOED UNTIL 9:30 A.M. EST
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TREASURY DEPUTY ASSISTANT SECRETARY FOR INFORMATION SYSTEMS AND CHIEF INFORMATION OFFICER JAMES J. FLYZIK
HOUSE GOVERNMENT REFORM AND OVERSIGHT SUBCOMMITTEE ON GOVERNMENT MANAGEMENT, INFORMATION AND TECHNOLOGY

Chairman Horn, Representative Kucinich, and members of the Subcommittee, thank you for the opportunity to appear today to discuss the Department of the Treasury's progress on the Year 2000 computer problem. The Year 2000 computer problem is our highest priority information technology challenge. I am confident that Treasury has a strong program in place to address this challenge, and while there is much work ahead of us, we have made significant progress to date.

The Assistant Secretary for Management and Chief Financial Officer (CFO) has overall responsibility for the Year 2000 date transition. As Deputy Assistant Secretary (Information Systems) and Chief Information Officer (CIO), I am the overall program manager for the Year 2000 effort. The day-to-day responsibilities of the Year 2000 program reside within my office. In addition, Treasury has contracted with several firms with specialized skills in the Year 2000 problem to assist the Department in its oversight role. Attached to this statement are copies of the Year 2000 Program Organization at the Department of the Treasury.

Secretary of the Treasury Rubin is briefed periodically on the status of our Year 2000 program, and the Assistant Secretary for Management and CFO and myself meet weekly with bureau heads to review their Year 2000 progress. Working groups meet regularly for the Information Technology (IT), Non-IT, and Telecommunications components of our program. The Department requires each bureau and office to submit detailed monthly status reports. Additionally, the Secretary of the Treasury has mandated that each bureau and office head select an executive official to be in charge of their Year

2000 program. This individual, typically at the CIO or CFO level or higher, is responsible for ensuring that the Year 2000 program at their bureau or office is completed in a timely manner.

I would now like to describe the overall status of Treasury's Year 2000 program, some successes we have experienced, and some remaining challenges we must address.

Treasury has now identified 321 mission critical IT systems and 272 mission critical Non-IT systems. At present, we have completed the assessments for 97.1% of Treasury's mission critical IT systems. We have renovated 125, or 51.4% of the mission critical IT systems that need to be converted. We can now report 119 out of 321 (37.1%) of the total mission critical IT systems are now Year 2000 compliant. Treasury's largest bureau, the Internal Revenue Service (IRS), has renovated 75 out of 126 (59.5%) mission critical IT systems, and validated 60 out of 126, or (47.6%).

I believe that, as a Department, we have made significantly more progress than has been indicated by the above figures. We are conservatively not reporting progress until entire systems have been renovated and tested. For example, the Customs Service, like the IRS, manages its renovation efforts by components. Customs has three mission critical systems, all of which require repair, which include 178 components. Although we report none of these three Customs mission critical IT systems as completed renovation, testing, or implementation, the fact is that 63.8% of the components within these systems have been renovated, 27.7% have been tested, and 19.24% have been implemented. Over 73% of the total Customs inventory of lines of code have been converted.

Treasury operates one of the largest enterprise telecommunications networks in the Government. In order to address Year 2000 challenges, a Year 2000 Telecommunications "Command Center" has been established to serve as a central location for telecommunications activities, including the Telecommunications Executive Body and Working Group meetings. Charts and graphs depicting current hardware and software status of each corporate telecommunications program, the independent verification and validation (IV&V) testing process, and overall progress tracking are displayed prominently for use by program managers and executives. Contractors supporting the telecommunications programs are co-located with the dedicated Year 2000 telecommunications program staff in the room to ensure ongoing, timely communications. To further promote communication among the CIO, Executive Body, program areas, working groups and bureaus, the Department has established a telecommunications site on the Treasury Year 2000 Intranet web site. Current information is published on the web site, including schedules, inventories and assessments, correspondence, and other relevant information.

Treasury has established a test laboratory for testing components of the system before implementing the changes in the operational environment. In addition, the Department has engaged a telecommunications company to perform independent

verification and validation (IV&V) of the telecommunications infrastructure with respect to Year 2000 compliance.

Thus, for our mission critical systems, Treasury is on schedule to meet the implementation milestone date of December 1998 with the exception of the IRS phase 5 system applications and Financial Management Services Government On Line Accounting Link System (GOALS). The IRS systems will be completed by January 1999 in accordance with the IRS Year 2000 program plan, which calls for implementing renovated systems in 6 month phases, each January and July, through January 1999. This implementation strategy was created to accommodate tax processing season considerations. The Department is working closely with Financial Management Service to determine actions that can be taken to accelerate the GOALS schedule, as described in the Financial Management Services' testimony.

Since the kickoff of the Treasury Non-IT Working Group on August 28, 1997, Non-IT efforts have been continuing. The management planning and the definition of bureau and office specific Treasury Year 2000 Non-IT management plans began on October 16, 1997. These plans are based on the standard plan format, overall process, and content requirements as defined in the *"Treasury Year 2000 Non-IT Baseline Management Plan,"* dated October 16, 1997. This Treasury plan has been used as a model by the General Services Administration (GSA) for addressing Non-IT systems.

The Non-IT effort is supported by a central Non-IT database, on the Treasury Intranet Year 2000 site, which provides a tracking tool to determine the compliance status of vendor products.

As of March 6, 1998, Treasury bureaus and offices had identified 6,898 external data exchanges, of which 3,169 were incoming and 3,729 were outgoing. The Department has assessed 6,878 out of 6,898 (99.7%) of these external data exchanges, and found that 87.3% are Year 2000 compliant or have been granted a waiver. Of the 2,551 interfaces with the US private sector, Treasury bureaus and offices thus far have contacted 2,446 and reached agreements with 2,391. The bureaus and offices are working to meet the established milestone date of March 31, 1998, for reaching agreement with all state governments with which Treasury exchanges data.

At the Department level, coordination on Year 2000 data exchanges has been ongoing with other government agencies. Treasury has held a series of meetings with executives and staffs from the Department of Defense and the Department of Agriculture's National Finance Center to address and resolve data exchange issues and readiness for Year 2000 testing.

In early 1996, Treasury established September 1998 as a program milestone date for the completion of contingency plans. During a series of meetings with bureau and offices heads in June 1997, the Department emphasized the need for contingency

planning and asked the bureaus and offices to accelerate their schedules for the development of these plans. Since then, Year 2000 Contingency Management Plans have been developed at several bureaus and offices for mission critical IT systems and components. Factors such as failure date, time to implement, dependencies, interfaces, resources, responsible office, impact, and criteria for invoking the plans are included. The bureaus' and offices' contingency planning efforts will be expanded to address Non-IT mission critical systems and telecommunications items.

In spite of our best efforts to date and our aggressive plans for the future, the Year 2000 problem is far from solved. Indeed, several significant key issues pose special challenges for us, and possibly for other Government agencies as well.

One issue that concerns us is vendor schedules for Year 2000 compliant versions of their commercial off-the-shelf hardware and software products. Some vendors have yet to release Year 2000 compliant upgrades of their products. While we are continuing to work on our renovation efforts, our testing cannot be completed until we have obtained and integrated the Year 2000 compliant versions of these products. This problem may become especially troublesome in the Non-IT area, where vendors have been, as a group, slower to recognize and respond to the challenges posed by the Year 2000 problem.

Treasury's cost estimates for fixing the Year 2000 computer problem have continued to rise. In our submission to OMB for the February 15, 1998, report, we estimated a total cost of $1.43 billion, with the bulk of that cost being incurred in this fiscal year. Our cost estimates were initially based in large part on a Year 2000 cost model that focused on costs associated with mainframe lines of code. In the period since those initial estimates were provided, Treasury bureaus and offices have made significant progress in their inventory and cost estimate efforts for repairing and testing IT items, telecommunications items, and Non-IT items. In the February 15, 1998, quarterly report, we estimated Non-IT program costs of $68.6 million, and $295 million for telecommunications costs.

In addition to funding challenges, we must also contend with the increasing rate of attrition within our information systems workforce. Skilled programmers -- especially those with skills in legacy system platforms -- are in strong demand within the private sector, which can pay significantly higher salaries than the Government. The loss of these critical resources represents a risk to the Year 2000 program.

Finally, while we are fortunate that many of our external interfaces are Year 2000 compliant, scheduling and testing all these interfaces are a challenge. Ultimately, we cannot test external interfaces unless our data exchange partners are ready to do so.

I believe that Treasury has an aggressive overall Year 2000 program in place, and we are on target to complete the conversion, testing, validation, and implementation of all

mission critical systems in time to avoid disruption to any critical systems. Nothing less than 100% compliance will be acceptable to the American public, or to me personally.

I recognize that Chairman Horn's ratings suggest that Treasury has significantly greater problems with the Year 2000 problem than my testimony suggests. I do not underestimate the challenge of achieving significant compliance. However, we have purposefully taken a conservative approach at Treasury with respect to measuring our progress on the Year 2000 problem. We are requiring an end-to-end testing of all our systems before we will consider them to be 100% compliant.

Thank you for the opportunity to meet with you today to discuss the actions being taken by the Department of the Treasury in addressing the Year 2000 computer problem. I will be happy to answer any questions you may have regarding this important matter.

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Mr. SESSIONS. Thank you, Mr. Flyzik.

Our next panelist is a distinguished gentleman, who is new to the IRS. Mr. Art Gross, I'd like to welcome you to this subcommittee.

Mr. GROSS. Thank you, Congressman Sessions.

As in Treasury, the Internal Revenue Service has established Y2K as its highest information technology project. We have focused our most accomplished and senior executive technology managers on this program, and most recently with the confirmation of Commissioner Rossotti. The commissioner has established an Executive Steering Committee, chairing a Y2K oversight effort to ensure timely compliance with the program.

The program in the IRS is enormous by any measure. We have expectations at this point that the program expenditures will exceed $900 million. We currently have more than 650 IRS personnel on the ground, more than 250 contractors, and those numbers are projected to pertain through the balance of the 1998 fiscal year.

We have reviewed the program, and report the program in essentially three or four components as follows. With respect to the application systems, as Treasury has reported this morning, our application systems, the mission-critical systems, comprise fully 126 different applications. Of those we have fully renovated 75. And perhaps more importantly, we are on schedule to timely complete the renovation of those mission-critical systems.

The second component, often misunderstood, but critically important to the conversion effort, is the renovation of our infrastructure, meaning the computer platforms, telecommunications, and other hardware devices that support these applications systems. With respect to the infrastructure, while we have made significant progress, I would suggest to you that, like most other agencies and private sector organizations, I think that that is one of the areas of greatest risk and exposure insofar as there continue to be a significant number of commercial products which are essential to the proper functioning of these infrastructures that have not yet been made Y2K compliant. And until those products are made available in the marketplace, fully integrated into our environment, and then fully tested in conjunction with the application systems, I don't think anyone in a senior position can comfortably assess risk and provide assurances with respect to the overall success of the program.

I believe it's also important for the Government as well as the private sector to continue to focus intensely on these infrastructure-related issues. That also applies to the category of noninformation technology, meaning specifically with respect to the operation of facility-supporting systems; HVAC systems, security systems, badge systems. All of those are relevant, all of those need to be inventoried, all of those need to be replaced or upgraded as applicable.

With respect to external trading partners, the IRS also has assumed some risk, given the amount and the extent of our exchange programs with both other Federal Government agencies, State agencies, and certainly the private sector. We are completing our risk assessment and expect that analysis to be available for review in April 1998.

Let me conclude by summarizing as follows: I think that the greatest risks with respect to the IRS program that I think pertain to other agencies as well is the ability of the Government to obtain the relevant infrastructure products, integrate those products into its environment, and then perform very comprehensive end-to-end testing of both the application systems and those infrastructures.

The second greatest risk is to retain our legacy programmers and our staff who are critical to the ongoing maintenance and support of our programs and operations. An important element of that program could be to leverage some of the Government's capabilities that, frankly, the private sector does not offer. The private sector has offered, as you've all heard in the earlier panel, incentive bonuses to either be recruited or to be retained. The reality is that market forces in the year 2000 are going to be changing, and many of the programming staff who are leaving the Government to obtain these near-term bonuses may have job security issues in the future.

Well, as it turns out, we all know that the Government can offer certain security around jobs, and I believe that the Government has within its grasp certain tools with respect to commitments to training, commitments to job security, commitments to restructuring their organizations that could provide incentives that will not dwarf the private sector financial incentives, but for many people in the IT business, I believe the Government has opportunities to afford different types of incentives or packages of incentives that could facilitate the retention of these critically important personnel.

Last, I would like to conclude my comments by offering my appreciation and my gratitude to both subcommittees for the important work they've done in focusing Government agencies and in overseeing our efforts. I think certainly more of that, as we move closer to the day, rather than less of it, will be critical to the success of this program.

Thank you.

[The prepared statement of Mr. Gross follows:]

Internal Revenue Service

Opening Remarks of Arthur A. Gross

Associate Commissioner for Modernization/

Chief Information Officer

Of the Internal Revenue Service

For Presentation to the House Government Reform and Oversight

Subcommittee on Government Management, Information and Technology

March 18, 1998

Chairman Horn, Representative Kucinich and members of the Subcommittee, thank you for the opportunity to discuss the Internal Revenue Service's progress concerning the Century Date Conversion project.

PROGRAM SCOPE AND STATUS

The Internal Revenue Service (IRS) is a huge enterprise, employing in excess of 100,000 individuals located in service centers, regional offices, district offices and posts of duty across the United States. A $1.5 trillion financial services program, the IRS is largely dependent on highly automated processes as well as the currency, comprehensiveness and availability of vast storehouses of computerized data.

The IRS information technology organization is particularly challenged given the breadth of the legislatively mandated systems changes which require extensive reprogramming

of legacy systems each filing season. For example, the Taxpayer Relief Act of 1997 requires the IRS to effectuate more than 750 legacy systems changes for the 1999 filing season.

Compounding our technical management challenge is the massive century date conversion project. Most legacy application systems are programmed to display 00 in the year fields beginning on January 1, 2000, thereby causing date-based calculations unintentionally to interpret the year field as 1900. Failure to identify, recode and retest each of these systems calculations could result in the generation of millions of erroneous tax notices, refunds, bills, interest calculations, taxpayer account adjustments, accounting transactions and financial reporting errors. Put another way – the IRS' capability to carry out its mission could be jeopardized if the Century Date program is not completed timely.

Adding to the challenge is the largely non-century date compliant technical infrastructure which includes more than 80 mainframes, 1,400 minicomputers, 130,000 microcomputers and massive telecommunications networks comprised of more than 100,000 components. Because of the age, fragmentation, diversity and local field ownership of the infrastructure, the Service's potential for success with this aspect of the Century Date program is largely dependent on its ability to corporately manage, monitor and accurately evaluate adherence with the program's schedule, budget and deliverables plans. Lastly, it is essential that both the IRS and its landlord, the General

Services Administration, ensure that applicable IRS facilities and infrastructure related equipment are upgraded or replaced to ensure century date compliance.

Major elements of the program are as follows:

- **Application Systems Conversion**

  The IRS currently supports 126 mission critical application systems comprising 85,000 modules and approximately 50 million lines of code. The code conversion, segmented into five sequential phases, each scheduled for six months in duration, has been completed through three phases. At this time, the IRS has renovated 73 systems, tested and implemented 60 mission critical systems and is on schedule to complete the systems conversion by January 1999.

- **Mainframe Consolidation**

  Instead of investing more than $250 million in upgrading the agency's computer mainframes to ensure century date compliance, the IRS proposed and received Congressional approval for a mainframe consolidation program that consolidates 67 mainframes currently located at ten service centers into twelve mainframes located at two computing centers. The program will provide for both century date compliance and savings of more than $500 million over the ten-year business case as well as position the IRS to implement its mainframe centric approach for modernizing the Service's technology. The effort also standardizes a major component of the IRS telecommunications backbone through the rollout of a century date compliant open architecture network of nearly 20,000 desktop devices.

The Century Date components of the project are currently on schedule with respect to the reprogramming of the Communications Replacement System and the replacement of desktop devices. These project components are scheduled to be completed by December 1998.

- **Other Information Technology Infrastructure Initiatives**

Together with the mainframe consolidation project, the following initiatives comprise the Service's Century Date infrastructure program:

- **Integrated Submissions and Remittance Processing System**

  Integrated Submissions and Remittance Processing (ISRP) replaces the antiquated Distributed Input System (DIS) and Remittance Processing System (RPS) which form the core of the tax processing input pipeline that processes more than 200 million tax returns and accounts for tax revenues exceeding $1.5 trillion.

  ISRP is currently being piloted at the Austin Service Center and is on schedule to be fully implemented in all ten service centers for the 1999 filing season.

- **Tier II and Tier III Computer Platforms and Associated Systems Software** require replacement or upgrades. Century date compliance for the more than 1400 minicomputers and 130,000 microcomputers is largely dependent on obtaining vendor upgrades and/or replacement products. Many of these

components are only now being made available in the market place. The IRS has initiated a proactive evaluation and testing process to validate the compliancy of these components.

- **Telecommunications**

The critical IRS network backbone is supported through the Treasury Communications System contract. Having recently received the network component inventory from the contractor, the IRS is in the midst of reviewing and validating these data as well as the contractor's site specific plans to convert the network. Given the need to upgrade or replace thousands of components within the TCS network as well as additional IRS proprietary networks which themselves comprise nearly 30,000 components, the network conversion represents a significant challenge.

- **Non-Information Technology**

A critical component of the non-information technology aspect of the program is dependent on the General Services Administration which has recently begun developing facilities inventories. Until the GSA and IRS inventories are complete, it is evident that the government is exposed to both schedule and cost risk.

- **External Trading Partners**

  The IRS is but one of many data dependent public and private sector organizations which both send data to and receive data from one another. At this time, IRS efforts to validate the accuracy of both incoming century date compliant data from a variety of sources and IRS century date compliant outputs to public and private sector organizations are on schedule.

MITIGATING RISK

Without exception, the Century Date Conversion in conjunction with the annual filing season systems changes are the Service's highest technology priorities. While the IRS has assigned its most senior and qualified management to the program, Commissioner Charles O. Rossotti has reinforced the project's priority standing by organizing and chairing an Executive Steering Committee dedicated to overseeing these efforts.

Regardless of the extent of the management commitment, however, the IRS must proactively develop and manage the following risk mitigation strategies:

- **Planning and Implementing an Integrated Century Date Conversion and 1999 Filing Season Strategy**

  Given the extent of the Taxpayer Relief Act mandated systems changes that require reprogramming many of the same legacy systems that must be made century date compliant by January 1999, it is essential to develop and implement an integrated Century Date/1999 Filing Season Plan. To mitigate risk, the IRS has accelerated by

several months the process for identifying the filing season related systems changes that would be incorporated into the integrated plan.

- **Testing**

Even prior to identifying the Century Date Conversion testing requirements, the Information Systems Product Assurance Division, responsible for Systems Acceptance Testing, lacked sufficient resources to fulfill its mission. In 1996, the Division was able to test only 20 percent of the systems placed into production. While some progress has been made, today the Division's testing operation is limited to only 30 percent of the agency's production systems.

Given the critical need to undertake a comprehensive end-to-end Century Date systems test beginning January 1999, it is imperative for the IRS to dedicate significant government and contractor resources and day-to-day management direction to the testing program.

- **Contingency Planning**

Given the scope of the IRS program and its critical importance to both the nation's economy and its taxpayers, it is imperative that the Service's mission critical systems continue to function properly in the new millennium. While the IRS has made significant progress, the risks are significant. Accordingly, the IRS must develop implementable contingency plans to neutralize any adverse impacts of a less than fully successful century date program. These contingency plans must

reflect the IRS functions as well as those of our data exchange partners. The overall IRS contingency planning strategy is to focus our efforts on planning for only those aspects of the program that may not be completed timely and/or fully successfully.

OPPORTUNITIES

While the primary focus is to timely complete the century date conversion, the IRS plans to leverage a variety of opportunities stemming from the project including the following:

- Utilize the business-owned and supported inventory of computer applications (estimated at 20,000) to both **eliminate duplicate applications** and establish the "best in breed" as a national standard application while **corporately managing the growth of future business-owned applications**. The IRS has already retired 3,000 business-supported applications.

- **Rebuild the IS Product Assurance Program**
  Leverage the SAT testing activities planned for century date conversion to rebuild the IS Product Assurance Program, which has been impaired as testing resource levels were reduced in the 1990's to less than 30 percent of the minimum industry standard.

- **Create, within IS, a project planning and management ethos.** The century date conversion is a massive project management challenge which requires the

thoughtful development and faithful execution of a rigorous plan. We aim to leverage aspects of the century date project management experience (e.g., project management tools, project management training and experience) as we instill the systems life cycle best practices, policies and procedures to support future information technology investments.

- **Rollout core elements of the future IRS computing infrastructure to provide for both century date compliance and data center consolidation that would also achieve significant savings.** The infrastructure framework would also support the planned Modernization in accordance with the IRS Technology Modernization Blueprint.

Mr. SESSIONS. Thank you, Mr. Gross.

Our next witness will be Constance Craig, Assistant Commissioner, Information Resources, Financial Management Services, Department of the Treasury.

Ms. Craig.

Ms. CRAIG. Thank you for the opportunity to appear today.

The highest priority of the Financial Management Service is to adapt our mission-critical computer systems to the century date change. FMS is devoting all possible resources to ensure that the day-to-day activities and services we provide to the American people will not be disrupted after January 1, 2000.

FMS plays a critical and central role within the Government. Virtually every Federal agency depends on FMS to facilitate the issuance of payments, to collect revenue and delinquent debt, and to account for the Government's receipts and outlays.

Each year FMS issues over 850 million payments, with a dollar value of more than $1 trillion. We issue these payments on behalf of civilian agencies, such as the Social Security Administration, the Department of Veterans' Affairs, and the Internal Revenue Service.

FMS also provides debt collection services and manages the processing of roughly $1.4 trillion in Federal revenues. FMS also maintains the central accounting and reporting systems that track the Government's monetary assets and liabilities. Making sure our systems are year 2000 compliant is absolutely essential.

In terms of a brief summary of our actions so far, we have carefully identified and assessed our mission-critical systems. We are well underway in making the necessary changes to our software code, and, most important, implementation of Y2K compliant payment and collection systems is planned and is on schedule for completion by the end of 1998.

Renovation of our other systems will also be done by the end of 1998, except for a portion of the Government On-line Accounting Link System. This is a system that edits and transmits intergovernmental accounting data between FMS and other Federal program agencies. The GOALS system is scheduled for completion in mid-1999. By the end of the summer—or in summer, rather—validation testing will be well underway internally and with our customers, and testing will continue until we are certain that all systems are ready.

FMS is in relatively good shape in replacing the systems that are critical to issuing payments and collecting Federal revenues. As an example, we have made critical progress with the Social Security Administration to ensure that monthly direct deposit and check payments will continue to go out accurately and on time after January 1, 2000.

Each month FMS issues 33 million direct deposit payments and 17 million check payments to Social Security recipients. The majority of these payments are issued by our Philadelphia office. That office and the Social Security Administration have been working closely together to coordinate the required program and format changes needed for Y2K compliance.

All of the programming changes necessary to begin testing have been completed, and testing between Social Security and FMS began earlier this month. We will complete the testing by July and

implement Y2K-compliant systems for both Social Security and supplemental security income payments in August.

Based on the fact that our testing will be completed at least 15 months before the year 2000 deadline, we believe we can be confident that all Social Security payments will be issued correctly and on time by FMS when the next century begins.

We do view systems preparation for the year 2000 as our absolute highest priority, and we are assigning whatever resources are necessary to ensure we do not fail.

Thank you for allowing me the opportunity to discuss our plans to meet the year 2000 challenge. We recognize the importance and enormity of it, and are working to ensure that important Government services are not disrupted.

I would be happy to answer any questions you may have regarding this issue.

[The prepared statement of Ms. Craig follows:]

DEPARTMENT OF THE TREASURY

Financial Management Service

Statement of Constance Craig
Assistant Commissioner for Information Resources of the
Financial Management Service
for Presentation to the House Government Reform and Oversight
Subcommittee on Government Management, Information, and Technology;
and the House Science Subcommittee on Technology

Chairman Horn, Chairwoman Morella, and members of the Subcommittees, thank you for the opportunity to appear today to discuss the Financial Management Service's (FMS) progress in meeting the challenges posed by the year 2000 (Y2K) computer problem. In my capacity as Assistant Commissioner of Information Resources, I have the responsibility for making the program decisions to ensure that FMS computer systems are Y2K compliant.

The highest priority of the Financial Management Service is to adapt its mission critical computer systems to the century date change. FMS is devoting all possible resources to ensuring that the day-to-day services we provide to the American people, on behalf of other Federal agencies, will not be disrupted on January 1, 2000 or thereafter.

During FMS's appropriations hearing on March 5, Representative Jim Kolbe made the observation that FMS is one of the two or three Federal agencies that absolutely must meet the year 2000 deadline. We agree - FMS plays a central and critical role within the government. Virtually every Federal agency depends on FMS to facilitate the issuance of payments, collection of revenue and delinquent debt, and accounting for the government's receipts and outlays.

Each fiscal year, FMS issues over 850 million payments, with a dollar value of more than $1 trillion. We issue these payments on behalf of civilian agencies such as the Social Security Administration, the Department of Veterans Affairs, and the Internal Revenue Service. Our payment services touch the lives of over 100 million people, and literally tens of millions of Americans depend on FMS systems to meet lifeline needs every month. FMS also provides debt collection services and manages the processing of roughly $1.4 trillion in Federal revenues, which include corporate and individual income taxes, customs duties, and Federal fines. And, FMS maintains the central accounting and reporting systems that track the government's monetary assets and liabilities, 7,500 separate Congressionally enacted accounts in all. Making sure our systems are year 2000 compliant is absolutely essential to our operations and the integrity of our systems for paying, collecting and accounting for money government wide. Obviously, all Federal agencies are counting on FMS to ready its systems in order to meet the basic financial needs of our constituents and the Federal government as a whole.

FMS is dependent on automated systems to make payments and collections. In order that these, as well as our other important functions, are not interrupted, we must make certain that our automated systems are modified to run in the year 2000. To make the necessary modifications for the century date change requires a massive, all out effort that touches every part of FMS. Here is a brief summary of our actions thus far:

* We have carefully identified and assessed our mission critical systems.
* We are well underway with making the changes to our software code to have our systems in compliance.
* Implementation of Y2K compliant payment and collection systems are scheduled for completion by the end of 1998.

* Renovation of our other systems will also be done by the end of 1998, except for a portion of the Government On-line Accounting Link System (GOALS) which collects, edits and transmits intergovernmental accounting data between FMS and other Federal program agencies. That system is scheduled for completion in mid-1999.

* By this summer, validation testing will be well underway internally and also with our customers. Testing will continue until we are certain that all systems are ready.

To provide a more up to date report on FMS's year 2000 program than was reflected in the mid-February report to OMB, I have attached several charts (charts A, B, and C) to my testimony that show the status of FMS's 62 mission critical systems. Since that report was compiled, we have implemented 2 replacement systems and completed repair on one system requiring renovation, bringing to 13 the total number of Y2K compliant mission critical systems. In addition, of the 39 systems still in need of repair, we have completed assessment on 32, 23 of which are now in the renovation phase, and 9 are in validation testing.

In terms of problem areas, FMS is not as far along in completing its Y2K work as we would like on our GOALS system--the system that edits and transmits intergovernmental accounting data. FMS is planning to replace the existing GOALS system to provide new and enhanced capabilities, however, development of all modules of the replacement system will not be complete prior to the year 2000. Consequently, we must renovate the existing applications to ensure that we have a GOALS system which will be year 2000 compliant after the turn of the century. This work is now underway. We had a late start in fixing the year 2000 problem because we had hoped to finish development of the GOALS II replacement system in time to avoid the need to renovate the existing system. In spite of the late start, we are taking steps to speed up the process. Our objective is to first renovate GOALS applications that are most critical

to the government and those that have implementation dates for the redesigned GOALS II system that extend well into 1999. We are confident that we will complete all necessary work -- whether redesign of applications for the new GOALS II system or renovation and testing of existing GOALS applications -- to ensure compliance well before the end of 1999.

FMS is in relatively good shape in replacing the systems that are critical to issuing payments and collecting Federal revenues. For example, we have made critical progress with the Social Security Administration to ensure that monthly direct deposit and check payments will continue to go out accurately and on time after January 1, 2000. Social Security disbursements comprise almost two-thirds of our overall payment volume. Each month, FMS issues 33 million electronic funds transfer/direct deposit payments and 17 million check payments to Social Security recipients. The vast majority of these payments are issued by our Philadelphia Regional Financial Center.

The FMS Philadelphia office and the Social Security Administration have been working closely together to coordinate the required program and format changes needed for Y2K compliance. All of the programming changes necessary to begin Y2K validation have been completed, and testing between Social Security and FMS began this month. Testing will be accomplished through all SSA and FMS processes, including the transmission of input from SSA to FMS, processing of that information in FMS's payment system, end to end testing from the payment system to FMS claims and accounting systems and the Federal Reserve, and transmission of output back to SSA. We will complete all of our testing by July, and implement Y2K compliant systems for both Title II (old age and survivors benefits) and Title XVI (supplemental security income) payments in August. Chairman Horn, Chairwoman Morella, and members of the

Subcommittees, based on the fact that our testing will be completed at least 15 months before the year 2000 deadline, we can be confident that all Social Security payments will be issued correctly and on time by FMS when the next century begins.

We view systems preparation for the year 2000 as our absolute highest priority, enabling us to successfully maintain payment and collection operations in the next century. While we have made significant progress in these areas, the Administration has proposed a supplemental request to provide Secretary Rubin with the discretion to fund FY 98 needs, which for FMS amounts to $7.4 million. Additional year 2000 funding will be used to provide supplementary contractor resources to accelerate the conversion, validation, and implementation of FMS's information systems, including GOALS and the Regional Financial Center payments and claims systems. Furthermore, funds will be used to provide increased computer capacity in our Hyattsville, Maryland data center to allow for concurrent testing of FMS's information systems that have been renovated for year 2000 compliance. FMS will assign whatever resources are needed to ensure we do not fail to accomplish these changes to our computer systems.

Thank you for allowing me the opportunity to discuss FMS's plans to complete the massive work necessary to enable us to meet the year 2000 computer challenge. We recognize the importance and enormity of the challenge and are working to ensure that important government services are not disrupted on January 1, 2000. I would be happy to answer any questions you may have regarding this issue.

Financial Management Service

Year 2000 Performance Measurement

As of 03/09/98

FMS Summary
40 systems

Total Systems by Phase

Repair Mission Critical Systems

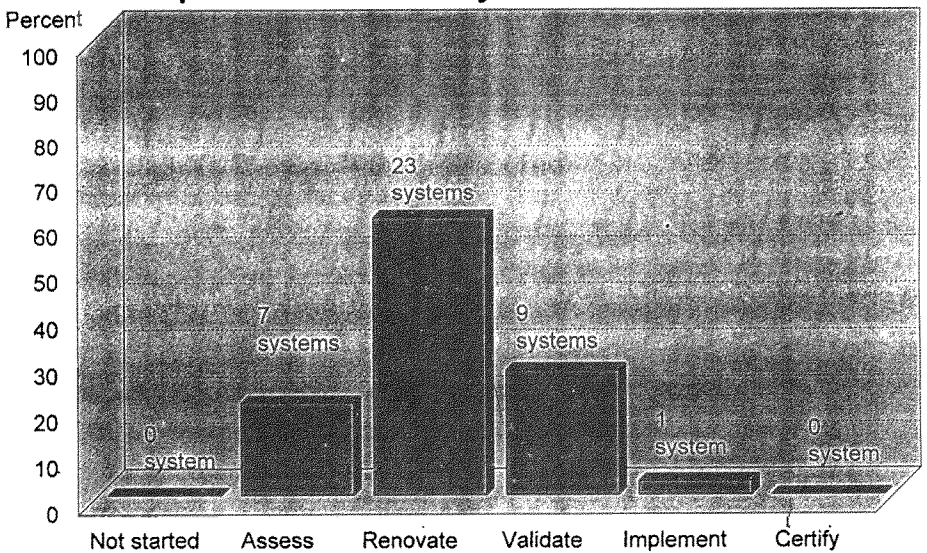


Chart A

Financial Management Service

Year 2000 Performance Measurement

As of 03/09/97

FMS Summary
19,286K LOC

Total Lines-of-Code by Phase
Repair Mission Critical Systems

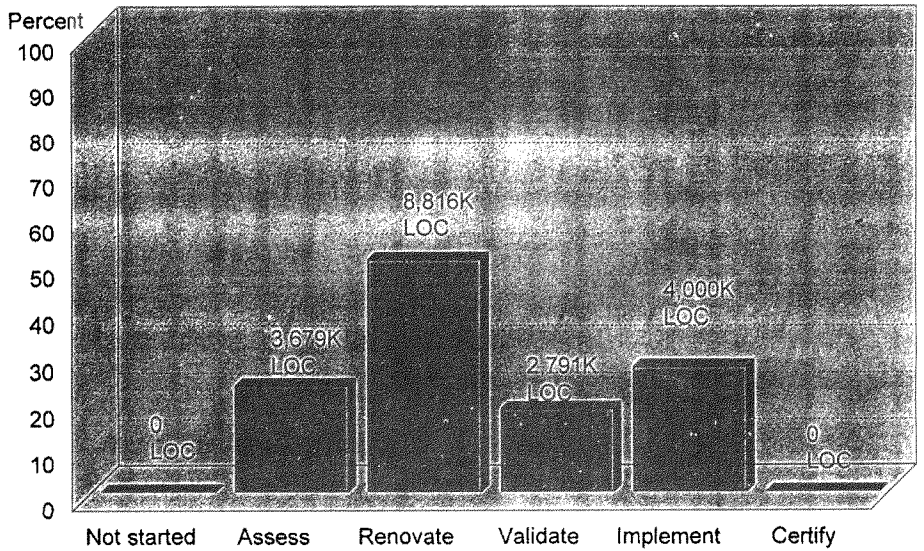
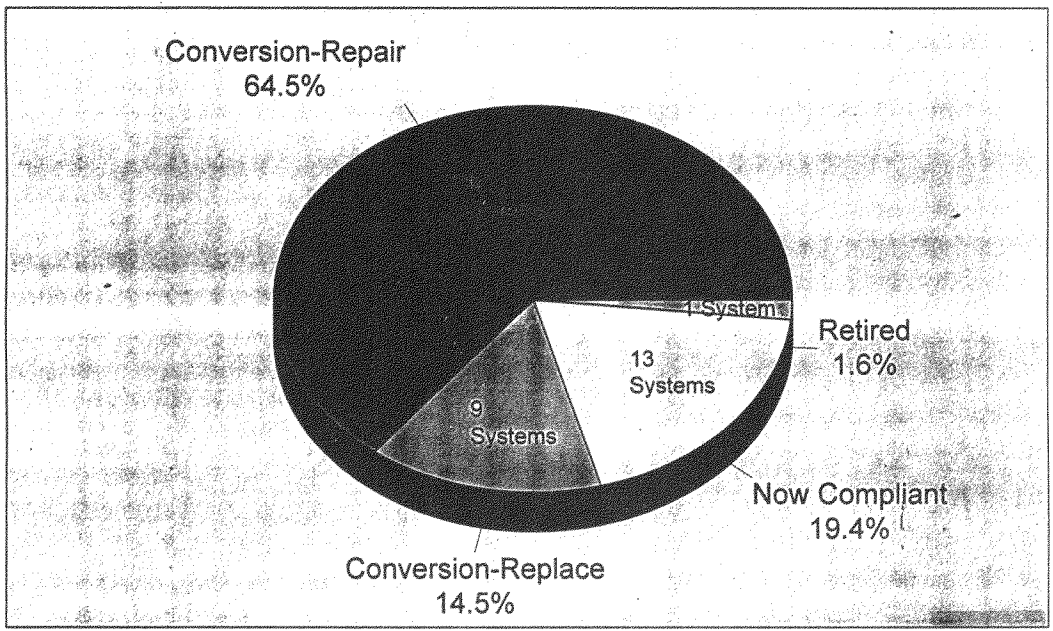


Chart B

Financial Management Service
Year 2000 Compliance Strategy

Shows the method by which FMS will achieve Y2K Compliance for its 62 Mission Critical Systems

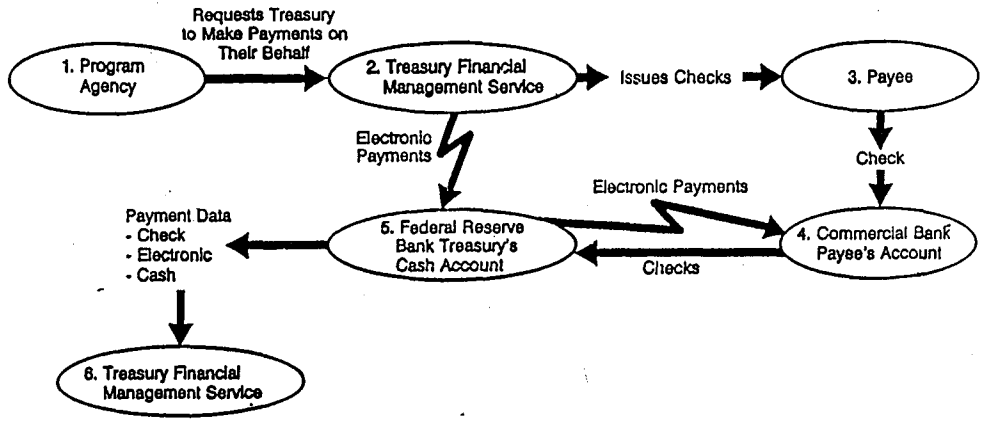


As of 03/09/98

STRATPIEM

Chart C

Payment Process



- Reconciles Paid Check Data
- Reconciles Electronic Payments
- Daily Cash Position
- Cash Controls
- Government General Ledger
- Financial Reports

Chart D

Mr. SESSIONS. Thank you, Ms. Craig.

I'm going to extend my conversation to you first, please, because we heard Mr. Koskinen earlier today say, and I will paraphrase, something like: You really don't know what's going to happen until the 1st of the year comes and the first checks go out. But I have heard you rather clearly today enunciate that you are going to have a period of time where you not only have a burn-in, but you've done a total audit of what you've done. It sounds like to me that you are being responsible, and you can accurately predict your compliance well before that date.

I'm not asking you at all to disagree with any testimony that's been given today, but rather it seems like that you've got, in regard to your system, a good handle to comply with the questions that have been asked, certainly from Mrs. Maloney and others today. Do you feel like you've got a good handle and things are going to go right?

Ms. CRAIG. I do. I don't want to minimize the complexity. It is a big challenge. But I do think we have a handle on what needs to happen. We work very closely with the Federal Reserve System as well, and I believe they announced earlier this month that their systems are already Y2K compliant. So we will be testing with them, as well as with the Federal program agencies, to make sure that all these payment systems work correctly.

Mr. SESSIONS. Good.

Mr. Flyzik, once again with great respect to you and any of the testimony that's been given today, also with regard to your wanting to be very judicious among the conversations that you've had with Secretary Rubin, how do you characterize putting into context that we on this committee, at least the majority side of the committee, have attempted to stay up with the Government and we have issued report cards that, by and large, have not been favorable? How do you respond to the Secretary? Because I've heard you say today: We're ready to go; we are on target; we are doing those things that are necessary, and we're on target to do that.

How do you justify asking or Secretary Rubin saying, what are those Congressman trying to do to us? In other words, said another way, are we crazy?

Mr. FLYZIK. No, sir, not at all.

Mr. SESSIONS. Do you think we're fair?

Mr. FLYZIK. In characterizing my conversations with the Secretary, I think we show appreciation for the work being done here by the committee and the subcommittees because you have done a remarkable job with the awareness issue and keeping the pressure on us to keep the priorities up. You've made it easier for me to go to Secretary Rubin and talk to him about the importance of this project and have Secretary Rubin himself become deeply engaged in the project.

In my last four or five meetings with him, I think we were scheduled to meet for about 15 minutes, and I believe they all ran well over a half-hour, some even longer, as we've gotten into details.

Mr. SESSIONS. He should be commended for that, by the way.

Mr. FLYZIK. Thank you, sir.

Mr. SESSIONS. I think that's admirable of the Secretary.

Mr. FLYZIK. Thank you, sir.

In terms of the report cards, we have a little different approach. You heard Art Gross and me testify that infrastructure components are part of critical-mission systems. What we're doing at Treasury—and let me give you an example. Within that, Customs, which reports three mission-critical systems, those 178 components might be modifying or renovating a data base in Washington, DC, at their Newington Data Center. They can complete the renovation, testing, validation, and we could report those as completed. For scoring card purposes or report card purposes. However, we also know that all of the border crossings all around the United States, all of the airport crossings, all the cargo, are going to be communicating with those systems here in the Washington, DC area. We also know that a lot of the component infrastructure, the commercial products, the telecommunication switches, the modems, the devices, and the commercial infrastructure, are going to be upgraded over the next year as vendor schedules allow those upgrades to take place.

Therefore, when we are saying we are reporting conservatively, I am not ready to guarantee compliance of all those mission-critical systems until I test them with the changes made in the infrastructure. Therefore, I think in my statement I'm indicating that, I think our progress in fixing our internal systems is far greater than what a report card perhaps would indicate, again, because of our conservative approach to waiting for end-to-end testing of all components.

My feeling is, after you fix a system, validate it, test it, implement it, if you make a change in the infrastructure, you really should go through the cycle again. You should do another assessment, another validation, and another testing. Therefore, we're reporting our numbers conservatively, but our feeling is to concentrate on the problem. I believe that these committees have been helpful, very helpful, by keeping the pressure on us through the report card process.

Mr. SESSIONS. As we approach this timeframe that we get close to the year 2000, I think at some point it's going to be important, and I think that today's opportunity for us to be together gets us closer to understanding where you are and where we think you are. It will be important for us to not scare the public. It will be important for us to be responsible as we enunciate this as a date where there are going to be changes, but that we should not build into anyone's mind an expectation of failure, but, rather, an expectation that you've got a new computer system that's up and working with different parameters.

How are you dealing with—and this is for anyone of the four of you—how are you dealing with communicating with your customers that there could be some things that might look different or that might be wrong, and that you're asking those customers to carefully review that that they are receiving? And are you doing that in a proactive way to where you can anticipate major changes, to where you can ask your customers to please pay attention with you? Have I been specific enough? I'm not talking about a PR battle. I'm talking about a real-life discussion with your customer of what you're going through, the changes that are happening, and asking them to look at your product and do an evaluation also. Has that been thought of within the context of what you're doing?

Mr. FLYZIK. At the Department level, I can report I've already testified as to the number of data exchanges, which, of course, are dealing with outside entities, the broker community, State and local governments, and other entities that we interchange electronic data with. So that's one set of customers being addressed through that sort of formal process.

We have also had memorandums that were signed by the Assistant Secretary for Management, and Chief Financial Officer, which went out to every Assistant Secretary in the Treasury and every bureau head in our component bureaus across Treasury, asking each of those entities to make contact with all of the relevant entities they do business with, to begin having a discussion to assess whether or not there are impacts that we are missing in supply chains or impacts in the way that we will be conducting business after the year 2000. That process is ongoing, and we have established a team to look at some of those impacts. We're particularly concerned about international issues, as was brought up by the first panel that testified here today.

At the bureau level, I defer to Art and Connie.

Mr. GROSS. Congressman Sessions, more than 100 million of our customers are individual wage earners, and for the most part we have sought both to reassure, but also honestly assess our progress in this program. As you can imagine, there's an awful lot of interest in the country with respect to the IRS program. For the most part, we have been able to provide those assurances that the systems that we have focused on are the systems that affect the individual wage earners—the systems that process more than 100 million tax returns each year, that issue tens of millions of refunds each year, and that those systems, indeed, will be converted timely, and we have extended those reassurances.

We also have a set of business partnerships with the commercial sector, the tax practitioner community, for example, and in those instances we have worked more intimately on a case-by-case basis, and fortunately, the IRS possesses a fairly well-evolved infrastructure of contacts and communications because each year we modify our forms and our reporting formats so that those processes and the individuals who manage those processes have excellent network relationships with those business communities. It's through those networks that we have kept business informed of our progress.

Mr. SESSIONS. At any point do you believe—and, Ms. Craig, I'm going to let you respond also—Mr. Gross, do you believe that you will be communicating with customers to be proactive, to say, yes, we feel like we've got it solved, but, "Customer, would you please just do your own cross-check?" Do you believe that that's a part of a responsible statement that your agency may be making?

Mr. GROSS. I think our agency, with respect to that issue, Congressman Sessions, I think what we have done is primarily work with the business community, the tax preparation community, and it's through those relationships that we have communicated those thoughts.

Mr. SESSIONS. Good. OK.

Ms. Craig.

Ms. CRAIG. I think that most Americans believe Social Security checks and direct deposit payments come from Social Security, and that IRS payments come from IRS. So, we don't really interface directly with the public, but we're working very closely with our sister agencies to help them in any way we can.

Most of our customers really are the Federal program agencies. They pass data back and forth to us, and we are working closely with them. We are also issuing Treasury Financial Management bulletins to keep them apprised of what we're doing.

Mr. SESSIONS. Good.

I would now like to direct my questions to Mr. Schindel. We have talked about the ability to keep people on the payroll, and there is some indication—Mr. Gross indicated about 650 contractors on the payroll at this time. Do you believe, from your inspector general capacity, that you are going to perhaps request of them to keep these people on the payroll for 1 month or 2 afterward or 3 months, so that you can complete an evaluation and ensure compliance that you're in line. Or has there been any discussion along that line? Or are they just going to get them off the payroll, and then you worry about fixing the problems later? In other words, I'm talking about burning-in of the process and then your evaluation and you being able to go back and get properly fixed anything that's wrong, and have you had that discussion with them about having those contractors available?

Mr. SCHINDEL. We have not had a discussion on that. Our expectation would be that the documentation would be available for us to go in and validate or verify that the problems have been fixed; the conversion has taken place, and we would be able to go back to the contractor, even if they are no longer working, to get that information.

I know that, as I mentioned in my testimony, the IRS Chief Inspector's Office has been doing extensive work in the IRS from an audit perspective, and they have been, for instance, looking at lines of code that the IRS has certified as already being converted and renovated, and they have actually gone in and reviewed a sample of that code themselves to verify that, in fact, that is the case.

Mr. SESSIONS. Good.

If you'll please allow me just 1 minute, please?

[Pause.]

Mr. SESSIONS. In summary, I have heard the testimony today, not only from Mr. Koskinen, but that others have given. I believe, this committee has a realistic sense that the administration not only is serious about the endeavor that is before them, but that this panel has, if considered representative of the entire Government, if we extrapolate it, which I believe it is, you've got some complex operations, including Customs and the IRS, Social Security. I find that I have not heard any competing testimony, that no one is complaining that they're not getting the resources that they need. I've not heard anyone say that they cannot get the attention of the President or the Vice President to make these tough decisions.

I have not heard anything from this committee say that they are not being listened to, that their boss is hearing what is going on, nor have I heard anyone give us any bit of testimony that would

indicate that there is something that is out there that you're fearful of, but, rather, that what lies ahead of you is a great deal of work; that you are approaching that in a systemic, logical perspective; and that you feel like that, by working hard at the effort, you will achieve the goal.

I've also heard further testimony today that clearly says that major systems that millions of Americans depend on will be tested and retested and prepared and be ready to go on that date.

I want you to know that this committee is intensely interested in the job that you are performing. We will continue to offer our insight, and even evaluation, due to our ability to have oversight. I want you to know that any time something changes in regard to what you have provided in testimony today, I encourage you to please go back up your chain of command; please keep this committee updated. We rely on you doing the work. Whether we, our members, be Republicans or Democrats, I think you see that we have great faith and confidence in what you are doing.

I would like to thank each and every one of you for taking your time to be with us today. If I hear nothing further, unless anyone has a closing remark, then we will end the hearing.

Ms. Craig, do you have anything, or anyone else on this panel? Does anyone——

Mr. GROSS. No, sir.

Mr. SESSIONS. Does anyone disagree with my analysis of this hearing and the conclusions that this chairman has drawn?

Mr. SCHINDEL. No, sir.

Mr. SESSIONS. With that said, we will now adjourn.

[Whereupon, at 12:25 p.m., the subcommittees adjourned subject to the call of the Chairs.]

[The prepared statement of Hon. Pete Sessions follows:]

CONGRESSMAN
PETE SESSIONS
News

TEXAS, FIFTH DISTRICT

1318 Longworth House Office Building • 202-225-2231 • Contact: Pam Arruda

FOR IMMEDIATE RELEASE MARCH 4, 1998

YEAR 2000 COMPUTER PROBLEM – GOVERNMENT AGENCIES ARE STILL BEHIND SCHEDULE IN FINDING SOLUTION

(Washington, D.C.) -- Federal agencies are in a bind. They have yet to solve the Year 2000 computer software problem and the new millennium is right around the corner. At a press conference today, Congressman Pete Sessions joined his colleague, Congressman Stephen Horn (R-CA), in releasing grades measuring the progress of major Federal agencies on the Year 2000 computer problem.

"If the Federal Aviation Administration's (FAA) computer system doesn't work, then pilots can't safely fly and this will force a slowdown throughout our economy, not to mention endanger the lives of those risking to fly," said Congressman Sessions. "If the Justice Department's National Criminal Information Center's computers don't work, then no one will know who the criminals are."

The Year 2000 problem is an inability by some computer software to recognize any year not beginning with the digits "1 - 9." When the year changes from 1999 to 2000, computers throughout the public and private sectors will not recognize the "00."

The grades measure the progress of 24 departments and agencies within the Federal government. These agencies have been graded twice in the past -- July 1996 and September 1997. In September of last year, almost half of the 24 agencies received a "D" or "F". According to Congressman Sessions, "This quarter, while some agencies have improved, we still see 11 agencies with 'D' or 'F'. We must strive for continuous improvement."

Another area of concern to Congressman Sessions and Congressman Horn was the number of systems classified by the Executive Branch as "mission critical." Congressman Sessions said, "The year 2000 issue has taken on a life of its own. Publicity about the problem is not a concern to me. But, with this heightened publicity, I hope the federal government is not burying its head in the sand. This concerns me when we look at the number of systems classified as mission critical."

Congressman Sessions described the issue of "mission critical" systems. He said, "Supposedly, a system is 'mission critical' if it is absolutely necessary to the performance of an agency's mission. I won't take the easy hit and talk about the difficulty agencies are having just defining their missions. But, I am gravely concerned by the fact that in August of 1997, we had 9,100 mission critical systems, and in November we had 8,840, a reduction in mission critical systems of 260. Today, we learn that there are 990 fewer mission critical systems than there were in November. We have to ask the Administration, are there actually fewer mission critical systems, or are we seeing agencies conveniently reclassifying systems to avoid the hard work of solving this problem."

Agency Chief Operating Officers will provide reports to OMB by the fifteenth of May, August, and November through November 1999, detailing their progress in dealing with the Year 2000 problem. The Subcommittee on Government Management, Information, and Technology will continue to monitor these reports, and insist on the highest level of effort on the part of the Executive Branch to solve this problem.

Congressman Sessions, in addition to being Vice Chairman of the Subcommittee on Government Management, Information, and Technology, is Chairman of the Results Caucus. The Results Caucus is a coalition of reform-minded members of Congress who share the common goal of realizing a smaller, smarter, common-sense government by getting major management problems off of GAO's high risk list, one of which is the problem concerning the year 2000.

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