



Analysis software for land, sea, air, & space

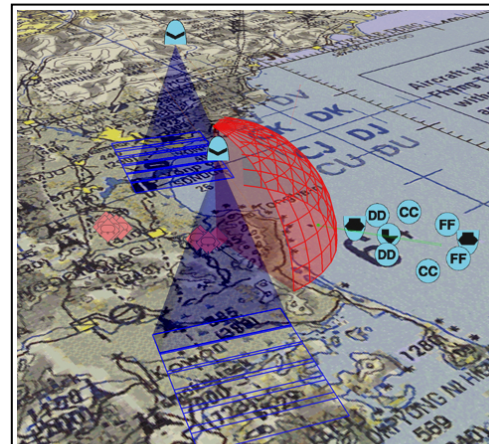
Space Information & Intelligence System

RAF Fylingdales

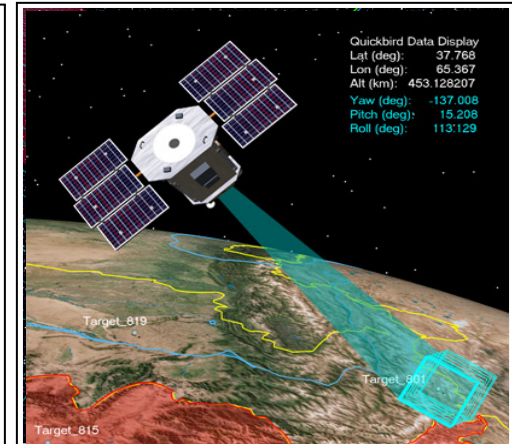
AGI overview



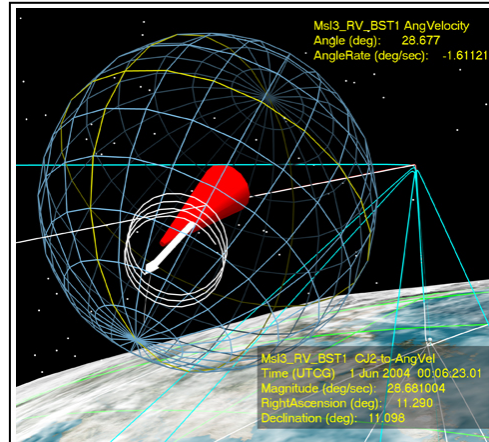
- **A software product company**
- Industry standard for analysis & visualization
- Offices in US, Europe and Asia
- Founded in 1989
- 32,000+ registered installations
- 500+ buying organizations
- STK 7.1 released May 2006
- STK 8 October 2006



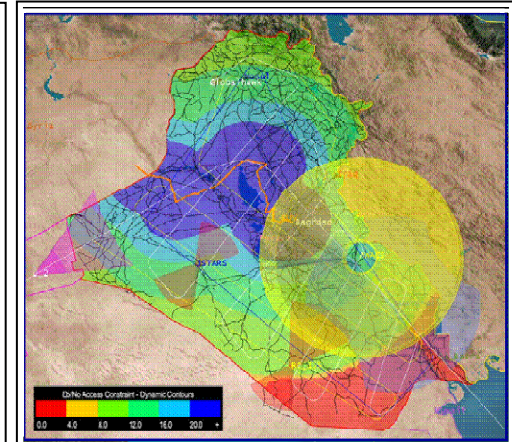
Battlespace Management



Space Systems



National Defense



Geospatial Intelligence



Background: RAF Fylingdales



- Phased-array radar located in North York Moors, England
- Part of the Ballistic Missile Early warning System
 - UK and US
- Secondary role is the detection and tracking of orbiting objects
 - Project focus area
 - What can see what & when?



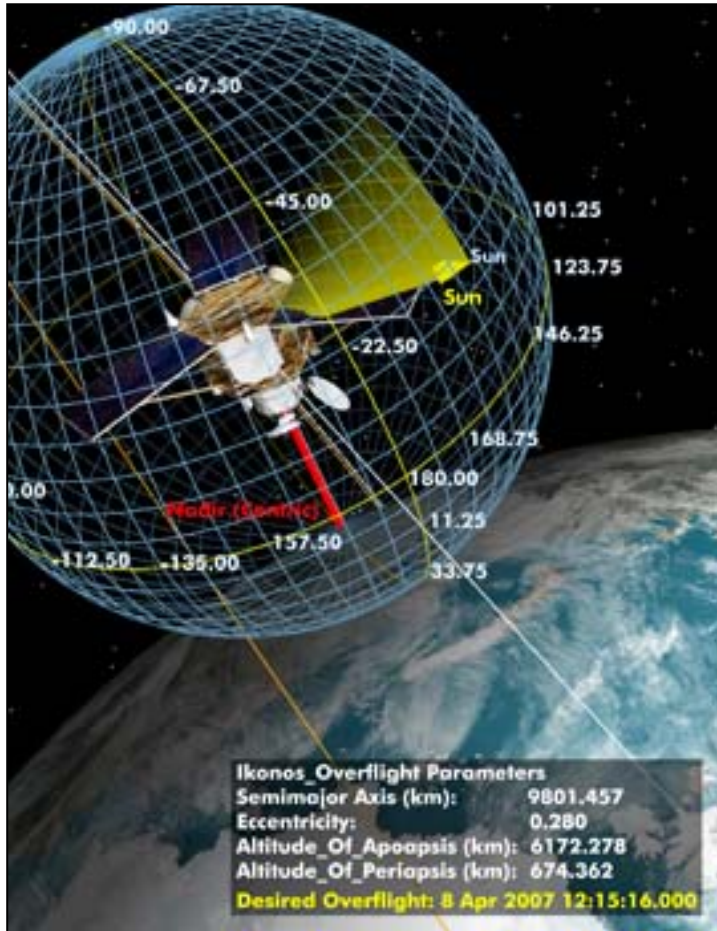
Problem



- Aging legacy software (~30 years)
- Replacement hardware difficult to find (eBay)
- Original development team retiring
- Complicated to use
 - Extensive training required
- Two prior unsuccessful upgrade attempts
 - 100% custom software
 - 2-year project lifecycle
 - \$6 million over - budget

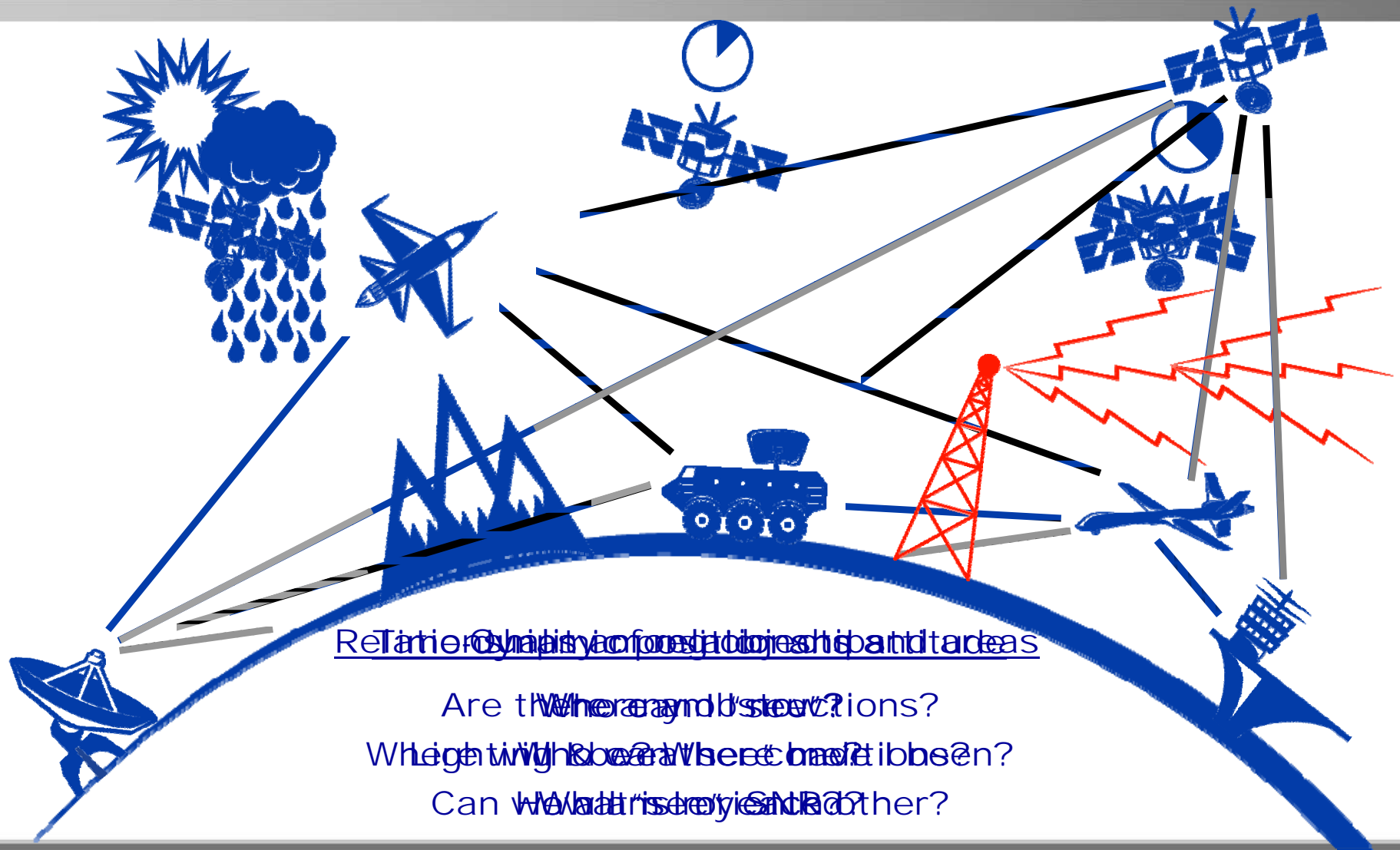


Key derived requirements



- ✓ Manage database of space objects
- ✓ Given a point or area on ground, calculate when in view from tracked space objects
- ✓ Generate actionable reports
- ✓ Easy-to-use by entry-level operational staff

STK basics



Relationships and data

Where are the objects?

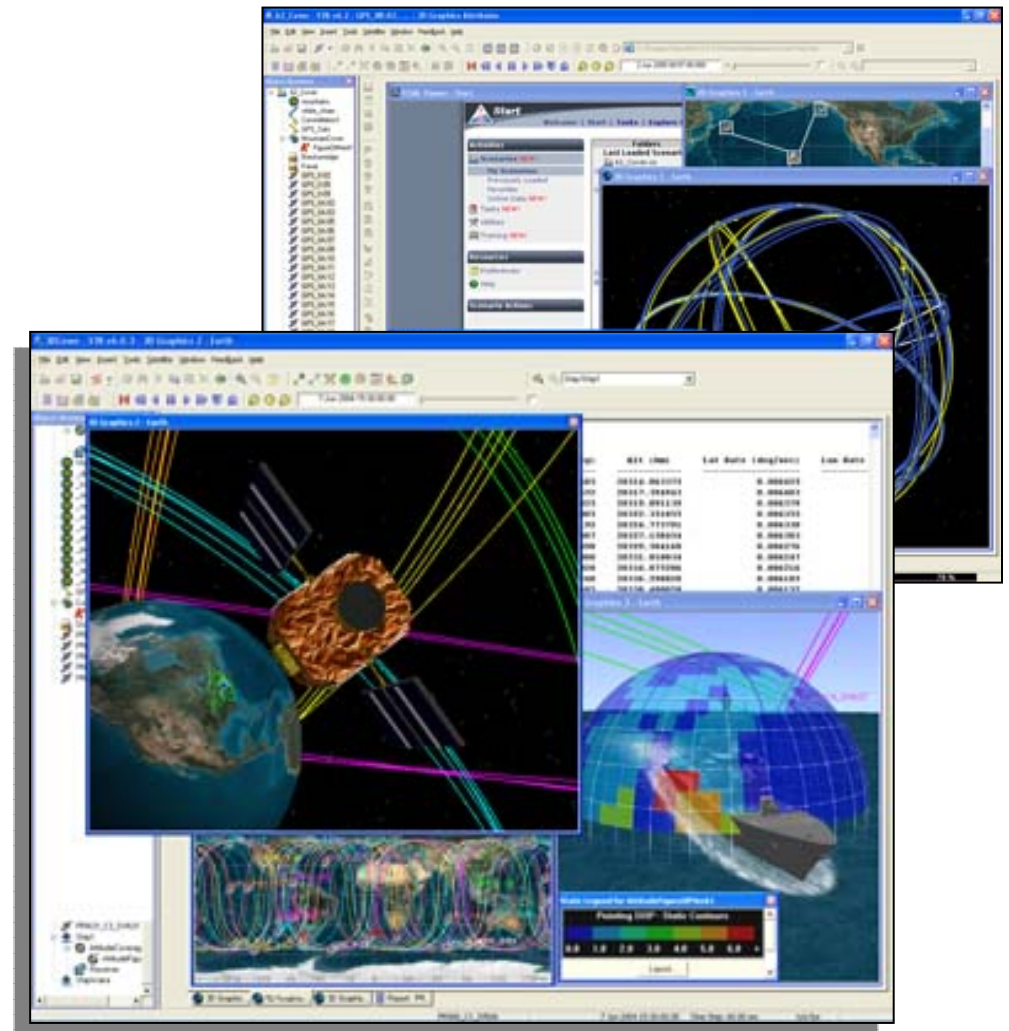
Where are the objects?

What is the data?

Off-the shelf solution?



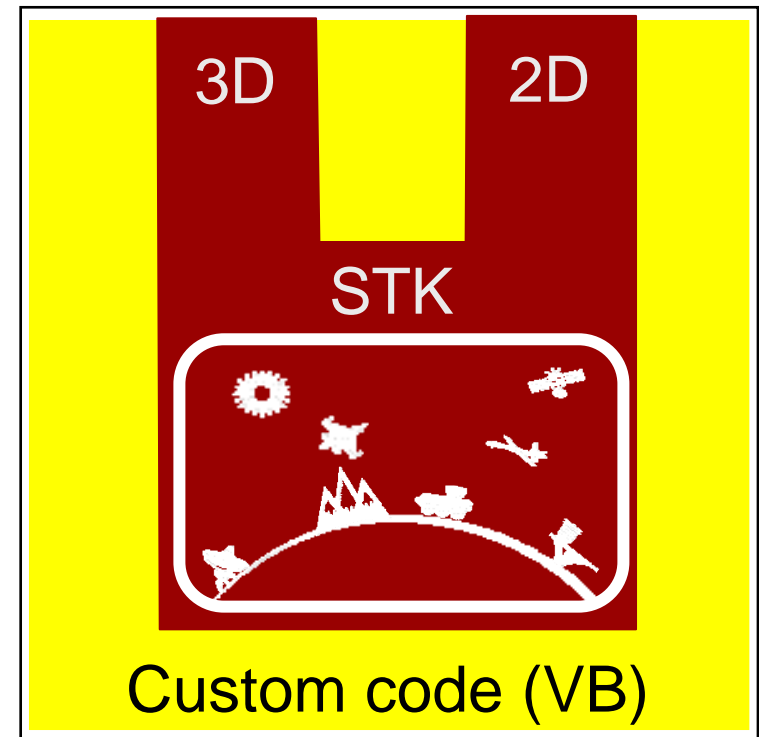
- All functional requirements met by AGI commercial product, Satellite Tool Kit (STK)
- Operational requirements not met due to learning curve
 - 400+ panels
 - Too many choices



Solution architecture

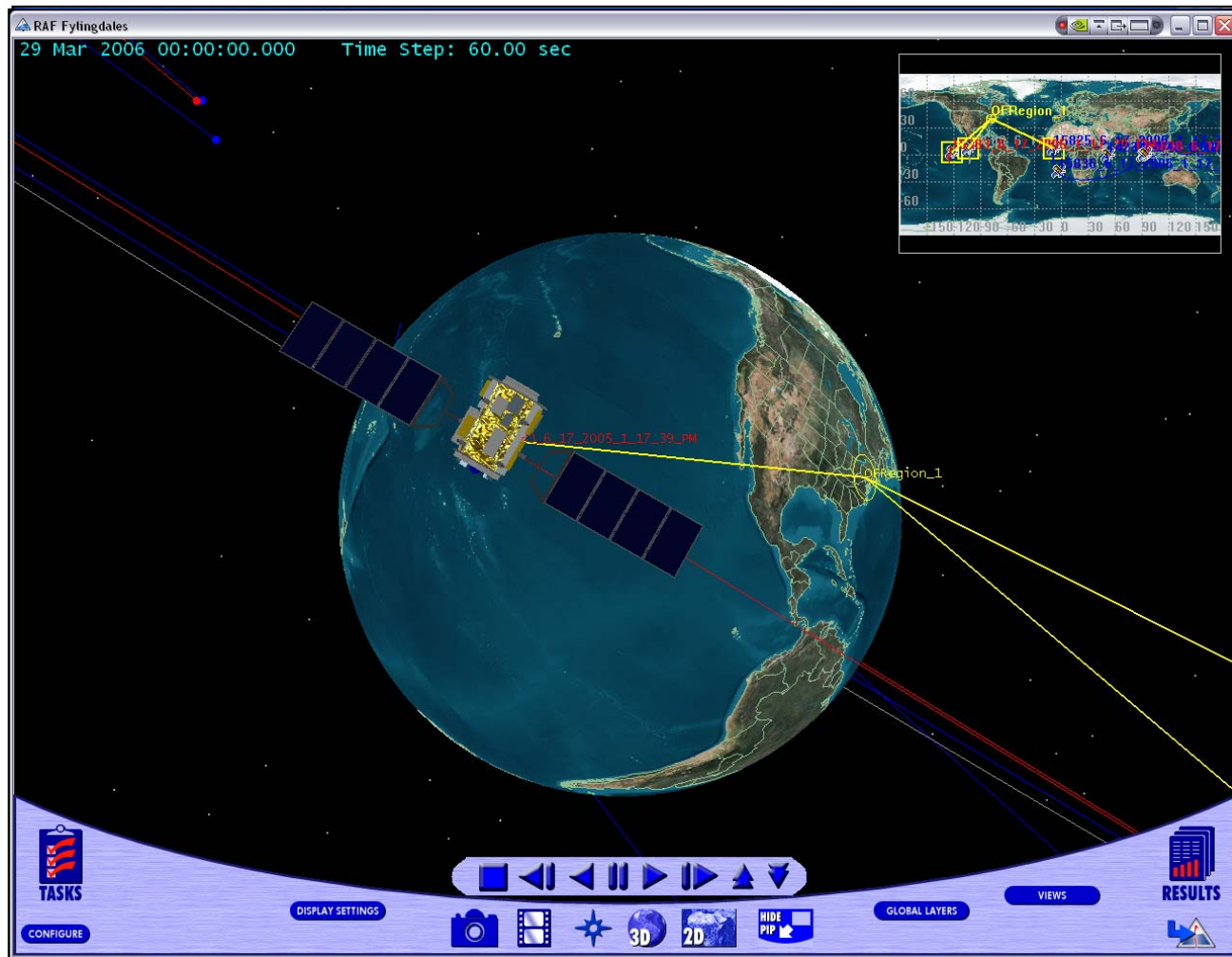


- Embed STK geometry engine & 3D/2D displays
- Custom code supports specialized workflow
- Use 80% COTS & 20% custom
 - COTS portion does all of the work
 - Custom code supports workflows

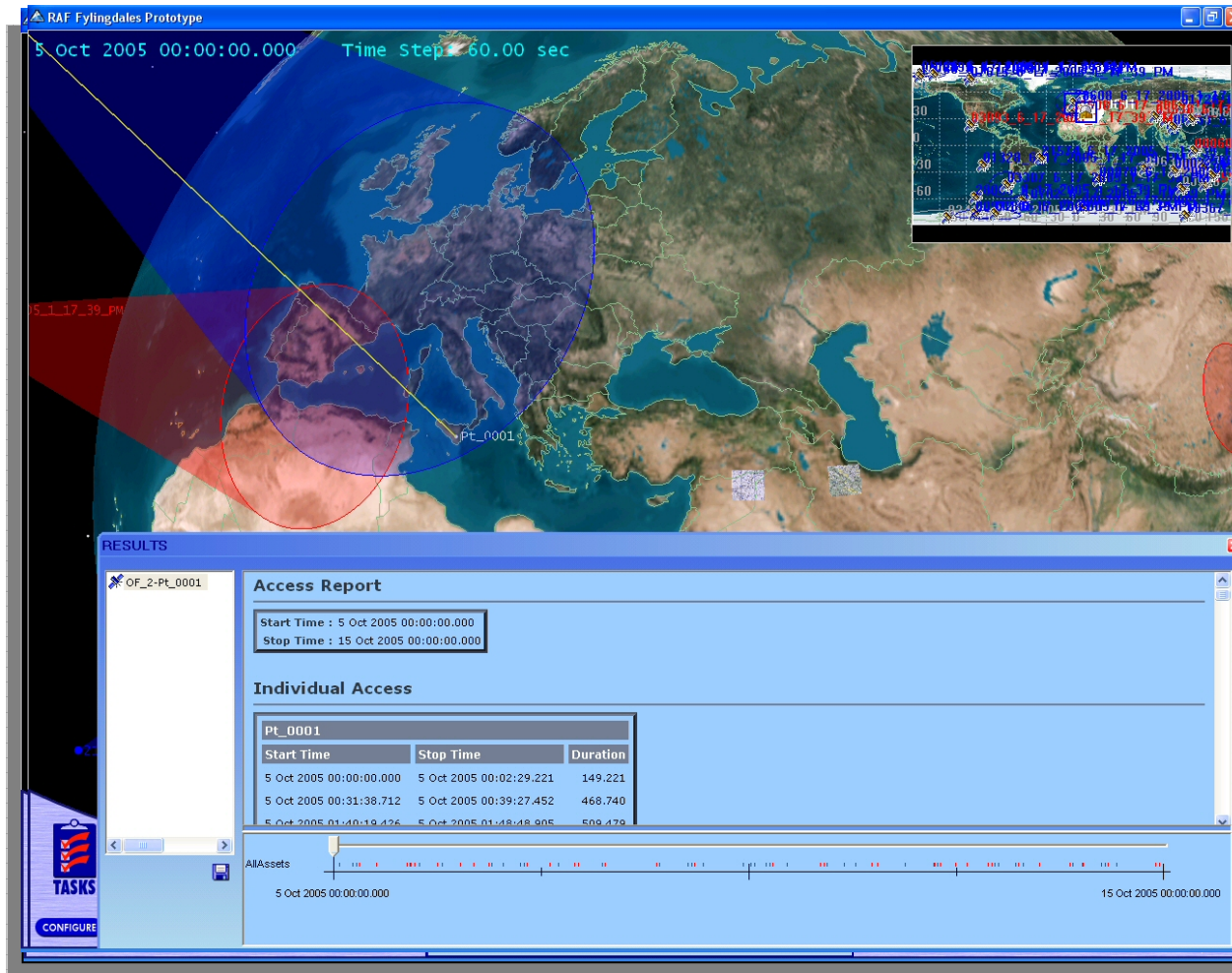


Embedded technology marketed as "4DX"

RAF Technical Analysis Prototype

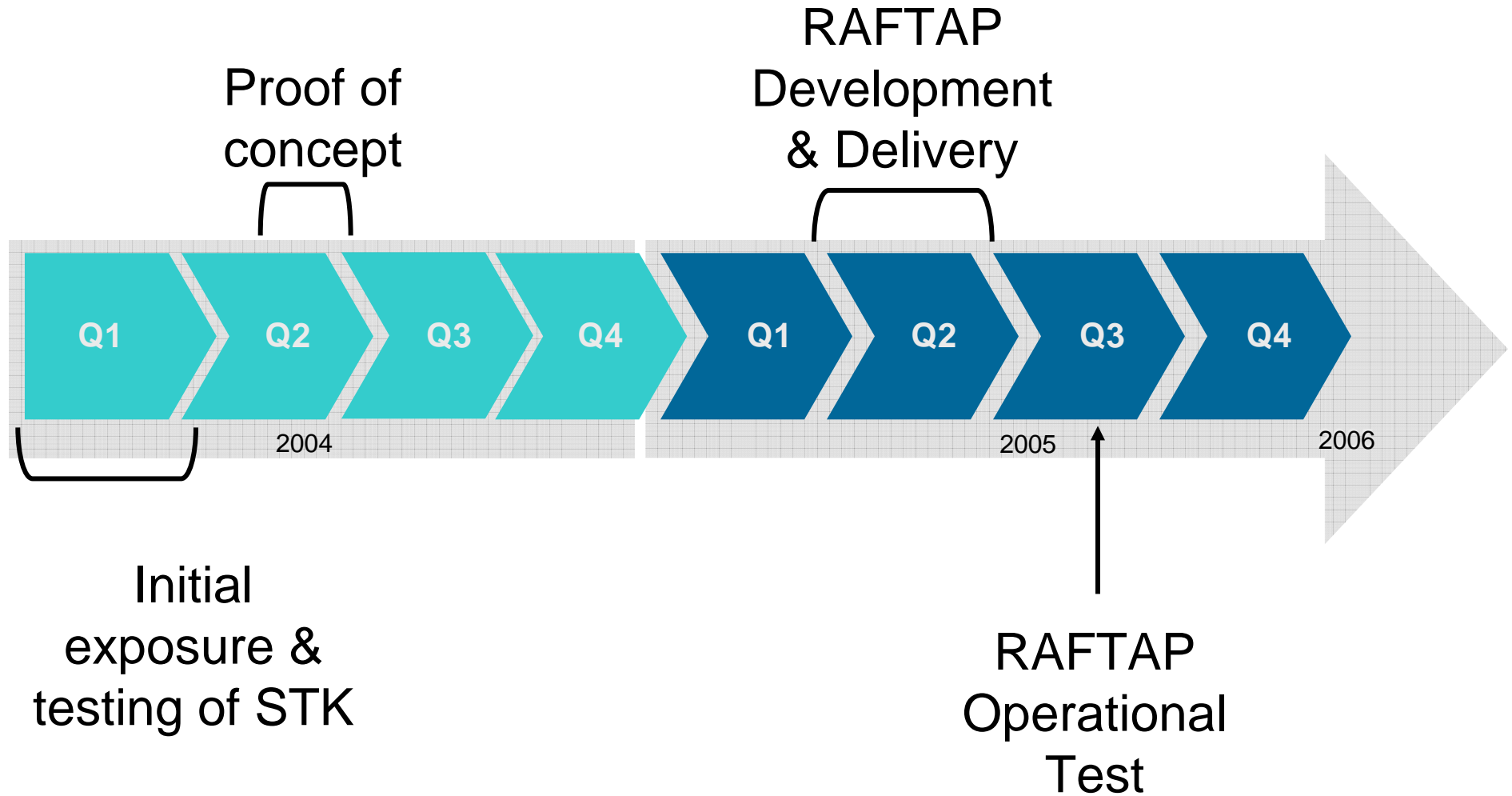


RAFTAP Features



- Manage terrain & imagery
- Search, sort, group & propagate objects
- Generate actionable reports

Project Timeline

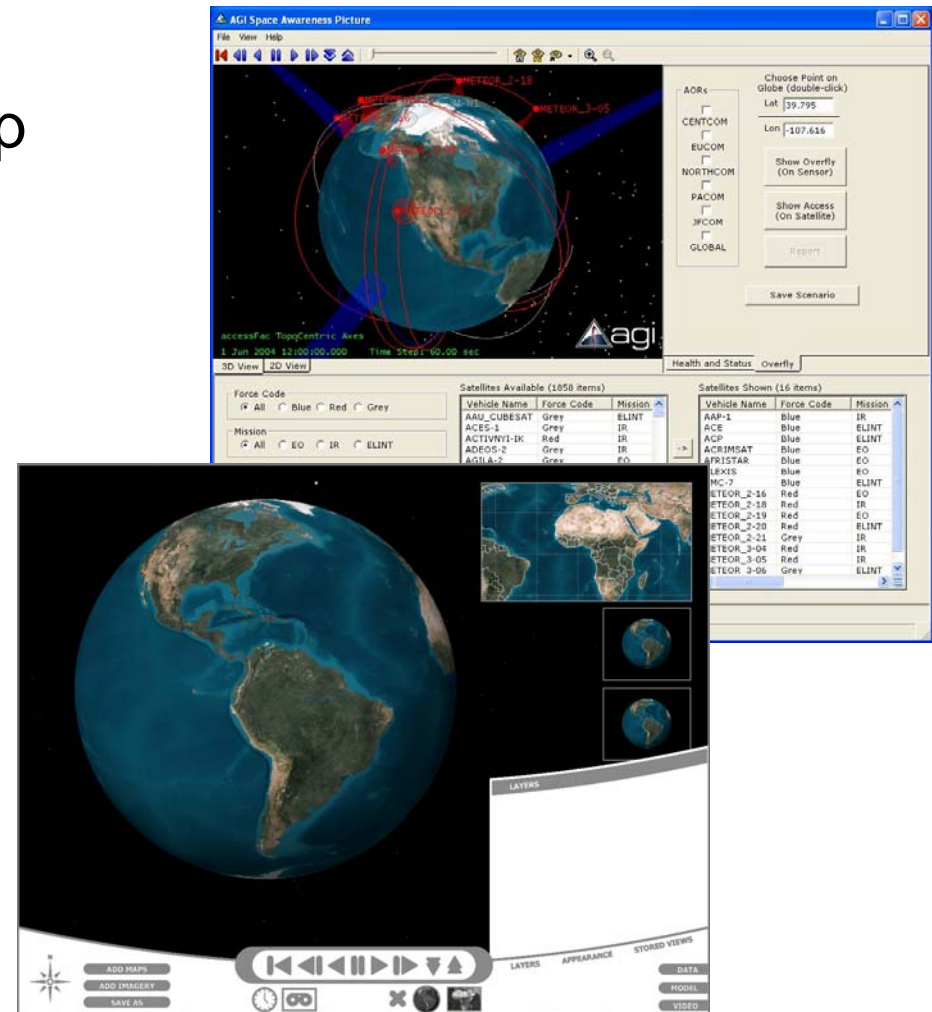


- **Long-distance deliverable**
 - Atlantic ocean prevents frequent site visits
 - Time zones discourage spontaneous communication
- **Language**
 - Oxford vs. Webster
- **Trust**
 - Previous unsuccessful attempts
 - RAF contracting with a foreign country
- **Mutual Ignorance**

Mitigations



- Solid face-to-face relationship
 - Local AGI rep, UK national
 - Regular interactions with RAF technical staff
- Early prototypes
 - Static and functional
 - Reduced mutual ignorance
- AGI willingness to invest
 - Free initial proofs of concept
 - Firm, fixed-pricing



What went right

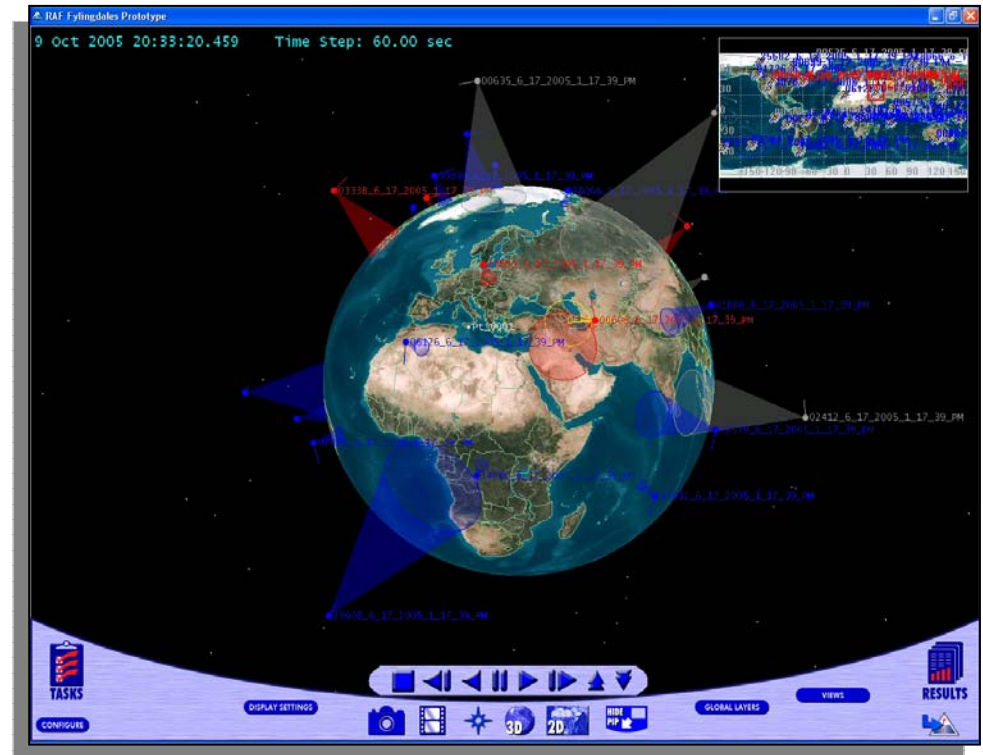


- Rapid, iterative UI prototyping via Webex
- Frequent, interim code drops
- Customer participation
 - Willing to accept partial deliverables
 - Not afraid to work hands-on with AGI
- Customer accepted the unknown
 - Customers shouldn't be expected to have all the answers
 - Experimenting with prototypes revealed unknown requirements

Result

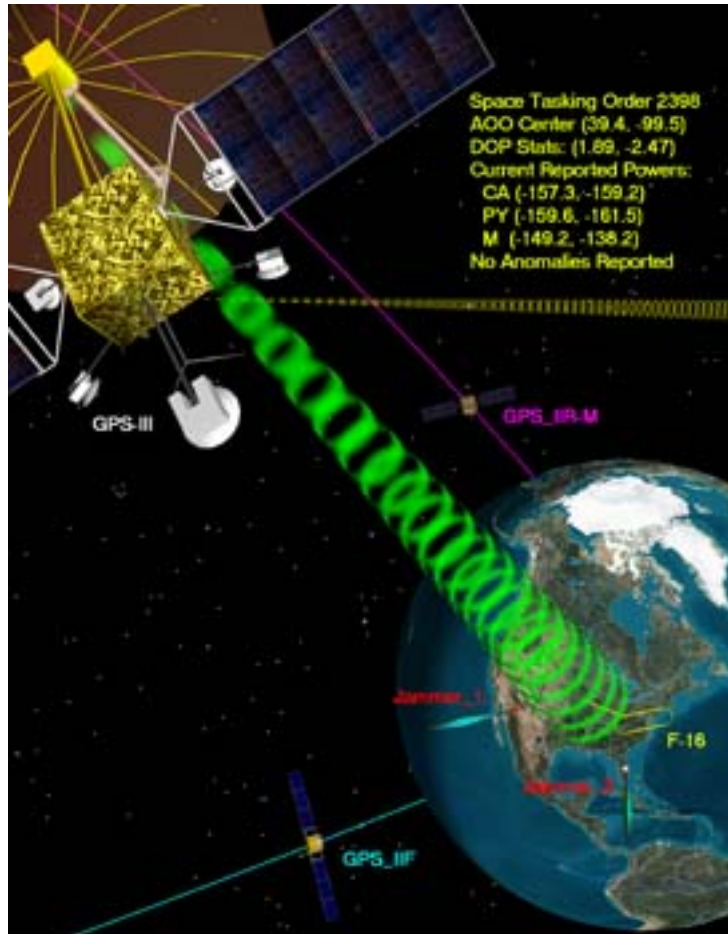


- Provided a customized application using COTS as core
 - User documentation
 - Source code for custom gui
- Training
 - User training
 - RAF developer training
 - Classroom
 - Code walk-through



“With AGI’s software technology, [our mission] has been propelled into the 21st century.”
-SSgt. Alan Reeves, RAF

Benefits



- Higher-fidelity analysis, less time
 - Collection, analysis & dissemination reduced from 48 hours to 2 hours.
 - 95% reduction
- Simplified for novice user
 - Training: 30 min. vs. weeks
 - 1.5 hrs. to test vs. 2-days
- Affordable
 - < 10% of previous budget overrun
- Sustainable
 - Supported, COTS software
 - VB developers readily available

Contact Info



D. Peter Sardella
Vice President, Services
psardella@agi.com
610-981-8019

