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The Satellite Industry

↳ FOSS

Talk overview

- Domain
- Technologies: Solutions
- Technologies: Development
- Rationale

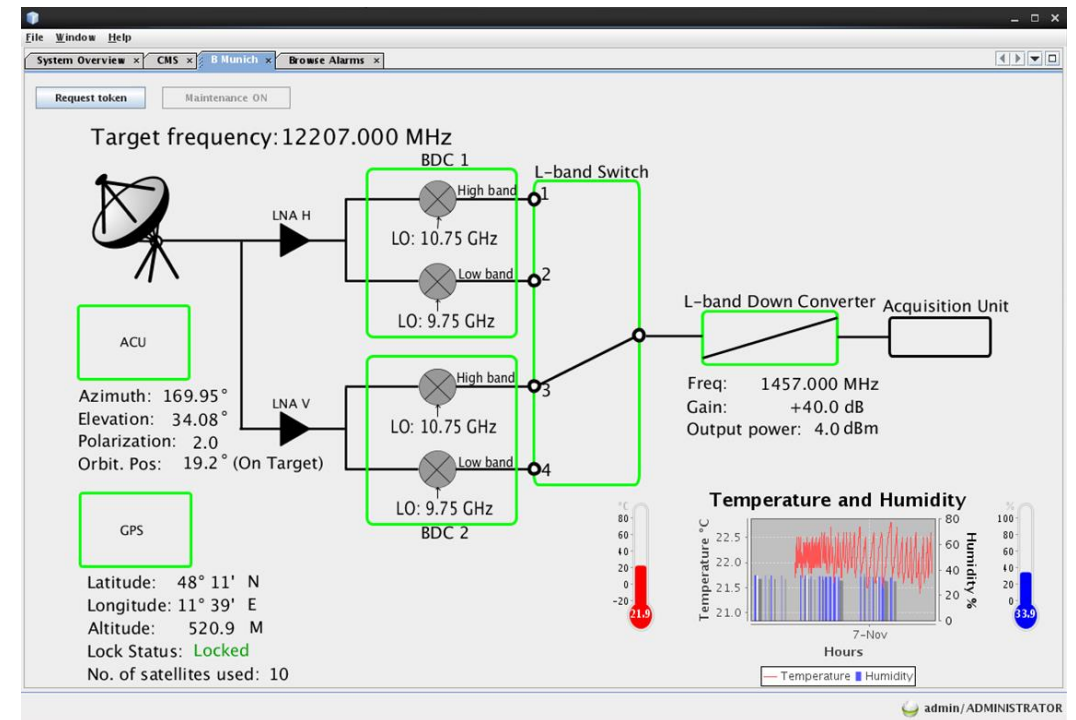
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Domain



REVERSE GPS

- Standard GPS: determine ground location using known satellite locations
- Reverse GPS: determine satellite location using known ground positions



No more manual dish alignments ...
Here comes the SatScout!

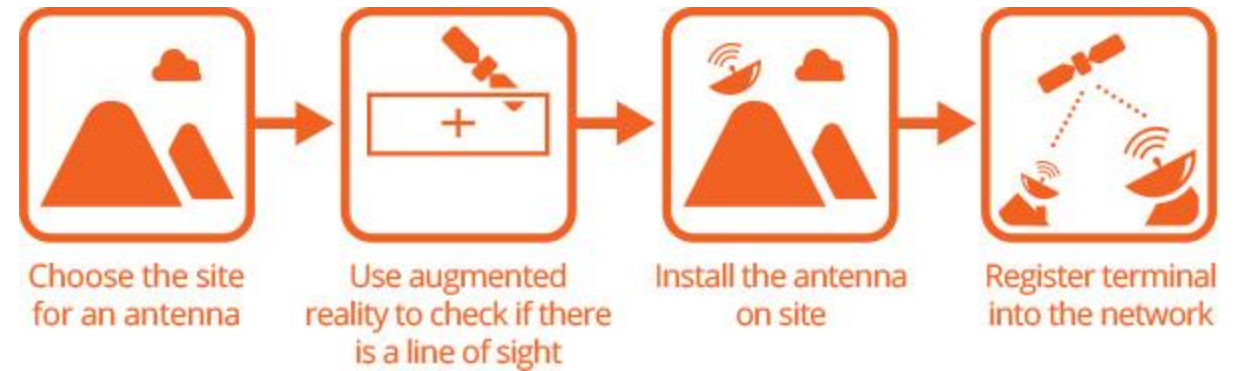


SatScout



SATSCOUT

- Ground terminal setup utility
- Faster setup
- Less interference



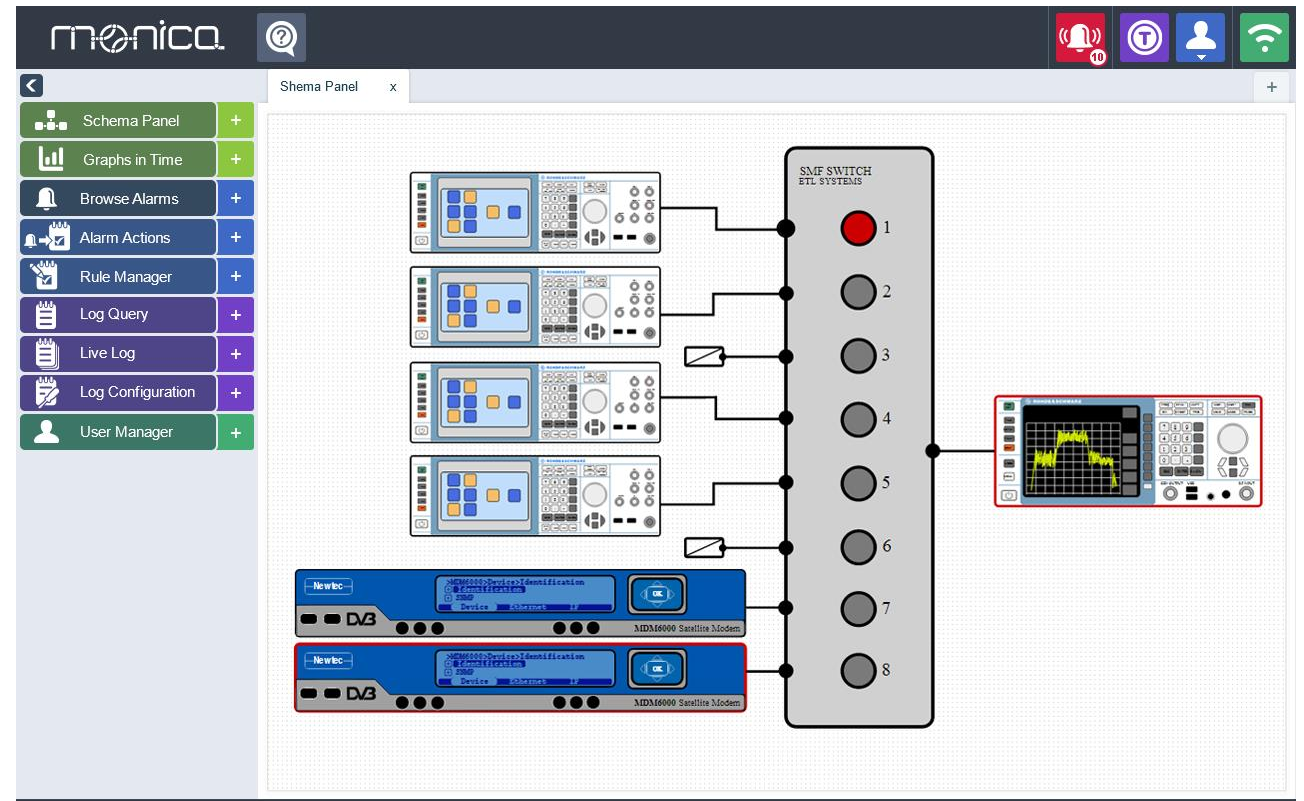


monica



MONITOR & CONTROL: MONICA 2.0

- 2nd generation
- Bread and butter of satellite industry
- Modernised technologies
- Partnership with SES



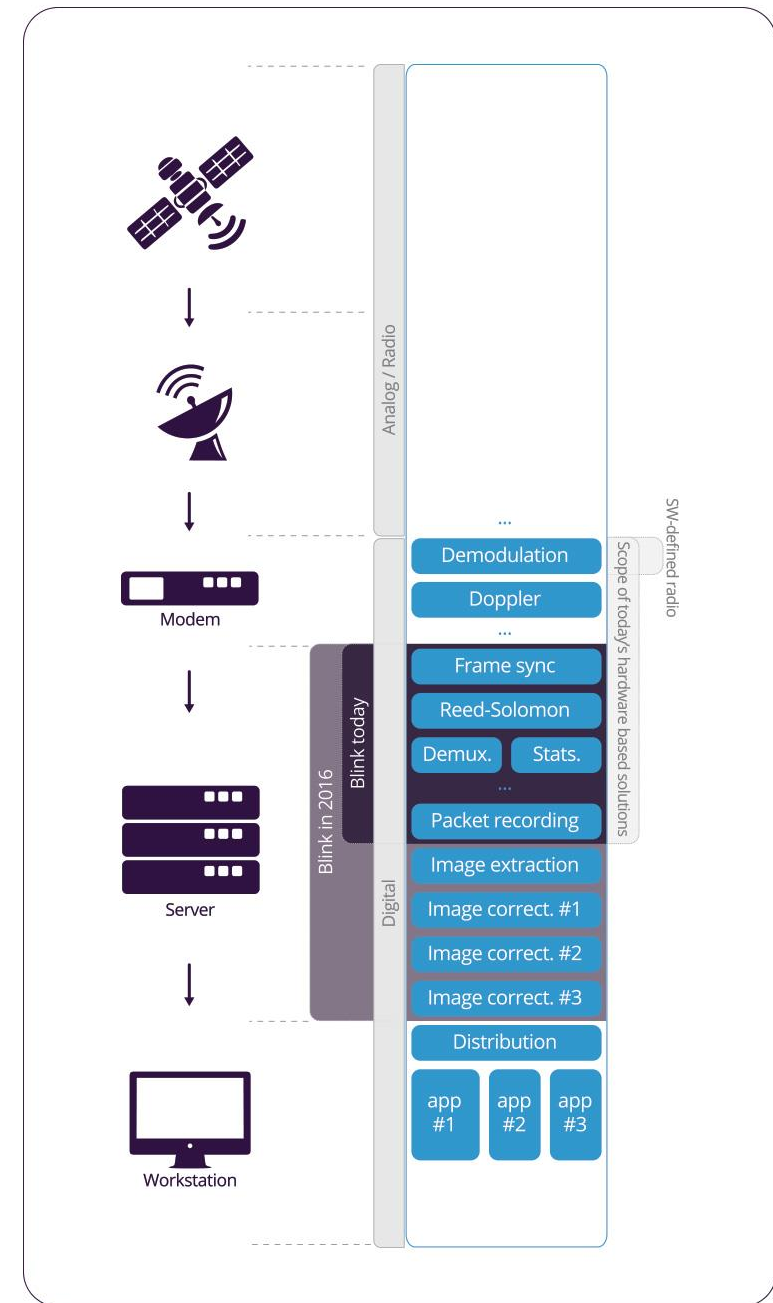


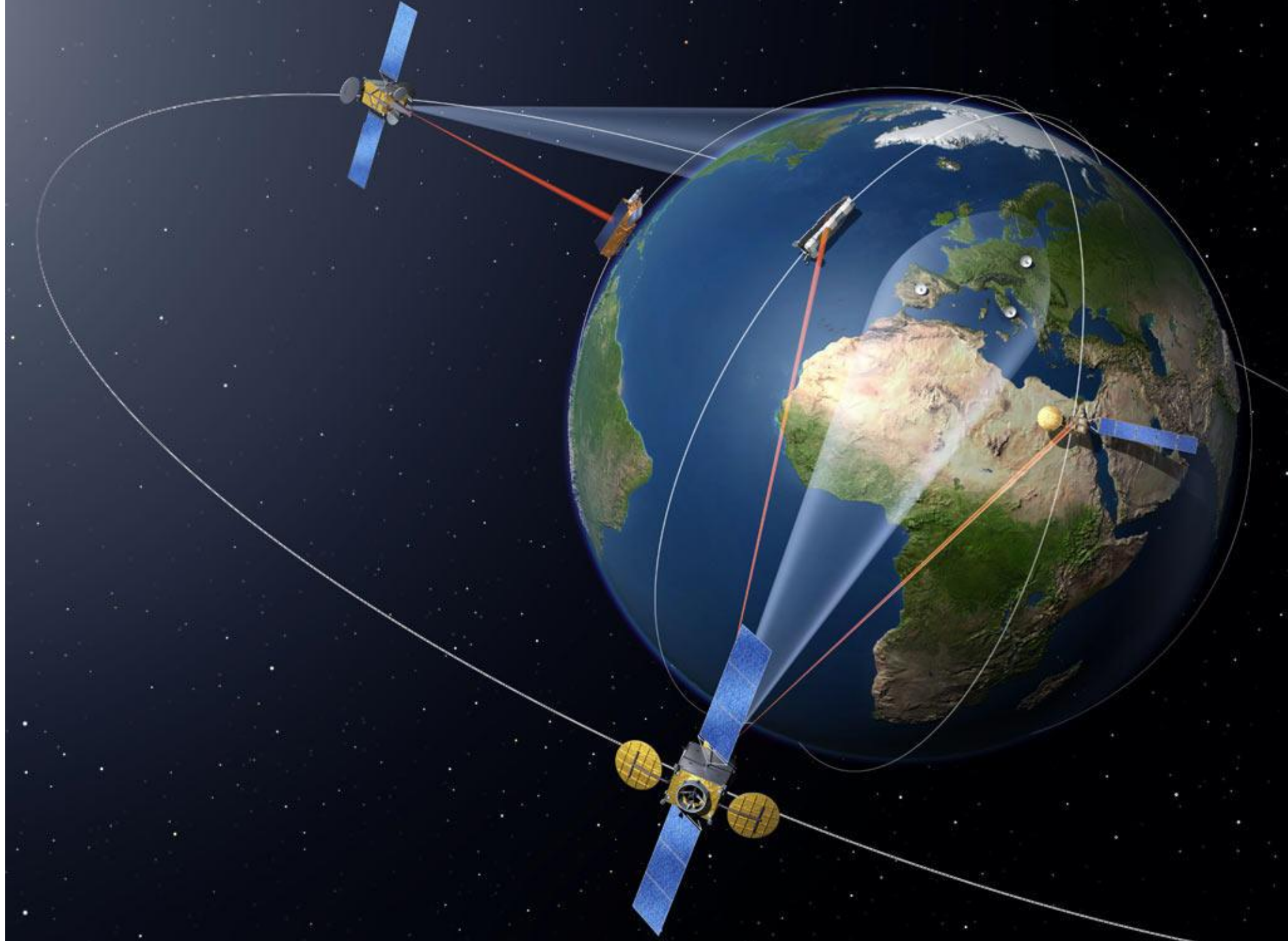
The cheetah is the fastest hunter on land, reaching speeds over 100 km/h in 3 seconds.

Blink is to satellite data acquisition
what the cheetah is to running.

DATA ACQUISITION: BLINK

- from HW to SW
- a utility
- an operational component
- a complete ground station solution

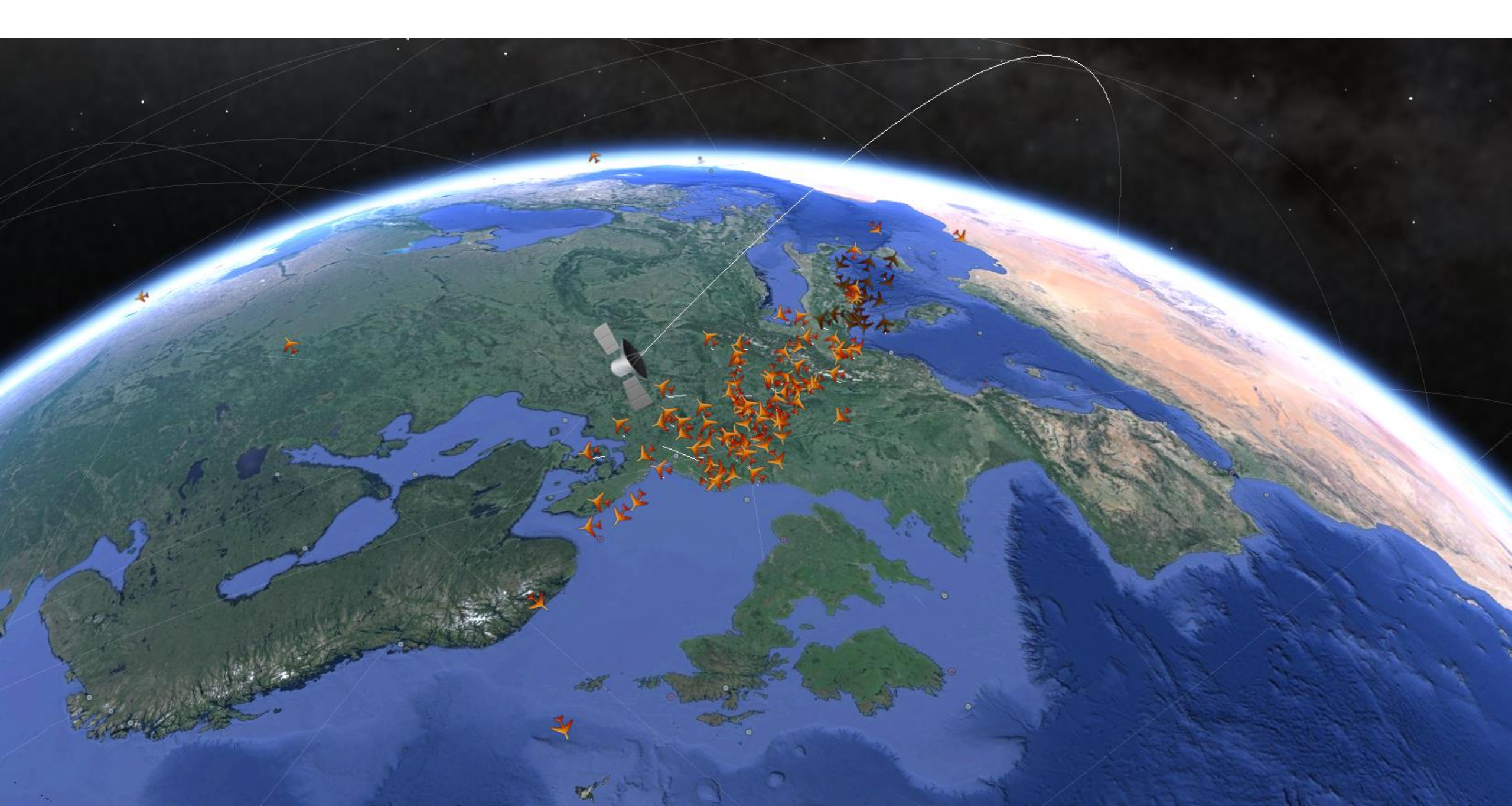




EUROPEAN DATA RELAY SYSTEM

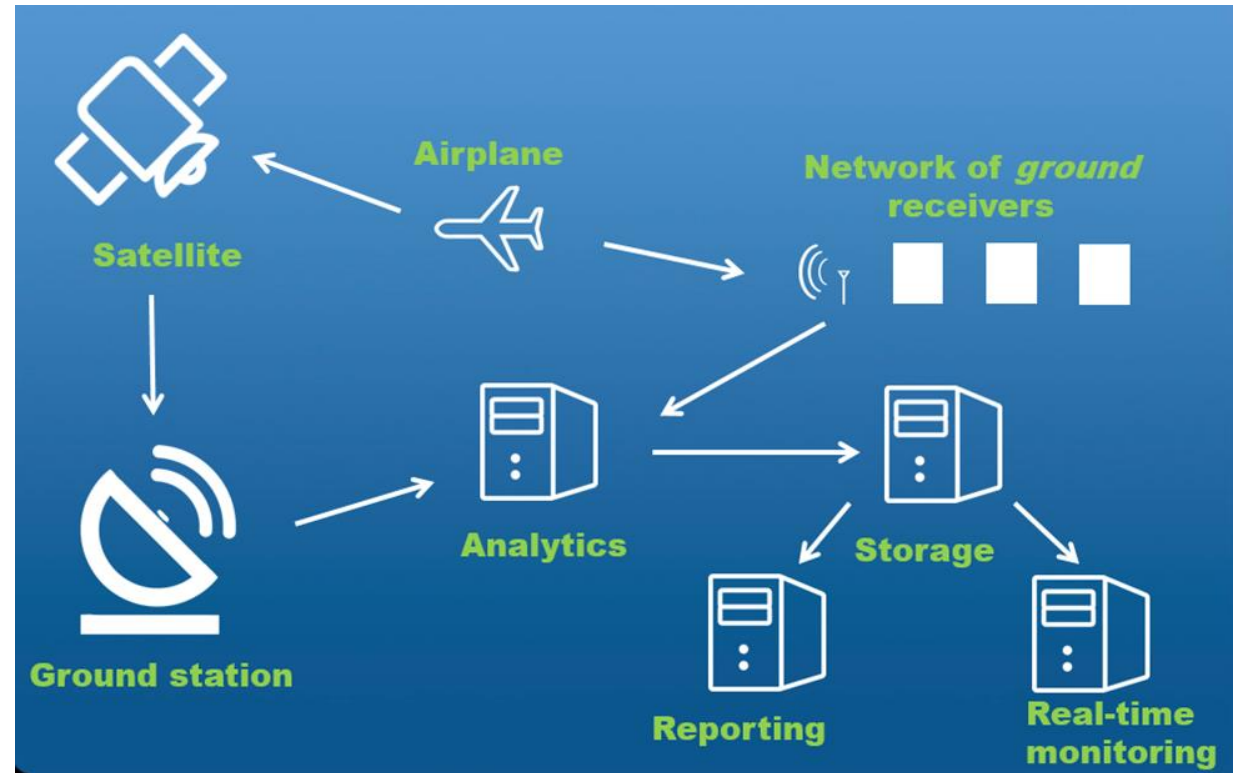
- consortium spanning several EU countries
- extremely formal PM
- Amphinicy: M&C and SIM components





AIRPLANE POSITION RECEPTION

- experimental approach
- oceans: blind spots
- faster and cheaper airplane recovery
- traffic control



CRUISER INTERNET ACCESS

- several thousand people on a ship
- beams follow ships
- low-latency connections



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Technologies: solutions

CENTOS

- the workhorse of the industry
- nearly exclusive
- no operational issues so far



JAVA AND THE JVM

- default server-side development language
- platform independence
- longevity
- extremely rich tool & component ecosystem
- high-performance



POSTGRESQL

- default DB: almost exclusively used
- very little MySQL
- failure unheard of
- typical use: relational data repository (i.e., no logic)



JBoss AS

- SES and Amphinicy default middleware
- not very smooth, but mostly gets the job done
- significant architectural improvements



ANGULARJS

- Newtec, SES, Amphinicy... default front-end framework
- HTML5 keyword de jour
- unstable grounds: difficult to ensure continuity
- producing more pleasant UIs
- NetBeans Platform and Eclipse RCP dead

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ANGULARJS

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Technology: development

JENKINS CI

- SES and Amphinicy default continuous integration system
- Just Works TM 😊
- critical infrastructure



MAVEN

- build workhorse: de facto standard
- difficult, but gets the job done
- deprecated Ant several years ago



REDMINE

- SES and Amphinicy standard
- not easy to maintain, but very nice to use
- broad community, lots of extensions
- rock-solid



ALFRESCO DMS

- de facto industry standard
- not too polished
- extremely powerful
- good underlying components



MERCURIAL SCM

- SES and Amphinicy standard
- extremely robust and well built
- Git popular mostly due to GitHub:
Hg mostly because of Hg
- distributed SCM a huge step forward



UBUNTU

- gained significant traction as a development OS
- easily better development environment than Windows*
- somewhat hindered by - MS Office

(* in our experience)



ubuntu

FOSS Overview

	Java	CentOS	PostgreSQL	Jboss AS	AngularJS	Netbeans Platform
Reverse GPS	✓	✓	✓			✓
Monica	✓	✓	✓	✓	✓	
Blink	✓	✓	✓			
European Data Relay System	✓	✓	✓	✓	✓	
Airplane Position Reception	✓	✓	✓	✓		
Cruiser Internet Access	✓	✓	✓	✓	✓	

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Rationale

Rationale

- no jumping through hoops:

“another user is currently logged on to this computer. If you continue, this user has to disconnect from this computer.”

“...can only use 1 CPU...”

“...can only have a DB of X GB...”

- easier to use for us:
 - packet management
 - component management and repositories

Rationale (continued)

- easier to use for customers:
 - license management
 - virtualisation
 - reduced complexity
- extremely robust

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Thank you!