DOE NII Program Plan

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Ed Barsis
John Cavallini
Ed Oliver
Bill McCurdy
Rick Stevens
Andy White
Goals

◆ Provide a ten year plan for DOE to embrace computing and information technologies as the key integrating factor in all of its activities (e.g. scientific, administrative, policy and planning)

◆ Provide the key means for DOE to be a model agency for openness and information transparency

◆ Provide a state-of-the-art information technology environment for DOE’s scientific and technical programs
Department of Energy’s National Information Infrastructure Program

- Develop ways to improve remote access and utilization of DOE experimental facilities
- Open environmental databases and cleanup processes
- Collaborate with electric utilities to develop enhanced strategies for building the national information network
- Design and build information systems to support the national transition to sustainable development
- Bring DOE’s simulation and modeling capability to a broad set of national customers
The DOE NII Program: Three Initial Thrust Areas

- Opening DOE’s Environmental Databases and Cleanup Plans
  - Public Access and Education
- Connecting Industry to DOE Facilities and Expertise
  - Building Collaborative Teams
- DOE Information Infrastructure and Computing Environments
  - Building the New DOE
- Development of Enhanced NII Deployment Strategies and Technologies
  - Leveraging Existing Universal Access
Large-Scale Experimental Facilities

Systems Integration Capability

Scientific and Engineering Expertise

Unique Data and Software

Problem Solving for US Industry

Education and Training

Support for National Missions

DOE’s Virtual Laboratory

Department of Energy

NII Program Plan

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Opening DOE’s Health and Environmental Databases and Plans

- Environmental Data from DOE Sites
- Global Change Databases
- Emergency Response to Environmental Incidents
- Environmental Remediation Plans and Budgets
- Sustainable Environmental Technologies
- Radiation Health Effects

- Transparent NII Access
- Data Mining
- Intuitive Search Tools
- Multimedia Servers

- Public Policy Arena
- State and Local Government Agencies
- Educational Access
Combining the utilities universal access, right of ways, and powered points of presence with DOE large-scale systems integration expertise to accelerate the deployment of the National Information Infrastructure.

Development of Enhanced NII Deployment Strategies

Accelerated National Information Infrastructure Deployment

• homes, schools
• businesses, libraries
• faster and cheaper
## Research Areas in Support of Pilot Projects

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DOE NII Program Ideal FY96 Start

Collaborative Environments $20M
Information Surety $5M
Data Mining and Navigation $10M
New Networking Technologies $10M
Applications Environments $5M
Total $50M
Collaborative Environments

Goal: Transform the scientific, administrative and policy-making infrastructure and culture at DOE

- Computer mediated collaborative work environments
- Distributed virtual environments
- Remote operation, participation and monitoring technology
- Multimedia servers and database technology
- Pilot projects for remote access and operation
Information Surety

Goal: To ensure appropriate, efficient access to open, private, proprietary, export-controlled, and classified data and software

- Development of new mechanisms for insuring privacy
- Providing secure communications via public networks
- Protecting trade secrets and protected codes
Data Management, Mining and Navigation

Goal: To provide new tools for access and analysis of distributed data and information resources

- Mechanisms for supporting federated databases
- Advanced indexing and searching technology
- Semantic and syntactic translation and annotation
- Pilot project for environmental databases
Advanced Networking Technologies

Goal: To explore new and alternative networking paradigms and technologies

- Scalable routing and network management
- Technologies for alternative NII deployment
- Protocols for supporting new types of aggregated multimedia and instrumentation data
- Terabit network technologies
- Pilot project for alternative deployment
Distributed Applications Architecture

Goal: Provide a computing and information environment with the ability to address the most urgent, complex and important problems facing the nation

- Distributed computing tools and environments
- Latency management techniques and algorithms
- Object-oriented applications templates
Model Agency

Computing and Information Infrastructure

Faster, Better Cheaper

Environmental Quality
National Security
Energy Resources
National Competitiveness