Impacts/Benefits of COTS during Operations/Maintenance Phase

FUSE Lessons Learned

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Benefits

- SCL C&C Standard Approach
  - Flight/Ground/I&T
- Mission Ops Team integrated at design phase for both Flight and Ground Operations

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Impact

- Cost/Schedule Impact
  - $$
  - Time
- Technology Impact
  - Leveraging On-board Expert System to detect SEU and reload detectors

FUSE Approach

- Mass Customization
  - Not COTS Mass Production
  - But Open COTS + GOTS + …
- COTS only gets you to an 80% solution, You then need to tailor the solution to the customer/application

GOTS

- Lack of Support
- Lack of Documentation
- Costly

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COTS Integration

- Issues
  - Scalability
  - Support/Maintenance
  - Risk Mitigation / Total Cost
- CORBA
  - IONA
    - Orbix & OrbixEvents
- Software Bus
  - Ground Data Distribution
    - NDDS from RTI
    - Tooltalk

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Data Management

- Data Representation
  - From RDL to SML/XML
    http:www.interfacecontrol/SML

- Data Management
  - Object-Oriented Database
    - O2 Ardent Software
      - Benefits
      - Issues

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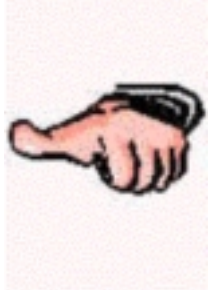
Other COTS

- Displays using SAMMI
  - A Mission Ops Responsibility

- STK

- MatLab



- IDL

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Key To Success

- SCL Standard Framework
- Open Source (ICS Announcement)
- Integrated Team
  - Mission Ops
  - Software Development
  - Vendors

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Pat Cappelaere

- President/CEO founder of Interface & Control Systems 1988
- Software Architect for SCL: Spacecraft Command Language
  - Command Interpreter/Expert System for On-Board Space Applications/Embedded Systems
- ICS Major Achievements:
  - Clementine (1994), ROMPS, FUSE, X33
  - New Programs: SBIRS High, ICM, NEMO
- Education
  - M.S. in Engineering -- Lille France
  - XMBA Loyola College – Baltimore MD

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