

POLICY ISSUE

(Information)

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FOR: The Commissioners

FROM: William D. Travers
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SUBJECT: INFORMATION TECHNOLOGY EFFORTS TO SUPPORT MOBILE
COMPUTING

PURPOSE:

The purpose of this paper is to inform the Commission, as requested in item 3 of staff requirements memorandum (SRM) M010131B, of the Office of the Chief Information Officer's (OCIO's) information technology (IT) efforts to support mobile computing.

BACKGROUND:

On January 31, 2001, OCIO briefed the Commission on the status of its programs, performance, and plans. The Commission requested additional information in SRM M010131B, dated February 9, 2001. In particular, the Commission asked the staff, "What information technology efforts are underway or planned to support mobile computing? For example, use of personal digital assistants (PDAs) for Regional Inspectors." This answers that request.

DISCUSSION:

Advances in remote computing technology have created opportunities for enhancing productivity, and many Federal agencies have already invested significantly in these technologies. The use of wireless technologies has also been encouraged by the Office of the President, which established the Federal Wireless Users Forum (FWUF) in 1993 for Federal agencies to discuss issues unique to government use of these technologies. NRC is participating in this forum and other related government and industry workshops and seminars.

OCIO has sponsored two meetings of an IT working group consisting of representatives from the Office of Nuclear Reactor Regulation (NRR), Office of Nuclear Material Safety and Safeguards (NMSS), OCIO and the regions. The meetings were held to identify opportunities

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for using technology to more effectively satisfy business requirements. The group believes that making relevant information “mobile” would increase efficiency and effectiveness. The information would be available to the staff and managers wherever they are - not just at their workstations. This would help optimize the staff’s and managers’ time and permit more timely processing of information.

In conversations with the group members and representatives in the program offices and regional offices several opportunities for improvement were identified. These opportunities include: more communication and coordination with the Program offices and Regions to identify uses of technology and to optimize use of resources, and redesigning or modifying dial-up solution (Citrix) to allow more reliable and faster connection necessary for mobile computing.

NRC has begun investigating practical uses of mobile computing technologies. These include:

- (1) Wireless Local Area Networks (WLANs),
- (2) Personal Digital Assistant (PDA) and Productivity Tools,
- (3) Inspections on Mobile Devices,
- (4) Mobile Computing/Teleworking Productivity Tools, and
- (5) Other Regional Mobile Initiatives

Wireless Local Area Networks (WLANs)

WLANs permit users to share information in places where installing wires is inappropriate or prohibitively costly. Several benefits include: allowing network access outside an individual’s office, and more efficient use of work space. The main challenges associated with this technology are security, configuration and initial implementation (i.e, policies, procedures and training).

OCIO has partnered with NMSS to assess and implement the use of a WLAN for use in their Regulatory Products Development Center (RPDC). NMSS is replacing the desktop workstations in the RPDC with laptops connected by a WLAN to optimize use of their office space. The assessment was completed and the WLAN was implemented in June.

Region IV has a pilot project underway to create a WLAN within their region to provide network access outside an individual’s office. They have completed their assessment and testing. They have partnered with OCIO to evaluate other practical uses of WLANs (see initiative below) and to address the security concerns associated with the use of WLANs. They plan to implement their WLAN provided that the security concerns can be resolved.

Another use of WLANs identified by the working group is to help establish a “portable” office. A WLAN would permit groups to share files and peripherals (e.g., printers) in rooms where there are typically no dedicated LAN connections (hotels, plants and facilities, conference rooms, etc.) for NRC use. This would be particularly useful during Augmented Inspection Team (AIT), Incident Investigation Team (IIT), special and routine team inspections of plants and facilities. For this use, additional security concerns need to be addressed and resolved. OCIO is working

with the working groups and assessing this initiative. The estimated completion date for this assessment is January 2002.

Personal Digital Assistant (PDA) and Productivity Tools

As mentioned earlier, increases in efficiency and effectiveness may be realized if relevant information is made mobile. OCIO is assessing PDA tools that provide the ability to access mission critical documents, e-mail and schedules while away from the office. The assessments will address and provide recommendations for: PDA devices, document management tools, synchronization tools, printing tools, and e-mail applications. The first three assessments (PDA tools, document management tools, and synchronization tools) have been completed. The remaining two assessments are estimated to be completed in November 2001.

Several of the Regions and Program Offices have provided PDAs and associated software to their managers to give them a more effective and efficient scheduling tool in addition to other benefits (i.e., portable address books, capture meeting, E-mail, tracking travel itineraries).

Inspections on Mobile Devices

OCIO has partnered with NMSS to assess and pilot performing inspections on PDAs. The expected benefits are: reduction in administrative burden (automated forms), and more accurate, consistent and timely data. This initiative includes assessing and implementing PDAs tools that; provide a simplified means for data collection (e.g. checklists), downloading and uploading this data to the PC, and access to critical reference materials on the PDA. For this pilot, forms will be created and downloaded to the PDA that will allow inspectors to collect relevant data from inspections of General Licenses who failed to return their Registration Form. The results of the pilot will be used to determine if performing inspections on these small devices (screen size) is practical and whether or not the expected benefits are "real". The assessment and pilot are estimated to be completed in January 2002.

Region II inspectors are piloting performing portable gauge inspections on PDAs. They are using tools that allow them to download their inspection documents and related reference materials into their PDAs. They purchased and used a software tool that allowed them to create a form for collecting inspections data on the PDA. They are coordinating with NMSS/OCIO on the returned registration pilot (mentioned above) and are awaiting the pilot/assessment results before proceeding with their portable gauge inspection pilot.

Several Region III inspectors are using PDAs for materials inspections. They download their inspection records and reference materials onto their PDAs and are able to complete most of the inspection report at the licensee's facility. This process allowed them to reduce their inspection preparation time (e.g. copying documents) from approximately one week to two days. In addition, less time is spent on finalizing the report when they return to the office since the report is already captured electronically.

NRR is performing a similar pilot. Their pilot is to assist inspectors with travel vouchers and the planning, scheduling and tracking of inspection program activities. They have completed their assessment and have acquired the equipment. They are awaiting a demo to NRR management that will determine whether or not to proceed with the next phase (pilot testing at the RISE sites).

Mobile Computing/Teleworking Productivity Tools

Several other productivity initiatives were identified that would assist with mobile computing and teleworking. These initiatives include: the ability to access e-mail via the Internet on PDAs and Notebook computers, the ability to receive and send faxes via the Internet, and use of web based technology (portal technology). OCIO plans to assess and pilot the first two initiatives with estimated completion dates of November 2002 and May 2002, respectively. A "White Paper" will be developed on NRC's use of Web based technology (Portal Technology) to access critical applications and data and is estimated to be completed in July 2002.

Other Regional Mobile Initiatives

In addition to the initiatives mentioned specifically above, the regions have been supplementing inspectors and managers with dockable laptops. These laptops contain the Agency applications and reference materials necessary to perform their work. In addition, several inspectors have created or purchased CDs that contain additional reference materials (e.g., electronic copy of Title 10 of the Code of Federal Regulations, mapping programs, etc.). They have found this technology to be more efficient for conducting the agency's business while away from the office.

CONCLUSION

Industry and government are implementing mobile workforces. It is estimated that 93,000 government employees are on the road on any given night (Washington Post, 9/4/2000). An IT research organization, Gartner Group, estimates that there are 60 million mobile workers, that the number will grow to 108 million by 2002, and that by 2004, 80% of new applications for consumer use will permit access from mobile devices (GartnerGroup Conference 1999).

Technology is rapidly changing to support business needs. Advances in technology have provided the means for electronic information to become more mobile than ever before. OCIO will continue to monitor advances and best practices in mobile computing and will coordinate with NRC program offices and regions to ensure that NRC business needs are matched with mobile computing technologies that are cost-effective and sufficiently mature to be deployed in the agency.

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