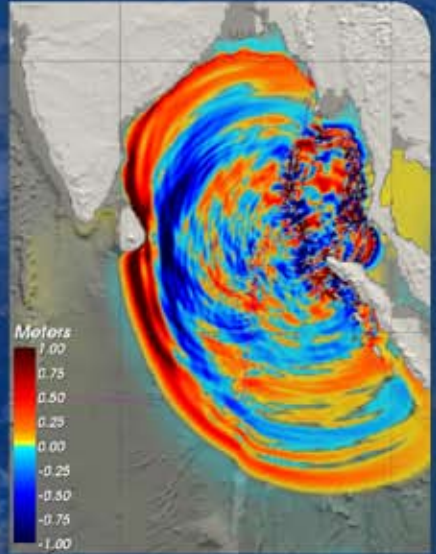


NOAA | OCIO

500-Day Plan



UPDATE
October 2008 - February 2010



NOAA | OCIO

500-Day Plan

VISION

A secure and agile information enterprise with advanced computing capability that propels NOAA's scientific and operational missions

MISSION

To deliver information and technology services that enable NOAA's mission

PRINCIPLES

Partner for customer success
Simplify, standardize, automate
Deliver value on schedule



OPENING MESSAGE

4

ACCOMPLISHMENTS

5

IT SECURITY

6

ENTERPRISE SOLUTIONS

7

HIGH PERFORMANCE COMPUTING

8

CUSTOMER-FOCUSED SERVICE

9

SKILLED IT WORKFORCE

10

Heather L. Hanson Jon D. [unclear] Scott M. [unclear] [unclear] [unclear] Douglas A. [unclear] Adam R. [unclear]

This Plan was approved by the NOAA CIO Council on October 28, 2008



Opening Message



The demand for NOAA's products and information continues to grow as global climate change and the threat of natural disasters remain at the forefront of the Nation's attention. Information Technology (IT) is critical to the NOAA scientists that produce the observation data; models and predictions; and research and development that our stakeholders rely on. As NOAA's Chief Information Officer (CIO), I am committed to modernizing the IT infrastructure and improving the cost-effectiveness, efficiency and service of operations to support our mission.

In the last 500 days, the CIO community began laying the foundation to transform NOAA's IT to a more secure, agile and innovative state:

- » Installed the Cyber Security Assessment and Management tool to automate the preparation and management of the IT Security Certification and Accreditation process
- » Conducted Quarterly NOAA-wide Continuity of Operations (COOP) tabletop exercise to prepare for, respond to, and recover from a disaster with the focus on impacts to NOAA's IT infrastructure
- » Began implementing the NOAA IT Workforce Investment Strategy to ensure NOAA's IT workforce more ably supports NOAA's mission
- » Established a governance model to plan and manage the implementation and operations of all IT Enterprise-wide initiatives
- » Initiated an enterprise IT strategic sourcing initiative, NOAALink, to align NOAA's IT and create a new IT business strategy to improve workforce productivity, and create efficiencies by fully leveraging NOAA's buying power

In the next 500 days, my focus is to build on these accomplishments and continue to evolve the IT infrastructure. As I look at the current landscape, many of the priorities remain the same. The threat of information attacks remains high, so significant efforts must continue in the area of IT security. The IT infrastructure is highly fragmented and complex; to migrate to a target architecture that is more robust and scalable, modernization initiatives must be planned, managed and monitored at an enterprise-level. Additionally, we must continually attract, develop and retain a world-class technical workforce.

This year, there are additional areas that require more focus and attention. To meet the growing National demand for climate, high impact weather, aviation weather and ecosystems management information, we must make substantial improvements to our High Performance Computing (HPC) capability. In addition, in response to feedback received from this year's IT customer satisfaction survey, more effort is needed to improve the quality of customer services.

The goal of this 500 Day Plan is to report on short-term progress and build momentum for integration and transformation across the IT enterprise. This plan drives towards establishing processes that architect, acquire, manage, and secure NOAA's IT; attract and retain a world-class technical workforce; and apply efficient ways to scale and grow HPC and the IT infrastructure. This 500-Day Plan describes these strategies through goals, clear objectives and defined initiatives. At the end of 500 days it is our commitment to drive NOAA IT towards successful, sustainable and measurable change.

Joseph F. Klimavicz

NOAA Chief Information Officer and Director,
High Performance Computing and Communications

GOAL 1 Secure NOAA's information and IT investments from threats

GOAL 2 Increase efficiency and effectiveness through enterprise-wide solutions

GOAL 3 Build robust High Performance Computing capabilities

GOAL 4 Operate IT as a customer-focused service provider

GOAL 5 Attract, develop, and retain a skilled IT workforce



500 Day Accomplishments

April 07 - September 08

GOAL 1 Protecting NOAA's IT Investments from Security Threats

- » Established an Information Assurance Plan and a security layer within the NOAA Enterprise Architecture to ensure proper consideration of security requirements in all phases of the IT life-cycle
- » Made dramatic improvements in terms of compliance with Federal Information Security Management Act (FISMA) standards, accrediting 99 percent of NOAA IT Systems
- » Initiated a formal process and common controls to expedite the certification and accreditation of all NOAA systems and developed a three year plan to ensure future accreditation
- » Installed a Cyber Security Assessment and Management system to automate the preparation and management of the IT Security Certification and Accreditation (C&A) process
- » Substantially reduced the number of preventable security incidents, from over 80 in 2006 to less than 25 in 2008
- » Implemented Federal security standards in desktop core configuration controls
- » Encrypted all hand held and mobile devices
- » Developed a plan for HSPD-12 Smart ID Cards
- » Implemented a new spam filter that resulted in an 85 percent decrease in complaints

GOAL 2 Ensuring Availability of Information and Technology Services

- » Ensured continuity of operations through NOAA's Homeland Security Program in the event of a terrorist attack, major disaster, or other emergency
- » Improved operational IT capabilities significantly - 99.7 percent availability of maintained systems
- » Coordinated NOAA Headquarters COOP exercise designed to evaluate federal government continuity capabilities and management of emergencies
- » Redefined NOAA Primary Mission Essential Functions in response to the Department of Homeland Security's Federal Continuity Directives to sustain the Nation during a catastrophic emergency
- » Updated multi-year COOP Strategy and Program Management Plans, and routinely tested and maintained NOAA COOP facility and equipment to provide an easy transition in the event of an emergency

GOAL 3 Attracting, Developing, and Retaining a Skilled IT Workforce

- » Conducted NOAA IT leadership off-sites, town halls, and face to face communications sessions with field personnel
- » Partnered with external agencies on leadership development assignments
- » Participated in the NOAA Leadership Competencies Development program
- » Provided summer internships for high school students
- » Began implementing the NOAA IT Workforce Investment Strategy to improve the IT workforce support for NOAA's mission

- » Conducted OCIO Employee Survey, achieving a 72 percent response rate, to assess employee satisfaction levels and develop an action plan
- » Established and advertised an IT Workforce Liaison position

GOAL 4 Scaling NOAA's IT to Keep Pace With Observing Capabilities

- » Initiated the documentation of end to end value streams for selected satellite products
- » Responded to Science Advisory Board recommendations regarding HPC
- » Acquired an industry standard enterprise architecture database
- » Completed mid-life upgrade to one of the R&D HPCS to accelerate system capacity and better serve NOAA
- » Demonstrated a holistic approach for the contracting of R&D high-performance computing with sub-systems to allocate and track computing across the entire R&D system; achieved target utilization
- » Implemented tools to manage the R&D HPCS as a NOAA resource and developed the flexibility needed to adjust the allocations to changing NOAA priorities
- » Developed agreements with the Department of Energy and the National Science Foundation to gain access and allocations to leadership-class high performance computing to advance some of NOAA's short-term goals in hurricane and climate research
- » Developed FY2011-15 High Performance Computing strategic plan and roadmap to meet National demand for climate, high impact weather, aviation weather and ecosystems management information in order to increase modeling capabilities

GOAL 5 Increase Efficiency and Effectiveness Through Enterprise-wide Solutions

- » Established the NOAA IT Program Management Office
- » Received appropriated funding approval for enterprise-wide IT investments for FY 2010-14
- » Presented an IT funding model to provide a funding source for enterprise-wide investments
- » Gained CFO Council approval to use the model for the conversion to Microsoft Exchange
- » Developed and published NOAA secure configuration standard for desktops, and IT standards for all facilities under construction or renovation to maximize enterprise-wide solutions
- » Established NOAA enterprise blackberry service to provide mobile support for NOAA's executive team
- » Advanced NOAAnet governance and funding models
- » Developed NOAAlink, enterprise IT strategic alignment and sourcing initiative, in order to acquire a broad range of cost-effective, enterprise-wide IT solutions to improve IT service delivery and support
- » Completed three major upgrades of the NOAA Staff Directory to create a single authoritative source of official NOAA staff and organization information
- » Established enterprise licensing agreements for geospatial applications
- » Established project team for telephony, messaging and collaboration



Goal 1

IT Security

“Significant weaknesses continue to threaten the confidentiality, integrity, and availability of critical information and information systems used to support the operations, assets and personnel of federal agencies.”

— GAO testimony before Congressional Subcommittee (2008)

SECURE NOAA’S INFORMATION AND IT INFRASTRUCTURE FROM THREATS

Information is central to NOAA’s mission. Therefore any amount of data loss, network failures, malicious intrusions or mishandling of data can result in far-reaching damage. The NOAA IT security program protects the confidentiality, integrity, and availability of NOAA’s information, computers, and networks. Current threats and attacks on NOAA’s systems are targeted, well funded, for profit, organized, motivated and constantly increasing in sophistication. NOAA’s IT Security Program strategy is to apply security countermeasures in layers working together to reduce risk. These layers include detection and response capabilities, user awareness, desktop security, network security and compliance monitoring.



Objectives | Actions

Detect, prevent and respond to IT security events

- » Expand NOAA Computer Incident Response Team operations to provide vigilance over NOAA systems
- » Implement additional intrusion detection/prevention systems to thwart hackers
- » Implement Internet content filtering to protect employees from web based attacks and scams

Increase user awareness and training

- » Publish data handling guidance to improve security awareness across NOAA
- » Conduct additional focused user security awareness and rules of behavior training to increase user commitment to sound IT security practices

Protect the end points in the IT infrastructure

- » Ensure continuous monitoring of potential vulnerabilities
- » Define enterprise patch management processes
- » Secure NOAA applications to protect our data and public services from compromise and loss

Improve network security

- » Initiate HSPD-12 access privileges with identity management
- » Implement firewall and network management
- » Leverage the Department of Homeland Security Cybersecurity Initiative

Monitor compliance

- » Standardize implementation of Federal Desktop Core Configuration to secure user desktops
- » Continue enterprise implementation of the Cyber Security Assessment and Management system for enterprise compliance with FISMA standards
- » Expand Certification & Accreditation (C&A) compliance review program to facilitate removal of material weaknesses, increase FISMA grade and improve the availability, accuracy, and timeliness of processes and products

Improve preparedness and response

- » Conduct quarterly CIO COOP Table-Top Exercises that address a full range of issues that may impact IT responsibilities
- » Incorporate pandemic influenza contingency planning into NOAA’s continuity of business planning efforts



INCREASE EFFICIENCY AND EFFECTIVENESS THROUGH ENTERPRISE-WIDE SOLUTIONS

Currently NOAA's IT infrastructure is difficult and expensive to maintain and lacks interoperability and scalability. NOAA IT infrastructure consists of multiple fragmented IT components that deliver services independently. The NOAA CIO Community is committed to modernizing the IT infrastructure and moving to enterprise-wide solutions. The foundation for improvements across the IT enterprise involves a sound architectural plan, effective NOAA-wide governance, an enterprise-wide funding model, a central acquisition approach, and strong program and project management capabilities. NOAA will also move to a services-oriented approach to organizing and managing information technology.

"Because IT equipment and software purchases are the largest component of federal IT spending, at more than \$26 billion in fiscal 2009, it offers the greatest opportunities for savings if agencies can combine and standardize IT operations."

— Nextgov (2008)

Objectives | Actions

Architect the infrastructure as a service-driven enterprise

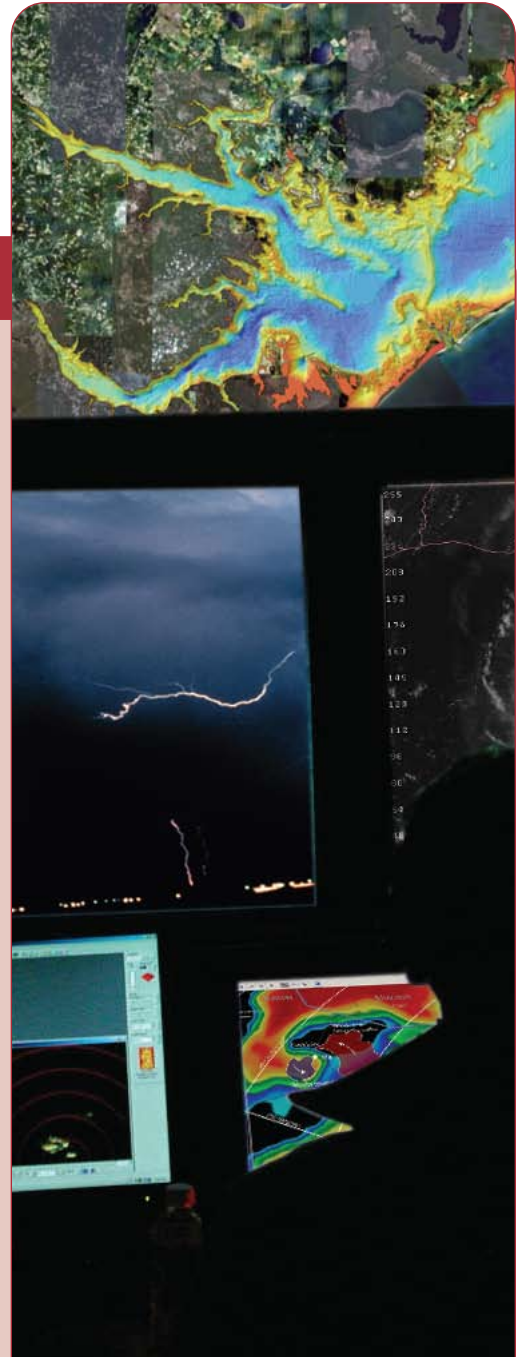
- » Define and publish the service layer of the NOAA Enterprise Architecture, with a focus on the catalog of infrastructure services
- » Develop the target architecture for high-priority infrastructure services
- » Enhance existing mechanisms to ensure that Capital Planning and Investment Control (CPIC) processes are driving toward the target infrastructure architecture
- » Establish mechanisms to implement the target infrastructure architecture through NOAALink

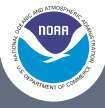
Improve project and program management capabilities

- » Define a common program management process that includes key milestones
- » Institute a standard, shared set of project/program document templates
- » Enhance the existing program review process
- » Establish NOAALink as an IT acquisition vehicle that will leverage the purchasing power for customers of IT products and services throughout the enterprise

Implement a services-oriented approach to organizing and managing information technology

- » Apply and mature the governance model to implement standard infrastructure through strategic sourcing vehicles
- » Establish IT Fee-for-Service model
- » Continue development and implementation of NOAAnet
- » Develop a plan and requirements as well as select a vendor for Unified Communications implementation to integrate voice, messaging and document collaboration
- » Develop a sharable library of Service Level Agreement (SLA) templates for common IT infrastructure services, based on industry best practices
- » Establish a NOAA-wide community of interest to develop a strategy for an enterprise-wide services oriented approach





Goal 3

High Performance Computing

"It is recommended the NOAA CIO establish a core team of HPC expertise to...monitor developments in HPC architectures...so it can be prepared to acquire and utilize them as they become available."

— NOAA Science Advisory Board Recommendations (2007)

BUILD ROBUST HIGH PERFORMANCE COMPUTING CAPABILITIES

NOAA is recognized as a world leader in understanding and predicting the Earth's environment through advanced modeling capabilities, climate predictions and real time weather products. The public demand is growing for climate and weather information with increased accuracy, shorter lead times and local detail of model simulations. To meet this demand, NOAA scientists require leadership-class high performance computing with the power and capability of the most advanced systems. NOAA's HPC must meet the continuum of clock-driven operational weather forecasts through calendar-driven projections of the Earth System. HPC requires significant and sustained investment to establish and maintain the target HPC architecture that allows maximum flexibility to meet the diverse requirements and the ability to scale to fill growing resource gaps.



Objectives

Actions

Develop long-term agreements with external computing partners

- » Establish NOAA's presence at a world-class computing facility
- » Explore possibilities for on-demand computing partnerships
- » Continue to develop partnerships on leadership-class systems to explore next-generation hurricane modeling, weather modeling and climate change modeling capabilities

Optimize the number and locations of HPC systems

- » Develop detailed design of Next Generation HPC Architecture
- » Award system integration contract to support planning and migration to the target architecture
- » Begin implementation of the target architecture

Minimize research to operations' transition time

- » Hire software engineer to lead developers on NOAA's HPC to efficiently utilize broad based software engineering techniques and common modeling frameworks
- » Establish policies, procedures and coding standards for model development
- » Standardize software repositories across NOAA to facilitate reuse and code sharing



OPERATE IT AS A CUSTOMER-FOCUSED SERVICE PROVIDER

"84% of end users cite help desk as the primary factor in shaping their opinions of corporate IT..."

— MetricNet Research

From email to calendaring, desktop services to mobile devices, NOAA employees depend on reliable and responsive IT services with high quality customer support. Historically, the IT infrastructure has evolved independently among the line offices. IT services are provided and managed in a balkanized fashion by each line office and in many cases at the sub-line office level. There are limited NOAA-wide service standards or processes. This results in uneven levels of service that are challenging to monitor and improve at the NOAA level. The focus of this goal is to start building consistent IT services that are customer-focused to improve the visibility and management of IT services across NOAA. By defining and communicating an overall customer service model and strategy, NOAA can ensure that the initiatives it undertakes such as help desk consolidation, software deployment, and performance management align to the business' needs. IT will achieve customer satisfaction by improving responsiveness, decreasing cost of providing services, increasing quality, and providing transparency to customers throughout the service lifecycle.



Objectives | Actions

- | | |
|---|--|
| Define a customer service model | <ul style="list-style-type: none"> » Document end-to-end customer service process, including understanding different customer touchpoints into IT » Assess customer service model and identify areas to improve service delivery » Develop and publish an IT service catalog with performance standards » Assess the overall organization to ensure alignment to service needs |
| Leverage knowledge to improve quality of customer service | <ul style="list-style-type: none"> » Identify capture points for information » Evaluate methods for management and analysis of information » Adopt technology, where appropriate to facilitate the access and dissemination of knowledge resources |
| Enhance change and configuration management processes | <ul style="list-style-type: none"> » Evaluate existing change and release management processes to identify gaps and opportunities for improvement » Establish operations configuration control committee that provides a single point of review to increase visibility and identify dependencies within a program environment » Stand up a quality assurance capability to ensure adherence to policies and standards |
| Monitor the quality of service | <ul style="list-style-type: none"> » Define and communicate the value of IT services provided to the end users » Identify performance measures to ensure that resources are focused on the areas that are of the highest value to the customer » Conduct customer satisfaction survey to assess performance |



Goal 5

Skilled IT Workforce

"Agencies report dramatically increased demand for information technology (IT) specialists. In 2007, two out of every three agencies list IT as a mission critical occupation and these agencies plan to hire 11,562 IT professionals through 2009."

— Partnership for Public Service report (2007)

ATTRACT, DEVELOP, AND RETAIN A SKILLED IT WORKFORCE

Successfully preparing for and meeting the high expectations of the Federal IT workforce of tomorrow is a daunting challenge that requires attention and commitment. The NOAA CIO community seeks to implement strategies to foster a world-class IT workforce. Experienced IT professionals who currently occupy Federal positions are expected to retire in increasing numbers over the next several years, creating critical gaps. Compounding this situation, due to extensive contracting and outsourcing, there is no sizable cadre of junior and mid-level staff preparing for tomorrow's leadership challenges. Adding to these issues are the growing demands on the Federal IT workforce to keep pace with legislation, new mandates and technological changes. The OCIO will continue to implement and refine the IT Workforce investment strategy to attract, develop and retain a talented IT workforce.



Objectives

Actions

Foster creative recruiting

- » Establish an Employee Referral Program
- » Partner with universities for internships and direct hires
- » Make maximum use of existing OPM recruitment programs
- » Implement pay for performance
- » Budget for and promote the use of recruitment and relocation incentives when needed
- » Complete conversion to the Commerce Alternative Pay System

Develop the IT workforce

- » Select a full-time NOAA OCIO IT Workforce Liaison
- » Partner with Department of Commerce Developmental Programs and encourage participation in NOAA leadership programs
- » Establish Exchange Programs with industry under the Information Technology Exchange Program
- » Promote the NOAA Rotational Assignment Program to the IT Staff
- » Develop a critical skills competency inventory
- » Promote and facilitate professional certification programs

Focus on retention and improving job satisfaction

- » Provide training for NOAA managers on IT workforce flexibilities
- » Budget for and promote the use of retention incentives
- » Evaluate supervisors on staff development
- » Review employee satisfaction survey results and look for quick wins to improve job satisfaction
- » Recognize the IT workforce through the use of team awards



**U.S. Department of Commerce
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