



# ***Air Force Integrated Infrastructure***

Integrating Stovepipes into  
Interoperable Infrastructure  
Components

***Broadsword 2000 Conference***



Mr. Cliff Liggins  
497IOG/INDI  
AFDI Functional Manager  
[ligginr@emh-497ig.bolling.af.mil](mailto:ligginr@emh-497ig.bolling.af.mil)  
(202) 404-8736



# Overview

- How we've built systems in the past
  - Stovepipes
  - Tunnel vision
- How the Air Force intends to build them in the future
  - Tightly integrated
  - Interoperable component-ware
- How we plan to implement an integrated infrastructure
- Current components
- Future components



# How we've built systems in the past

- DoD has built systems in the past essentially in a vacuum
  - Tunnel Vision
    - No vision of capabilities already existing or capabilities which could benefit more than one system
  - We've built stovepipes



# How we plan to build them in the future

- We must focus on the “bigger” picture when designing new capabilities
  - We should not be building systems but rather designing functional component-ware which interoperates within the overall DoD architecture
    - Where possible, re-use of existing capabilities
    - Where viable, Commercial Off The Shelf (COTS)
      - Why reinvent the wheel?

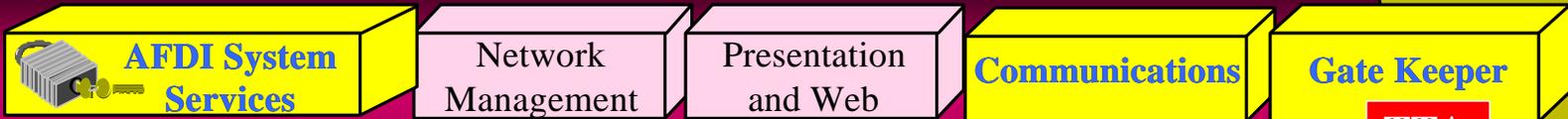


# How we plan to build them in the future (continued)

COE



COMMON SUPPORT APPLICATIONS



INFRASTRUCTURE SERVICES



DII COE KERNEL

Operating System

TTA



DATA ACCESS

SHADE





# How we plan to implement an integrated infrastructure

- An Integration lab has been established at AFRL to integrate, test & evaluate, the interoperability of 497IOG sponsored programs
  - An initiative is underway to take those Air Force programs meeting integration and interoperability standards and install them as the base infrastructure for the new CAOC-X



# Current infrastructure components

- AFDI
  - Provides the underlying infrastructure security and enterprise infrastructure management tools
- Broadsword/Gatekeeper
  - Provides secure transparent access to distributed information sources
- ISSE Guard
  - Provides secure, bi-directional information exchange between dissimilar security domains
  - TTA
    - Provides secure transparent access to distributed information sources across security domains as the ISSE interface to the Gatekeeper
- IET or AMHS for messaging (jury still out...)



# Future Components

- 497<sup>th</sup> IOG has partnered with Penn State University's Applied Research Lab to build an all source fusion and correlation tool capable of sensor to shooter real time/near real time targeting of Time Critical Targets
  - Being developed as a new component of the infrastructure



# Future Components (continued)

The goal is to provide Real Time/Near Real Time  
Sensor to Shooter Target Correlation



**Enroute Mission Planning  
and Retargeting**



**Sensor-to-Decision  
Maker-to-Shooter**



**Sensor-to-Shooter**



# Summary

- We can no longer continue to build systems in a vacuum
  - The resources are no longer available
- The pieces of one component must enhance and interoperate with the whole
  - Interoperable, integrated, component-ware to build on the overall infrastructure
- An underlying infrastructure must be assumed when building new components
  - New components must integrate into that infrastructure seamlessly
  - New components must enhance current infrastructure capabilities