

# Gateway to the Global Grid

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Air Force MOIE

The logo for the MITRE Technology Program, featuring a stylized graphic of stacked blocks in yellow, orange, and blue to the left of the text.

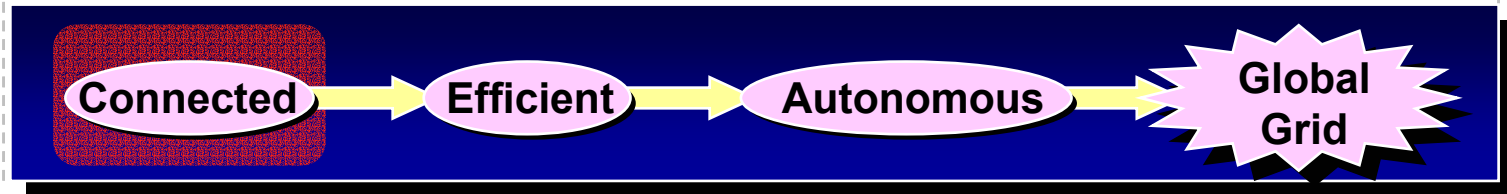
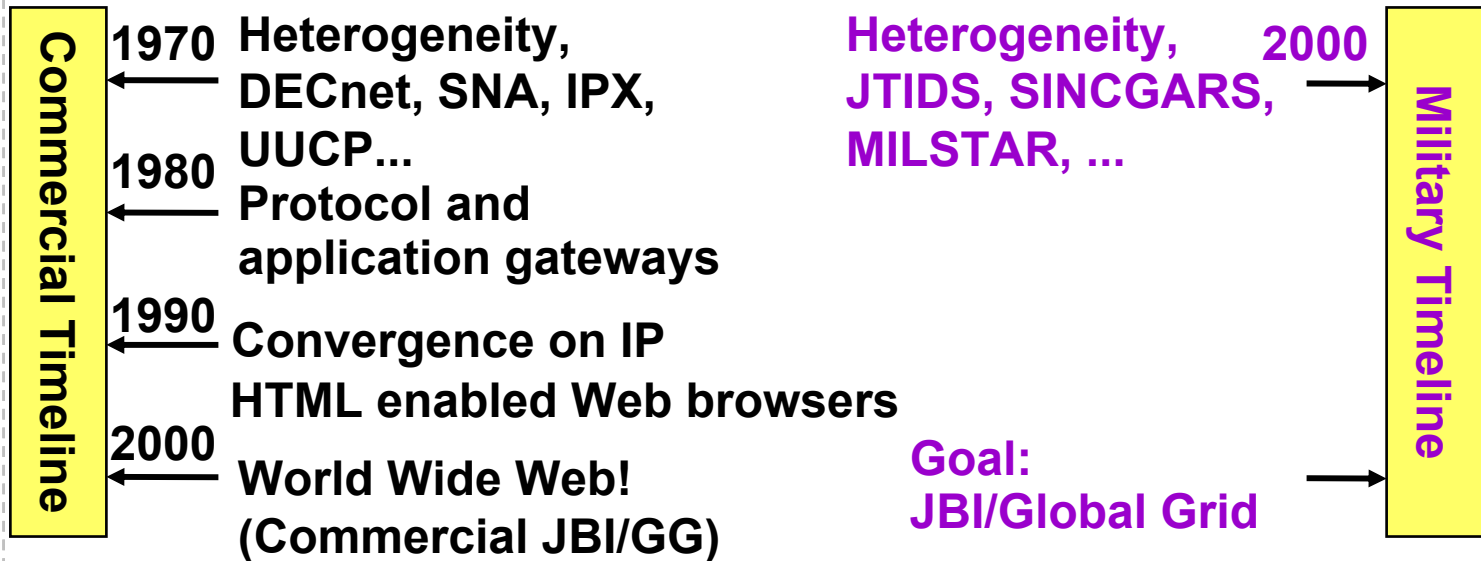
**MITRE**  
Technology  
Program

# Problem

- **The Global Grid is an effort to integrate the totality of military communication into an interoperable, heterogeneous, military-grade Internet. An immediate challenge to this vision is massive DOD investment in the existing communication infrastructure which, today, is not “Global Grid - ready.” Gateways are a means by which the military investment in legacy communications can be preserved and utilized, while simultaneously building the infrastructure to enable the Global Grid.**

# Background

We've seen a connectivity problem of this scale before ...



# Objective

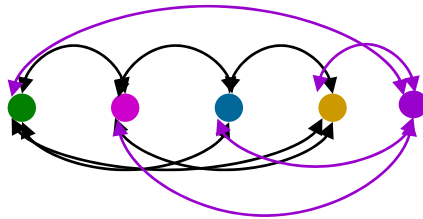
- **Demonstrate the utility of gateways in providing a means to bring legacy communication systems into the Global Grid**
  - **FY01 - Demonstrate common transport (IP) over Link-16**
  - **FY02 - Investigate applicability of using a common data schema to enable information sharing between legacy data links and other Global Grid participants**
  - **Build and demonstrate ADS-B to TADIL-J gateway to solve an ATC problem in Alaska**

# Activities

- **Choose a subset of message standards for common data schema analysis**
- **Partition messages into “communities”**
- **Define a common data schema for each community**
- **Develop a prototype gateway between Link-16 system and civilian air traffic management system**
  - **Implement with common data schema**
- **Demonstrate the utility of a Global Grid compliant gateway**

# Highlight

- Previously deployed gateways have all been stovepipes
- Not compatible with tenets of connectivity
  - Don't employ a common transport
  - Don't employ a common data schema for exchanging information
- Promulgate an  $N^2$  problem

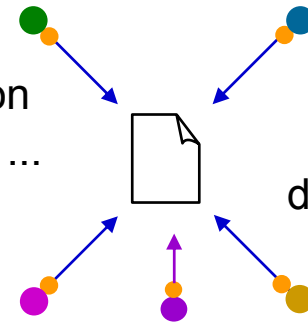


Communication System ●

Stovepipe Gateway ↷

VS

Common  
Transport of ...

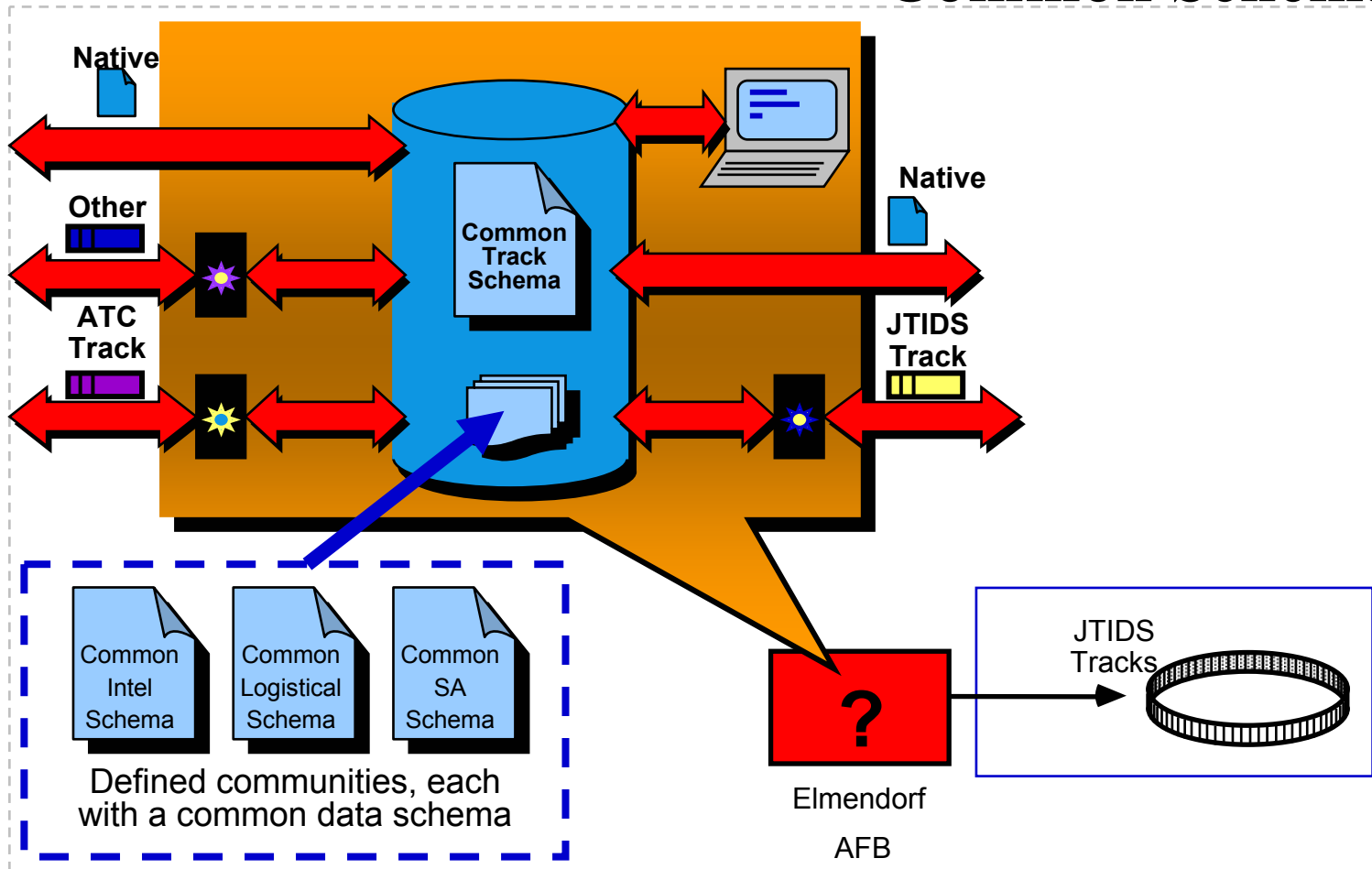


A common  
data schema

GG Compliant Gateway ●

# Highlight

## Common Schema



# Impacts

- **Address an immediate air traffic safety issue in Alaska**
  - **Demonstrate the value of a gateway that conforms to the tenets of the Global Grid**
  - **Highlight the value of common data schema**
- **Laid foundation for joint interoperability**
  - **Brought the Global Grid to the “doorstep” of the tactical fighter and C2 platforms**

# Future Plans

- **Continue to define communities of information**
- **Develop a common data schema for each community of data**
- **Transition IP-over-JTIDS technology**
- **Demonstrate the value of tunneling IP over Link-16 via collaboration with other MITRE MSR/MOIEs and pursue various operational opportunities**