



Planning for the Future

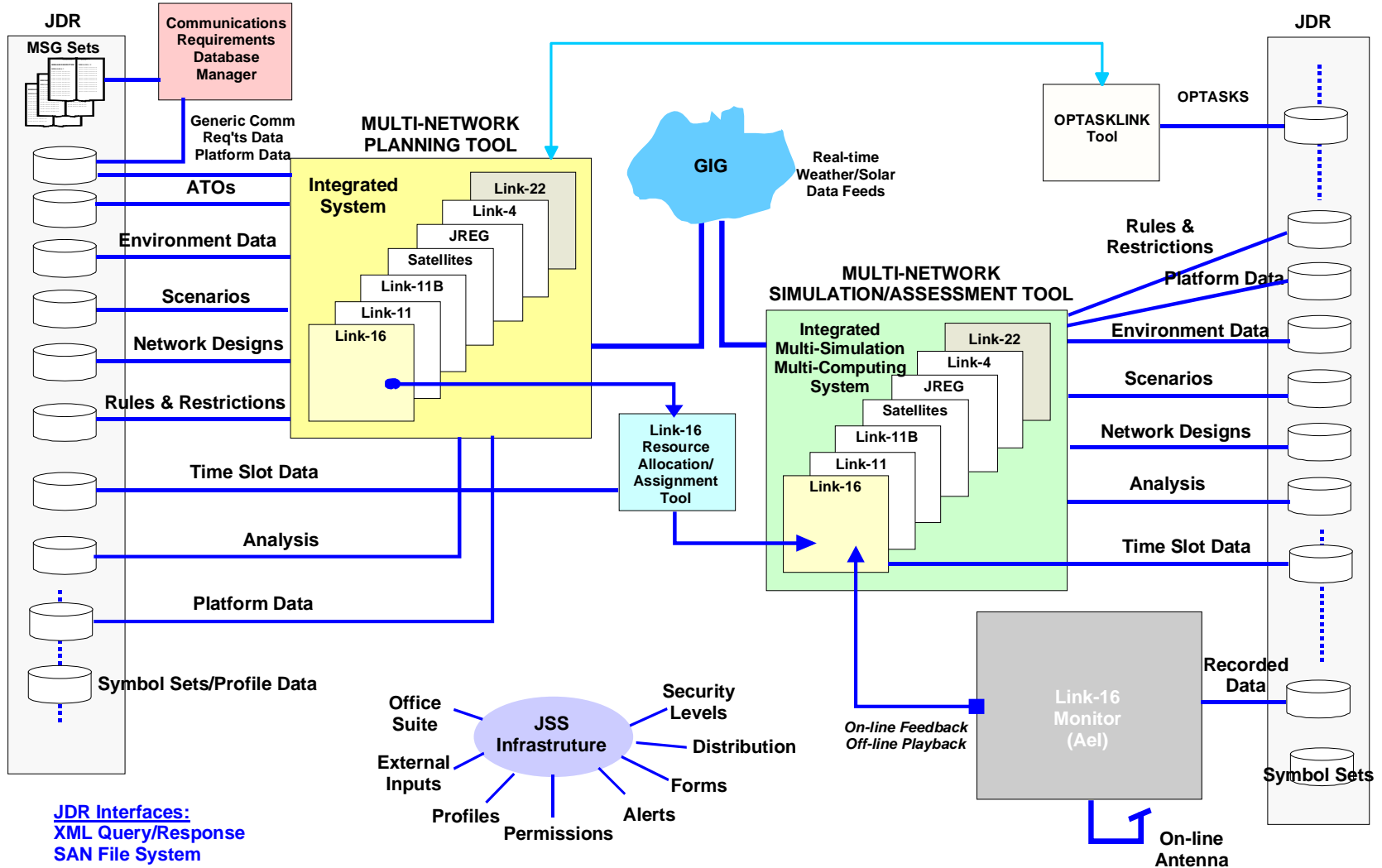
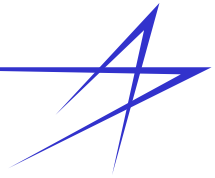
*Originally Presented on 30 August 2004 in the
JSS Phase 1 Kickoff Meeting held at
Lockheed Martin – MS2, Moorestown NJ
for Air Force ESC JSS Project Team Client*



Dr. John Fikus



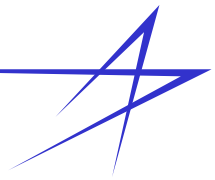
JSS Phase 2 Multi-Network Planning System



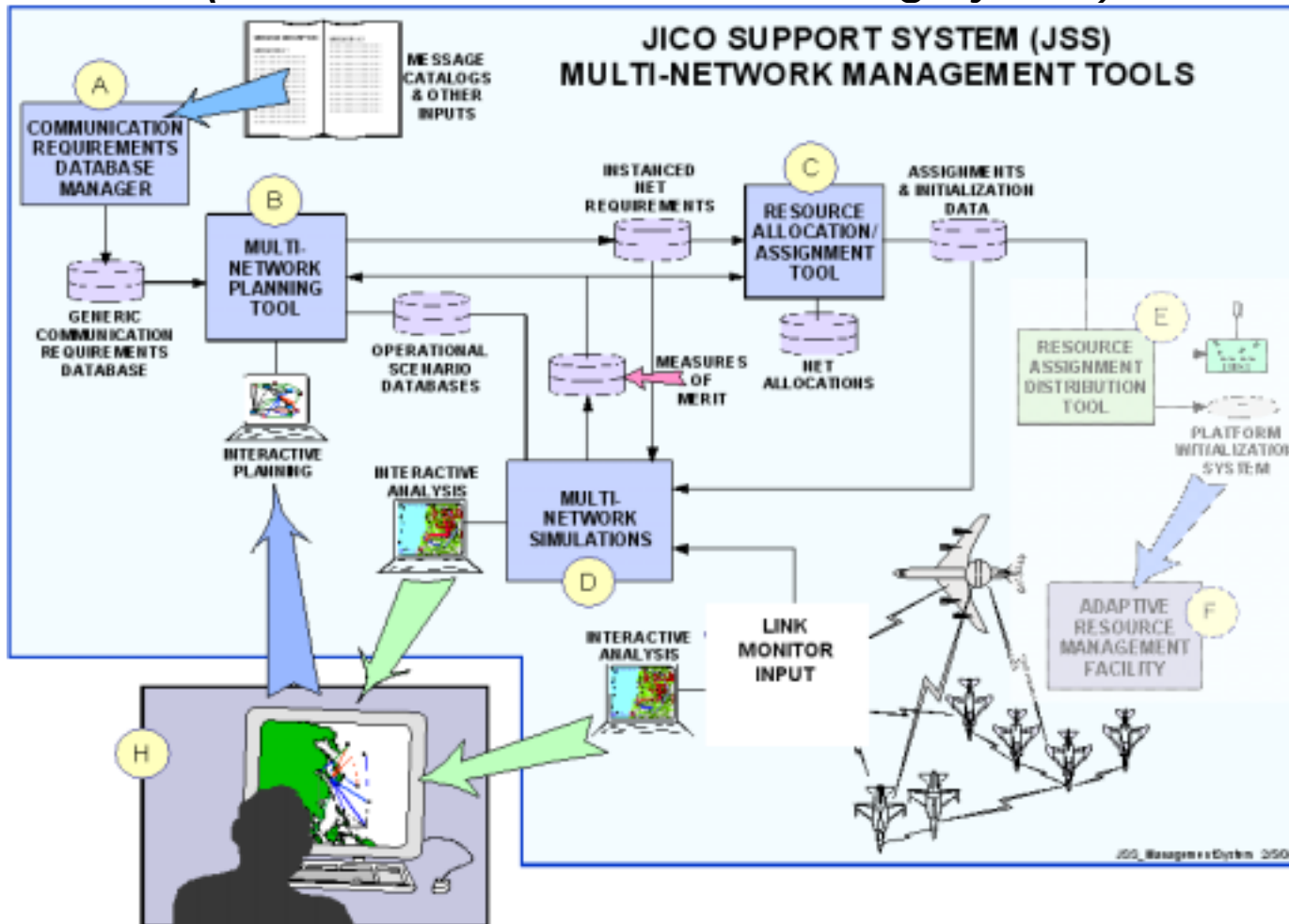
JDR Interfaces:
XML Query/Response
SAN File System



Integrated Link-16 Network Management System

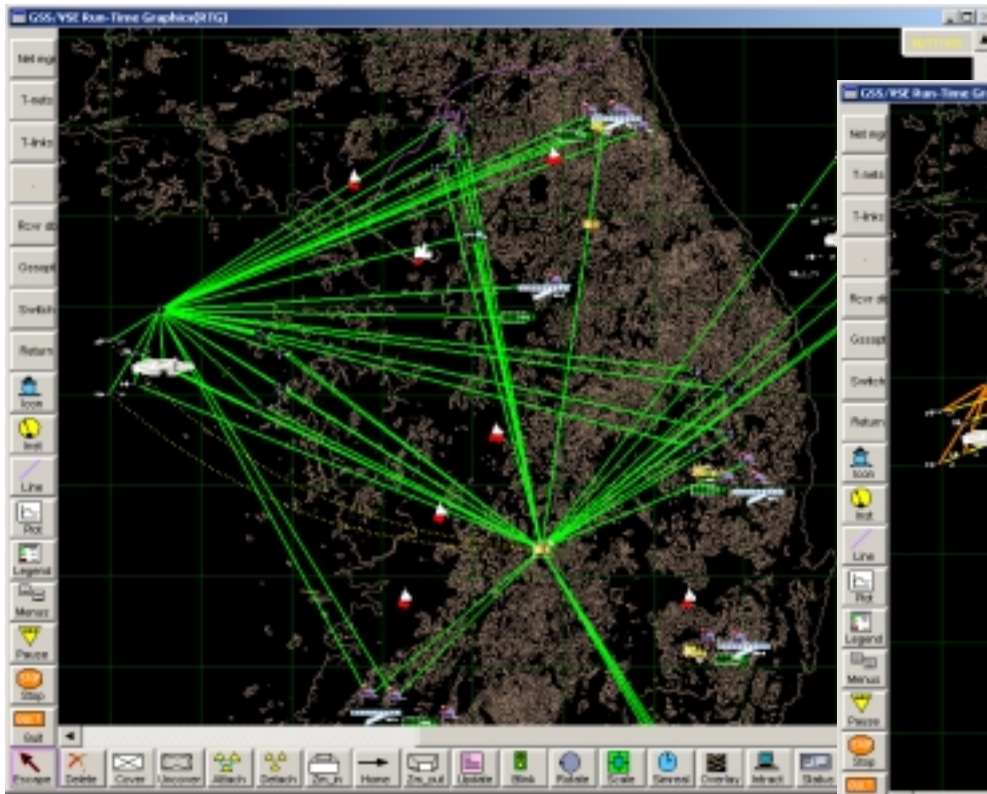
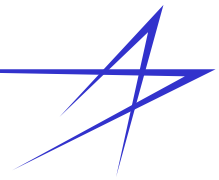


(Basis for Multi-Network Planning System)

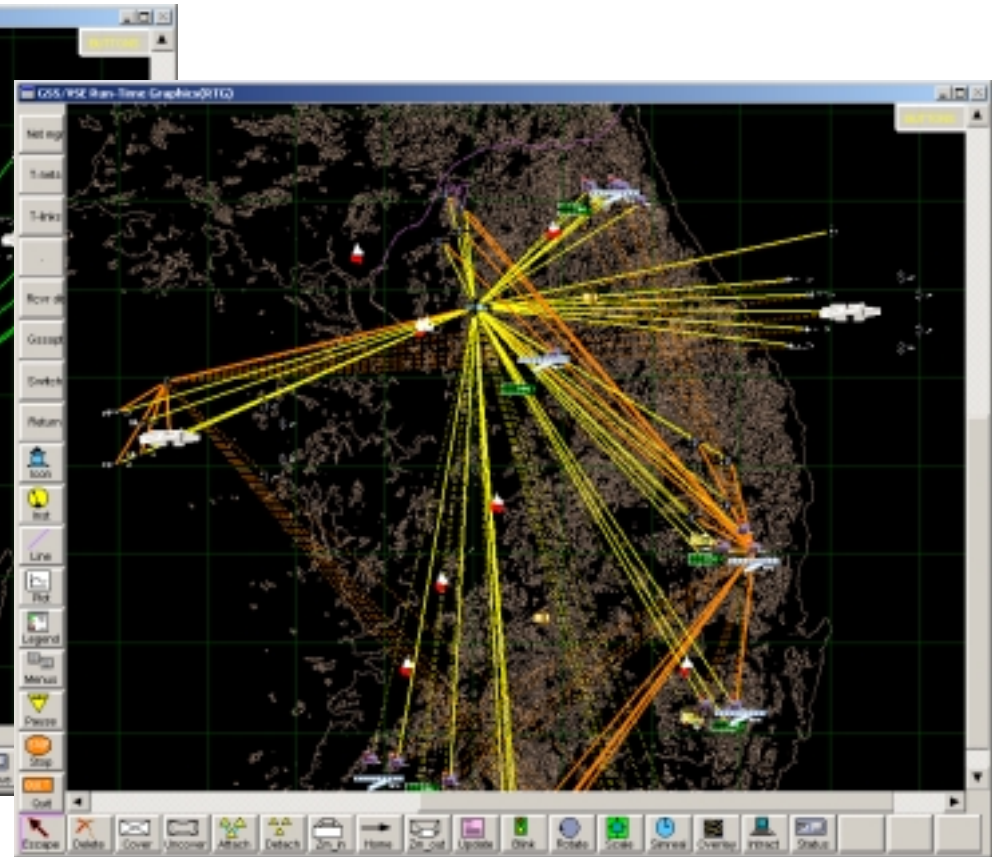




Dynamic Link and Net Connectivity Display Supports Planning, Analysis and Test



Visualize Validated Radio Link Connectivity Predictions Against Terrain of Operations

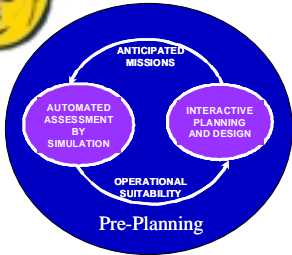


Visualize Direct Net Connectivity (Orange) and Relay Connectivity (Yellow)



Benefits of Our Approach to Planning

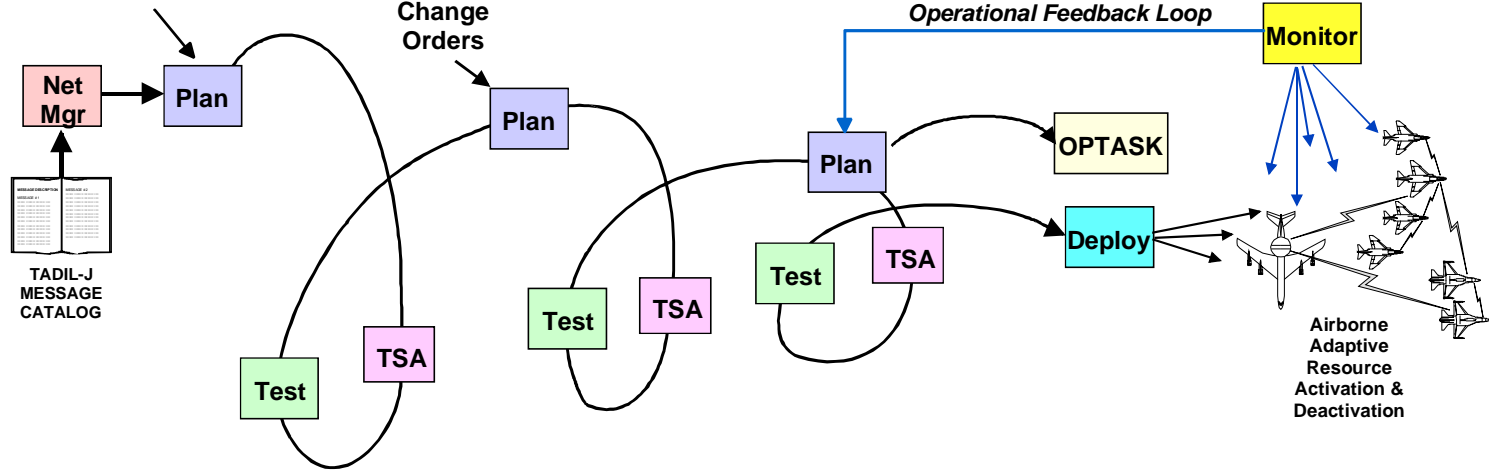
**Link-16
Example**



- Greater Operational Focus
- Network & Mission Centric (Operational Nets)
- Dramatically Faster Network Design, Build and Test Cycles
- Rapid, Low-Cost, Low-Risk and Accurate Design Verification
- Dramatic Increase in Link-16 Network Capacity
- Dramatically Larger Scenario Sizes (3-5 Times Bigger)

Very Fast, Accurate & Intuitive Design & Test of Networks Enables Short Spirals

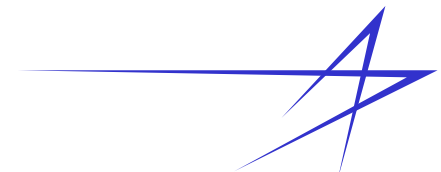
ATOs
Scenarios
ROEs
Platform Info



Plan	Operational Network Planning Tool: Focus on Network Design and Mission Effectiveness
TSA	Automated Time Slot Allocation: Allocate and Assign Time Slots in Seconds
Test	Fast, Accurate MTA Simulation: Test Networks in Complex Scenarios to Reduce Risk



Network Planning



Today

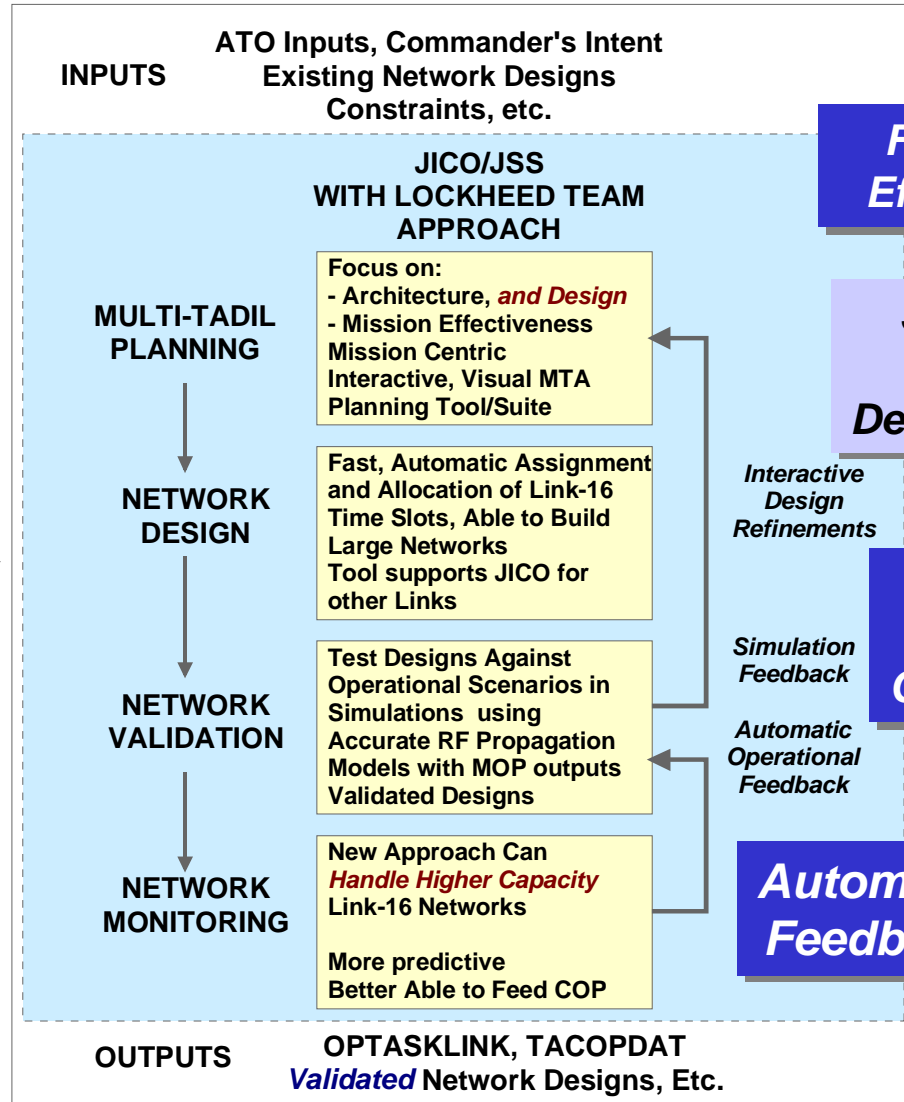
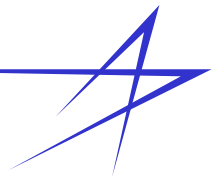
- JICOs/NDFs overloaded
- Long design cycles
- JTIDS/MIDS:
 - “Broken!”, “Saturated!”
- Disjointed info sources
- Time slot centric
- Limited Tools
 - Highly manual operations
 - Time Slot “craftsman”
- Limited pre-op network evaluation/validation
- Limited on-line feedback
- Cumbersome training

Our JSS & Beyond

- JICOs/NDFs off-loaded, more effective
- Rapid design and test cycles
- JTIDS/MIDS:
 - Realize full potential
- Integrated, fused info sources
- Network/mission centric
- Complete integrated network planning suite for JSS
 - Time slot automation
- Robust validation by simulation with large, complex scenarios
- Automated on-line feedback
- Superior training via closed-loop planning system



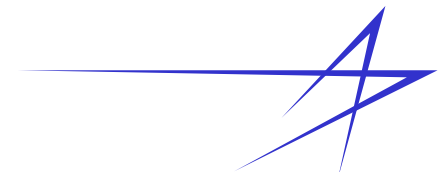
Our JSS Planning Approach



(From PSI technology talk)



Conclusions



- **Bottom Line Results**
 - Significant reduction in network design and build times
 - Rapid, low-risk validation of networks
- **Integrated multi-network management system:**
 - Supports comprehensive off-Line and on-Line JICO operations
 - Time slot automation with manual override capability
 - Facilitates improved JICO/NDF feedback and interactions
 - Supports superior JICO training
 - Provides a bridge to the future... new TDLs, algorithms
- **Network / mission centric approach provides the flexibility to meet the operational demands of tomorrows missions**
- **Ready for future JSS**
 - 5 to 10 times more network capacity
 - Ability to Plan and Test 3-5 times larger deployments