# GSA Develops Information Infrastructure

In the past four years GSA has made great strides in building an award-winning information infrastructure using state of the art technology. The infrastructure is made up of six major components--a packet/circuit switched Wide Area Backbone Network (WABN), nationally deployed Local Area Backbone Networks (LABN), customer-specific secondary networks, high speed Metropolitan Area Networks (MAN), the GSA National Notes Infrastructure (GNNI), and a highly versatile National E-Mail System. It is through this versatile information infrastructure that the operating elements of GSA achieve ubiquitous interconnectivity. It is the long term commitment to excellence at GSA in the development of this information infrastructure that allows GSA to meet or exceed many of the goals of the National Performance Review (NPR). In June 1995, GSA received an award from *Government Computer News* for contributions to improved information resources management through the implementation of the GSA Information Infrastructure (GII). The GII uses Sprint Corp. T-1 (1.544 Mbps) Dedicated Transmission Service (DTS) circuits provided under the FTS2000 contract to connect the GSA Central Office, eleven GSA Regional Office Buildings and the GSA Remote Field Offices. A description of each component of the current GII is as follows:

**Wide Area Backbone Network (WABN)** - The WABN began as a simple star network connecting regional mainframes to a central mainframe in Washington, DC via 9.6 Kbps DDS circuits provided under an AT&T contract. From these humble beginnings has sprouted a burgeoning information highway that now supports multiple protocols, multiple computing platforms, over 15 thousand clients, and transports over 3 trillion characters of information annually. The GSA WABN interconnects 20 major locations nationwide including Alaska, Hawaii, and Puerto Rico and is comprised of over 90,000 miles of Sprint DTS T-1 GSA Backbone circuits and Sprint DTS 56/9.6 Kbps Secondary circuits. The GSA WABN also provides a direct interface to an Electronic Data Interchange value added network and to the Defense Data Network (DDN) for GSA's Department of Defense clients located worldwide.

The GSA WABN is based on Gandalf SL25 Packet/Circuit switches manufactured by Netrix and supplied to GSA through a contract with Unisys Corporation. This is a highly versatile switch that has the capability to multiplex data, voice, and video over the same backbone trunk. GSA has currently implemented connections based on X.25 packet switching, circuit switching, and Frame Relay. Voice and video are expected to be incorporated into the network in the near future.

**Local Area Backbone Network (LABN)** - The LABN consists of multi-protocol routers and over 80 miles of fiber optic cabling used to interconnect GSA workgroup Local Area Networks (LAN). LABN provides high speed interconnectivity between LANs within each major GSA building nationwide with inter-building connectivity provided via the GSA WABN. The typical LABN architecture consists of redundant mutli-protocol routers with fiber optic cabling running throughout the building terminating in LAN hubs where the clients' LAN server is located. This is termed a "collapsed backbone". The LABN implementation has been extremely successful. Current connectivity is running 460% over initial support estimates at the end of the LABN's third production year with explosive current year

expectations to exceed 1200% over initial support estimates.

The GSA LABN is based on Cisco AGS+ and Cisco 7000 multi-protocol routers. These routers are consistently rated as one of the best products of it's kind in today's marketplace. Multiple routers have been installed at the major sites and are interconnected with ethernet and/or an FDDI ring. Protocols currently routed include IPX and TCP/IP with bridging support provided for LAN Manager.

**Secondary Network** - The Secondary Network consists of site specific connectivity in support of remote office locations across the nation. It provides the bridge between offices not housed in a GSA regional office building and the myriad of host processors and servers located throughout the country. In most cases, GSA services have embraced both the PC and LAN technologies in the regional and remote offices.

The Secondary Network is based on LAN-to-LAN or terminal-to-host connectivity over local or long-haul digital circuits. The circuits are provided by local exchange carriers where applicable and from Sprint Corp. via the FTS2000 contract in cases where inter-LATA connections are required. Speed of service ranges from 9,600 Bps up to 1.544 Mbps. The circuits terminate into Datanet front-end processors, CP2000 front-end processors, Gandalf SL2510 PADs, or LABN Cisco routers. Recent augmentations to the GSA Secondary Network includes extending the reach of the information infrastructure to over 130 remote Fleet Management Centers and to over 200 remote field offices. These augmentations entail the integration of remote LANs into the regional LABN and subsequently into the WABN. It is a major technological feat that requires the expertise and dedication of GSA and Sprint Corporation.

**Metropolitan Area Network (MAN)** - GSA has made extensive use of MAN technology in support of a large number of LABN clients within the Washington, DC area and a smaller MAN in the Philadelphia region. The DC MAN currently has 11 router connections providing high speed LAN interconnectivity, IBM host access, Unisys A Series host access, and a high speed connection to the Internet. The Philadelphia MAN consists of 5 sites. Both GSA MANs are based on a 1.17 Mbps service provided by Bell Atlantic called Switched Multimegabit Data Service (SMDS). SMDS is a standards based offering that utilizes cell switching to achieve high throughput, low error rates, and high availability. As this service becomes available in other GSA locations nationwide it will be evaluated for its applicability in LAN interconnectivity and utilized when it makes sense from a business aspect.

**National Notes Infrastructure (GNNI)** - The GNNI is a distributed hub and spoke environment for the efficient and effective replication of the Agency databases. The system is dedicated to the exchange of enterprise notes application data. The hub and spoke network consists of 13 primary servers providing reliable, high speed, dedicated routing of information. Current applications include GSA Orders, GSA-Wide Directory, Vacancy Announcements, TREK, discussion databases, and many more.

The primary hardware and software components located in each GSA Region include a Compaq Proliant 2000 file server operating under OS/2 version 2.11. Each server is configured with IBM TCP/IP,

Novell's Netware requester and backup software (Bakup Wiz). The system is physically connected to a Cabletron 93 Series 10BASE-T Hub which is connected to the GSA Local Area Backbone Network (LABN). The file server uses TCP/IP and SPX as the network transport protocols.

**National E-Mail System** - GSA's present E-mail infrastructure provides E-mail routing and directory synchronization services for 300 plus cc:Mail "client" post offices, serving 15,000 distributed addresses. E-mail messages and directory updates are routed inter- and intra-regionally using 12 cc:Mail "regional hub" post office systems. A National E-Mail regional hub system is located in each GSA Regional Office. Each regional hub system utilizes the GSA Local Area Backbone Network (LABN) for intra-regional connection to local "client" cc:Mail post offices and the Wide Area Backbone Network (WABN) for intra-regional routing of messages between client post offices. In some cases, remote "client" (field) post offices are accessed using telephone modems. Growth of the National E-Mail System has been phenomenal with the current directory containing over 15,000 clients.

The National E-Mail System is made up of regionally located cc:Mail routing hubs that run a cc:Mail LAN based post office on a 486 PC based file server. The file server is running the Netware 3.1 NOS. Messaging communication is performed using a combination of Cubix diskless workstations and 386 PC's running the cc:Mail communications router software, utilizing SPX protocol over the LABN/ WABN. External X.400 E-mail services are provided by a single DOS based X.400 (1984 standard) gateway, running Retix X400 to cc:Mail software and a single Internet gateway, running cc:Mail's DOS based Link to SMTP 2.1 software. Dedicated links are provided to service providers (Sprint for X.400 and SuraNet for Internet) to support the external messaging traffic. Design, installation, and operation of the system was and is performed solely by GSA technical personnel.

The current implementation and ongoing upgrades to the GII meets several goals of the National Performance Review (NPR). The infrastructure allows clients worldwide to interconnect, send messages, and share information. The Internet connection accessed via the LABN architecture provides GSA with access to a wealth of information all over the country and throughout the world. The infrastructure provides a means for GSA internal clients as well as the entire Federal community serviced by GSA to perform their duties in a much more efficient and productive manner thus providing a greater level of service to the American taxpayer. The introduction of much of the technology that comprises the infrastructure has allowed GSA to do more while spending less on operations and maintenance as it did for the older legacy systems. The GII has been used in the implementation of the Fleet Management System re-invention laboratory sponsored by the GSA Federal Supply Service. The LABN will also play a major role in the government-wide implementation of the Telecommunications Ordering and Pricing System as well as all major client/server applications deployed in the future. GSA's National E-Mail System played a major role in support of the Clinton Transition Team and the NPR Team.

Greater, faster, and more reliable access to information within the agency systems and through systems accessible utilizing the Internet. Increased productivity and lower costs with improved service to the citizen. The GII provides GSA business elements with a high level of technology at a reasonable cost thus allowing GSA to re-engineer its business functions in a more efficient manner for the federal

community as a whole, the business community that deals with GSA and ultimately the public taxpaying citizens.

# NARA Issues E-mail Regulations

On August 28, The National Archives and Records Administration (NARA) issued regulations on managing records created or received on E-mail systems. The regulations respond to the increased importance of E-mail as a tool for conducting Federal agency business.

The regulations require agencies to apply the definition of a record in the Federal Records Act to documents created in E-mail systems, just as they apply the definition to records created on other media. Because E-mail is used for a wide variety of formal and informal purposes, not all E-mail will meet the definition. Those E-mail messages and attachments that agencies determine to be Federal records are to be maintained in recordkeeping systems, either electronic, microform, or paper, that make the records accessible to stay for the full retention period required for the records.

NARA's assistance to agencies in managing their electronic records will not end with the issuance of the regulations. A survey of agency implementation will be conducted to gather information that may be useful to other agencies. In addition, staff members will be working directly with many agencies as they implement the new E-mail regulations. NARA is also available to help agencies that are converting their paper recordkeeping systems to electronic recordkeeping systems. This assistance will be at the request of individual agencies and can include briefings for program officials, review of agency directives, and participation in system requirements analyses. The purpose of NARA's involvement is to help agencies fulfill their responsibility to create and maintain records that are adequate to meet their needs and the needs of future researchers.

The new E-mail regulations are available in the August 28, 1995, issue of the *Federal Register*. They are also available over the Internet at **GOPHER.NARA.GOV** (Under: Information for Archivists and Records Managers/Federal Records Management Information/Publications). Copies may be requested by calling NARA at 301-713-7100, ext. 274.

Agencies that wish to have NARA participate in their implementation of E-mail regulations or conversion to electronic recordkeeping should call James Hastings on 301-713-7100, ext. 229.

# 1,000 by 2000 Graduates Receive Certificates

One hundred and fifteen students comprising the second graduating class in GSA's 1,000 by the Year 2000 Program have completed their studies and received certificates in IRM. The graduates, from agencies throughout government, have taken courses in subjects such as systems analysis and design, information engineering, records management, and emerging IRM issues.

The GSA program works in cooperation with the academic community. Universities and colleges offer graduate-level courses to help tomorrow's Federal executives manage IRM more effectively. The ultimate goal of the program is to develop 1,000 Federal IRM managers and practitioners by the year 2000. This second class brings to 216 the number of persons receiving the IRM certificate.

For more information on the 1,000 by the Year 2000 Program or to enroll, contact Annie Barr at 202-208-2780.

# ITS Newsletter Available Electronically

The *ITS Newsletter* (which you now hold in your hand) is available in electronic form. It may be obtained from either the IT Policy On-Ramp on the World Wide Web (WWW), or directly through E-mail.

To access the IT Policy On-Ramp on the WWW, enter the following URL: **http://www.itpolicy.gsa.gov** .

To receive the newsletter directly via E-mail, send an E-mail message to **LISTPROC@ETC.FED.GOV**. In the text portion of the message enter the following: **SUBSCRIBE ITPOLICY-L <YOUR NAME>**. (*Note*: <YOUR NAME> should equal your first name and your last name.)

For further information, contact Richard Kellett at 202-501-1650.

# OIS Offers Security Services

GSA's Office of Information Security (OIS) offers a broad range of system security technical services, INFOSEC and technology training, and government security infrastructure services. These services are designed to meet the emerging technology requirements of both classified and sensitive applications. OIS offices are located throughout the United States, Europe and the Far East. Their engineers and technicians are INFOSEC professionals, trained in accredited schools, and cleared to "Top Secret" and "Special Access."

Services are readily available under the Federal Information Resources Management Regulation Bulletin C-19 and are provided on a reimbursable (fee for service) basis. Services may be customized to specific customer requirements and priced accordingly. Changes in scope or need may be readily incorporated thereby offering maximum flexibility to accommodate technology turnover as well as variations in the availability of funding.

The following are some examples of current OIS projects:

***Executive Level Security Awareness Exercise -*** OIS is working in concert with the National Security Telecommunications and Information System Security Committee (NSTISSC) and National Security Agency (NSA) to evaluate the feasibility of a general executive level security awareness exercise. The exercise would be modeled after an exercise done by the Department of Defense to increase the awareness of national security executive level personnel to the impact of an adversarial attack on information technology infrastructure. The proposed exercise would focus on non-military events that could impact the government's capacity to perform its mission.

***Information Systems Security Officer (ISSO) -*** The OIS, Center for Western Operations is now providing ISSO support services to the U.S. Pacific Command Automated Data Processing Server Site-Japan and the Joint Intelligence Center Pacific Detachment located at Yokota Air Base, Japan. OIS is providing Department of Defense Intelligence Information Systems Security services to include the development of Automated Information System Security Procedures, overseas installation and integration of migration systems in accordance with current security and technical standards, instruction of AIS security practices to site LAN users and AIS professionals, and review operations to ensure INFOSEC and Network security practices are followed.

***NASA IS FIRST CIVIL AGENCY USER OF MISSI -*** OIS has its first civil Agency customer for MISSI Fortezza services. The OIS Center for Eastern Operations is providing the Certificate Root Function for Civil Government Agencies participating in the Multilevel Information System Security Initiative (MISSI) which is a key component of the Defense Messaging System. The National Aeronautical and Space Administration (NASA) initially will receive approximately 40 Fortezza cards to provide secure business quality messaging at a dozen sites with the capability to communicate with other Fortezza users governmentwide.

For additional information call 202-708-7300 or send an E-mail message to **INFOSEC. SERVICE@GSA.GOV**. Internet users can find the OIS home page and more detailed information at **http://www/gsa.gov.irms/ki/ois.htm**.