SCISYS

- **Founded in 1980**

- **Innovative software solutions**

  » Space, Defence, Environment Broadcast, Transport, Energy…

- **AIM Exchange** (1995)

- **Offices in UK and D**

- **450 staff; £43M turnover**

- **Space ⟷ Non-Space**
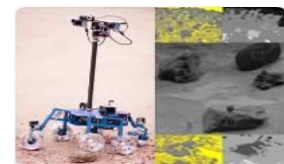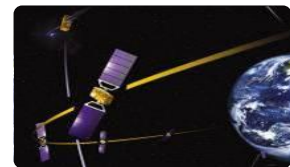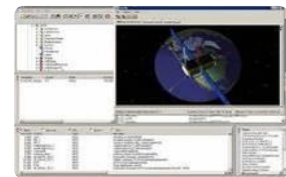
Software for Operational Systems

- Operational Customers
  » Mission critical – Systems have to work and be reliable
  » Long duration - Systems used for 10+ years
- Ground – Distributed systems, automation
- Space – Real-time embedded systems , autonomy
- Simulation – Validation & Operations
- From Concept to Operations
  » Mission & Operations Concept Studies
  » Architectures
  » Design, Implementation & Validation
  » Deployment, Operations & Maintenance
- National Expert Status
  » Represent UK and Germany in standards groups
- Quality and Standards
  » ISO 9000:2008 TickIT   ISO 14001:2009
  » OHSAS 18001   ECSS standards
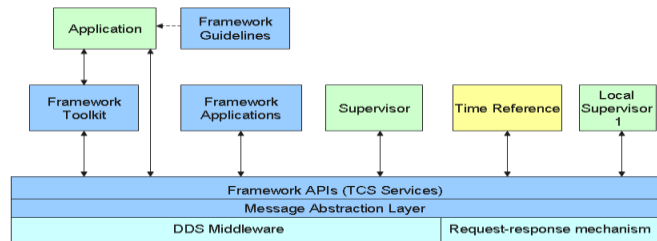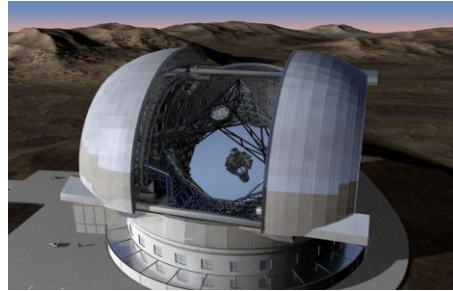
ESO E-ELT Architecture Study

- E-ELT and Space share similar needs
- Complex, expensive, systems
- Remote operations
- Minimise life-cycle costs
- Maximise science return
- Integrate subsystems and instruments
- Long-Term Technology Thinking
  - » 20+ year time-scales
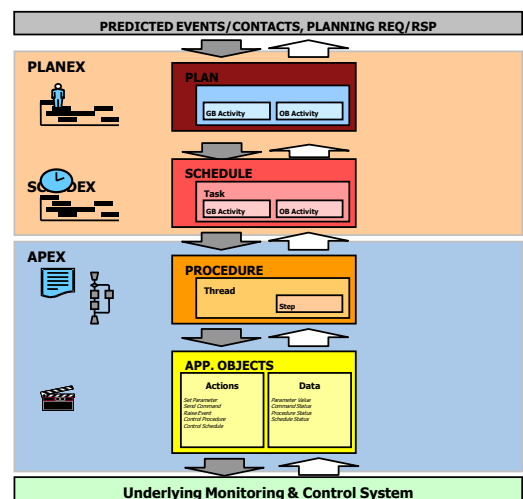 - » Minimise and manage obsolescence impacts

Application	Framework Guidelines			
Framework Toolkit	Framework Applications	Supervisor	Time Reference	Local Supervisor 1

Framework APIs (TCS Services)	
Message Abstraction Layer	
DDS Middleware	Request-response mechanism

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Planning and Automation

- Why Automation:
  - » Operational Cost Reduction
  - » Reduce Manning Levels
    - › Reduce # Shifts
  - » Improve Consistency and Safety of Operations
  - » Effective use of Resources
  - » Hostile Environment
- Suitable for:
  - » Fleet or Constellation Operations
  - » Ground-based Automation
  - » **Shared instrument resources**
  - » **Instrument Automation**
  - » **Repetitive procedure execution in constrained and changing environments**
- **Heritage**
  - » Meteosat Second Generation (EUMETSAT)
  - » Constellation Planner (Galileo GNSS)
  - » Hylas Payload Control (Avanti)
  - » UK Digital TV Network (Arqiva)
  - » Drilling Automation (Schlumberger)

PREDICTED EVENTS/CONTACTS, PLANNING REQ/RSP

PLANEX — PLAN — GB Activity — OB Activity

SCHEDEX — SCHEDULE — Task — GB Activity — OB Activity

APEX — PROCEDURE — Thread — Step

APP. OBJECTS — Actions — Data
Set Parameter / Send Command / Raise Event / Control Procedure / Control Schedule — Parameter Value / Command Status / Procedure Status / Schedule Status

Underlying Monitoring & Control System

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