STATE OF MISSISSIPPI

STRATEGIC MASTER PLAN FOR INFORMATION TECHNOLOGY
2011 – 2013

MISSISSIPPI DEPARTMENT OF INFORMATION TECHNOLOGY SERVICES

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Mississippi Department of Information Technology Services

David L. Litchliter, Executive Director

301 North Lamar Street, Suite 508
Jackson, MS 39201-1495
Phone: 601-359-1395
Fax: 601-354-6016
www.its.ms.gov

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I am pleased to present the *2011 – 2013 State of Mississippi Strategic Master Plan for Information Technology.* Each year the Mississippi Department of Information Technology Services (ITS) publishes the Master Plan outlining the current strategic initiatives of state agencies as well as our approach to achieving the goals and strategies we have set to optimize information technology (IT) services for the State of Mississippi.

ITS has, since its inception, fulfilled its mission by adapting to changes not only in the landscape of Mississippi state government, but also by adopting service oriented business practices that allow for more choice and flexibility in developing and implementing technology solutions. With the fiscal challenges the state faces, the best way to bring about efficiencies in IT for an enterprise the size of state government is to standardize on IT hardware and software to the extent practical, to leverage volume discounts on goods and services, and to share common IT resources (hardware, software, and environmentally controlled floor space) across agency boundaries.

In the next few months, the state will complete construction of the new State Data Center. The Center is designed with significant redundancies in the areas of available power, backup power, and uninterruptable power supplies; on-premises fuel and water tanks; and 12,000 feet of raised floor area for hosting the state's critical information systems. The facility is a major improvement over the current data center and offers connectivity to the state's fiber optic network providing high-speed, multi-path access to the State Data Center from any government building in the Capitol Complex, along Woodrow Wilson Avenue, and at the Education and Research Center. Use of the State Data Center by state agencies and other government entities will improve the security and resiliency of the government systems hosted there and will reduce the costly and less efficient environmentally controlled floor space used to host systems for many state agencies today. The taxpayers of the state have invested $18M to $20M in this facility, and its full utilization by state government is necessary to obtain the maximum benefit.

On behalf of the Mississippi Department of Information Technology Services, I look forward to our continued work together in advancing the goals and strategies presented in this plan.

Sincerely,

David L. Litchliter

David L. Litchliter
Executive Director

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TECHNOLOGY ORGANIZATION

INTRODUCTION

Each year, state agencies prepare an information technology (IT) plan detailing budgeted projects for the upcoming three years. The agencies send these plans to the Mississippi Department of Information Technology Services (ITS). ITS evaluates all the plans and uses the information gleaned from them to:

- Inform the Information Systems Services Division of ITS of procurement or consulting assistance agencies may require for the coming year
- Inform the Data Services and Telecommunications Services divisions of ITS of agency plans that may affect the state's IT infrastructure
- Inform the Strategic Services Division of ITS of agency plans to use new technologies
- Determine how agency plans affect the *State of Mississippi Technology Infrastructure and Architecture Plan* and the *State of Mississippi Strategic Master Plan for Information Technology*
- Inform the ITS Board Members of significant agency projects and initiatives
- Prepare the *State of Mississippi Strategic Master Plan for Information Technology* each year to provide an overall picture of the current efforts and the planned direction of technology in state government

ABOUT ITS

OUR MISSION

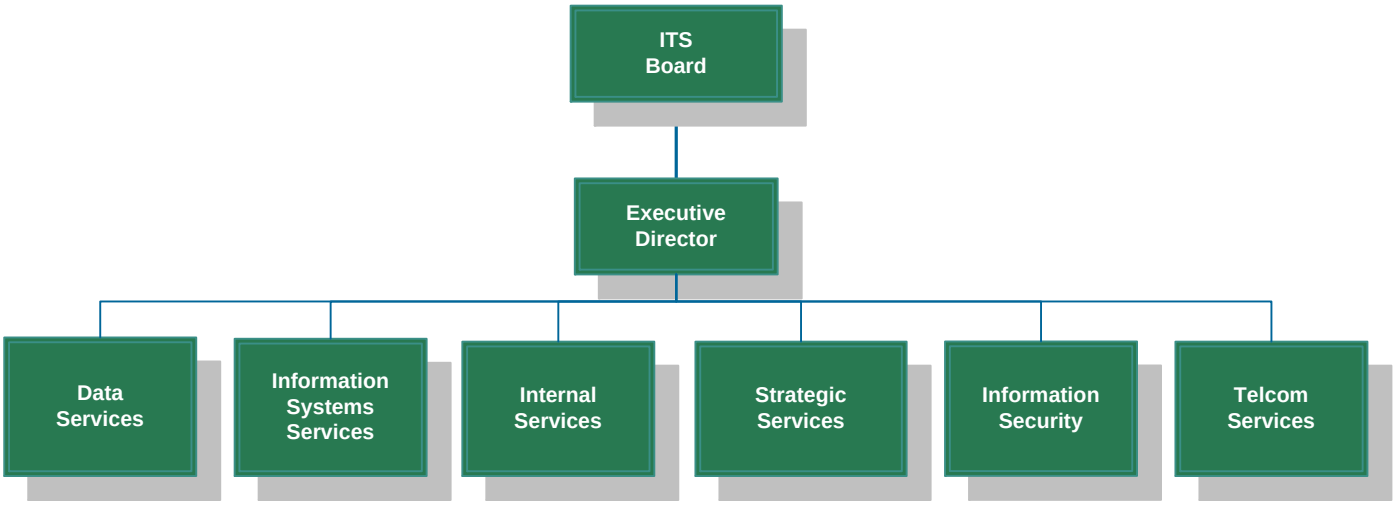
The Mississippi Department of Information Technology Services provides statewide leadership and services that facilitate cost-effective information processing and telecommunication solutions for agencies and institutions.

WE STRIVE TO BE

SERVICE ORIENTED	Partnering with our customers to use IT to achieve their business goals
TECHNOLOGY LEADERS	Working with agencies and institutions to explore emerging technologies and to set policies, standards, and guidelines
FACILITATORS	Communicating effectively with customers, on both an executive and technical level, to identify potential opportunities for IT in the state
RESOURCE PROVIDERS	Providing the infrastructure resources to support IT

THE ITS ORGANIZATION

The Mississippi Department of Information Technology Services (ITS) is comprised of six divisions which provide the resources needed to move Mississippi forward using IT. This diagram depicts the organizational structure of ITS.



DATA SERVICES

The State Data Center is operated by ITS and provides centralized IT resources to agencies requiring shared information, enterprise computing resources, or any other centrally managed resource. The State Data Center supports:

- Mainframes and peripherals shared by numerous state agencies. High quality tiered storage systems available to match performance requirements.
- Virtualized Servers for Microsoft, Red Hat Unix, SUSE Unix, AIX Unix, DB2, and Microsoft SQL with redundant infrastructures for dependable service.
- Email service with internal/external email relays providing SPAM and Antivirus protection that is updated hourly for the latest threats
- Call Center – ITS Service Center providing 24 by 7 Service Level management and dispatching of on call Technical Specialists to resolve issues. The call center software is available as a service for internal use by agencies wanting to setup their own Help Desk/Call Center.
- Application hosting services, Server Provisioning services, co-location services per user agency requirements, Website Hosting, Portal Services, Electronic Payment Services, SLL Certificate Acquisition, Document Management and Storage Systems.
- ITIL model for separate domains for development, testing, Quality Assurance, Training and Production environments with Change Management and production deployment tracked for Quality Assurance.

State agencies utilizing the State Data Center equipment and services will benefit from the following features:

- Secure physical environment monitored and operated 7 days a week, 24-hours a day, including holidays

- Fully redundant power source
- Environmentally controlled space
- Fully equipped fire suppression system with fire and water alarms
- Host, Application, and Network monitoring and alerting for problems and exceptions
- Backup of systems and offsite storage for Disaster Recovery

INFORMATION SYSTEMS SERVICES

The Information Systems Services (ISS) division includes the business functions of the procurement and consulting areas of ITS. ISS is staffed with technology professionals who possess a wide variety of skills and knowledge and are able to fill diverse project roles. ISS is available to work with customers on a multitude of projects such as the following:

Management Consulting, including:

- Project management for strategic IT initiatives
- IT Contract management
- Application development management
- Software quality assurance and testing coordination
- Requirements definition and business analysis
- All aspects of IT procurement

Technical Consulting, including:

- Web-enabled application development
- Web site development and support
- Database development
- LAN support/help desk

INTERNAL SERVICES

The Internal Services Division provides the necessary support to assist ITS service areas in accomplishing their goals. This support includes:

- Administrative support to the Executive Director and the ITS Board
- Human Resources services
- Public Relations services including liaison with the State Personnel Board, the Mississippi Management and Reporting System (MMRS), the Legislative Budget Office, and the Mississippi Legislature
- Agency-wide accounting services, general administration, and receptionist services
- Grant management and administration for the Mississippi Wireless Communication Commission (WCC)

The Internal Services Division also provides education services to state agencies to assist in the productive use of technology-based business tools. Training for state employees is provided at all levels, including end-users, technical employees, and agency managers. Services include:

- Curriculum development
- Designing and developing courses
- Delivering training
- Maintaining training records
- Advising customers
- Coordinating internal training
- Providing informal on-the-job training
- Providing access to the Robert G. Clark, Jr. Building lab facilities

STRATEGIC SERVICES

The Strategic Services Division has several main business functions, all of which involve working closely with state government entities to plan for tomorrow's IT. These business functions include:

- Agency IT Planning - assist in strategic planning in order to guide the state's technology investments. The information gathered is used to define the strategies and goals supporting government initiatives and to prepare the *State of Mississippi Strategic Master Plan for Information Technology* (Master Plan).
- Infrastructure Planning - review legislation, technology trends, plans, policies, and standards to ensure that the information and telecommunications infrastructure is supportive of the strategic needs of the state as documented in the *State of Mississippi Technology Infrastructure and Architecture Plan*.
- Emerging Technology - research and identify those technologies which represent new and significant developments within a field that would benefit state government.
- E-Rate - work with Mississippi Department of Education, the Mississippi Library Commission, federal agencies, and vendors to coordinate activities resulting in maximum E-Rate discounts on qualified technology.
- Web Content and Publications - oversee production of internal and external publications, as well as Web site content, including ITS, MS.gov, WCC, MS-HIN, and GIS.
- E-Government - manage citizen-facing help desk for Mississippi.gov.
- Strategic Projects - perform numerous strategic projects, assigned by the ITS Executive Director to address technology issues at ITS and across the state enterprise such as:
  - Coordination of the American Reinvestment and Recovery Act of 2009 (ARRA)
    - Broadband Technology Opportunities Program (BTOP)
    - Broadband Data Improvement Act (BDIA)
    - State Health Information Exchange Cooperative Agreement Program
    - State Longitudinal Data System Development Program
  - Geographical Information Systems (GIS)
    - Mississippi Geospatial Clearinghouse (MGC)
  - Health IT Initiatives
    - FCC Rural Health Pilot Program

- Mississippi Coastal Health Information Exchange (MSCHIE)

INFORMATION SECURITY

The Information Security Division (ISD) has established enterprise level documents such as the Enterprise Security Policy and the Enterprise Security Plan to assist agencies with establishing policy and plans within their own organizational business units. ISD provides tools to communicate, educate, and bring awareness to the agencies through tools such as the ISD information security website (http://www.its.ms.gov/services_security.shtml), the monthly cyber security newsletter, the SecureNet listserve, the quarterly Information Security Council Meetings, and security classes offered through the ITS Institute. ISD also manages the core and perimeter defense systems for the State Data Center and will continue to add security related systems and services as needed.

The Information Security Division (ISD) will also continue to work with the Governor's Office and Legislature for funding and statutory support, the Auditor's Office for policy compliance, the security vendor community for contractual and consulting support, and each agency's designated security officer for communications and implementation support in order to effectively carry out the responsibilities of this division.

General responsibilities include, but are not limited to:

- Develop and maintain an enterprise IT security plan
- Maintain the enterprise security policy
- Draft cyber-security regulations and legislative initiatives
- Ensure security processes and reporting comply with federal standards
- Establish security related contracts for products and services to support agency initiatives
- Provide ongoing management of security operations
- Promote the business case for investment in IT security
- Conduct or coordinate agency security assessments/audits
- Establish effective communications tools for communications with agency staff
- Provide ongoing security education and awareness programs
- Establish incident reporting mechanisms and incident response procedures
- Coordinate or assist the proper authorities with IT forensics and investigations
- Maintain core and perimeter defense systems
- Coordinate PCI remediation and compliance for the Data Center

TELECOMMUNICATIONS SERVICES

The Telecommunications Services Division is the voice, video, and data network service provider for state government. These services are provided at a reduced cost to state government through volume discount arrangements. The Telecommunications Services staff assists with a variety of telecommunications services, such as:

- Voice, video, and data network infrastructure management
- Local, long-distance, and toll-free services

- Customer support for telecommunications consulting, work order processing, bill management, and help desk requests
- 24-hour technical control center to monitor, diagnose, and test data communication equipment and circuits
- Facilitation of the design, installation, and maintenance of the:
  - Metropolitan Area Network
  - Statewide multi-protocol Wide Area Network
  - Shared state access to the Internet

MISSISSIPPI MODEL FOR THE ENTERPRISE

To ensure the effective and efficient use of public funds, ITS collaborates across government agencies at the state and local level to effectively manage and deliver statewide services and technologies that are beneficial, secure, accessible, and leverage the statewide shared infrastructure.

ITS has outlined the seven guiding principles listed below for shared technology infrastructure in the *2010–2011 State of Mississippi Technology Infrastructure and Architecture Plan*. These principles provide the rationale for adherence, serve as starting points for difficult evaluations and decisions, and guide the design and selection of technology components.

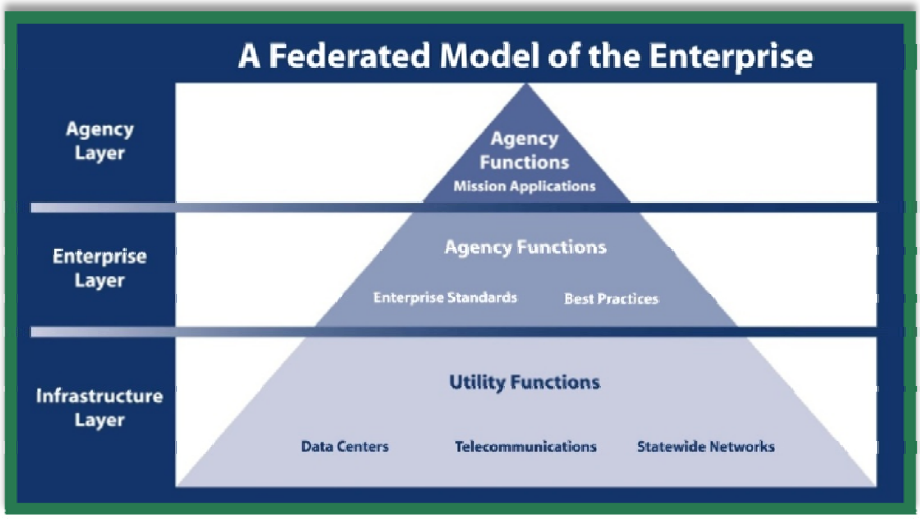
- IT is an enterprise-wide resource, therefore, IT investments will be aligned with the strategic goals of the State of Mississippi through planning and architecture processes
- State IT infrastructure and architecture will support the state's long-term business strategies and plans
- State IT solutions that deliver products and services to stakeholders will leverage the shared technology infrastructure
- State IT infrastructure and architecture will be adaptive and evolve to accommodate changes in business and technology
- State IT solutions will be based upon industry standards and proven technologies that leverage the state IT infrastructure and architecture
- State IT solutions will actively seek opportunities to implement common sets of shared technologies and services
- State IT infrastructure and architecture will provide a reliable, secure, and highly-available network and technology infrastructure

The Mississippi Federated Model for the Enterprise provides a framework across the government enterprise to achieve these principals and presents a vision of a flexible and innovative shared services and technology infrastructure. The model provides the foundation for the development of ITS goals and strategies which are contained in the following section.

The Mississippi Federated Model is comprised of three layers:

- **The Statewide Infrastructure Layer** includes Managed Service Delivery, which encompasses state data center services, communications technology services, Mississippi.gov, and shared applications.
- **The Enterprise Layer** represents the areas where ITS and agencies work together to leverage Mississippi's technology investment. Another aspect of the Enterprise Layer is to ensure that effective and innovative solutions are identified and broadly communicated as best practices across the enterprise. Partnerships are an essential element of the Enterprise Layer as Mississippi government seeks to fully leverage the shared services and technology infrastructure.

- **The Agency Layer** represents agencies' business lines. It encourages creative approaches and supports an innovation centered environment where individual agencies have the time and resources to focus on creative business solutions.



By utilizing the shared services depicted in the bottom layer of the model and by leveraging the policies, best practices, and partnerships reflected in the middle layer, individual agencies are able to innovate with creative solutions that focus on fulfillment of core missions. Deployment of innovative technology solutions will expand access to information and services, equip employees with the tools needed to accomplish their jobs, and improve decision making within organizations.

GOALS AND STRATEGIES

CONTEXT

The economic downturn is having a detrimental effect on state governments across the United States, with the National Conference of State Legislatures noting in a survey that states have experienced unprecedented budget shortfalls over the past several years. In FY 2008, state general revenue expenditures totaled $687.3 billion. In FY 2010, they fell to $612.9 billion. Expenditures are forecast to rise only to $635.3 billion in FY 2011, still $52 billion lower than in 2008. Many states are placing additional emphasis on information technology (IT) efficiency in the face of budget challenges with several states combining services in IT and back office functions to save money. In fact, IT consolidation is a promising area to realize savings and improve efficiency in state government.

As part of the IT planning process, ITS develops goals and strategies that will provide future benefits for the state. Selected goals and strategies have been strengthened and restructured, and new goals have been added. In striving to accomplish the goals and strategies set forth in this plan, ITS endeavors to collaborate with state agencies, universities, public education, and other public entities in Mississippi to focus on excellence through quality of service, responsiveness, innovation, professionalism, and teamwork. The development of Mississippi's 2011-2013 goals and strategies were guided by the following technology leadership principles:

- Drive IT initiatives by business needs, goals, and objectives and have a sound business case before new investments are made
- Maintain flexibility with accountability in order to respond to new service needs
- Foster intergovernmental cooperation
- View IT in Mississippi government from the perspective of the entire enterprise, rather than from the perspective of a few individual agencies or jurisdictions
- Acquire, manage, and use technology resources economically and efficiently
- Protect private information and securely hold and manage technology assets
- Develop a process to share information easily within government organizations and with outside partners
- Aggregate resources, where feasible, in order to reduce duplication, increase efficiency and effectiveness, and increase purchasing power
- Employ technology that is flexible and interoperable so that changing business needs can be responded to quickly and efficiently
- Recognize that many agencies have substantial investments in existing technology and devise strategies that leverage those investments when practical
- Develop an IT workforce with the skills required to develop, manage, and fully utilize the state's IT enterprise

Goal 1

PROVIDE AND SUPPORT ENTERPRISE TECHNOLOGY INFRASTRUCTURE COMPONENTS TO ENABLE THE EFFECTIVE AND EFFICIENT USE OF INFORMATION TECHNOLOGY

Strategy 1: *Utilize the Investment of Current Data Center Technology Infrastructure and Resources*

In recent years, many state IT organizations have seen a proliferation of redundant IT hardware and software resources implemented to address agencies' specific needs. This proliferation has resulted in agency hardware and software infrastructures with independent operations and a broad range of technical environments, service levels, and security standards. Often, these disparate environments are more expensive to maintain and operate than a federated statewide system. This fragmentation creates a duplication of effort and can present a challenge for statewide disaster preparedness and response. Fully utilizing the investment in the current State Data Center is a critical step toward helping government build a more secure, agile, and cost-effective infrastructure for the delivery of government services. Leveraging a shared service environment will give agencies equal access to advanced technologies and will maximize state resources by leveraging economies of scale. Most importantly, by coordinating and sharing resources at the statewide level, agencies can focus more of their technology resources on agency-specific applications that support their unique missions.

Action:

- Expand the usage of Linux on zSeries and Intel platforms as well as migrate candidate applications to Linux environment when appropriate
- Implement Windows and Unix applications on platforms that employ virtualization technologies
- Implement toolsets to provide seamless web access to legacy data residing on any enterprise server
- Expand the use of enterprise performance monitoring software
- Expand Storage Area Network (SAN) environments by upgrading SAN fabric switches, adding tape capability, and increasing online storage capacity
- Re-evaluate backup and recovery software environments
- Enhance business continuity and disaster recovery processes
- Establish state owned disaster recovery facilities
- Amend the disaster recovery agreement with IBM Business Recovery Services to add hot site support for additional Internet connectivity, email, and E-Government applications, and to add individual agency servers as requested by agencies
- Implement a Configuration Management Database system to interface with the Service Desk System to assist with help ticket creation and verification of hardware and software components
- Build on the benefits of implementing ITIL best practices for incident management, service request management, problem management, and change management
- Provide fully functioning Service Center/Call Center to offer a single point of access for all customers – a "one stop shop" for all problems, questions, and answers

- Provide fully functional Service Center/Call Center which allows users or monitors to notify ITS of any problems encountered during their interaction with ITS services and get rapid feedback and tracking of the correction of problems
- Provide for centralized knowledge and consistent service to build confidence within our customer base that the service desk will be able to resolve problems in a faster manner
- Provide service desk facilities to individual agencies providing them an internal service desk ticketing system dedicated to their agency for tracking problems and requests unique to their agency and applications

Strategy 2: *Assist Agencies in Efficient and Cost-Effective Usage of Telecommunications Services*

Statewide voice and data communications is provided for state entities and local governing authorities within the Capitol Complex, the Greater Jackson Area, and across the state through a combination of vendor contracts and directly managed services. The current contract with AT&T for statewide voice and data communications leverages the state's aggregate buying power to ensure that the best possible rates and universal service offerings are available to government entities. This long term contract includes access to local and long distance telephone services, dedicated Internet, broadband data network services, and router management services. Telecommunications services provided directly to agencies within the Capitol Complex include access to the Capitol Complex fiber network, telephone system, voice mail, and high-speed network connectivity to the State Data Center.

Action:

- Provide agencies and institutions throughout the state with cost-effective telecommunications services (voice and data) that support the missions and objectives of state government
- Provide agencies and institutions with statewide access to the Internet and computing resources through the state's shared data network infrastructure
- Continue to enhance the state's communications infrastructure (voice and data) to expanded services and provide communications access to state agencies in the Capitol Complex and throughout the state
- Perform annual needs assessment and upgrades to state communications resources at the enterprise level
- Continue to monitor, enhance, and modify all telecommunications networks to maximize utilization and decrease operational overhead
- Continue to migrate and consolidate legacy vendor billing for telecommunications services to state approved contract
- Manage the implementation of technically sound and cost-effective communications platforms at all newly constructed or renovated facilities by continuing established inter-agency policies and procedures
- Coordinate moves of communications services for all agencies impacted by planned new building and renovation activity
- Provide value-added services to our clients such as end-user training, enhanced billing services, system administration, network monitoring, and on-going project management

- Provide hardware, software, and personnel resources necessary to support the users of the state enterprise voice and data infrastructure
- Examine security functions and services for core voice communications platforms
- Implement Voice over Internet Protocol (VoIP) and other real-time applications, where appropriate

Strategy 3: *Manage the Multi-Protocol Label Switching (MPLS) Statewide Data Communications Network and Related Contracts*

In late 2005, AT&T was awarded a new long term contract for telecommunication services that included the data network products and services for the migration of the legacy ATM backbone network to Multi-Protocol Label Switching (MPLS) based services. MPLS is a secure, redundant, high performance wide area network technology that provides state agencies with access to other agencies, the State Data Center, and the Internet. MPLS is also the cornerstone for the deployment of real-time applications like Voice over IP, real-time video, and unified communications.

The state MPLS network is a critical resource in providing effective and efficient access to state government resources. New products and services are evaluated and added to the contract as needed to ensure the network remains reliable and cost effective.

Action:

- Continually manage the inventory of products and services under the new contract and monitor the value provided through pricing, efficiencies, and the quality of services provided
- Establish and manage the global policies for firewalls, filtering, and intrusion detection services provided within the MPLS network
- Maintain documentation, policies, and procedures for the service desk, supporting the day-to-day operations of the state agency MPLS network
- Provide technical leadership in the design, implementation, and management of a high-speed research network

Goal 2

SAFEGUARD INFORMATION AND TELECOMMUNICATIONS TECHNOLOGY ASSETS

Strategy 1: *Develop and Implement a Comprehensive Security Program*

In a decentralized state government environment, lack of coordination and limited security resources make responding to a severe security threat challenging. Any strategic enterprise approach to information security management in Mississippi must address two basic issues: resources and technology infrastructure. The state must implement a comprehensive security program to leverage and manage all of its critical information and communications technology assets. Additionally, as part of the effort to develop a comprehensive statewide security program, more awareness of agency practices for planning, prioritizing, and budgeting security resources is needed to better understand and determine the effectiveness of agency security programs and practices.

Action:

- Develop a comprehensive business plan for advancing a statewide security program

- Establish effective communication and notification systems for incident and vulnerability alerts
- Establish and document incident response processes and procedures
- Establish a comprehensive security education and awareness program for both government employees and the citizenry
- Establish guidelines for routine core security system audits
- Establish the processes and procedures for the development and promotion of, and the support for security related legislation
- Promote the development of grant writing expertise within the agency to seek special funds for special projects
- Establish and maintain a comprehensive security policy document
- Promote information classification and integrity
- Establish an approach to engage agencies in proof-of-concept pilots
- Provide topical workshops on emerging security issues
- Collect information on agency security assets and resources
- Evaluate commonalities in agency technology security architecture, assets, training, policies, and procedures
- Promote improvements to statewide security practices and state agency policies
- Establish a program to provide security expertise to smaller state agencies that do not have sufficient staff to dedicate to meeting security best practices and state policy

Strategy 2: *Enhance Network Security Operations*

Rapid advances in science and technology have significantly accelerated the convergence of computer and communications networks. However, these convergences and technological advances also pose unprecedented security challenges of uncertain character and scale. In the ongoing development of a statewide network infrastructure, the state must prioritize requirements for security in concert with increased functionality and efficiency. The state must ensure that government communications and computer networks are secured as part of its overall information and communications technology security strategy.

Action:

- Investigate the establishment of a shared security operations center (SOC) for state agencies and other government entities that participate in the statewide network infrastructure
- Continue to operate and maintain perimeter defense systems including firewalls, Virtual Private Networks (VPNs), intrusion prevention systems (IPS), authentication, and event correlation systems
- Adopt and provide network security guidelines and standard operating procedures
- Develop a comprehensive statewide computer incident response and recovery process
- Develop and deploy a comprehensive technology security training program
- Investigate the development of a collaborative cyber security portal for state agencies and local governments

- Work with agencies regarding interoperability, scalability, cost savings, and security benefits to enhance network security

Goal 3

DEVELOP AND PROMOTE ENTERPRISE SOLUTIONS TO MAXIMIZE THE BENEFITS OF SHARED TECHNOLOGY SOLUTIONS

Strategy 1: *Develop and Implement Enterprise Remote Sensing (RS)/Geographical Information System (GIS) Solutions*

House Bill 861, passed during the 2003 Legislative Session, created the Mississippi Coordinating Council for Remote Sensing (RS) and Geographic Information Systems (GIS). The Coordinating Council is tasked with establishing and enforcing policies and standards to make it easier for RS and GIS users around the state to share information and to facilitate cost-sharing arrangements to reduce the costs of acquiring RS and GIS data.

Specifically, ITS was charged with the responsibility of bringing about the effective coordination of policies, standards, and procedures relating to the procurement of RS and GIS resources. In addition, ITS is responsible for development, operation, and maintenance of a delivery system infrastructure for GIS data. Also, codified in the Coordinating Council's legislation, the Mississippi Department of Environmental Quality (MDEQ) was given responsibility for program management, procurement, development, and maintenance of the Mississippi Digital Earth Model (MDEM), which will include the following seven core data layers:

1. Geodetic Control
2. Elevation and Bathymetry
3. Orthoimagery
4. Hydrography
5. Transportation
6. Government Boundaries
7. Cadastral

Action:

- Work with the Coordinating Council to develop an enterprise strategy to cost-effectively deliver geospatial technology, such as GIS resources and information, to state employees, local government, the federal government, and citizens
- Work with MDEQ and other entities in accordance with the Coordinating Council's direction to procure the data that will be implemented in the Mississippi Geospatial Clearinghouse (MGC) (*www.gis.ms.gov*)
- Seek geospatial application growth opportunities with agencies in the development of Web based GIS applications, which leverage the enterprise infrastructure and data of the MGC
- Continue efforts to develop and enhance the content of easily categorized and downloadable data from the MGC
- Focus outreach efforts to include federal, state, and local entities seeking an interface to the MGC

Strategy 2: *Serve as a Strategic Partner on Health IT and Health Information Exchange Initiatives*

Through the American Recovery and Reinvestment Act of 2009 (ARRA), Mississippi is eligible to receive funding through the State Health Information Exchange Cooperative Agreement Program. The funding covers planning and implementation projects to advance appropriate and secure health information exchange (HIE) across the state. The 2010 Legislative Session saw the passage of House Bill 941 providing the initial structure and leadership rules for the statewide HIE and the Mississippi Health Information Network (MS-HIN). With the cooperative agreement funding and additional matching monies, in cooperation with the Mississippi Strategic and Operational Plan Domain Teams and MS-HIN Board of Directors, the state intends to formalize an approved state plan and then implement the infrastructure for a statewide HIE. The MS-HIN will utilize a technology platform capable of scalable and rapid connectivity and be able to interface with providers of care, public health organizations, local and regional health information exchanges, as well as provide connectivity to the National Health Information Network (NHIN).

Action:

- Serve, in close collaboration with the Office of the Governor, as the State Designated Entity (SDE) for the ARRA State Health Information Exchange Cooperative Agreement Program
- Provide continued support for the Mississippi Strategic and Operational Plan Domain Teams established to develop the strategic and operational plan (SOP) for the MS-HIN
- Lead efforts to establish a contract for the statewide HIE in conjunction with the Office of the Governor and the MS-HIN Board
- Serve, in collaboration with the SOP Domain Teams, the MS-HIN Board of Directors in an advisory capacity regarding MS-HIN operations such as staffing requirements, funding options, and milestone dates necessary to achieve a successful statewide HIE
- Support the University of Mississippi Medical Center in the Rural Health Care Pilot Program (RHCPP), sponsored by the Federal Communications Commission (FCC), and designed to significantly increase access to acute, primary, and preventive health care in rural America
- Coordinate other state and federal HIE initiatives such as the Beacon Community Grant, awarded to the Delta Health Alliance for expanding rural health information technology throughout the Mississippi Delta

Strategy 3: *Coordinate Wireless Communication Solutions*

Senate Bill 2514, passed during the 2005 Legislative Session, created the Mississippi Wireless Communication Commission (WCC) and Legislative Advisory Board. The WCC, which is comprised of representatives of state and local governmental entities, is charged with making recommendations and developing strategies for achieving interoperability to ensure that effective communications services are available in emergencies.

Action:

- Promulgate rules and regulations governing the operations of wireless communications systems in conjunction with the WCC

- Develop a plan for statewide wireless communications, including voice and data, with the WCC and its advisory board
- Collaborate on RFP 3429, issued on behalf of the WCC, for the acquisition and three-phase deployment of a statewide, public-safety grade, seamless roaming, and digital trunked land mobile radio system
- Collaborate on RFP 3489, issued on behalf of the WCC, for statewide cellular services, designed to encourage the statewide build-out to deploy cellular voice and data services statewide
- Investigate the feasibility of using a common governing structure for managing and directing wireless projects and operations across state entities, focused on improving the effectiveness of wireless communications and serving as the foundation for the interoperability needed to protect the health and safety of Mississippi citizens
- Provide technical and management expertise in the implementation of Long-Term Evolution technology as a platform for providing broadband mobile data access to public safety personnel across the state

Strategy 4: *Initiate Innovative Procurement Strategies and Practices*

ITS assists state agencies, universities, community colleges, and governing authorities with the acquisition of IT hardware, software, and services. An ongoing initiative is the re-engineering and continuous improvement of processes and procedures through both strategic and incremental changes. Improvements to the procurement process focus on the following initiatives with the goal of providing better service to our customers and cost savings to the state.

Action:

- Facilitate dialog between the ITS Board and customer agencies and institutions on technology strategy and initiatives
- Coordinate the procurement process with the IT planning process to address customer requests and technology direction more proactively
- Identify and promote opportunities for utilization of existing technical resources in lieu of procuring redundant equipment and products
- Coordinate the requirements of multiple customer entities in developing procurement instruments that leverage the state's combined purchasing power to achieve the best possible discounts for technology products and services
- Facilitate the acquisition and adoption of enterprise solutions to provide standard products across state government for common functions such as imaging, work flow, and licensing
- Incorporate the technology procurement process into the overall E-Government initiatives of Mississippi's state government
- Make the procurement process more accessible to both vendors and procurement customers by expanded utilization of web-enabled applications, including:
  - Web publication of Request for Proposals (RFP) content and advertisements
  - Dynamic presentation of procurement status information
  - Publication of agendas for ITS Board meetings (upcoming and historical)
  - Publication of procurement outcome information

- Continue to evolve and standardize best practices for RFP format and content, proposal evaluation methodologies, and vendor contracting
- Work with manufacturers and resellers to establish an EPL business model that provides customers with a choice of current technologies in a timely and cost-effective manner
- Continue the implementation of a project management methodology for strategic projects in state government, focusing on meeting stakeholders' objectives and effectively identifying and managing project risks
- Improve the internal ITS procurement process, emphasizing consistent, appropriate, and timely processing of all requests, plus effectively responding to seasonal workload fluctuations caused by customer funding constraints
- Identify opportunities to appropriately delegate additional authority and responsibility for routine agencies and institutions technology procurements
- Preapprove commodity-level procurements at plan review time for agencies and institutions with comprehensive technology plans
- Provide proactive training to the vendor and customer communities regarding procurement law and procedures, timelines, and best practices
- Seek input from the vendor and customer communities regarding their technology directions and the impact of procurement procedures upon their business models and the state's enterprise architecture

Strategy 5: *Investigate the Implications and Business Efficiencies of Providing Standardized Email Infrastructure and Services*

The decentralized nature of the state's email systems has resulted in noteworthy inefficiencies. There is no common address book for cross-agency interaction, and calendaring activity is limited to each agency's email system. These systems are all based on a wide variety of different mail implementations. There is no common naming convention, making it difficult to ascertain email addresses. Nor are there any common email policies across the state. A standardized email system, and the associated unified network and directory services, will make the state more nimble in its ability to deploy new applications and will lower the deployment cost of new applications.

Action:

- Research the potential cost savings and operational efficiencies gained by implementing a standard messaging architecture containing a common mail directory
- Solicit executive support for building a central email system for state government which will result in lower overall costs, significantly better uptime, a broad expansion of email features and cross-agency efficiencies
- Investigate the benefits of building a central email system prior to agency engagement to clearly demonstrate concrete value to cautious agencies and more effectively build a valuable business case
- Research and document the potential for lowering overall costs, improving uptime, expanding email features, and enhancing cross-agency efficiencies
- Examine the value in a common, unified network and directory services, regarding the ability to deploy new applications and lower the deployment cost of new applications

Goal 4

PROMOTE THE MANAGEMENT AND FUNDING OF IT AS A STRATEGIC INVESTMENT

Strategy 1: *Raise Awareness and Seek Alignment of the IT Investment Process*

The National Association of State Chief Information Officers (NASCIO) and the National Governors Association (NGA) strongly emphasize the need for a strategic IT investment process which ensures that state agencies utilize innovative, smart buying, investment techniques. With IT becoming a critical component of state government infrastructure, many states have focused on using IT to solve problems in government operations. However, choosing an IT application requires a strong case that it can better meet citizen's needs, facilitate business/government interactions, and improve internal government processes, at reasonable cost and with ease of implementation. Currently, the budgeting and funding of IT within Mississippi state government is accomplished on an agency by agency basis. Many opportunities exist that Mississippi can leverage to accomplish an increasingly strategic investment of IT resources, including strategically planning for upgrades, transferring cost savings to fund applications, and implementing return-on-investment programs.

Action:

- Seek opportunities to develop and implement IT services that are common to multiple agencies and governmental programs in order to minimize duplication of efforts among organizations, take advantage of economies of scale by spreading the fixed costs over larger volumes to reduce overall unit costs, and efficiently leverage scarce and expensive IT staff resources
- Investigate enhancing the oversight of ITS to include more input and direction from the state's executive and legislative leadership with aims to achieve economies of scale, increase accountability, and implement enterprise-focused solutions, which address the whole enterprise of state government across all functions and enables the use of common software, hardware, communication systems, data applications, and professional service contracts
- Consider enhancing the accountability of ITS to enable strategic technology projects to be critiqued and prioritized by the state's executive and legislative leadership, with funding appropriated via a separate budgeting process and management monitored and reported through a Project Management Office
- Improve current, traditional IT funding approaches with an expansion and wider adoption of innovative and alternative funding models focused on enabling the state to deliver savings and improve services to citizens
- Investigate the transfer of savings from shared service IT initiatives to fund applications and upgrades

Strategy 2: *Develop a Technology Blueprint that Drives Improved IT Coordination and Investment*

Many states are investigating the link between a Technology Blueprint (TB), often referred to as an Enterprise Architecture, and IT procurement services. Both disciplines arose out of the need for better government decision making and strive to instill standardization through rules and processes placed upon the state's decision making processes. A technology blueprint depicts the technology components for a statewide IT system. It is a holistic, comprehensive plan for a government enterprise that integrates information and services across agency boundaries. A technology blueprint supports the

coordination of various IT support functions. It also can create and enforce statewide standards for data, security, purchasing, management, and operational procedures.

Action:

- Implement a standards-based blueprint for the state's use of technology, which addresses the whole enterprise of state government and enables data sharing across all government functions to enable the use of common software, hardware, communication systems, and data applications
- Optimize shared technology components, including mainframe computers, email systems, data centers, servers, vendor platforms, storage, help desks, applications, and networks to reduce initial purchase and ongoing maintenance costs, ensure better use of existing IT assets, and promote interoperability
- Review existing policies, standards, and guidelines for consistency and improvement
- Work with agencies to identify and review business processes that are common across multiple agencies
- Support inter-agency efforts regarding collaborative initiatives for specific business areas such as GIS, employment security, retirement systems, and human services
- Develop, when appropriate, a business case that considers alternatives and recommends actions related to future shared services that will deliver cost savings and value to agencies

Goal 5

PROVIDE INNOVATIVE AND TIMELY IT TRAINING TO ALL LEVELS OF STATE EMPLOYEES

Strategy 1: *Provide Online Learning as an Alternative to Instructor Led Training*

The use of Web-based training is growing rapidly. This technology allows training at the employee's desktop. More and more vendors are offering courses required for various certifications through technology-delivered instruction. ITS provides self-paced, online training to Mississippi public entities via the Internet. State agencies, county and local governments, public schools, community colleges, and institutions of higher learning are eligible to participate. There are currently over 1,000 courses in technical, end-user, and professional development topics; new courses are added quarterly. Training is available anywhere, anytime. ITS will continue to offer a variety of IT-related topics using this media.

Strategy 2: *Provide Training for End-Users in the Use of Technology Products*

ITS provides an ongoing educational program designed to enhance and improve the skills of state employees who develop or use information systems. The curriculum is continually updated to keep pace with changing technology. Instructors who are qualified through education and experience provide formal classroom instruction. Hands-on training is provided in state-of-the-art computer laboratory facilities. ITS also provides customized information systems training for Mississippi public entities upon request.

Strategy 3: *Implement Training to Encompass New Technology Skills Needed for IT Initiatives*

Training for new initiatives such as Enterprise Data Systems and Network Infrastructure will be needed as more agencies and local governments begin utilizing these technologies. ITS will provide training as needed in these technologies for government entities. As other new technologies are adopted, efforts will be made to address related training.

Action:

- Provide self-paced, online training to Mississippi public entities via the Internet
- Provide continuous curriculum updates to keep pace with changing technology
- Provide customized information systems training for Mississippi public entities upon request
- Increase number of course offerings to keep pace with technology, new products, and new releases of software, either through instructor led training or online learning
- Provide a comprehensive information systems training program for end-users, technical, and managerial personnel
- Upgrade lab facilities to provide training on new products and new releases of software

TECHNOLOGY SERVING MISSISSIPPI

Each year, state agencies in Mississippi work to enhance government services by intelligently leveraging technology to implement strategic systems. The systems featured in this year's "Technology Serving Mississippi" section of the *2010 – 2012 State of Mississippi Strategic Master Plan for Information Technology* provide improved services to citizens, businesses, and state employees through the implementation of innovative IT applications.

MEDICAID ELECTRONIC HEALTH RECORD SYSTEM AND E-PRESCRIBING SYSTEM

For many years, the Division of Medicaid (DOM) has been aware of the need for a combined Medicaid Electronic Health Records System and statewide e-prescribing system. In Mississippi, health care is delivered by a variety of providers working in a large array of inpatient and ambulatory settings, who utilize different technologies with no clearly defined interoperability. Medicaid providers have found it challenging in the past to obtain complete health care information on beneficiaries, which adversely affects their ability to provide beneficial treatment.

In response to Medicaid provider needs, the State of Mississippi has implemented a system known as Medicaid Electronic Health Record System and e-Prescribing (MEHRS/eScript). The system was launched in June, 2010 supporting over 650,000 beneficiaries. Within the first 90 days after launch, 450 Providers and 650 administrative and clinical staff were registered to use MEHRS/eScript for a total of 1,100 registered users. The MEHRS/eScript system is available to all Mississippi Medicaid Providers at no charge.

This system offers Providers capabilities for:

- An Electronic Health Record based on data from Medicaid claims, showing a rolling 36-month history of procedures, diagnoses, and medications for each Medicaid beneficiary
- e-Prescribing, based on Medicaid formularies, with drug utilization review alerts
- Opportunities for care improvement when comparing a patient's information against evidence-based quality measures
- Entry of patient-reported allergies, immunizations, self-reported medications, and vitals

The goals for the MEHRS/eScript project include:

- Online Provider access to Medicaid beneficiaries' claims-based clinical and medication history
- Identification and treatment of health problems at the point of care with the potential for reduction of duplicated procedure expenses
- Access to beneficiary history in situations where the beneficiary is unable to communicate
- Access to beneficiary history in times of disaster
- Reduction in prescription errors due to elimination of hand-written scripts

Phase 2 of the project began in August 2010 and is scheduled for completion in March 2011. The following functionality is being addressed in Phase 2:

- Population predictive modeling tools and reporting

- Additional workflow and data interoperability with Mississippi Coastal Healthcare Information Exchange (MSCHIE), Delta Health Alliance (DHA), and the statewide HIE when available
- Workflow and data interoperability with requested practice management and electronic medical records systems in Mississippi communities of health systems
- Additional clinical population management and Clinical Decision Support tools
- Additional advanced secure messaging
- Personal Health Record (PHR) Management Console
- Additional population predictive modeling tools and portal options

Mississippi Department of Archives and History – Mississippi Coast Heritage Trail

The State Historic Preservation Office (SHPO) of the Mississippi Department of Archives and History (MDAH) has been tasked with developing a GIS based system to map archaeological sites, National Register properties, and above ground historic resources that are located within the disaster areas defined by Presidential Declaration FEMA-1604-DR and its amendments. This project was developed programmatically in consultation with and mutual agreement between the Tribal Historic Preservation Office, the State Historic Preservation Office, and the Mississippi Development Authority.

The majority of this trail will be Internet based and will consist of a large web presence that begins with the coast with future plans to include the entire state. The main focus will be on the known archaeological sites such as Graveline, Krebs House, Jackson Landing, the Moran site, Ft. Maurepas, Claiborne, Cedarline, Deer Island, Harvey and a few architectural sites. These archaeological sites would be ones that cannot be experienced any way but through the web due to access issues.

This system will improve the public's knowledge about the range and extent of historic and prehistoric sites within the Mississippi Gulf Coast Region and will provide the SHPO with a new tool to better evaluate and manage these cultural resources. Once completed the system will provide a tool for the staff of MDAH to add and maintain records, create reports, perform research, perform cross-divisional regulation tasks, and provide for the easy review of historic building surveys.

This application is currently in development and is projected to be completed by July 1, 2011.

Mississippi Department of Corrections – Electronic Medical Records

The Mississippi Department of Corrections (MDOC) has implemented a comprehensive electronic medical records system called Centricity to automate patient records and provide clinicians fast access to a patient's complete record. The Centricity system was customized for use by MDOC and interfaces with MDOC's offender management system. Prior to the implementation of Centricity, offender medical data was maintained on paper charts and stored at the facility where treatment was initiated. As offenders were transferred from one facility to another, it became problematic to ensure that the offender's medical record was also shipped to the receiving facility. The system captures all health care encounters, diagnoses, lab results, and prescribed medications. This system is beneficial in ensuring that offenders have continuity of care upon release from MDOC's custody.

Mississippi Broadband Mapping Program

The Mississippi Broadband Taskforce (MBTF) was established by Governor Haley Barbour and charged with developing a comprehensive strategy to expand the use of broadband across the state. In

Mississippi, the Office of the Governor led an effort to solicit proposals from qualified vendors interested in providing broadband mapping/deployment/adoption consulting and services for the MBTF. This initiative will focus on conducting research/mapping to provide a comprehensive picture of current infrastructure deployment and availability in the state, working with providers to encourage build-out in areas lacking accessibility, while engaging local community teams to analyze current use of broadband and educate on opportunities.

Specifically, the State Broadband Data and Development Grant Program is a competitive, merit-based, matching grant program that implements the joint purposes of the American Recovery and Reinvestment Act of 2009 (ARRA) and the Broadband Data Improvement Act (BDIA). The Program will provide up to an approximate $240 million in grants to assist states, or their designees, to develop state-specific data on the deployment levels and adoption rates of broadband services. The data, including publicly available state-wide broadband maps, will also be used to develop the comprehensive, interactive national broadband map required by the ARRA. This map is to be created and made publicly available by February 17, 2011. The national broadband map will publicly display the geographic areas where broadband service is available; the technology used to provide the service; the speeds of the service; and broadband service availability at public schools, libraries, hospitals, colleges, universities, and public buildings. The national map will also be searchable by address and broadband service providers will have the option to make their identity available.

This data collection and assimilation effort will focus on gathering comprehensive, statewide broadband data on a detailed and disaggregated basis (address level), processing and mapping the information into a GIS system, inventorying the data, and providing a means to aggregate the result for a comprehensive broadband map for the State of Mississippi. This program further involves developing continual means to keep the information updated, providing effective public access to the data, and supporting data services and reports to the National Telecommunications and Information Administration (NTIA), where the data can be used to form a comprehensive nation-wide broadband mapping platform. In this effort, the MBTF has provisioned resources and solutions to ensure the security of sensitive data by using data-guard solutions and providing automated data access, maintenance, and updates.

However, beyond the stated objectives, the MBTF recognizes the importance of the effort in the promotion of business opportunities; public access applications for education, health, and commerce, and extending the reach of remote communities to a wider range of services. As such, other notable objectives of the program include activities that would guide identification of gaps and constraints that are preventing wider coverage, programs to assist in determining tactical and short-term solutions to close the gaps, and efforts to form the basis for evidenced based and data driven strategic planning and investments in the state's infrastructure and/or policies aimed at promoting broadband coverage and related services.

In conjunction with the vendor selected via the RFP process, the MBTF is on target to collect the required data and meet the federally mandated timeline of delivering a substantially completed data set on or before February 1, 2010, and the complete data set by March 1, 2010. Additionally, preliminary analyses for unserved/underserved areas, dasymetric (sub-census) analysis of the areas and Emergency Services' and Community Anchor's access to broadband analysis is expected to be developed in January, April, and June of 2010.

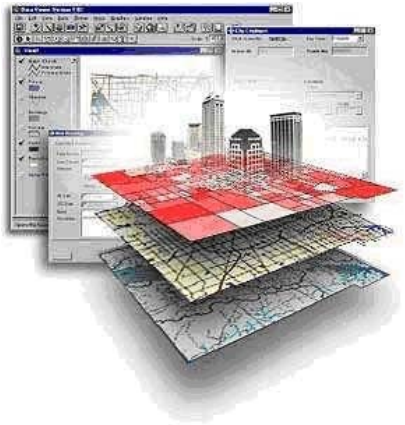
TECHNOLOGY FOR INTERGOVERNMENTAL COLLABORATION

GEOGRAPHIC INFORMATION SYSTEMS

The Mississippi Geospatial Clearinghouse

The Mississippi Geospatial Clearinghouse (MGC) was placed in production in September 2007 and serves as the state's premier portal for the Geographic Information System (GIS) community to search, discover, share, and use a comprehensive warehouse of Mississippi's geospatial resources. The goal of the MGC is to make the application of spatial information GIS technologies within the state of Mississippi more efficient by eliminating the duplication of spatial data production and distribution through cooperation, standardization, communication, and coordination. Moreover, the MGC is the primary location for the Mississippi Digital Earth Model (MDEM). The MGC is housed in the State Data Center at the Mississippi Department of Information Technology Services (ITS).

State agencies, county government, city government and the public can download data that has been stored in the MGC. This data provides the foundation for applications to be developed using GIS technology to meet business needs of the governmental agencies and/or public interest.



The requirement to provide operational storage and dissemination of high-resolution digital contour maps from recent MDEM data collection activities and the development of new technologies has prompted the need for a major software upgrade and updated design to the MGC. The upgrade, now in development, will reflect a new information delivery interface utilizing up-to-date software releases that will lay the groundwork for future upgrades as needed. The design will provide the user with simple and easy routes to the three delivery mechanisms: visualization, information search, and data download. The visualization will utilize the web-browser add-on, Adobe Flex. This easy to navigate and responsive viewer will access ESRI map services and ITS-hosted map and image services. The viewer will retain or improve on available user tools to allow for locating, drawing graphics, measuring, printing, and exporting maps as seen by the user. The information search mechanism will be made more user-friendly by differentiating between MDEM and Non-MDEM datasets allowing for a natural flow to data download. GIS data will be available in "Quick Download" packages or through custom online requests.

This data, primarily the MDEM, provides the foundation for applications to be developed using GIS technology to meet the business needs of the governmental agencies and/or public interest. ITS is continually focused on the development and enhancement of the MGC, as well as maintenance of GIS hardware and software procurement instruments for state agencies and local governing authorities. The projects described in the following paragraphs will leverage the MGC infrastructure.

ITS Telecommunication Division / MapITS

The Telecommunication Services Division of the Mississippi Department of ITS currently manages all voice and data systems for Mississippi state government via the MySoft software package from Compco. The Telecommunication Services Division uses MySoft to locate and process repairs or changes to voice-related hardware. The exact physical location of this hardware is determined through a hardware naming convention and through historical knowledge. This project provides the functionality to geographically

locate all existing buildings in the Capitol Complex, inter-connecting lines, and access points and link these locations to the MySoft database.

Even though this application will remain non-GIS centric, the system will require the collection of GIS data in the form of building footprints, communication centerlines, and access points. An internal web based mapping application has also been written to allow staff to explore telecommunication assets through a viewer that can link to the data in MySoft. Currently in the final phase of testing, this application provides a high-level management tool and help desk aid.

Architectural and Historic Structures

The State Historic Preservation Office (SHPO) of the Mississippi Department of Archives and History (MDAH) has been tasked with developing a GIS based system that will map archaeological sites, National Register properties, and above ground historic resources that are situated within the disaster areas defined by Presidential Declaration FEMA-1604-DR and its amendments. This system should improve the public's knowledge about the range and extent of historic and prehistoric sites within the Mississippi Gulf Coast Region and will provide the SHPO with a new tool to better evaluate and manage these cultural resources.

The Architecture and Archaeology divisions of MDAH are currently managing information about historic places in slightly different ways. The level of completeness with regard to this information is different for each division. The opportunity exists to bring the information in both divisions to the same completion level and provide management of this information through a common interface. The daily maintenance of these combined records management systems will be housed at the State Data Center. This electronic data will have support and can be accessed twenty-four hours a day, seven-days a week. In addition, all upgrades and maintenance to the combined records management systems will be performed by ITS staff which will free resources at MDAH.

Once completed the proposed system will provide a tool for the staff of MDAH to add and maintain records, create reports, perform research, perform cross-divisional regulation tasks, and provide for the easy review of historic building surveys.

Archaeology and Historic Sites

The State Historic Preservation Office (SHPO) of the Mississippi Department of Archives and History (MDAH) has been tasked with developing a website to publish the rich, but not well-known archaeological history of Mississippi. This project intends to educate the citizens of Mississippi about their archaeological heritage through an interactive website that includes virtual tours of archaeological sites. The website will reach citizens as well as teachers, students, and professionals. The website will include key sites in the Mississippi coastal area but will be designed to include information statewide when available. The virtual tours will guide users to experience historic sites that are now non-existent or inaccessible. The site will also guide users, through the use of podcasts and downloadable content to visit actual sites.

Small Community Assets

The Asset Development Group of the Mississippi Development Authority has been tasked with developing a GIS based system that will highlight the resources of small communities in Mississippi. MDA created the Asset Development Group to focus on non-traditional economic development opportunities unique to Mississippi. Such opportunities often require longer term development, guidance, vision and support. This system will showcase resources of small communities to the public. The site will provide tools to tourists, the film industry, and businesses. A tourism-focused application foundation will be created with expandable functionality and the ability to include program areas as data sources become available. The foundation will be an application that has all of the basic functionality that is necessary in any web-based mapping program. This will include multiple base maps, keyword search,

address search, zoom/pan, multimedia pop-ups and other basic functions. The foundation will be designed in a way to provide for the easy expansion of more complex functions such as a trip planner. Through the use of standard web feeds, like GeoRSS, the foundation can be designed to consume these feeds as they become available.

HEALTH INFORMATION TECHNOLOGY

In 2007, Governor Haley Barbour established the Mississippi Health Information Infrastructure Task Force for the purpose of improving the quality and safety of healthcare delivery by means of the expedited adoption and implementation of Health Information Technology (HIT) and Health Information Exchange (HIE) across the state. The first milestone for the task force was the development of an action plan for the *Mississippi Health Information Infrastructure*, published in October of 2007. The plan detailed recommended activities, staffing requirements, funding options, and milestone dates necessary to achieve the goals set by executive order within the designated two year time frame. Specifically, in addition to serving on the task force, ITS collaborated with members serving on the Technical/Interoperability Work Group. The proposed charter of this work group included addressing the IT-related issues associated with implementing HIT and HIE and developing recommendations concerning technology standards, infrastructure, and technical operations.

Work accomplished by the task force led to a recommendation that Mississippi implement a "proof of concept" HIE project. Soon thereafter, the Office of the Governor was able to secure funding to establish the Mississippi Coastal Health Information Exchange (MSCHIE). ITS provided technical advice and oversaw the procurement process for RFP 3560, developed for Mississippi Foundation for Medical Care, Inc. dba Information and Quality Healthcare (IQH). The primary goal of the MSCHIE RFP was to establish a restructuring effort to improve patient care delivery in Mississippi, particularly for Pearl River, Stone, George, Hancock, Harrison, and Jackson counties. These are the state's six coastal counties that were most affected by Hurricane Katrina.

After the completion of the procurement process for RFP 3560, Medicity Inc. received a notice of award from IQH on September 20, 2008, as the best technical and lowest cost vendor. When subsequent contract negotiations were finalized, MSCHIE began "Phase I" of implementation in October 2008 with three disparate coastal stakeholders: Coastal Family Health Center, Memorial Hospital of Gulfport, and Singing River Hospital System. These three provider organizations have begun to share basic clinical information, lab results, and medication history, over the MSCHIE, and new data feeds continue to be added. "Phase II", currently underway, is expanding the HIE by adding more hospital participants and establishing an extensive provider outreach program.

Through the American Recovery and Reinvestment Act of 2009 (ARRA), Mississippi is eligible to receive funding through the State Health Information Exchange Cooperative Agreement Program. The funding covers planning and implementation projects to advance appropriate and secure health information exchange across the state. With the cooperative agreement funding and additional matching monies, the state intends to formalize an approved state plan and then implement the infrastructure for a statewide HIE, the Mississippi Health Information Network (MS-HIN). The MS-HIN will utilize a technology platform capable of scalable and rapid connectivity and be able to interface with providers of care, public health organizations, local and regional health information exchanges (such as MSCHIE), as well as provide connectivity to the National Health Information Network (NHIN).

The current Mississippi Health Information Infrastructure Task Force structure was to expire December 31, 2009. However, since the proposed permanent governance structure for the MS-HIN was not to be introduced until the 2010 legislative session, the decision was made to extend the duties of the task force until June 30, 2010. While acknowledging that effective project management will be essential to achieving success during the initial phases of the MS-HIN, the task force was instrumental in providing

key stakeholders in the development of the state's strategic and operational plan as well as in achieving the project's overarching objectives and outcomes.

At the request of Governor Haley Barbour, the Mississippi Department of Information Technology Services (ITS) is serving as the State Designated Entity for the State Health Information Exchange Cooperative Agreement Program. In close collaboration with the Office of the Governor, ITS is responsible for key day-to-day tasks such as overall project management and monitoring of the statewide HIE's ongoing progress, preparation of reports, and communications with the Office of the National Coordinator of Health Information Technology (ONC) and other partners. The Governor also appointed a State Health Information Technology (HIT) Coordinator assigned for overseeing and managing the required Strategic and Operational Plan (SOP) process for the statewide HIE.

The 2010 legislative session saw the passage of House Bill 941 providing the initial structure and leadership rules for the statewide HIE, the Mississippi Health Information Network (MS-HIN). Following the example set forth in the ONC Cooperative Agreement, five Domain Teams were formed to help develop the SOP; Governance, Finance, Technical Infrastructure, Business and Technical Operations, and Legal and Policy. Each team consist of 7 - 10 representatives, including legislators, physicians, public and private healthcare administrators, public interest liaisons, and payers, chosen across the state for their knowledge of information technology and expertise related to a particular Domain Team.

The Domain Teams began the SOP process by meeting in joint session in June 2010 then continued to meet frequently over the next four months to provide insight and direction for the MS-HIN's SOP. The Domain Teams reached a consensus on the content contained within the SOP and it was submitted to the ONC on September 27, 2010. It is expected the State will receive direction or approval from the ONC regarding the SOP and know when implementation funding for the MS-HIN will be made available by the end of November 2010.

STATE BROADBAND DATA AND DEVELOPMENT PROGRAM

The State Broadband Data and Development (SBDD) Program implements the joint purposes of the Recovery Act and the Broadband Data Improvement Act, which envisioned a comprehensive program, led by state entities or non-profit organizations working at their direction, to facilitate the integration of broadband and information technology into state and local economies. Economic development, energy efficiency, and advances in education and health care rely not only on broadband infrastructure, but also on the knowledge and tools to leverage that infrastructure.

Since the program's inception, the National Telecommunications and Information Administration (NTIA) has awarded a total of $293 million to 56 grantees, one each from the 50 states, 5 territories, and the District of Columbia, or their designees. Grantees will use this funding to support the efficient and creative use of broadband technology to better compete in the digital economy. These state-created efforts vary depending on local needs but include programs to assist small businesses and community institutions in using technology more effectively, research to investigate barriers to broadband adoption, innovative applications that increase access to government services and information, and state and local task forces to expand broadband access and adoption.

Since accurate data is critical for broadband planning, another purpose of the SBDD program is to assist states in gathering data twice a year on the availability, speed, and location of broadband services, as well as the broadband services that community institutions, such as schools, libraries and hospitals, use. This data will be used by NTIA to update a public searchable, interactive national broadband map once it is completed by the agency by February 17, 2011.

In January, 2010, the Mississippi Office of the Governor, the state's eligible entity, received a SBDD grant award comprised of approximately $1.5 million for broadband data collection and mapping activities and $500,000 for broadband planning activities over a two-year period, bringing the total grant award to approximately $2 million. ITS is spearheading the broadband mapping initiative in conjunction with our mapping vendor, BroadMap, the entity chosen by the Mississippi Broadband Task Force to create the statewide broadband inventory map for Mississippi.

In September, 2010, the Office of the Governor received an additional award from NTIA of nearly $5 million for broadband planning and mapping activities under the SBDD Program. This is a supplement to the original $2 million award Mississippi received in January. This funding will allow the state to extend its current two year broadband data collection program for an additional three years and allow Mississippi to identify and implement best practices in broadband mapping. Mississippi will utilize a portion of the funding to support the creation of the Mississippi Broadband Connect Coalition, a non-profit, public-private partnership focused on producing a comprehensive statewide strategic plan for improving digital literacy, increasing access to broadband and enabling greater adoption of broadband in the state.

Through a partnership with Mississippi State University Extension Service which will begin in 2011, this strategy will be translated into activity in all parts of the state. Extension Service personnel will be responsible for holding planning meetings at the regional and local level designed to identify barriers to adoption of broadband internet and local solutions. Over the life of this multi-year grant program, Mississippi hopes to improve broadband access and use for its citizens and maximize its benefits for the state.

WIRELESS COMMUNICATIONS AND INTEROPERABILITY

The Mississippi Wireless Communication Commission (WCC) and Legislative Advisory Board, created during the 2005 Legislative Session (Senate Bill 2514), is responsible for the efficient use of public resources to ensure that law enforcement personnel and essential public health and safety personnel have effective communications services available in emergency situations as well as ensure the rapid restoration of such communications in the event of disruption caused by natural disaster, terrorist attack, or other public emergency.

The commission's core focus is to provide communications resources to the people who protect our citizens. The WCC has been given the responsibility of constructing, operating, and maintaining the primary statewide communications network for state and local first responders and administrators. To that end, in June 2006 a Request for Proposal (RFP) was issued resulting in a contract award to Motorola. Included in this agreement is the build out of the 700 MHZ Mississippi Wireless Information Network (MSWIN), scheduled in three major phases.

Phase 1 is made up of 44 tower sites in the southern region of the state. This phase was formally accepted by the state in April 2010 and is operational.

To enhance the state of readiness during emergencies, three 4-channel RF Sites on Wheels (SOWs) and one deployable Master Site on Wheels (MSOW) are a part of the MSWIN configuration. If one of the three SOWs is destroyed by a catastrophic event, the MSOW will provide backup.

Phase 2 is made up of 52 tower sites in the central region of the state. The Site Candidate Information Packages (SCIPS), which identify parcels, ownership, and constructability, are complete for all 52 sites. Phase 2 is further broken down into Phases 2A, 2B, 2C, and 2D, consisting of approximately 13 sites each. Phase 2A, including two microwave paths from Phase 1 and a microwave loop around the Jackson Metropolitan Area, is now operational. Phase 2B which is north and west of Jackson will be operational

in January 2011. Phases 2C and 2D in East Central Mississippi are in construction and are planned for operation mid-2011.

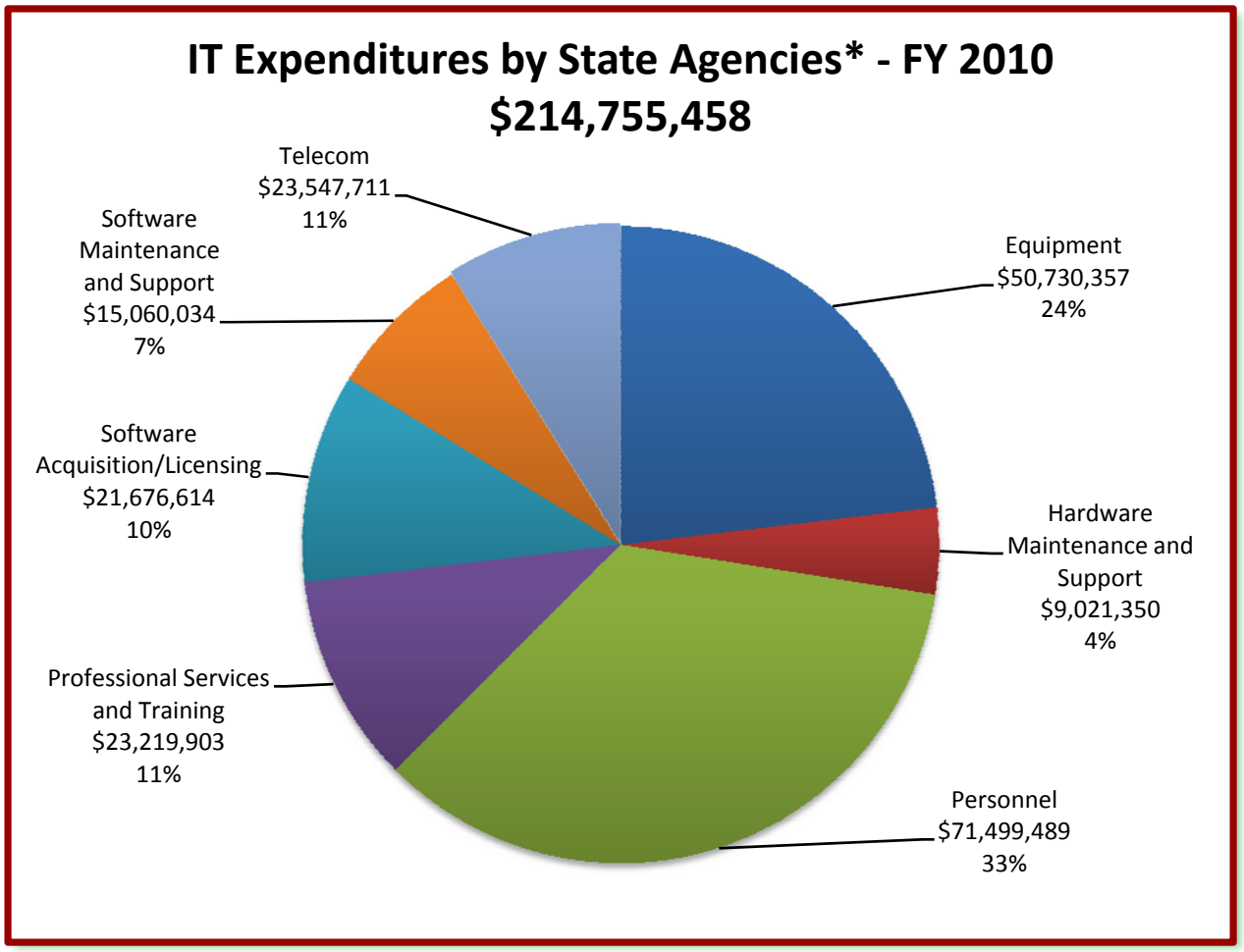
Phase 3 is made up of 45 tower sites in the northern region of the state. Tower sites have been identified and SCIPS are complete for all 45 of Phase 3 sites. These sites are currently in due diligence for compliance with Federal Communications Commission, Federal Aviation Administration, National Environmental Protection Act, and Federal Emergency Management Agency compliance.

The scheduled build out of MSWIN is on schedule and on budget. The completion of the MSWIN system is expected by mid year 2012.

On August 1, 2010, the Office of the Governor received a federal grant award of approximately $70 million through the Broadband Technologies Opportunities Program (BTOP) to enhance the MSWIN system by deploying Long Term Evolution (LTE) technology. BTOP is a broadband stimulus program under the American Recovery and Reinvestment Act (ARRA) which provided a total of $7.2 billion to the National Telecommunications and Information Administration (NTIA) and the Department of Agriculture's Rural Utilities Service (RUS) to fund projects that would expand access to and adoption of broadband services across the United States. NTIA utilized $4.7 billion of that funding for BTOP grants to deploy broadband infrastructure in the U.S., expand public computer center capacity, and encourage sustainable adoption of broadband service. The award funding will also be used to enhance Mississippi MED-COM operations by equipping ambulances with LTE equipment and applications tying the ambulance and its patient directly to the hospital system.

ENTERPRISE STATISTICS

IT EXPENDITURES BY STATE AGENCIES – FY 2010



* Payments to vendors by schools, libraries, community colleges, universities, or any other governing authorities are not included. Salary expenditures for state IT personnel are included. The expenditures reflected are as categorized in the Statewide Automated Accounting System (SAAS) and are only as accurate as the information entered by the state agency at the time the funds were expended.

E-RATE

The Schools and Libraries Program (*www.universalservice.org/sl*) was established by Congress to help make advanced telecommunications affordable for the nation's kindergarten through grade 12 (K-12) schools and libraries. It provides discounts on the costs of eligible telecommunications services, Internet access, and internal connections ranging from 20% to 90%. The highest discounts go to the schools and libraries serving the most disadvantaged populations. The majority of E-Rate funds have gone to the most disadvantaged schools and libraries, where over 50% of the students in the district qualify for the National School Lunch Program.

In the thirteen years of the E-Rate program, schools and libraries nationwide, have received over twenty-eight billion dollars. The following table reflects the amount received by Mississippi.

Funding Year	Mississippi's E-Rate Funding
2010	$27,165,217.67
2009	$38,040,512.62
2008	$35,086,068.74
2007	$32,799,335.43
2006	$36,686,826.67
2005	$41,256,290.48
2004	$43,368,319.48
2003	$38,567,669.47
2002	$33,566,915.06
2001	$34,527,103.17
2000	$29,654,672.64
1999	$32,823,779.85
1998	$24,242,445.36
TOTAL	**$447,785,156.64**

*Some funding requests for 2009 and 2010 remain under review.
** Source: http://www.e-ratecentral.com/us/stateInformation.asp?state=MS

STATEWIDE NETWORK STATISTICS

Statistics 1998 - 2010	
Growth (Number of end sites connected)	2100 to 2700
Types of circuits available	3 to 100+
Speeds of circuits available	64K – 1Gb
Internet (Cost per megabit)	$1129/M to $40/M
Internet Capacity	3M to 2.664G
Backbone (Cost per megabit)	$224/M to $25/M
Backbone Capacity	186M to 1.4G

MISSISSIPPI.GOV

Mississippi.gov supported more than 270,500 electronic transactions in FY 2010. Some of the most note worthy includes:

- Mississippi.gov averaged 6,000 visits per day
- More than 66,500 Mississippi sportsmen renewed their hunting and fishing licenses or boat registrations electronically using the Department of Wildlife, Fisheries, and Parks' online applications
- The Department of Public Safety's Online Driver's License renewal application averaged more than 4,100 renewals each month
- More than 53,000 students applied for financial aid using the Institutions of Higher Learning's online application
- Over 42,000 transactions took place using the Secretary of State's online applications (Uniform Commercial Code (UCC) Filing, Certificate of Existence, Public Land, and Certificate of Fact)
- Approximately 9,000 physicians renewed their professional licenses using the Board of Medical Licensure's online renewal application
- More than 7,800 health related professionals renewed their licenses using the Department of Health's online licensing system

FUTURE TECHNOLOGY

The Strategic Services Division of ITS works with state agencies, institutions, and each division of ITS to perform emerging technology projects, which includes research, testing, assessment, and recommendation of new technologies. Where applicable, the Strategic Services Division collaborates with agencies and institutions to implement pilot projects.

Emerging technologies targeted for research must have at least one of the following characteristics:

- The public has little knowledge and experience with the technology
- The current technology is in a constant state of change, which affects IT within state government
- The technology is new and on the leading edge

SOCIAL MEDIA AND GOVERNMENT

Social Media is becoming more prevalent throughout society, especially with the younger workforce who have embraced the technology and integrated it into their everyday lives. With the increasing popularity of Web 2.0 tools comes the necessity to implement more of these communication applications in government. Federal, state and local governments are embracing the use of these applications and implementing new communication advances made available through social media applications. The ability to provide timely and cost effective communications with employees, business partners, and the general public, has government entities looking seriously at the tools and evaluating their value while also considering security, privacy, and ongoing support concerns.

Social Networking is defined as the interaction between groups of people who share a common interest. It is the process of building online communities and sharing information between two or more individuals that have been brought together by similar causes.

Social Media is a general term that encompasses applications such as Facebook, Twitter, YouTube, Wikis, etc. Future use of these applications could be seen as the following:

Facebook

With over 500 million people using Facebook there is a growing need for state government to have a voice. Facebook is an online social networking community where people with similar interest can come together for one main cause, communication. State agencies can use Facebook to almost instantaneously send out information to other agencies and vendors alike. Creating a Facebook page for a particular division or program can aid in pushing out information about services, programs, procedures, policy, etc. while getting feedback from customers and partners to work together more efficiently.

Twitter

Twitter is a social networking and microblogging service that enables users to send brief posts, up to 140 characters, immediately to all of their followers. Agencies can benefit from this application in many ways. Twitter can be used to send out information for an upcoming project or program, to notify customers or vendors of pending deadlines, or to post emergency notifications from the proper authorities. Twitter can be used to get information out to a large mass of people whether it is information needed by state agencies, legislators, or citizens.

YouTube

The State of Mississippi is already benefitting from the use of YouTube. Governor Hailey Barbour uses this application to make his press conferences available to thousands of followers on YouTube. Through

the oil spill crisis on the Gulf Coast updates were made available and videos of progress could be seen through the use of this application. Going forward, agencies could implement the use of this media application to get messages out from agency Executives about special programs, health related issues, changes in services, etc. With the growing popularity of facetime, messages delivered, whether in real time or recorded, by someone you can see can rapidly increases popularity of even a difficult message delivery.

Through the use of social media government provides a two way channel for communication with its constituents. The idea is to provide a more open channel of government and customer influence in our democracy.

IP-Enabled Communications

ITS provides statewide voice and video communications for state entities and local governing authorities within the Capitol Complex, the Greater Jackson Area, and across the state though a variety of communications services. These services are provided through either contractual arrangements with service providers or through state owned and managed products. ITS has continued to track the expansion and acceptance of Internet Protocol (IP) enabled applications and services in the communications industry which have had a tremendous impact on traditional voice and video communications. Many equipment manufacturers have announced the end of support for traditional products, driving customers to upgrade or replace critical telecommunications systems and services with IP enabled technology.

Voice over IP (VoIP), on-demand IP video, unified messaging, and Internet-based web conferencing are quickly becoming the norm for state government communications. As agencies upgrade or replace legacy systems at their headquarters and remote office sites, the need to develop a core IP enabled infrastructure to accommodate these new applications at the enterprise level is critical. While many state agencies and vendors prefer a self-managed solution, ITS does not consider this solution to be in the best interest of the state. ITS is crafting a policy that will guide investment toward a centrally managed VoIP solution that integrates into the state's existing infrastructure and will provide a standardized and cost effective solution across the enterprise. In addition, a centrally managed solution will enhance network security and provide the ability to easily integrate these applications with other hosted IP services.

VoIP is a component of a converged network. A converged network is one whereby different communications medium such as voice, data, and video, are converted into a single physical network. By joining multiple physical networks into a single converged network, economies of scale can be achieved. However, the network foundation has to be designed to withstand the additional traffic. What was once acceptable for non-real-time applications is not necessarily acceptable for real-time applications, such as voice and video. In the event of problems, such as delays, packet loss, and collisions, voice and video applications are not as forgiving as data applications.

The Telecom Services Division of ITS has completed the core network upgrade to provide VoIP services in the most reliable and secure manner possible. Recently, Telecom Services successfully deployed over 30 remote office systems for the Division of Medicaid, as well as a campus solution for East Mississippi State Hospital. These deployments provided valuable information toward the development of a VoIP policy that will allow ITS to deliver these technologies and services in a reliable manner consistent with the performance quality of traditional telephony.

Long Term Evolution

One of the statutory purposes of the Department of Commerce's Broadband Technology Opportunities Program (BTOP) is to improve access to, and use of, broadband service by public safety agencies. To

achieve this goal, the Department of Commerce awarded BTOP grants to construct 700 MHz Long Term Evolution (LTE) networks in seven states, targeting the long-standing need for mobile broadband public safety networks. These awards will increase interoperability, and improve first responders' response times, communications at the scene of emergencies and reliable access to real-time data. The Office of the Governor, one of the BTOP public safety award recipients, received $70 million to enhance the 700 MHz Mississippi Wireless Information Network's (MSWIN) Land Mobile Radio (LMR) network by adding LTE technology. The award funding will also be used to enhance Mississippi MED-COM operations by equipping ambulances with LTE equipment and applications tying the ambulance and its patient directly to the hospital system. The MSWIN LTE network will be a cutting-edge 4G network and meet the FCC's standards for nationwide interoperability.

LTE is an Orthogonal Frequency Division Multiplexing (OFDM), Internet-protocol, next generation technology which will enable unprecedented broadband service to public safety agencies, achieving fixed line broadband performance while enabling new rich media services and a mobile experience. The addition of the LTE network will allow the public safety community to significantly increase its use of technology. Some potential applications include:

- Streaming real-time video to police and fire stations, mobile command centers and even squad cars and fire trucks to better respond to and monitor emergency situations,
- Uploading medical images, accident scene video, and vital signs from ambulances and helicopters to hospitals to speed up diagnoses and improve care,
- Deploying first responders more efficiently, improving response times to accident and crime scenes where seconds matter, and
- Communicating and sharing data seamlessly amongst first responders from relevant cooperating jurisdictions.

In the near term, the LTE network will finally bring applications consumers are able to access on their everyday cell phones and PDAs to public safety. In the long term, these investments will unleash innovation in public safety, allowing the same sort of transformational progress for first responders that consumers have seen in the last few years.

MISSISSIPPI'S RESEARCH NETWORK

For several years the research universities within the State of Mississippi have sought support for the build out of a research network within Mississippi, much like their peers in other states. The primary partners in this endeavor included the four research universities (University of Mississippi in Oxford, the University of Southern Mississippi in Hattiesburg, Mississippi State University in Starkville, and Jackson State University in Jackson) who would serve as the original tenants of this network. Other possible research tenants included the Stennis Space Center, the University of Mississippi Medical Center, and the US Army Corps of Engineers.

This research network, referred to as the Mississippi Optical Network (MissiON), will provide the research infrastructure to allow the State of Mississippi to foster new educational opportunities and to keep Mississippi's research universities nationally competitive among peer institutions and agencies. With planning underway to begin implementation in the first half of 2011, the primary purpose of this network will be to provide the research entities with a high-performance, high capacity optical network with access to national research networks such as Internet II and National LamdaRail (NLR), as well as to encourage collaboration within Mississippi. The Mississippi research universities will serve as the primary nodes on this high-performance, high capacity, and resilient fiber optic network utilizing their advanced networking expertise and resources to make the most of this opportunity.

ENTERPRISE MONITORING

The State Data Center infrastructure continues to grow as ITS offers more and more services to the agencies of the State of Mississippi. ITS utilizes enterprise monitoring applications by Computer Associates to properly monitor and maintain reliable and available systems and network infrastructure. According to independent research, average downtime can cost the typical enterprise 3.6% of its annual revenue and these costs are trending upward. The infrastructure housed in the State Data Center is very complex, relying upon a mixture of legacy and leading edge technologies to deliver integrated business applications. Individual network, database, application and system components are managed separately and often manually, delivering an enormous amount of non-normalized information to the Data Center for analysis. The Unicenter product suite from Computer Associates, continuously monitors, assesses, and correlates events across disparate systems.

In complex distributed operations such as the State Data Center, Unicenter can unify and simplify infrastructure management and reduce costs. Crucial to this rise in efficiency is the ability to gather information from a wide variety of platforms, including Windows, UNIX, Linux, AS/400, z/OS, and OpenVMS. This wide analytical view will enable the simplification of managing complex technical infrastructures with a centralized view of the entire infrastructure.

ITS CONTACT INFORMATION

3771 Eastwood Drive
Jackson, MS 39211
(601) 432-8000
www.its.ms.gov
www.mississippi.gov

Executive Director
David Litchliter
(601) 432-8000
david.litchliter@its.ms.gov

Data Services
Mitchell Bounds
(601) 432-8138
mitchell.bounds@its.ms.gov

Information Systems Services
Martha Pemberton
(601) 432-8043
martha.pemberton@its.ms.gov

Information Security
Jimmy Webster
(601) 432-8090
jimmy.webster@its.ms.gov

Internal Services
Michele Blocker
(601) 432-8111
michele.blocker@its.ms.gov

Strategic Services
Craig Orgeron
(601) 432-8089
craig.orgeron@its.ms.gov

Telecom Services
Roger Graves
(601) 432-8092
roger.graves@its.ms.gov

Department of Information Technology Services

David L. Litchliter, Executive Director

3771 Eastwood Drive
Jackson, Mississippi 39211
Telephone (601) 432-8000
Fax (601) 354-6016
Web site: www.its.ms.gov
State Portal: www.mississippi.gov