



# ***Space Transformation Issues:***

## ***A User Perspective***



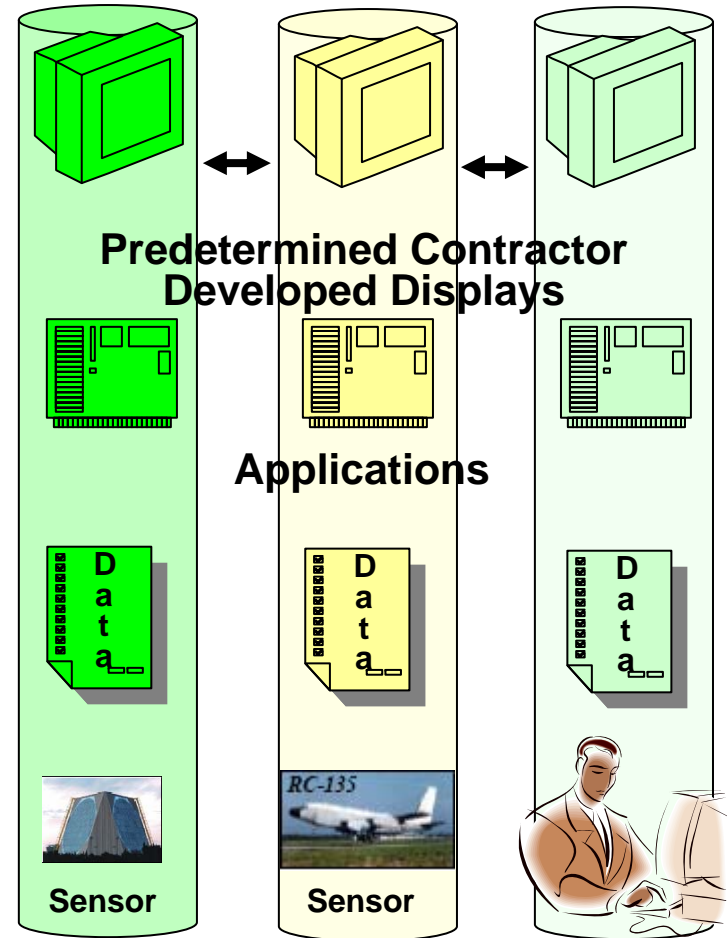
***CAPT Mark Olson  
Chief, ISR and Space Division  
Capability and Resource Integration  
17 April 07***



# Space Capability Today

- **Space Infrastructure**

- **Infrared Systems (e.g., SBIRS)**
- **Environmental Sensors (e.g., DMSP)**
- **Positional Navigation & Timing (e.g., GPS)**
- **MILSATCOM (e.g., Milstar, DSCS, UFO)**

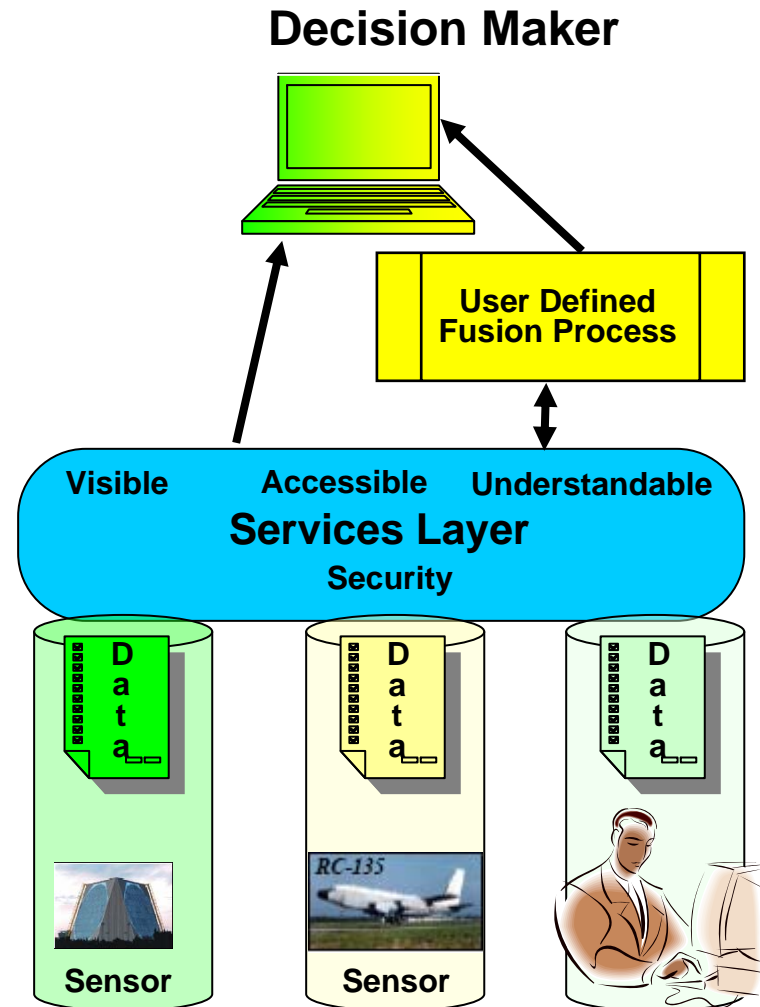


**Great Capabilities, but...**



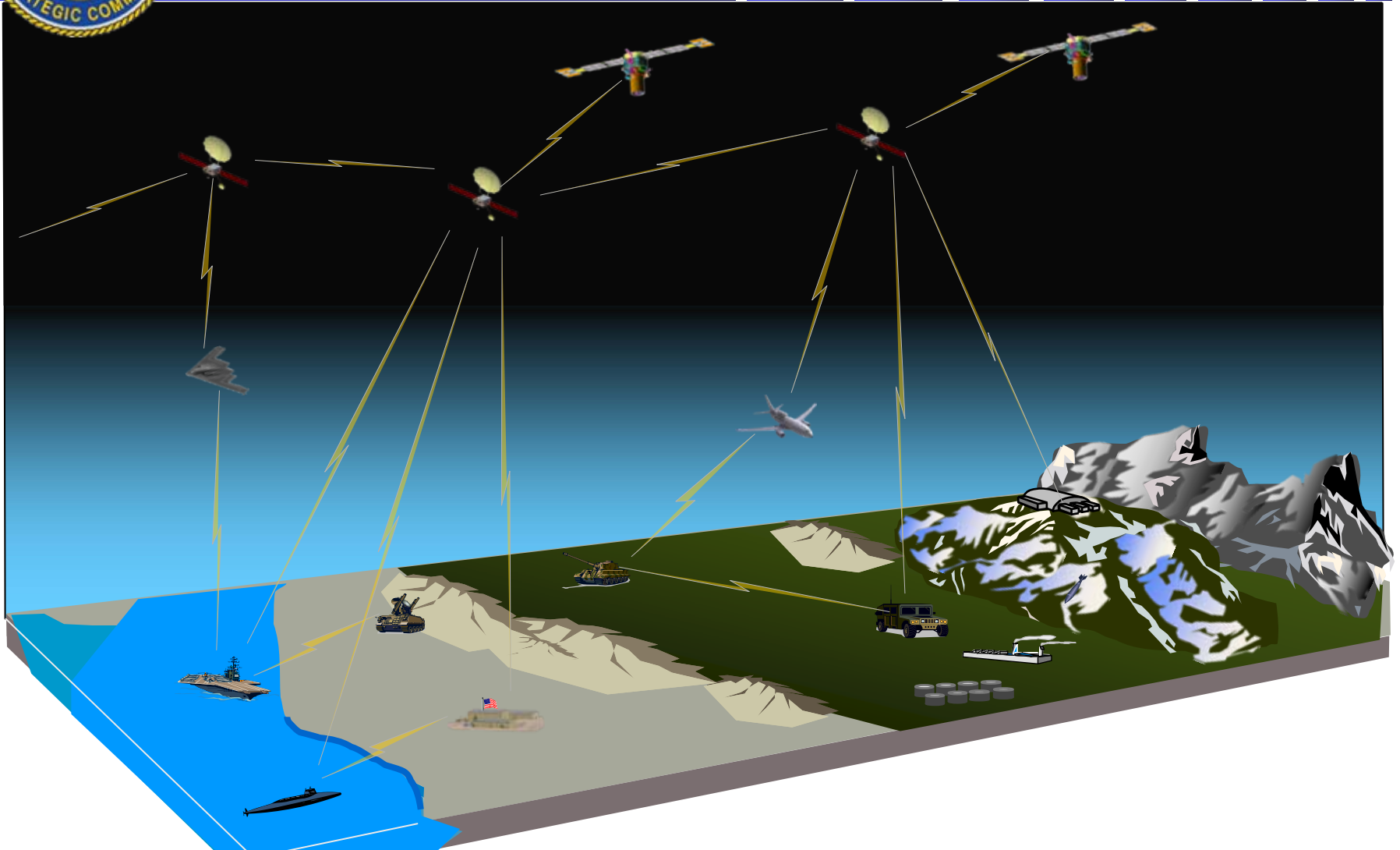
# We need a better way

- It's all about the data!
- Users need rapid, ubiquitous access to quality\* information, and be able to share knowledge...from anywhere, to anywhere





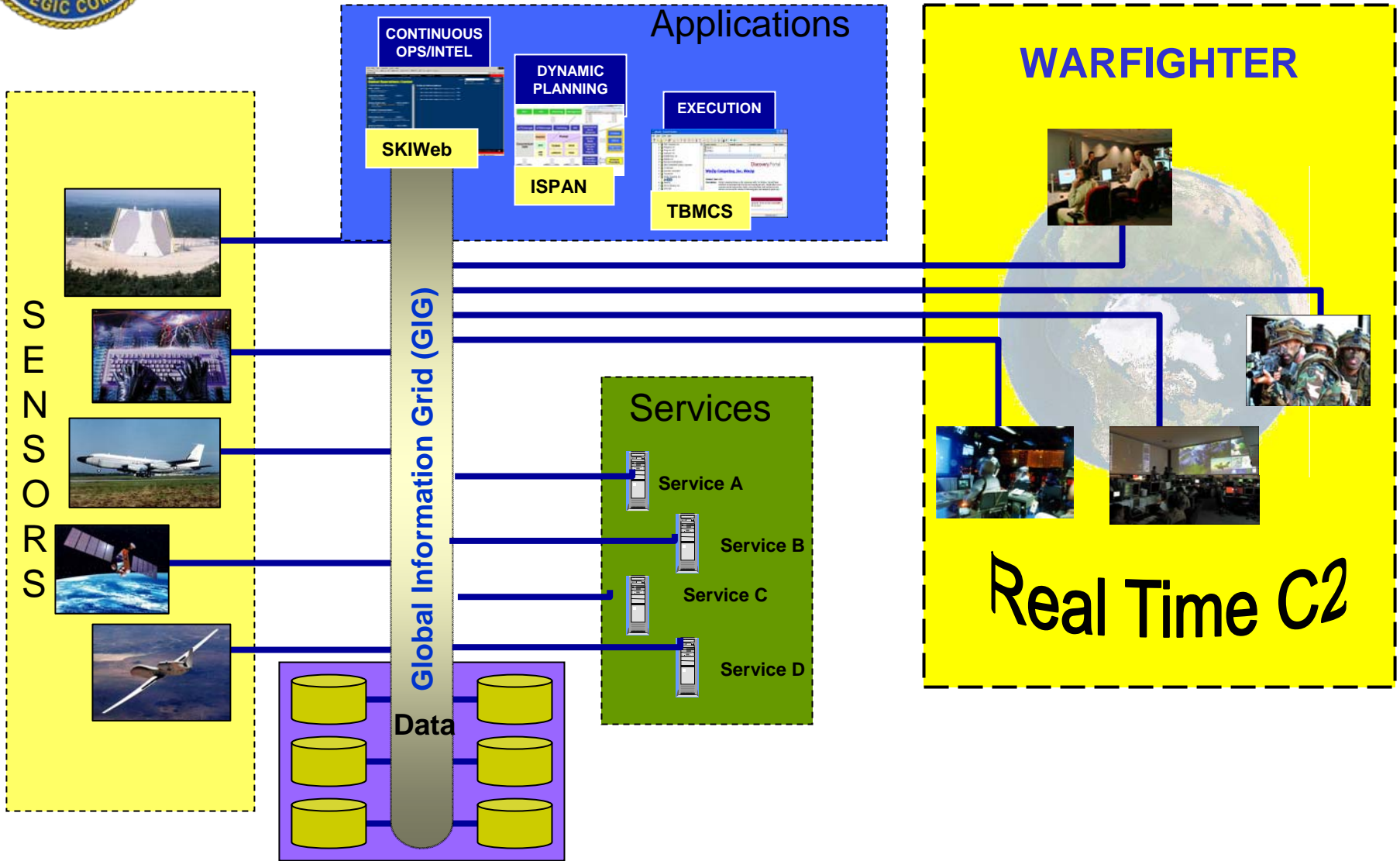
# Future Battlespace



**Rapid, ubiquitous access to quality information.  
Able to share knowledge...from anywhere, to anywhere.**



# User Perspective





# Challenges

- **Space Infrastructure**

- Long and complex acquisition system
- Program slips/Funding cuts
- Technology insertion delays

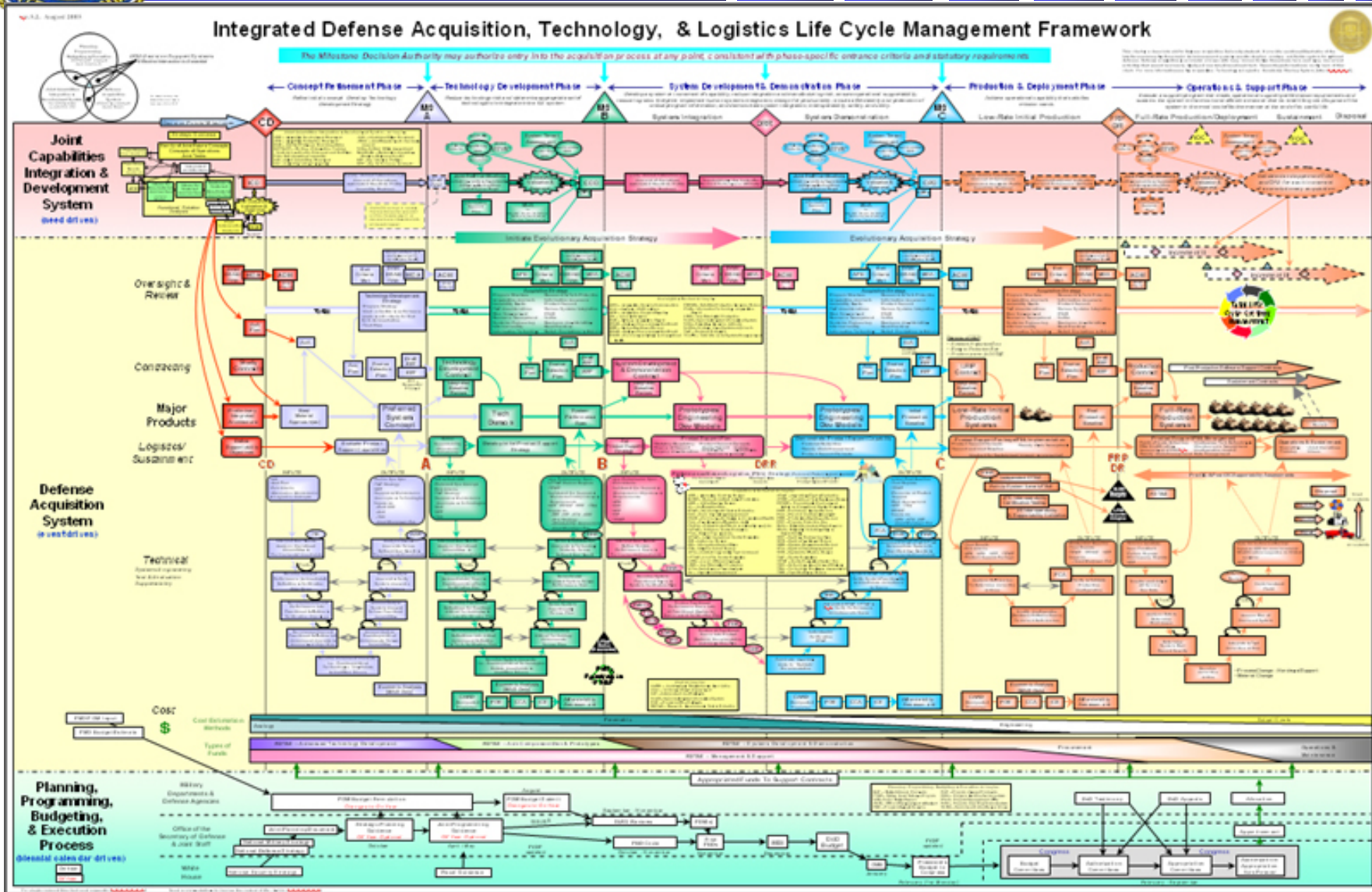
- **Data**

- Access - proprietary, security, ownership, bandwidth ...
- Quality of service - not responsive to function
- Lack adaptability - unanticipated future needs

**Is something less than 100% reliable better than nothing?**



# Acquisition Complexity





# *Response to Challenges*

- **Joint Capability Technology Demonstrations (JCTD)**
  - **New, relevant, mature technology to warfighters quickly**
  - **Demonstration program, not a procurement program**
  - **Options that can lead to accelerated procurement**
- **JCTDs with Space Impact**
  - **Extended Space Sensors Architecture (ESSA)**
  - **Tactical Satellite-2 (TACSAT-2)**
  - **Internet Protocol Routing in Space (IRIS)**

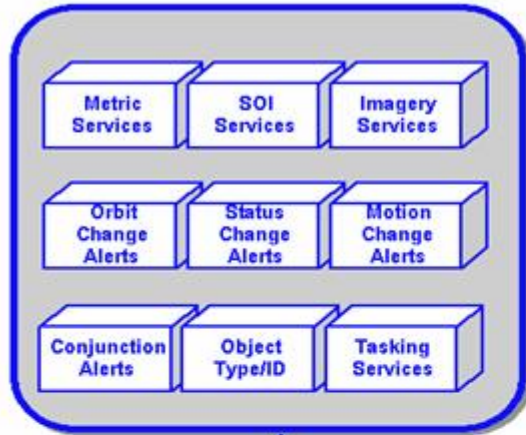




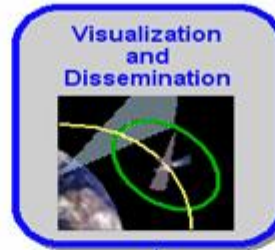
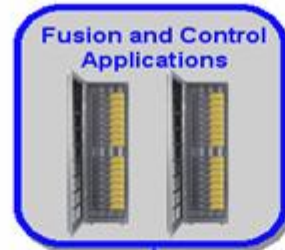
# ESSA

## Extended Space Sensor Architecture

### SSA Services



### Fusion Node



### C2 Nodes

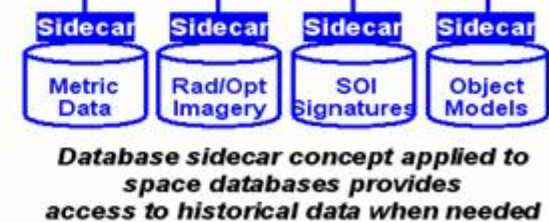


User Defined Operational Picture

### Core Services



### Communication Backbone



### Sensor Nodes

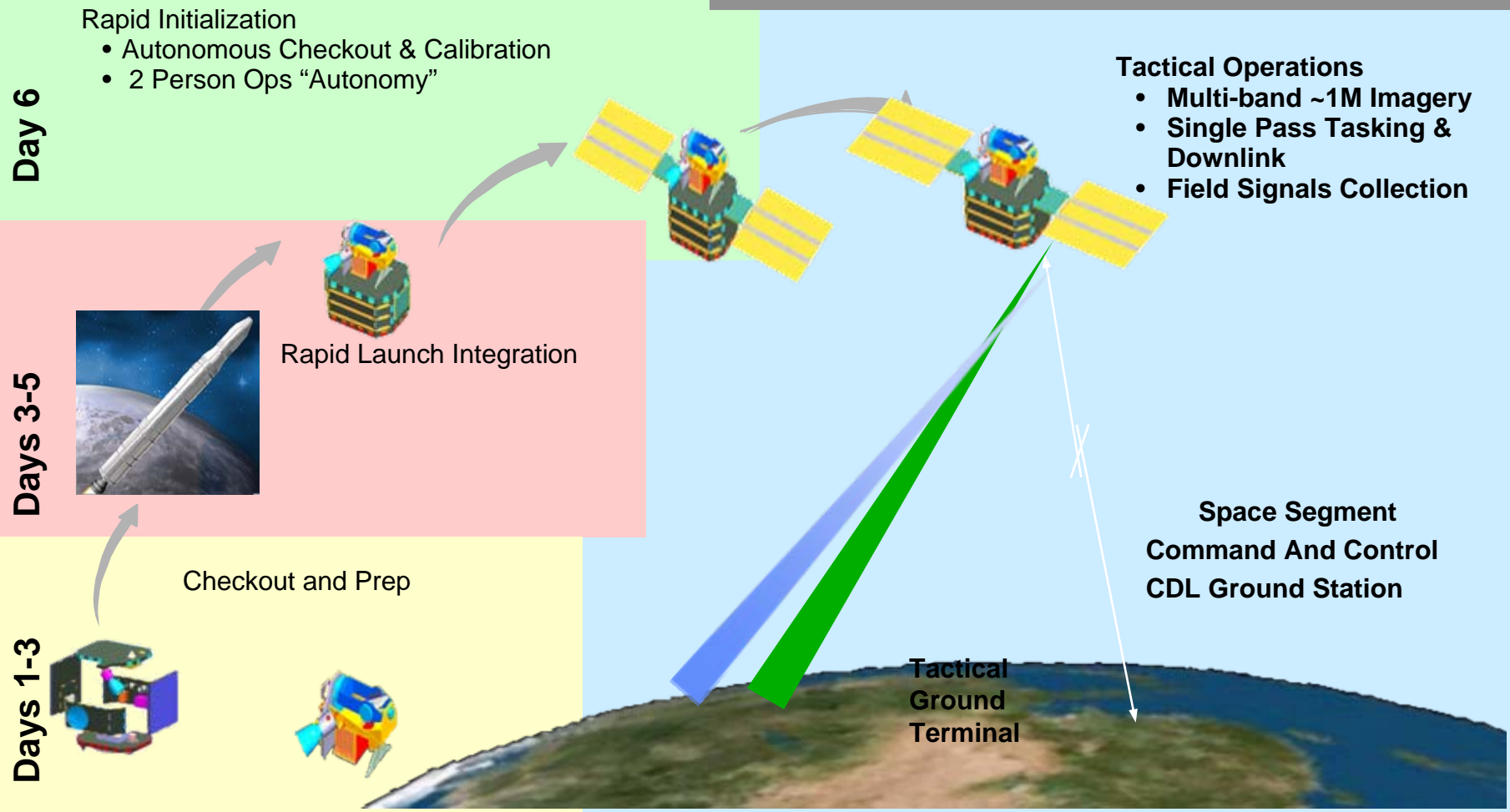
### Data Archive Nodes



# TACSAT-2

## Demonstration Objectives

- Tailored and flexible tactical satellite capability
  - Responsive Space for theater Commanders
  - Flexible and low cost payloads and launch

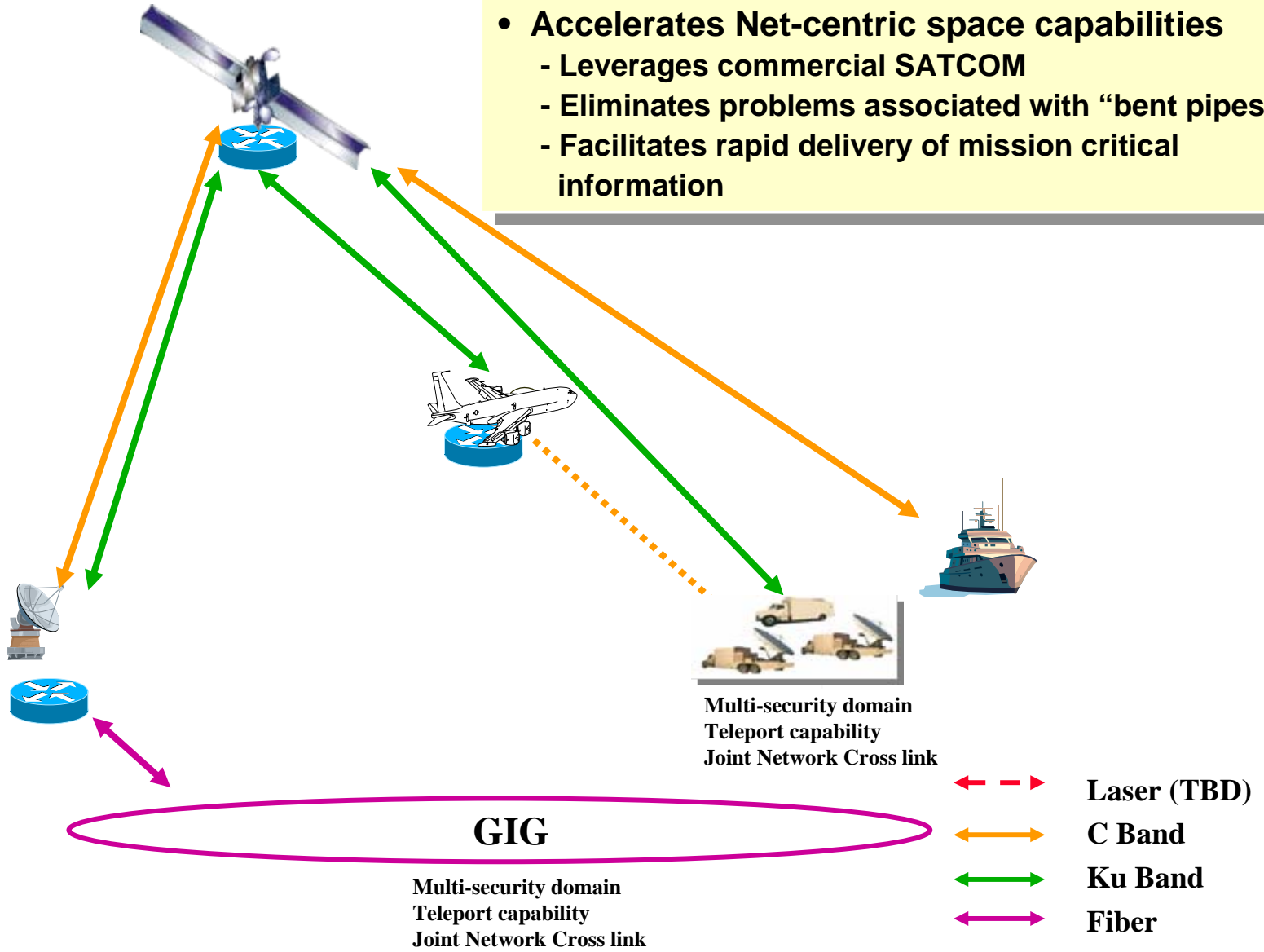




# IRIS

## IP Routing in Space

- Accelerates Net-centric space capabilities
  - Leverages commercial SATCOM
  - Eliminates problems associated with “bent pipes”
  - Facilitates rapid delivery of mission critical information





# Response to Challenges

- **Operationally Responsive Space (ORS)**

- **Objectives**

- Increase responsiveness of existing space capabilities
- Develop complementary, low-cost/rapid reaction capability

- **Focus**

- Meeting the JFC needs in operationally relevant timeframes
  - Augment on-demand capabilities optimized for JFC use
  - Reconstitute capabilities that fully or partially replace critical existing capabilities
  - Exploit existing resources to counter rapid change in national security environment

Tier-1) *Command It / Employ It*

Tier-2) *Launch It / Deploy It*

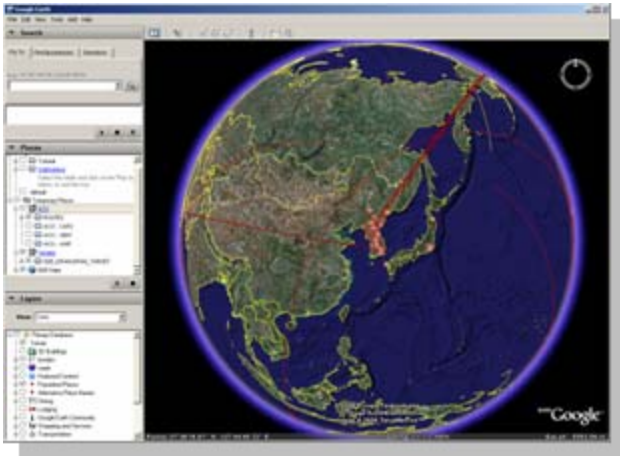
Tier-3) *Develop It*

**Contribute a responsive space element to joint operations**

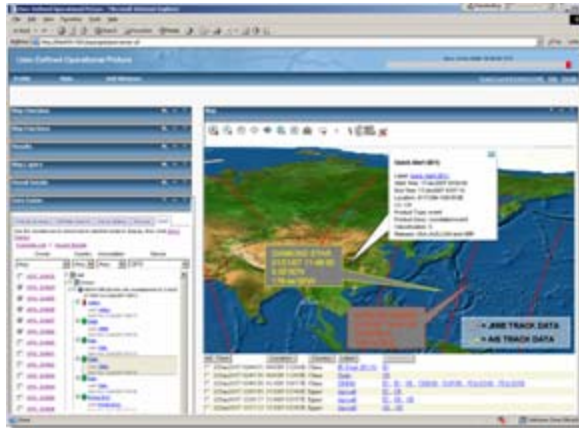


# *It's All About the Data ...*

- **Connect what's relevant, discard what's not**
  - Ensure operational demand drives a coherent set of exposure priorities
- **Assemble actionable information quicker than an adversary**
  - Maximize flexibility via application of standards at the appropriate levels
- **Think globally**
  - Utilize an enterprise approach to issues of access, security, scalability



**Global**  
*(Thick Client)*



**Regional**  
*(Thin or Thick Client)*



**Individual**  
*(PDA)*



# Putting It Altogether

