

# Enterprise Approaches to Integrating Satellite Systems



*Enterprise Ground System Architecture (EGSA)*

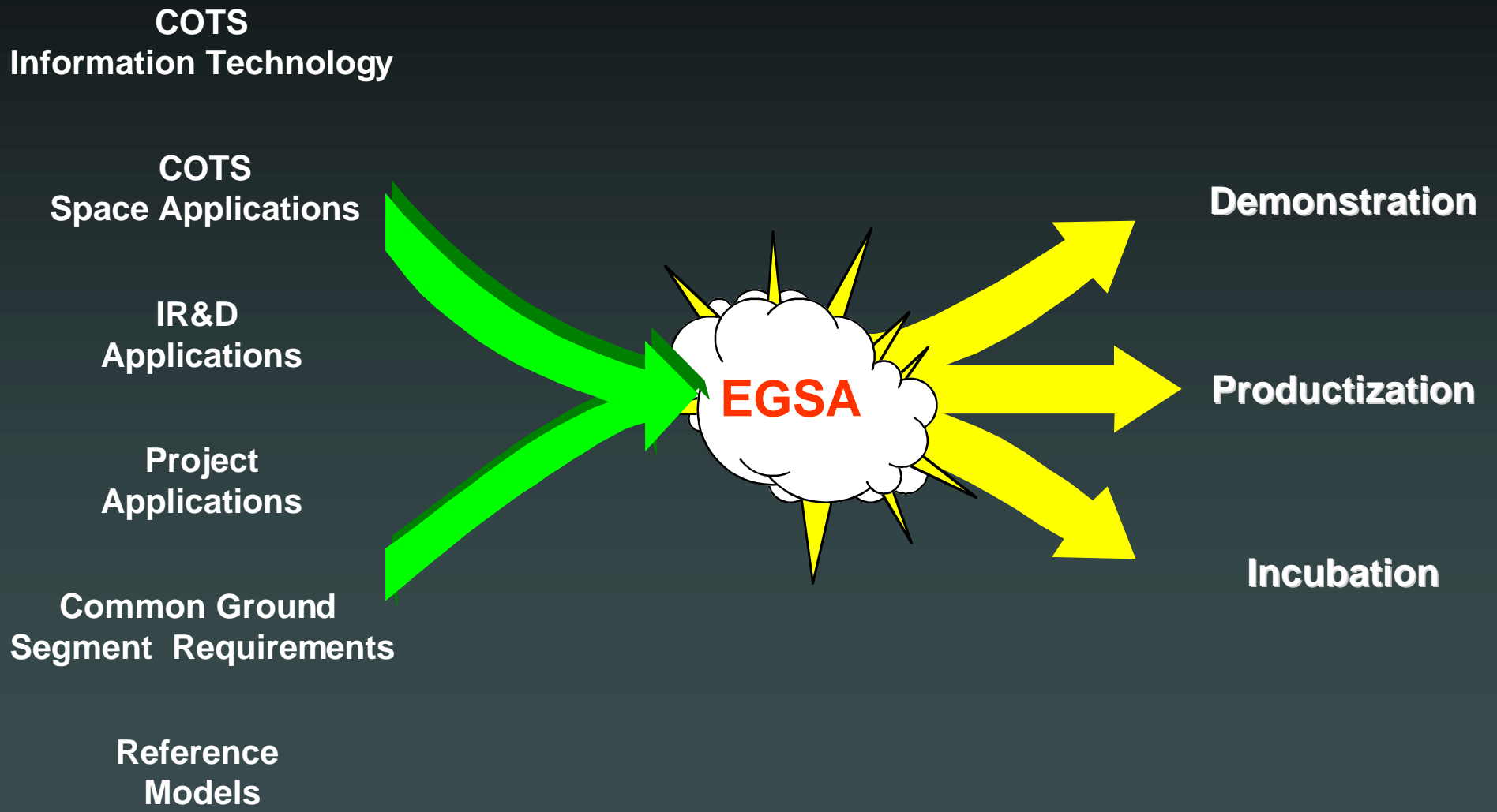
*Independent Research & Development Project*

**Systems & Information Technology Group**

**Morris Brill, Principal Investigator**

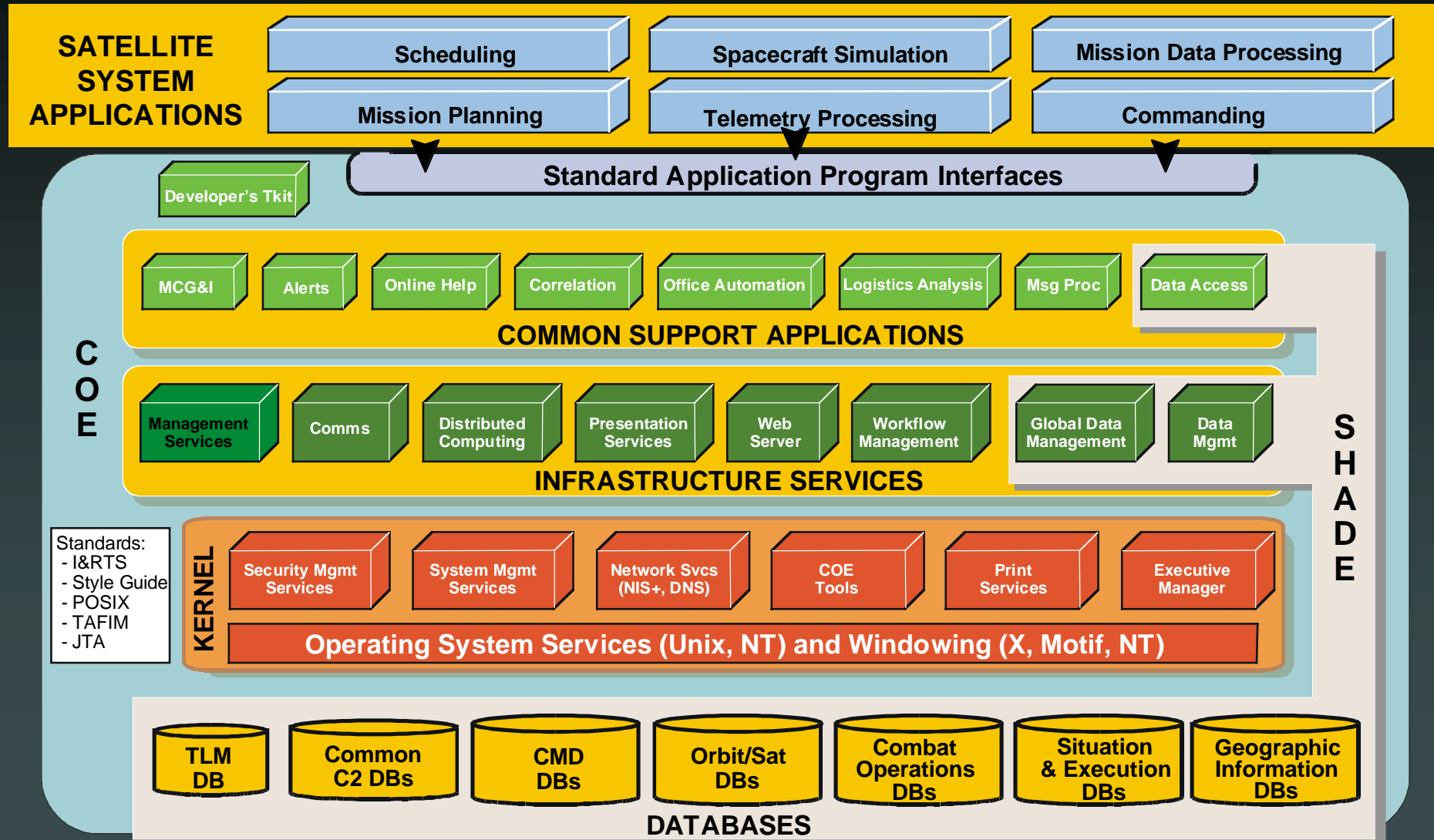


# EGSA Approach Features Use of Commercial Off-the-Shelf (COTS) Products



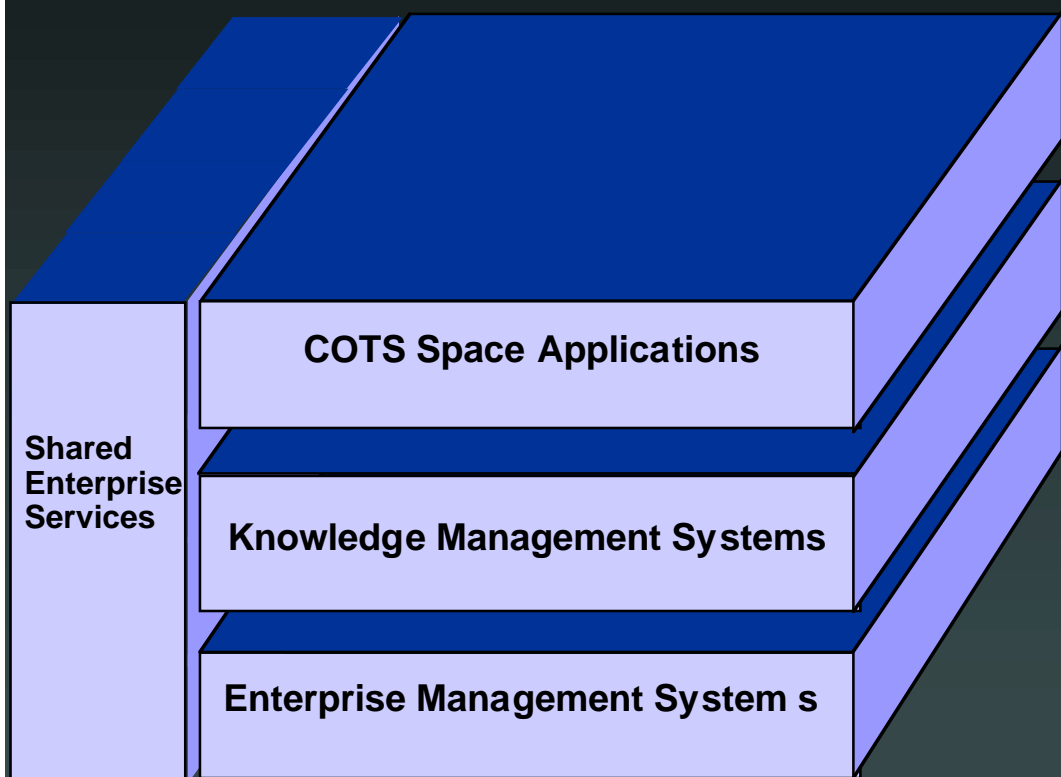


# TRW has Adapted DII-COE to Satellite Systems



# EGSA Adapts Commercial Marketplace to DII-COE

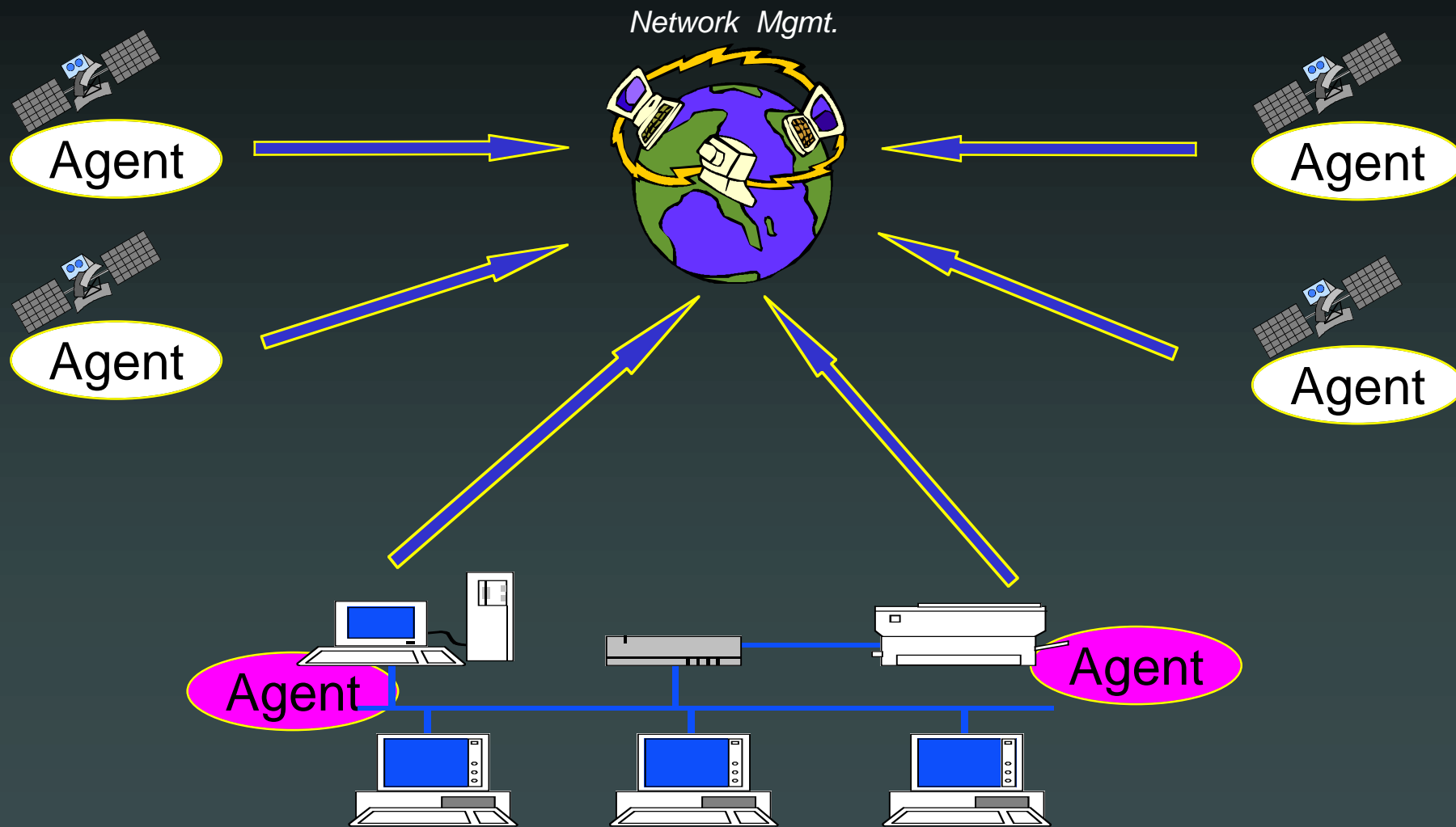
## Commercial Marketplace Layering



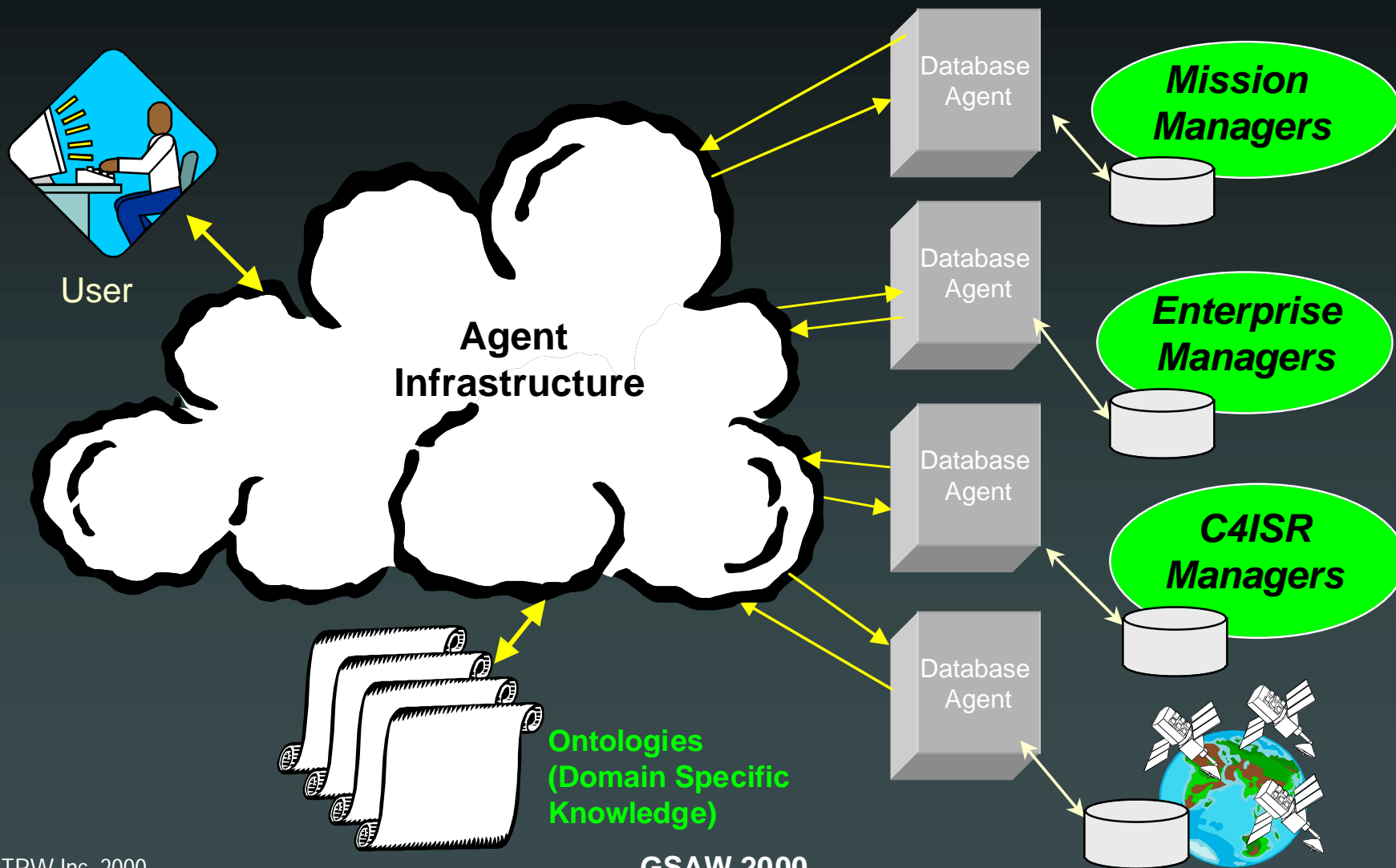
## Benefits & DII-COE Mapping

- **COTS Space Applications**
  - Manage more missions, satellites with current staffing profile
  - Quick response to changing mission requirements
  - DII-COE layer: Mission Applications
- **Knowledge Management Systems**
  - Exploit mission, telemetric, ground resource data
  - DII-COE layer: SHADE
- **Enterprise Management Systems**
  - Simplify management, legacy friendly
  - Reduce O&M costs
  - DII-COE layers: Common Support Apps, Infrastructure Services, OS Services
- **Shared Enterprise Services**
  - Middleware and infrastructure services
  - Enables productization
  - DII-COE layers: Common Support Apps, Infrastructure Services

# IP in the Sky Extends Enterprise Management Reach: Same Tools Used in Space and on the Ground



# Knowledge Management Systems Virtually Integrate Stove-Piped Systems





## Key Messages

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- **DII-COE can and has been adapted for use in spacecraft ground systems (SGS)**
- **Commercial marketplace dynamics can be harnessed to benefit the SGS**
- **The enterprise approach to the SGS is network based, COTS-based and compatible and compliant with current technical reference models (e.g., JTA, DII-COE)**
- **Enterprise management enables the management of the SGS infrastructure while lowering operations and maintenance cost**
- **Knowledge management systems protect legacy system investments and enable interoperability with emerging systems**