

ARTES Applications Programme Ambition

Creating Economic Value & Business
in the Space Application and Service Domain

Annual ARTES Applications Workshop

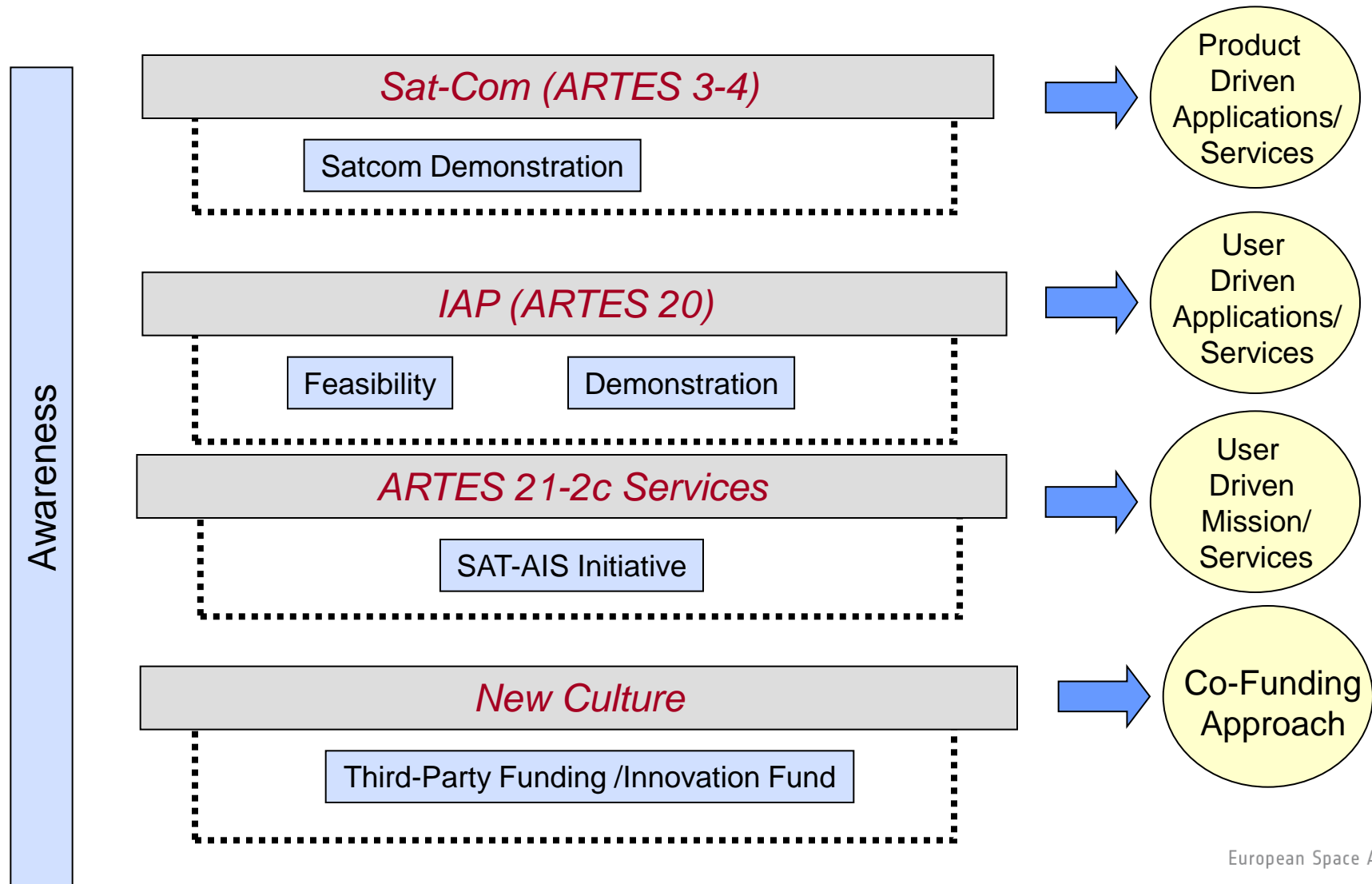
April 18th-19th 2013

Centre for High Defence Studies (CASD), Rome, Italy

A. Ginati, *ESA*

- ARTES Applications & Services (Sat-Com & IAP)
- Examples of Established **Operational Services**
- SAT-AIS, User Driven European Mission and **Services**
- Third Party Funding for Development of **Space Services**
- Conclusion

ARTES Applications/Services & User Driven Missions



The goal :

Foster **new utilization** of **existing space** capacity and **capability**, in close **partnership** with **end-users**, through the development of **integrated** (different space and non space technologies) **& SAT-COM** applications projects which **demonstrate** a potential for **sustainable services**.

Incubator of Services

Thematic Areas addressed by Artes 34 Satcom Applications and Services



Telemedicine/ Medical Education

29 Projects
22.7 MEUR (ESA part)



Satcom Networks Systems & Services

37 Projects
31.2 MEUR (ESA part)



B2B / B2C

34 Projects
32.6 MEUR (ESA part)



Location Based Satcom Services

15 Projects
4.3 MEUR (ESA part)



Disaster Relief/ Emergency Management

11 Projects
3.6 MEUR (ESA part)



Community Information Services & Capacity Building

16 Projects
9.3 MEUR (ESA part)



Distance Learning

9 Projects
4.2 MEUR (ESA part)

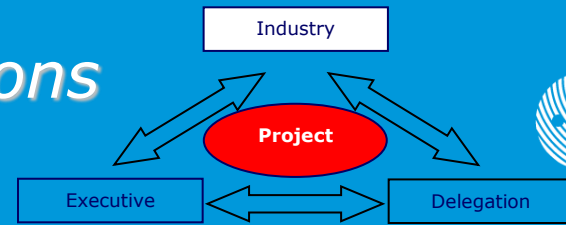


eGovernment

2 Projects
1.9 MEUR (ESA part)



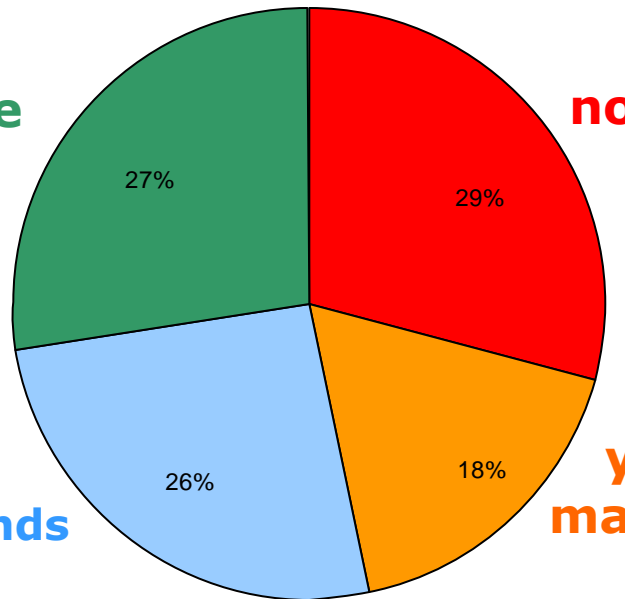
April 5&6th 1st Annual Artes Applications & Evaluation workshop



Did the product or service resulting from your project get into the market (i.e. with paying customers)?

yes, with total sales above the internal project fund

yes, with total sales not yet recovering project internal funds



yes, offered on the market but no sales yet

Integrated Applications

Example: "Service-Buy" Model



Telemedicine

Telecommunications satellite



Hospital

Crisis management
centre

Base

Telecommunications
service provider

Earth observation satellite

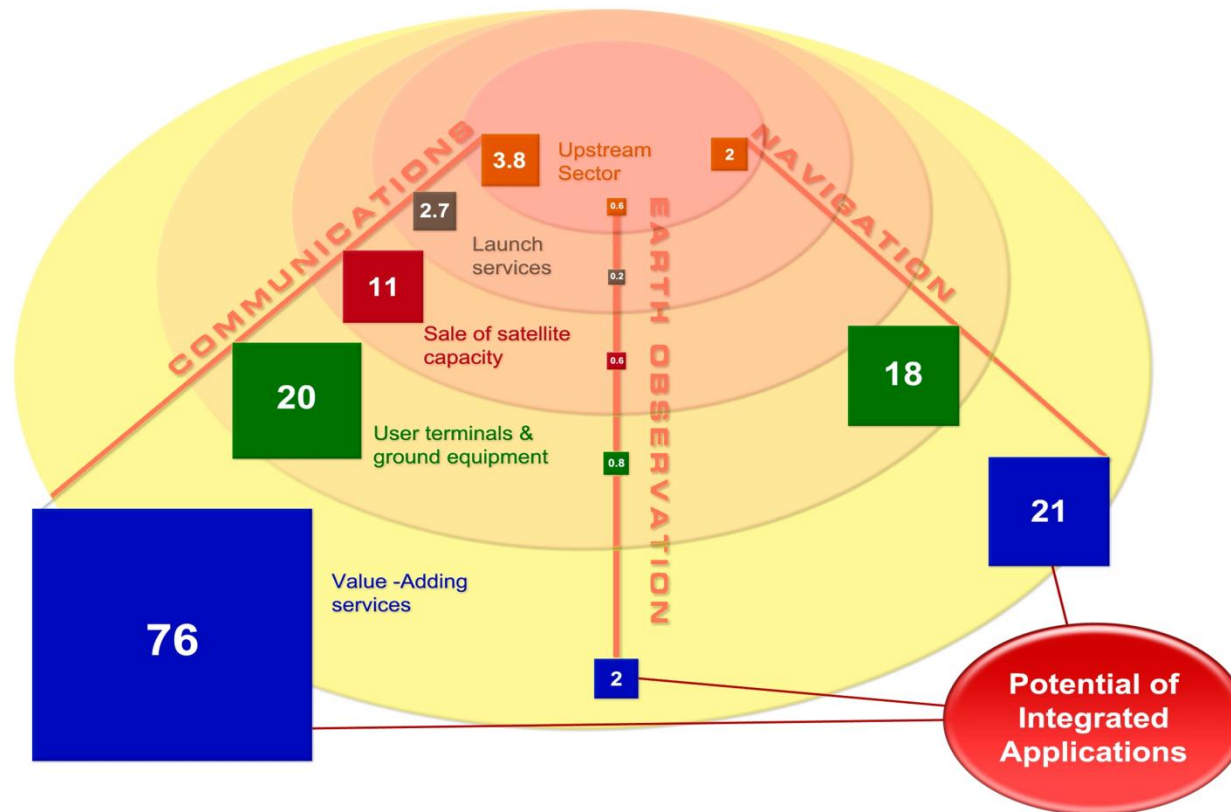
DRS

Navigation and positioning
satellite



Property of DG-RELEX/JRC

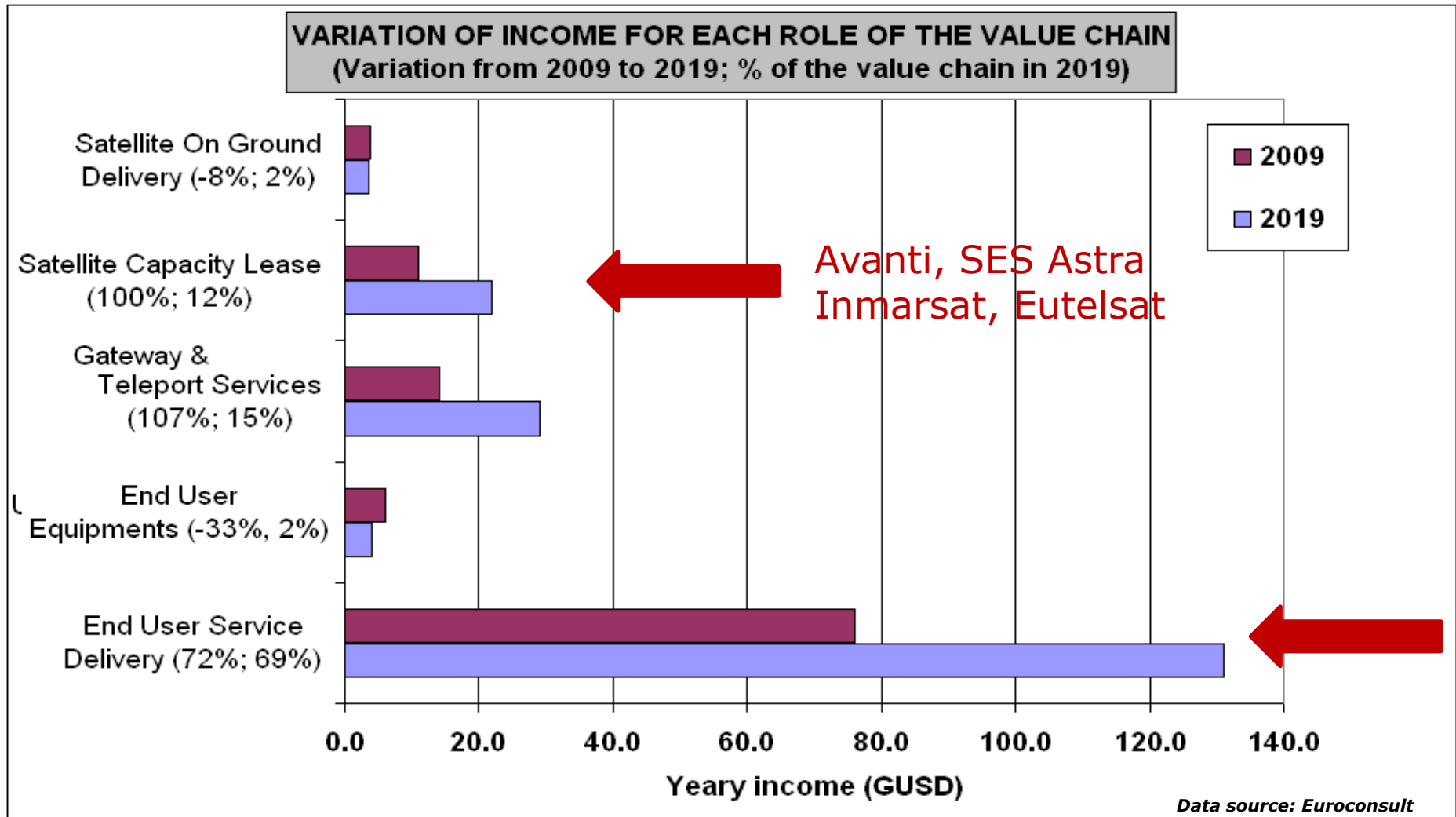
The Three Value Chains in Commercial Satellite Applications Global Space Market Revenue in US\$Bn



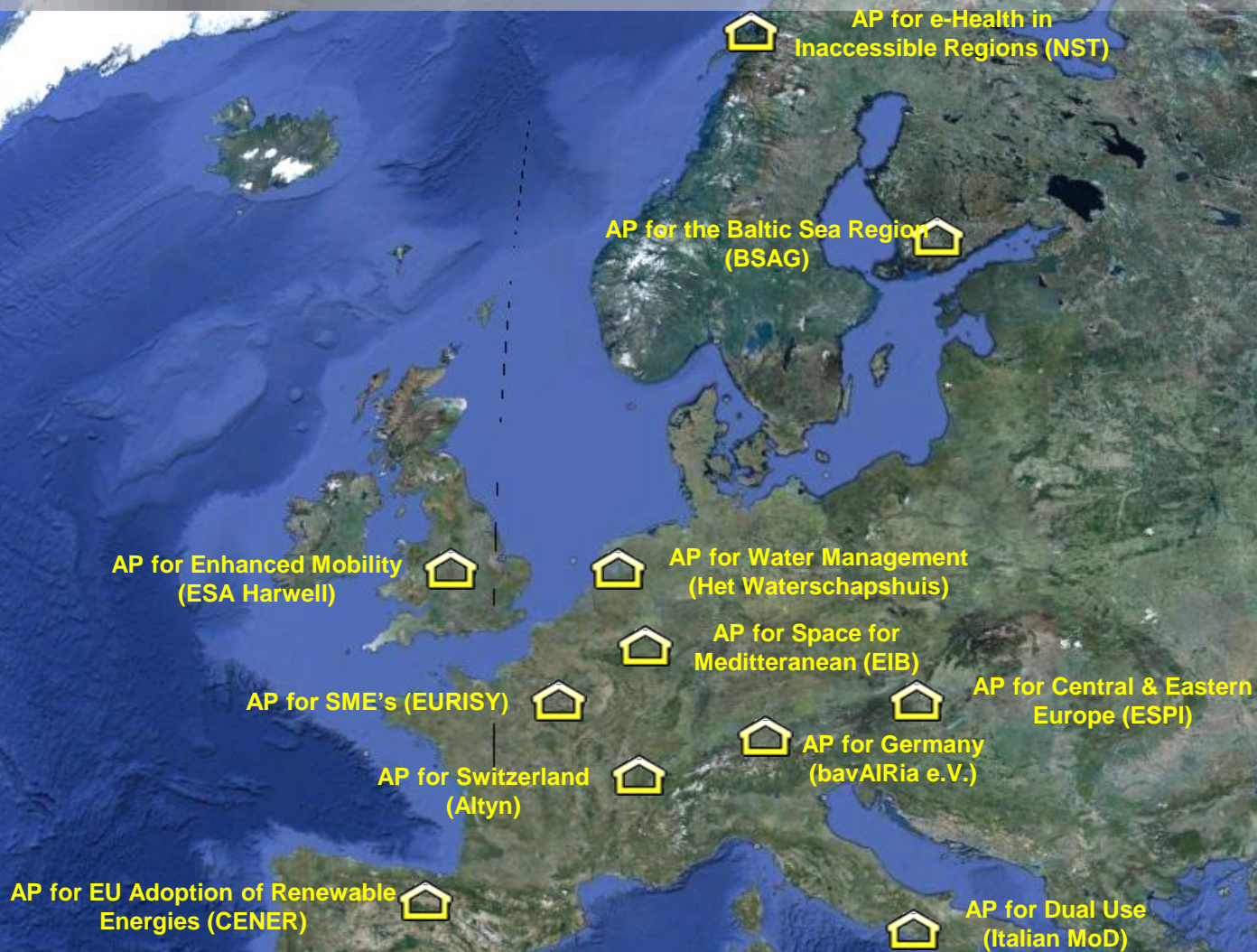
- **Sat communications** are dominant with **>75%** of the downstream services revenue
- **Navigation** is emerging **21%**
- **EO** is currently **2%**

Source: Euroconsult & GSA, 2010

2009-2019: Revenues shifting downstream in the value chain



Network of IAP Ambassador Platforms

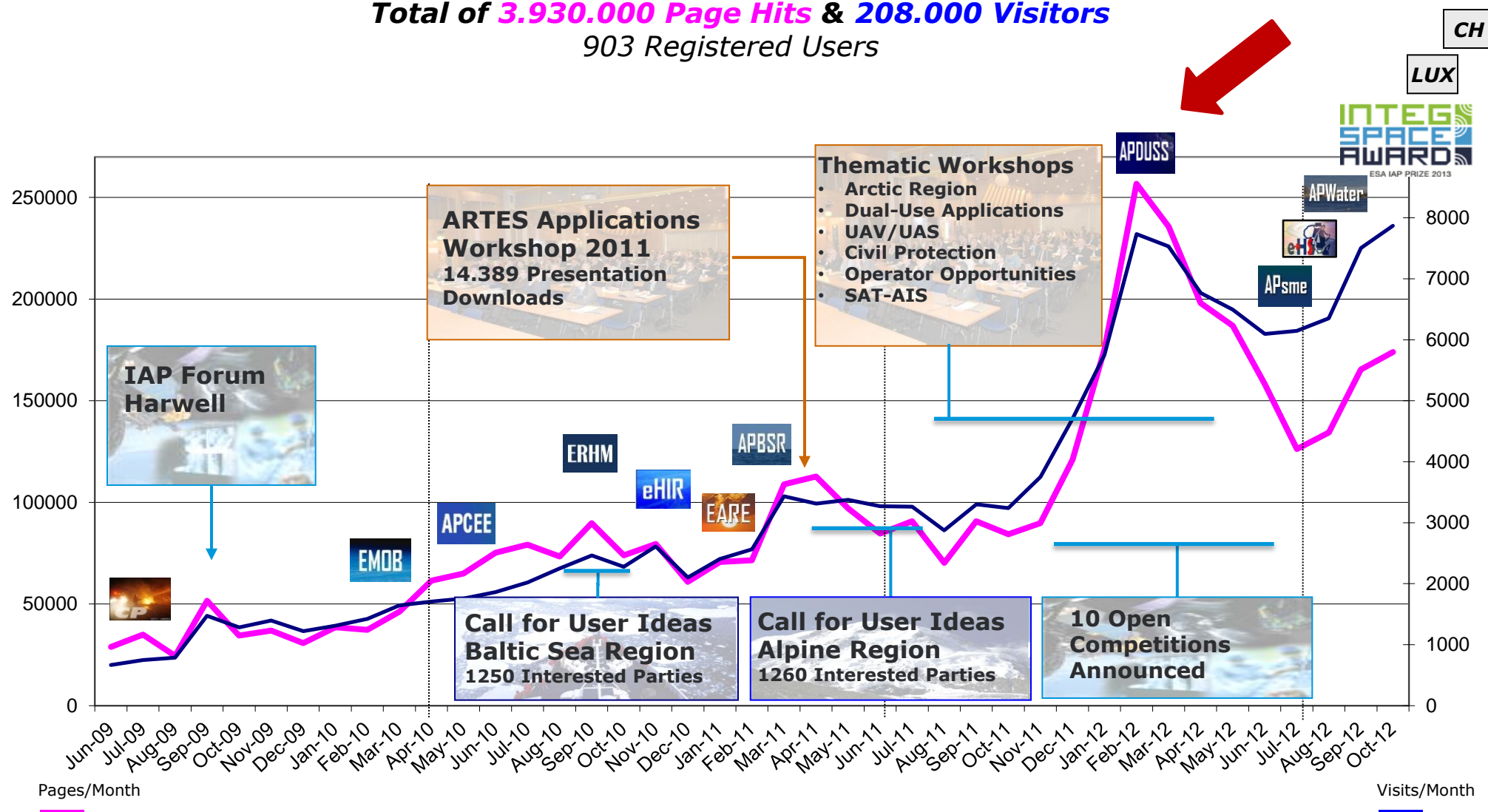


IAP Ambassador Platforms



1. Norway: E-Health in inaccessible regions (by NST)
2. UK: Enhanced mobility (based at Harwell)
3. Austria: Integrated Applications in Central & Eastern Europe (by ESPI)
4. France: SME's (by EURISY)
5. Spain: EU adoption of renewable energies (by CENER)
6. Finland: Baltic Sea Region (by BSAG) 2nd AP
7. **Italy:** **Dual-Use space-based services (by Italian MoD)**
8. NL: Water Management (by Het Waterschapshuis)
9. Lux: Space for Med (by EIB)
10. Germany: New AP (by bavAIRia e.V.)
11. Switzerland: New AP (by ALTYN)

Total of 3.930.000 Page Hits & 208.000 Visitors
903 Registered Users





Integrated & Sat-Com Operational Services



KIA KIA MOTORS

KIA KIA MOTORS

KIA KIA MOTORS

MELBOURNE

KIA

100
BOULETTES



Birds and Flight Safety



GAF (1997-2004): **360** collisions strikes/year
FAF (1998-2005): **320** collisions strikes/year
RAF(<2004): **110** documented serious accidents
Estimated conservative cost due to damage
and delays of **commercial** aircraft worldwide
1.2 billion USD per year



Birds and Flight Safety

July 15 1996 a Belgian C-130 crashed at Eindhoven Air Base due to a bird strike. 34 people were killed and 7 people were seriously injured.

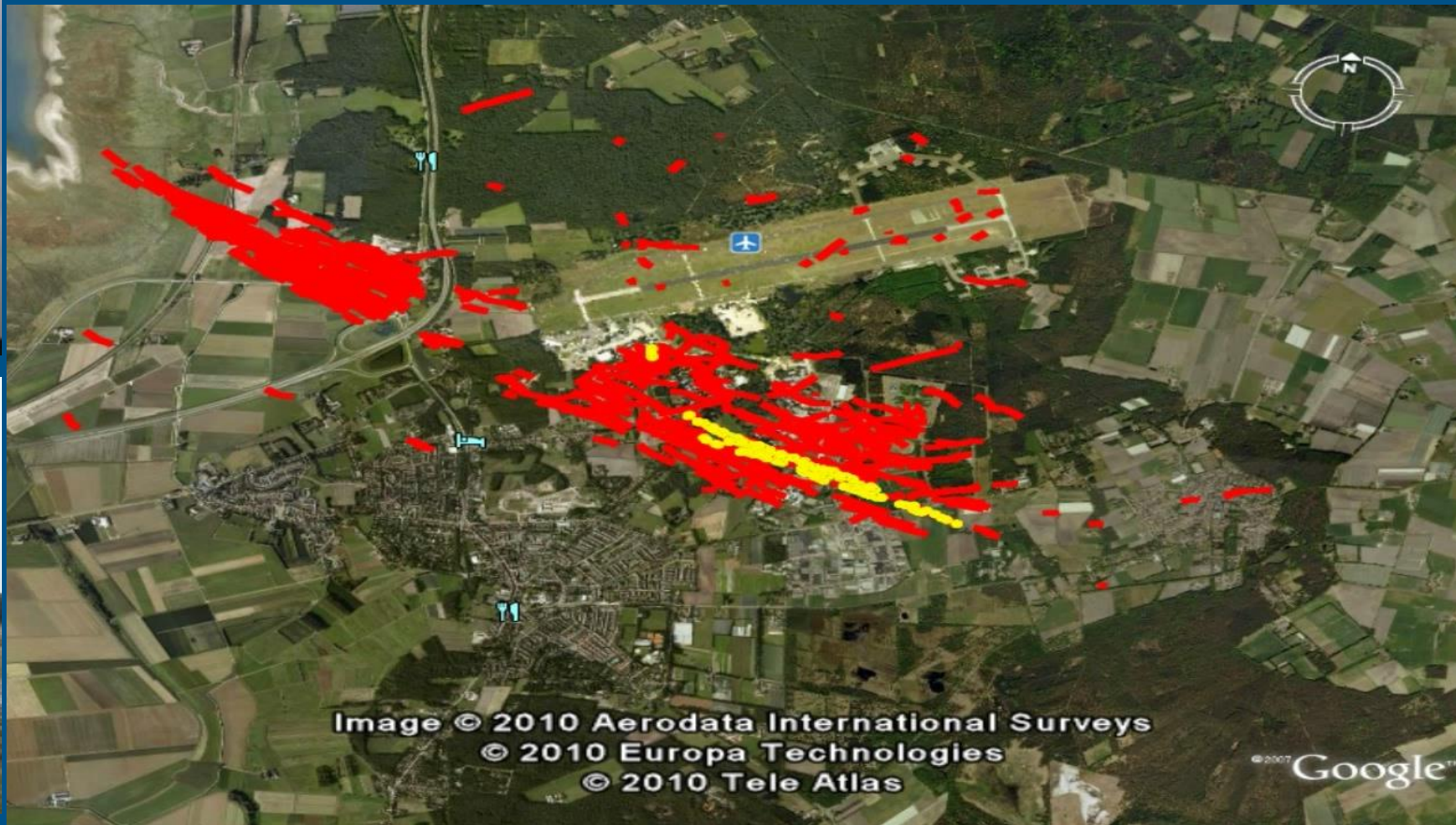


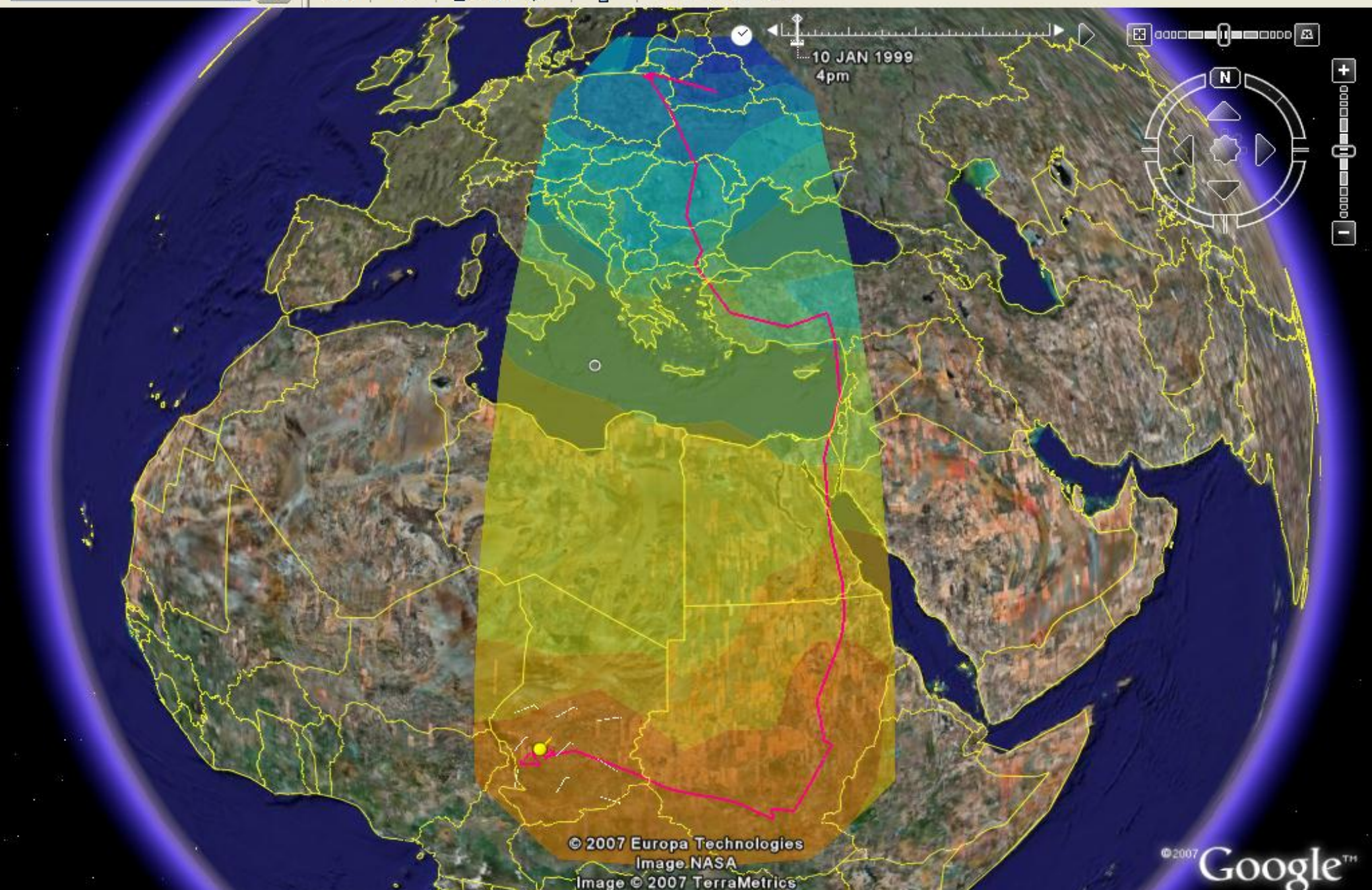
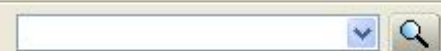
FlySafe project activities



Trial of on-airfield avian radar (ROBIN Lite)

- prevention of local bird strikes
- 2 D radar on 1 airbase





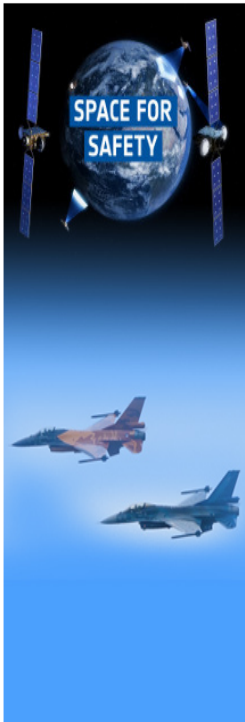
10 JAN 1999
4pm

© 2007 Europa Technologies
Image NASA
Image © 2007 TerraMetrics

© 2007 Google™

the flysafe bird avoidance model service centre

[Home](#) [Migration](#) [More information](#) [About us](#) [Legal Disclaimer](#)



The FlySafe Bird Avoidance Model (FlySafe-BAM)

The FlySafe Bird Avoidance Model, Operational Service Centre provides near real-time information and forecast on large scale bird mobility in the air space of The Netherlands and Belgium. The information includes bird density measurements and predictions and altitude profiles over The Netherlands and Belgium. This information is used by the Belgian Air Force (BAF) and the Royal Netherlands Air Force (RNLAf) to create and disseminate BIRDTAM's (bird notice to airmen) to their pilots, enabling them to adjust their operations and avoid collisions between aircraft and birds.

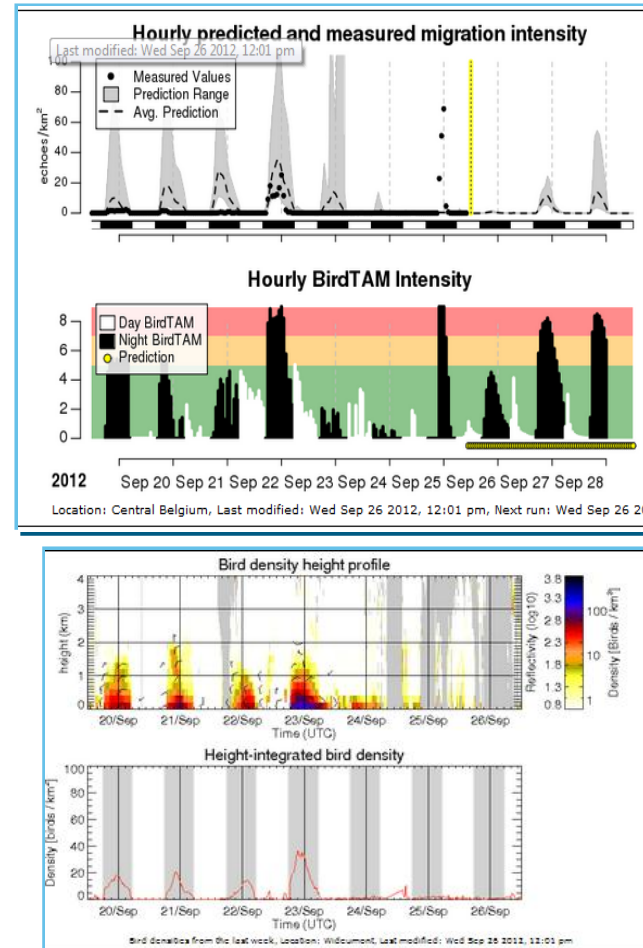
The FlySafe Bird Avoidance Model, Operational Service Centre is the result of the FlySafe project initiated by the European Space Agency's (ESA) Integrated Applications Promotion (IAP) programme in partnership with the BAF and the RNLAf to develop a bird warning system to reduce bird strike risk of collision and improve flight safety in northwest Europe.

This website presents:

- Near real-time measurements of local bird movements and bird density altitude profiles;
- Forecast of bird migration intensity over The Netherlands and Belgium;



UNIVERSITY OF AMSTERDAM



<http://www.flysafe-birdtam.eu/>

FlySafe has facilitated the establishment of ROBIN Radar Systems (TNO's spin-off)

"Robin Radar Systems spun out of TNO in the summer of 2010 to pursue market leadership as an independent company. Two years after start, the company has grown from 4 to 17 employees and won contracts in the Netherlands, Belgium, UK, Turkey, Estonia, Bulgaria, Poland, France and Norway. The cumulated value of these contracts exceed 4M€. Robin has won 6 out of 7 times from the world's market leader and became Europe's market leader. Robin is looking to expand its business further towards the Middle East and Asia. Robin won the tender in Amsterdam & Spain Airports and expect a large scale roll-out by the Indian Air Force."

Siete Hamminga, Managing Director

FlySafe Start-up Company: ROBIN



Date: 06/12/2012 14:21

Dear Amnon,

Robin secured funding! **Two investment funds** (one related to KLM and Schiphol, the other being a large pension fund) **take a minority share in Robin**. Their **significant investments will be used to further drive Robin's ambitious innovation agenda and international roll-out**. Next week we'll launch a press release about this on 12-12-'12. Do you have PR-people within ESA that you would like me to involve? Or an internal ESA magazine?..etc.

Kind regards,
Siete

Siete Hamminga Msc.
Managing Director

Robin Radar Systems BV
Mercuriusweg 1-A
2516 AW The Hague



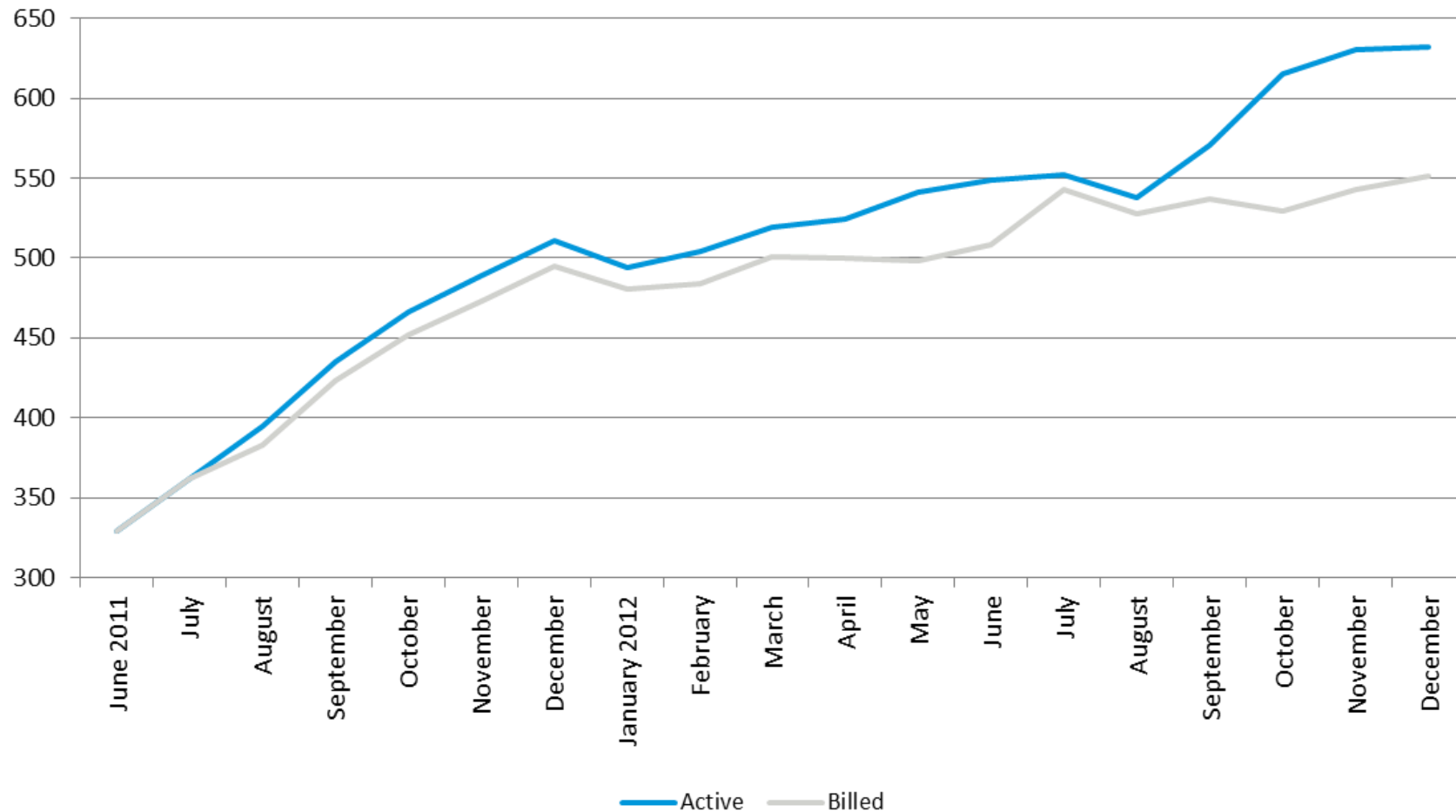
European Space Agency

Automatic Telling Machine (ATMs)

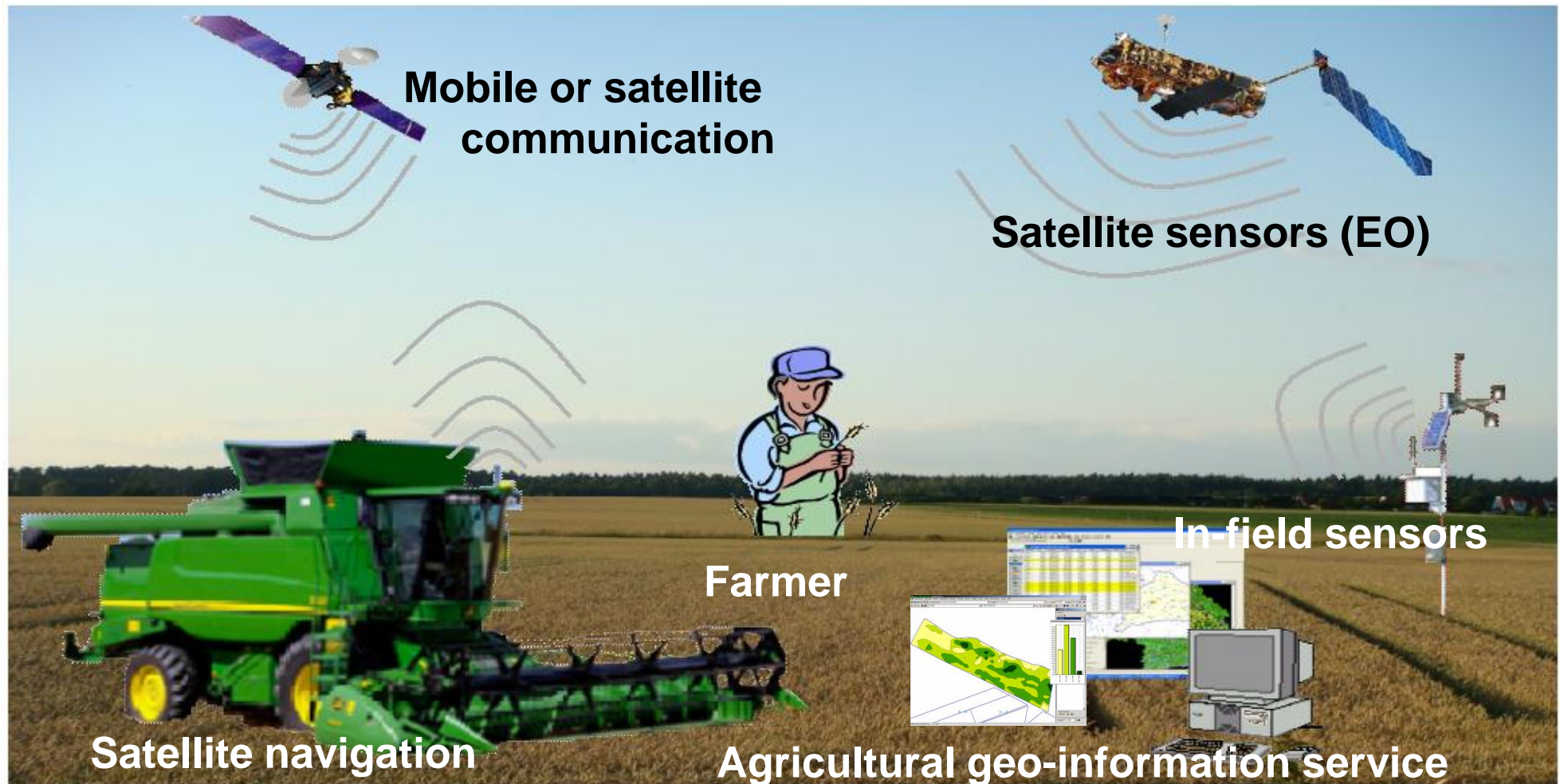


Demo of financial transactions through VPN tunnel on Internet

Number of active terminals for SATCOM services



Talkingfields main functional elements



German consortium: Vista GmbH, Uni Muenchen, PC-Agrar GmbH

Current Status of Processing and Orders

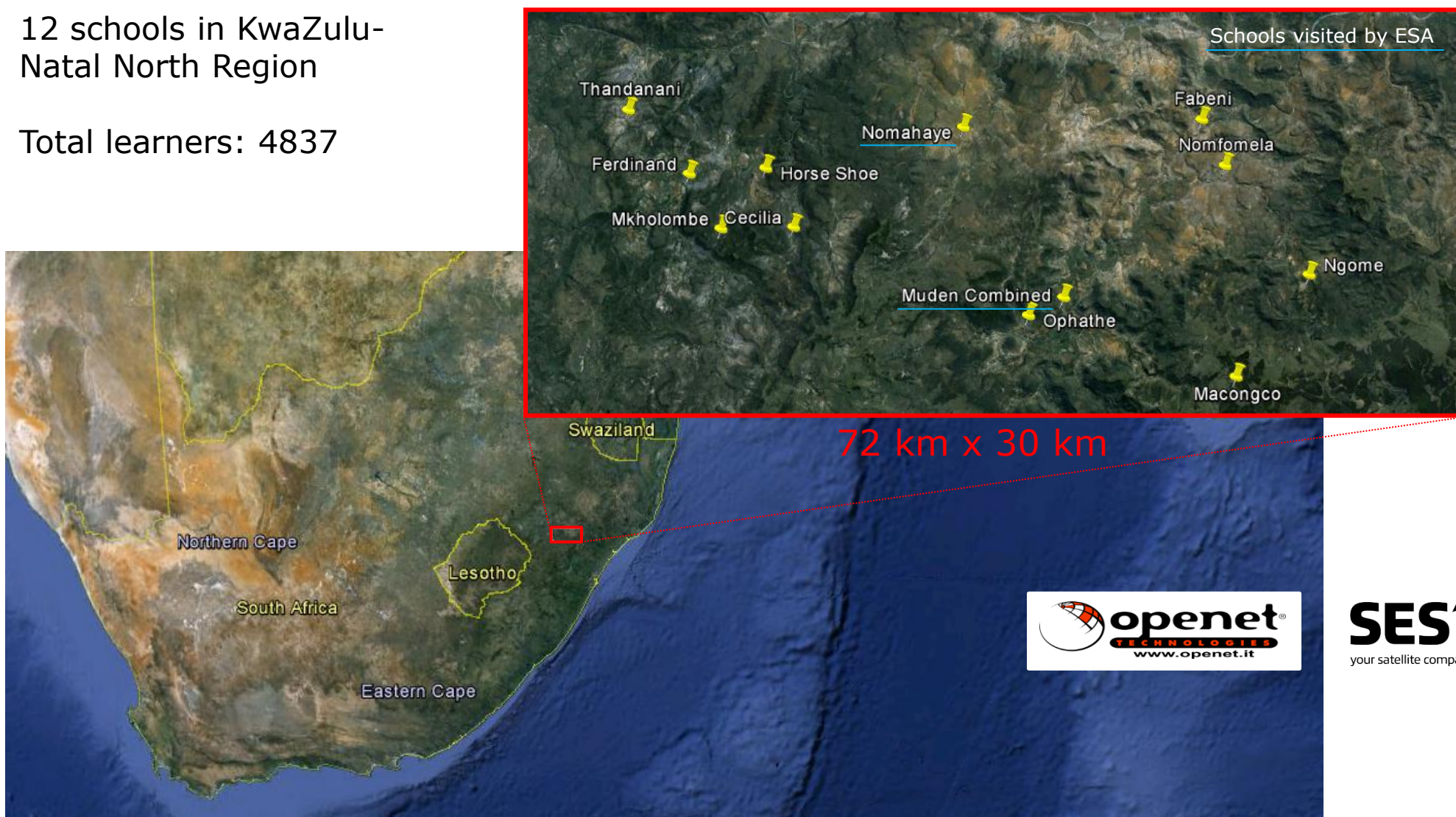


Space4edu : Where?



12 schools in KwaZulu-Natal North Region

Total learners: 4837



SES
your satellite company

September 2012: initial trial, first teachers and students browsing Internet



Nomfomela school

European Satellite AIS Mission

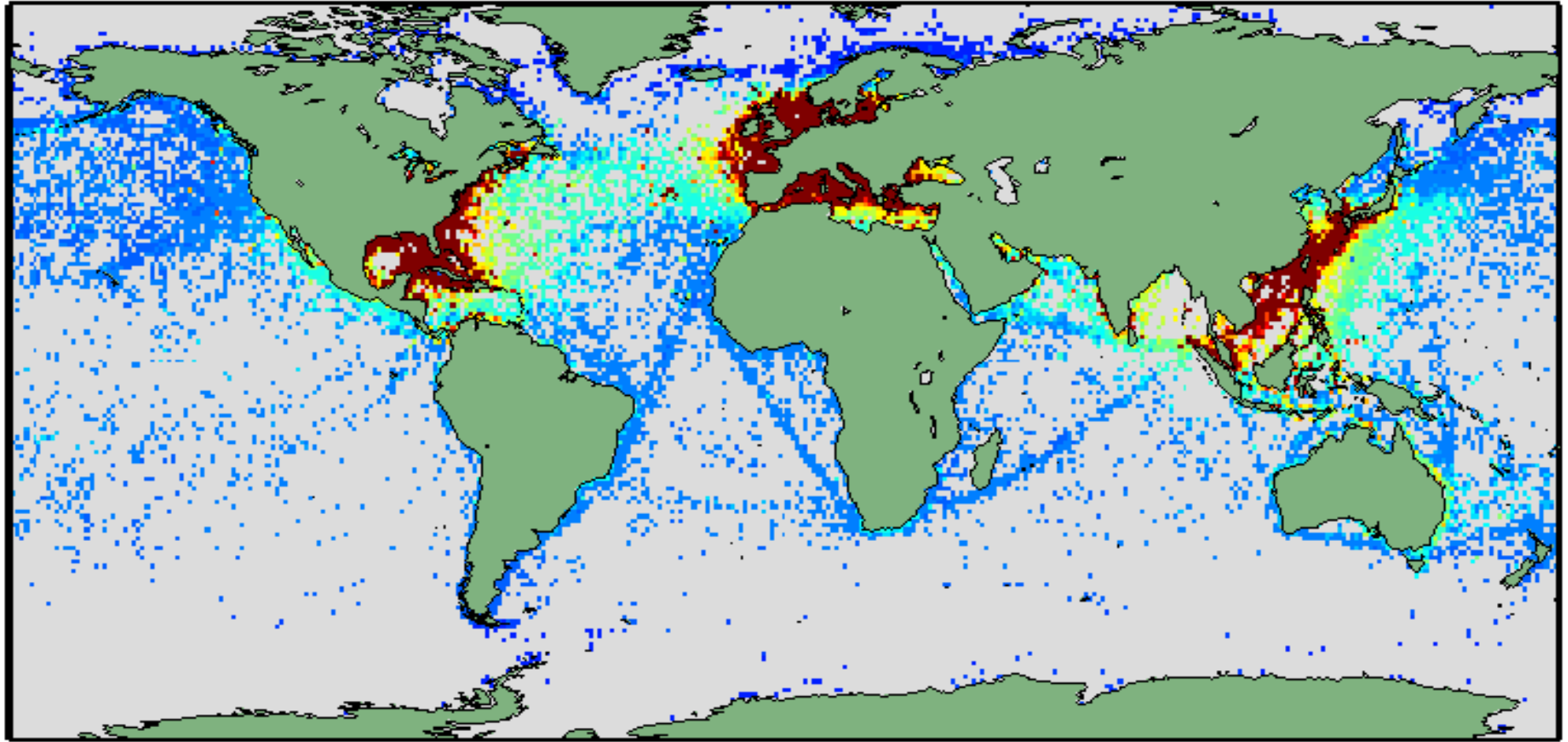
Users Driven in partnership with EMSA

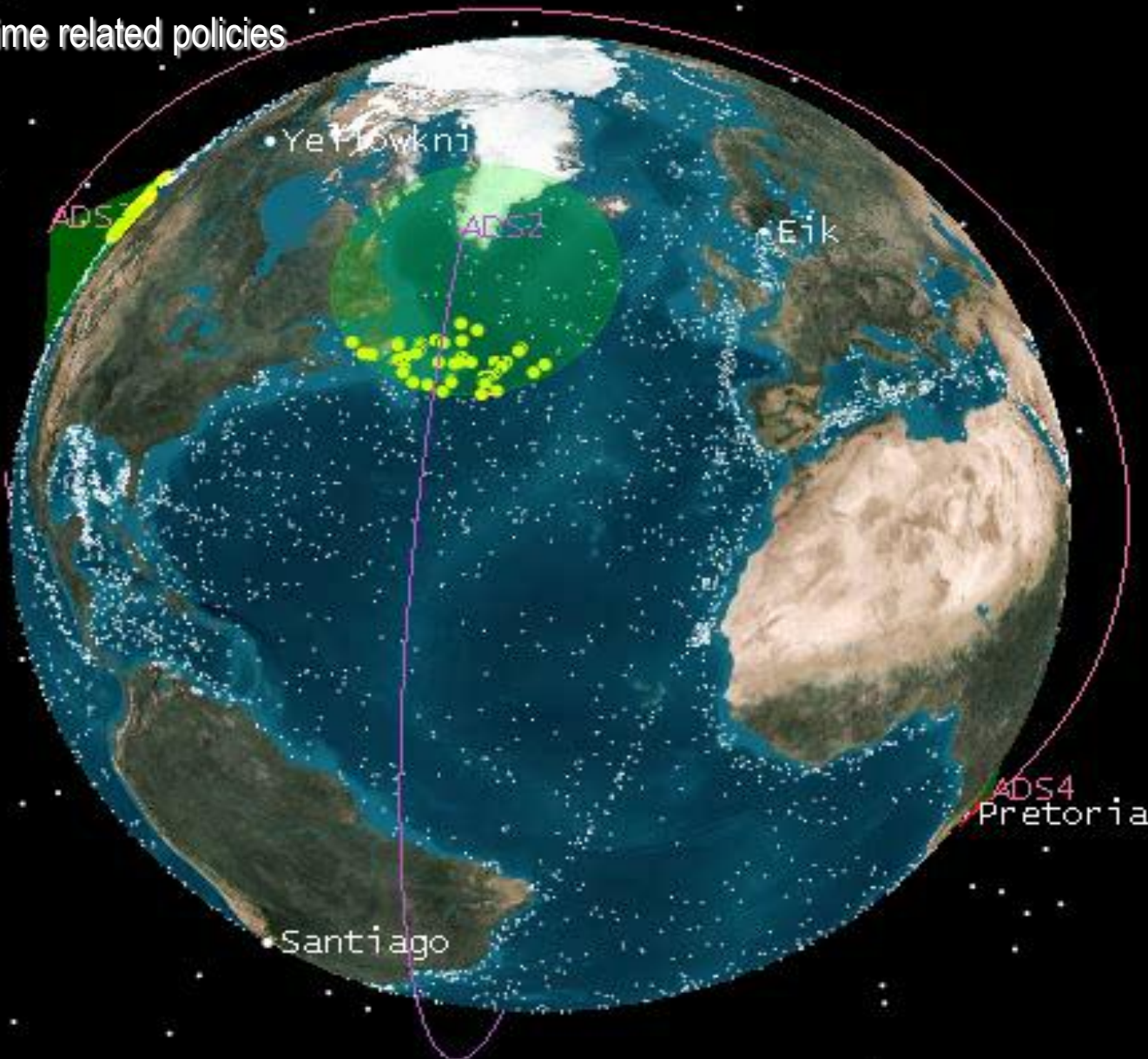


Source: [ESA](#) & [McDaniel/CargoLab](#) International Salvage Union, 2003

SAT-AIS Initiative

Global & High Traffic Zones



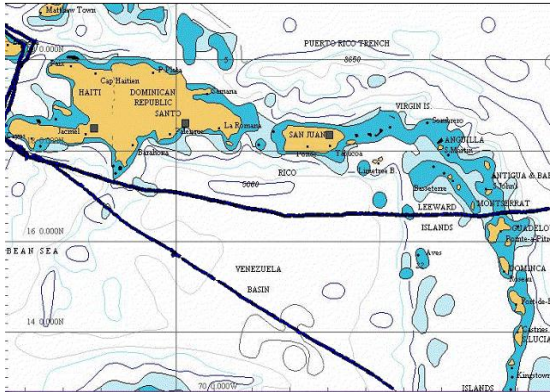


DG-MARE / ESA
Joint
Action Team
&
European
Steering group:
EC DGs (Mare, ENV,
TREN, JLS, INFSO,
TAXUD, ENTR, JRC)
FRONTEX, EDA, EMSA,
ESA

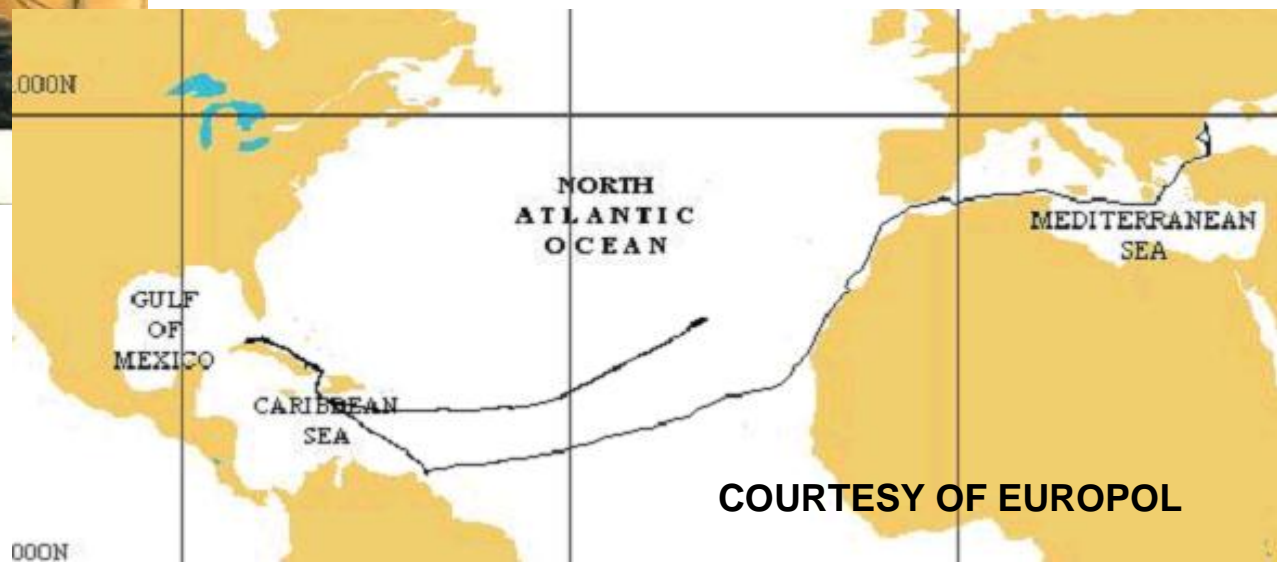
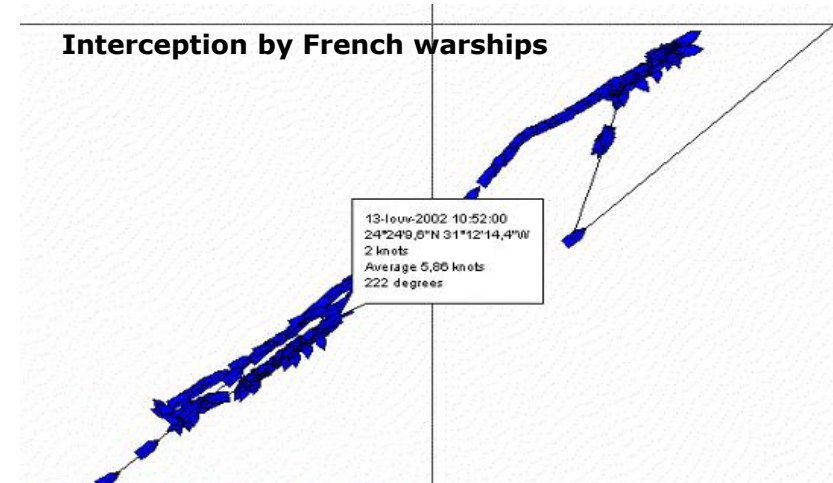
COURTESY OF COMDEV

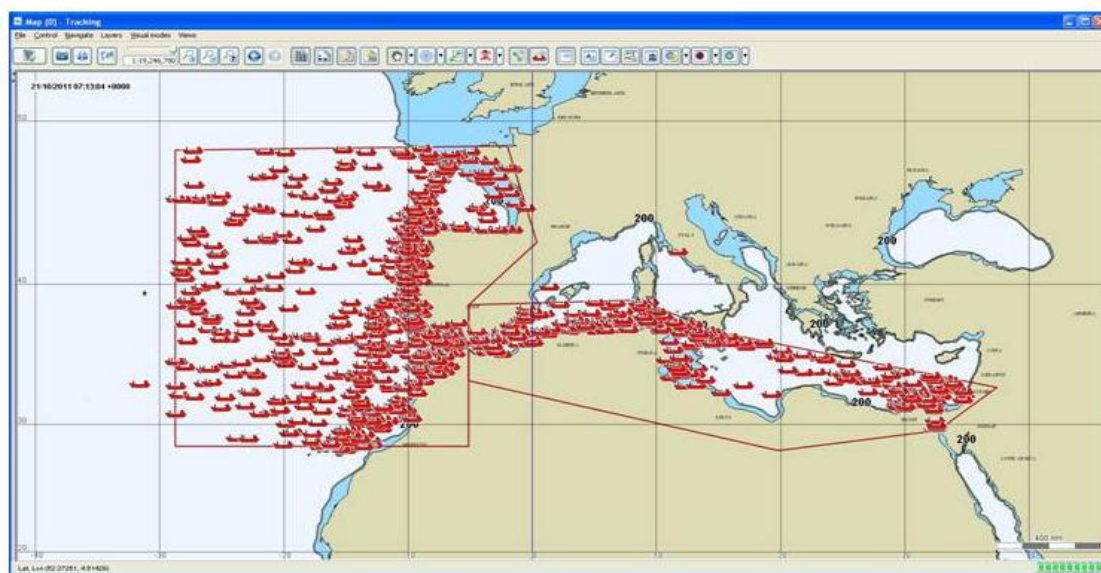
1. **Maritime Security services**: support of security operations, maritime security threats
2. **Law-enforcement services**: anti-piracy, illegal fishing, enforcement of international /national regulations, support of enforcement ops
3. **Search and Rescue (SAR)**
4. **Maritime surveillance services**: monitoring of vessels in sensitive areas (international waters), anti-drug smuggling, border control
5. **Environmental services**: hazardous cargos monitoring, prevention of pollution caused by ships, pollution response
6. **Maritime Safety services**: vessel traffic/navigation monitoring, vessel traffic management, support of safety operations
7. **Fleet management services for commercial users**
(shipping companies, owners,...)

Cocaine Trafficking – M/V Winner, Bolivian flag

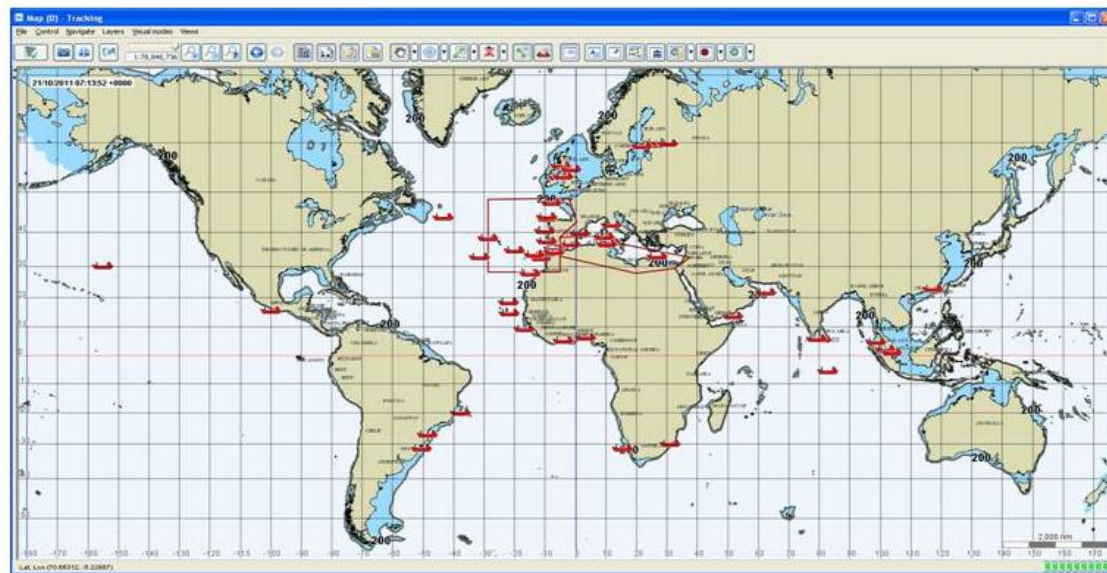


Loading point





Positions provided since 20th Oct: All ships focus on both Areas of Interest

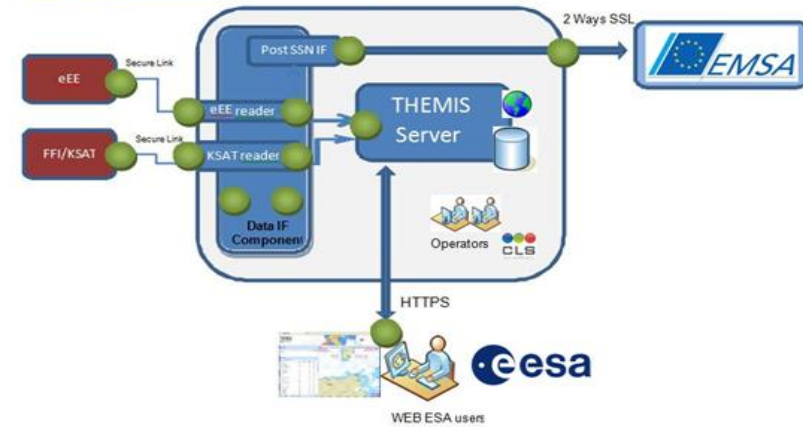


TASK
monitor

Blue Belt SAT-AIS

Fri Oct 28 19:15:29 UTC+0200 2011

[Refresh](#) - [Switch View](#)



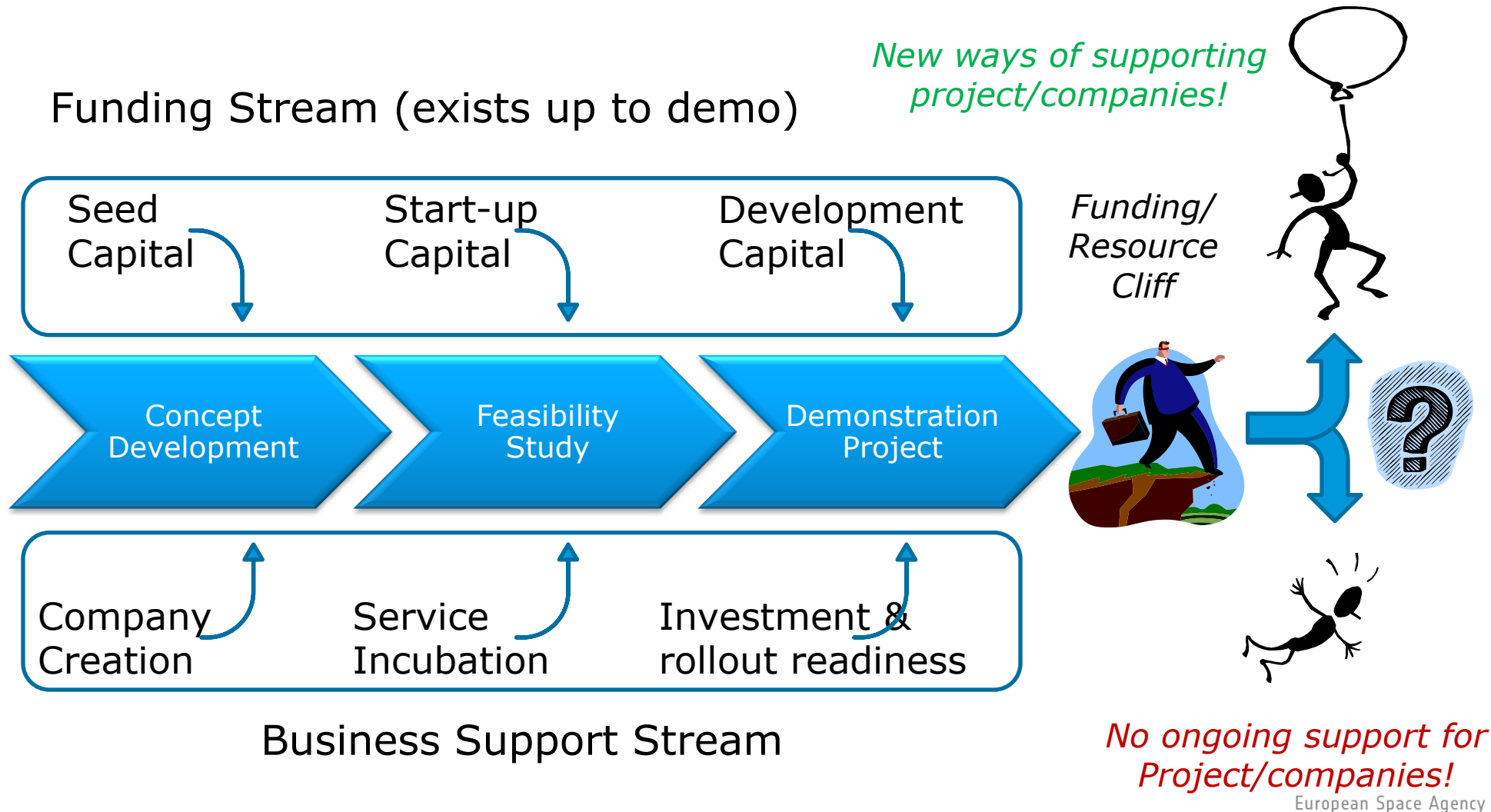
Positions provided since 20th Oct: Only Blue Belt ships globally

Third Party Funding

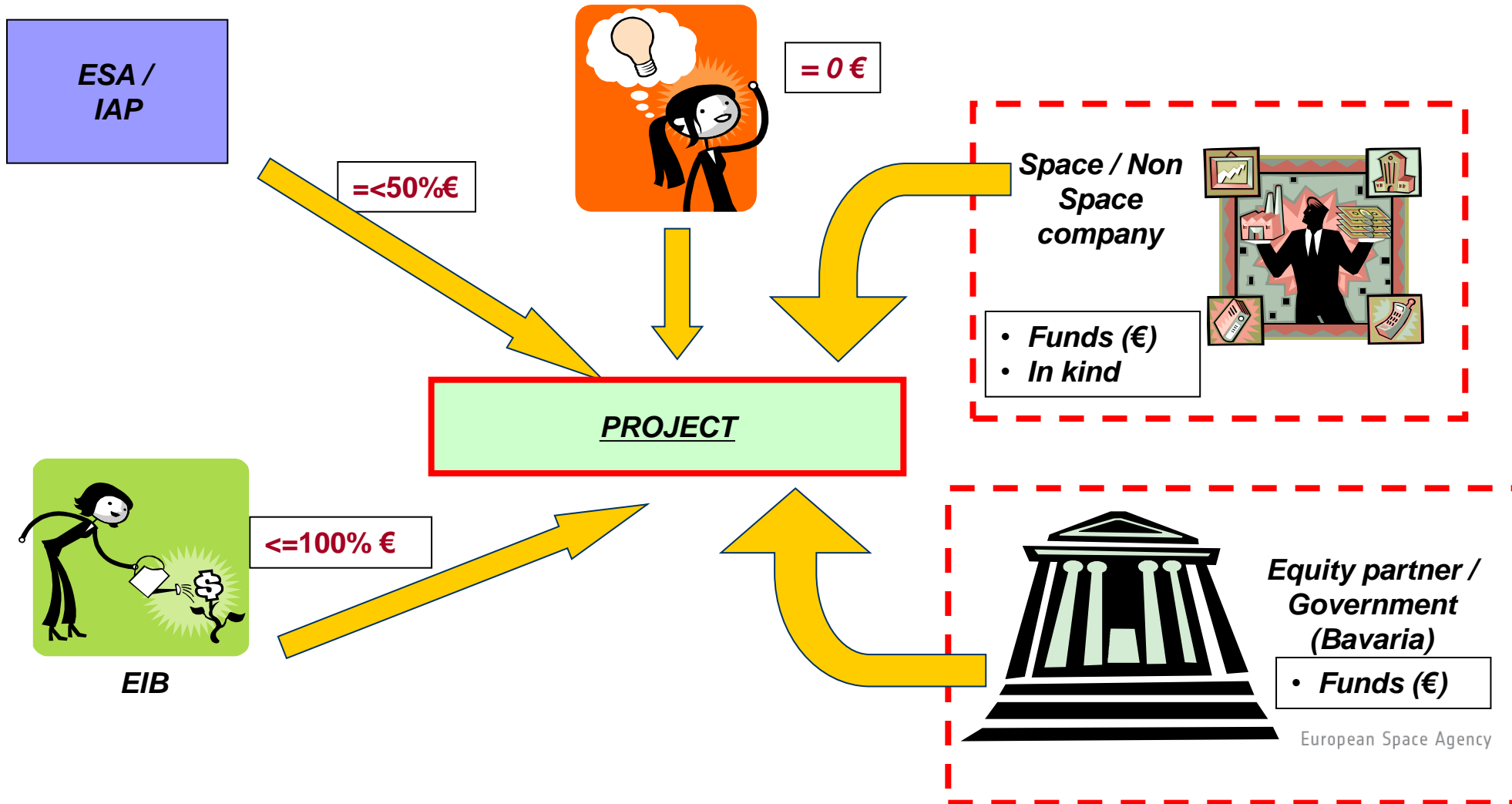
4

Space Services

Need to increase support for SMEs: not just funding but wider business support



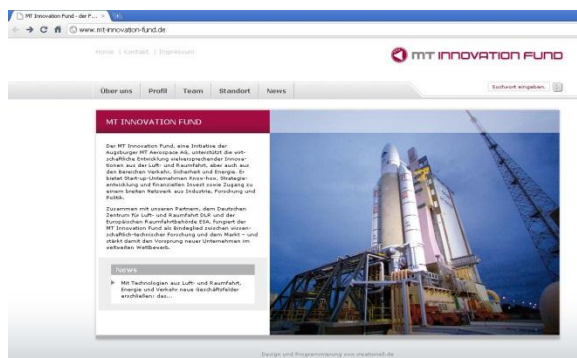
Opportunities to create an Partnership for Space Innovation Fund



INTEG SPACE AWARD

ESA IAP PRIZE 2013

Auftaktveranstaltung
29. Oktober 2012

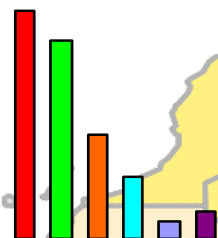


“Space for Med” Space for Mediterranean a Common EIB/ESA Initiative

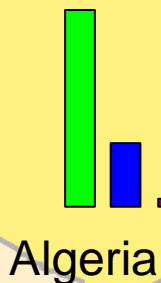
Million EUR

- Energy
- Transport
- Telecoms
- SMEs & Industry
- Environment
- Human Capital
- Credit Lines
- Risk Capital

Regional



Morocco



Algeria



Tunisia



Egypt



Israel



Syria



Lebanon



Palestinian Territories



Jordan

EIB sectoral priorities in the Mediterranean Partner Countries

3rd Annual ARTES Applications Workshop is a Forum to meet, discuss, network and stimulate new ideas....



Interesting Guest Speakers

Sessions on:

- Environment; JA
- Transport; NH
- Consumers & capacity building; FF
- Partnerships with ARTES Applications; AB
- Dual Use & safety; MC
- Water management & agriculture;
Joris V. Ernst
- Maritime surveillance; TS
- ARTES Applications Entry Points ;FF



***ESA Executive wish to thanks Marco Airaghi –Member of
IAPAC & Giovanna Orlando***

Artes Applications in general and IAP in particular are unique and **effective platform** in support of **European economic growth** in general and **European stakeholders** in particular:

- Demonstrated capability for **Industry** to exploit their expertise for the purpose of new initiatives and to identify **new lines of business** in a wide variety of fields **for space applications/services**.
- IAP strategy (e.g. AP) to stimulate **wider use** of space.
- Opportunities to expand into other thematic areas with **Local and Global markets**, e.g. Insurance, Infrastructure, Smart Cities, Water/Food/energy etc...
- Explore **new partnerships** with “non classical space” stakeholders.
- Participation in **relevant 3rd party (e.g. EIB)** programmes, Space 4Med

*Special appreciations to : **Enrico Saggese** (2007 ESOA)*



Thank You!

Open Call, IAP web portal:
<http://iap.esa.int>