

# EARSC

European Association  
of Remote Sensing  
Companies



## **Growing the EO Industry – Enabling new Markets**

Geoff Sawyer , EARSC Secretary General  
Geoland2 Final Workshop  
19<sup>th</sup> October 2012, Copenhagen



## What is EARSC?

- EARSC is a non-profit-making organisation created in 1989 as the voice of the European geo-information EO service industry
- Mission & objectives:
  - to foster the development of the European Geo-Information Service Industry
  - to stimulate a sustainable market for Geo-information services using EO data, openly accessible to all members
- Today EARSC has 68 members in 22 countries, and is a recognized association worldwide
- Represents European geo-information providers creating a sustainable network between industry, decision makers and users



## European EO Services Industry

- Offers a full range of services based on extensive experience serving government, industry and the citizen
- Includes data providers, downstream service providers, software and consultancy companies with a mastery of space-borne/airborne/in-situ systems and sensors technologies.
- Innovative / dynamic; many new companies, changing ownership
- Around 200 companies largely SME's with strong partnership experience across European borders.
  - Estimated as around €800m annual revenues.
  - Highly skilled workforce; interchange with other sectors
  - Last survey in 2006 identified 152 companies.
  - **Full industry survey is being made by EARSC.**
  - **Questionnaires launched in next few weeks**
  - **Let us know if you wish to participate.**

# Market Development – ESA / EARSC Initiatives.



**OGEO**  
•Link with Oil & Gas Industry



**eopages**  
•Brokerage site for the EO services Industry



**EOINS**  
•Link with Insurance Industry



**eoworld**  
•Links to the World Bank and other IFI's



## GMES – Key market enabler

- GMES is a key European public programme to provide space-derived information on environment and security to European policy makers and citizens.
- Direct funding for EO services is important and will develop new products to be exploited

But more important

- GMES provides a strong opportunity as a market driver for EO Services.
  - Industry can exploit opportunities using GMES products & services in other markets eg. commercial, export and non-EU government.

Provided that

- GMES data and Information products are freely & openly available



# GMES Open Data Policy

- GMES data and Information is to be collected by governments for public use and hence qualifies as PSI under EC Definition.
- Digital data collected by governments or their agencies (Public Sector Bodies or PSB's) is:
  - Already paid for (first copy is expensive: further copies are cheap)
  - Easily reproducible
  - Fungible (one user does not prevent another user)
- Public Sector Information re-use encouraged by the EC Directive 2003 and new Directive for 2013
- PSB's to make their data available and to do so at marginal cost ie free.



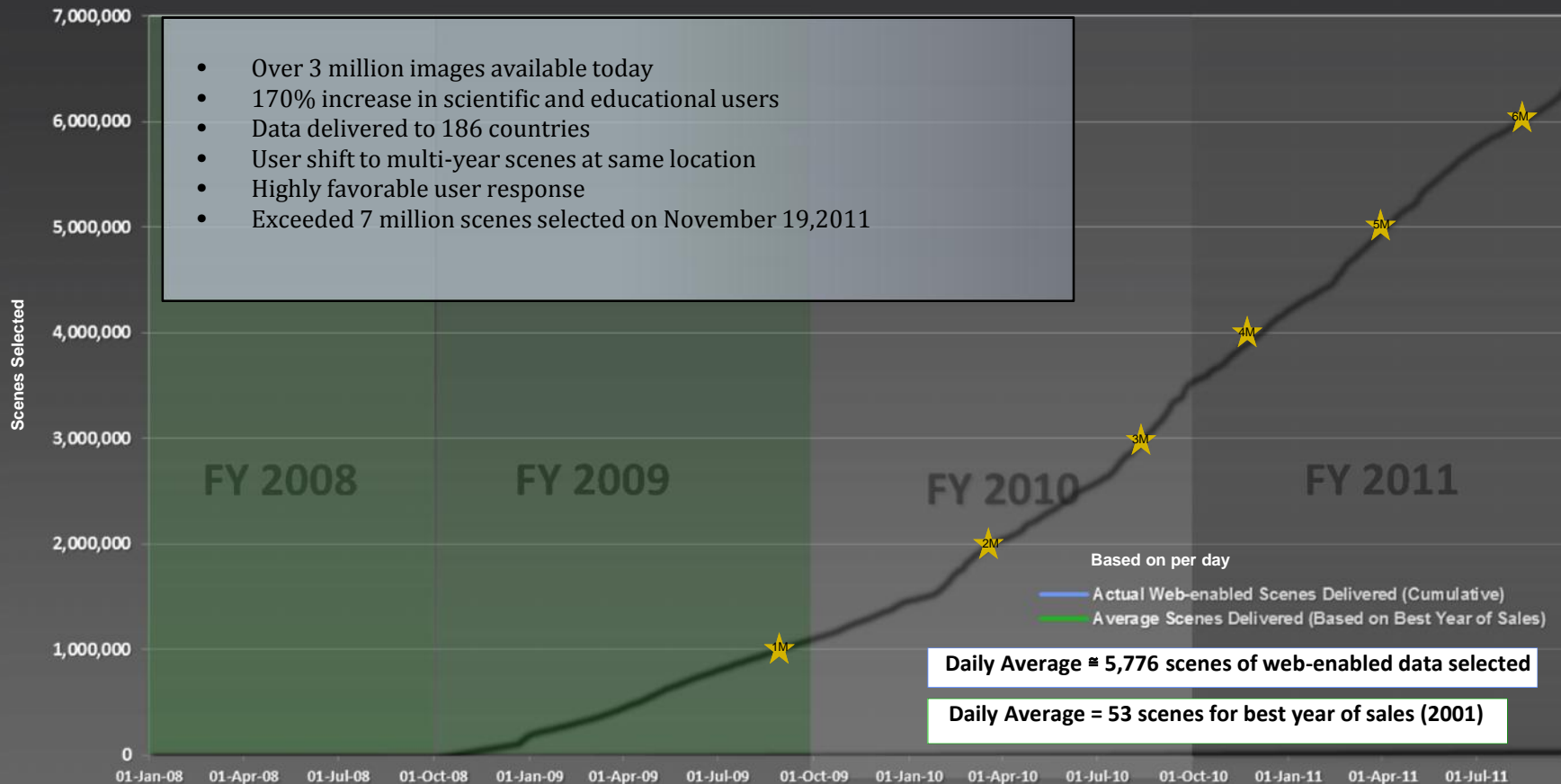
## GMES Open Data Policy (2)

- Evidence in other cases where PSI is made available for re-use, e.g. cartography, cadastral, meteorological domains show strong economic benefits:
  - Re-use grows hugely (100-fold in some cases)
  - PSB loses income but generally a small proportion of its total (more than 50% of the PSB's gain less than 5% of their revenues from sales)
  - New business growth is high (100 to 400%)
  - Employment increases (+300% for Dutch KNMI, +800% for Danish DECA)
  - Taxation increases

What can we learn from the other domains to apply to GMES?

# Landsat Internet Data Distribution

40-year archive of global data provided freely on the Internet

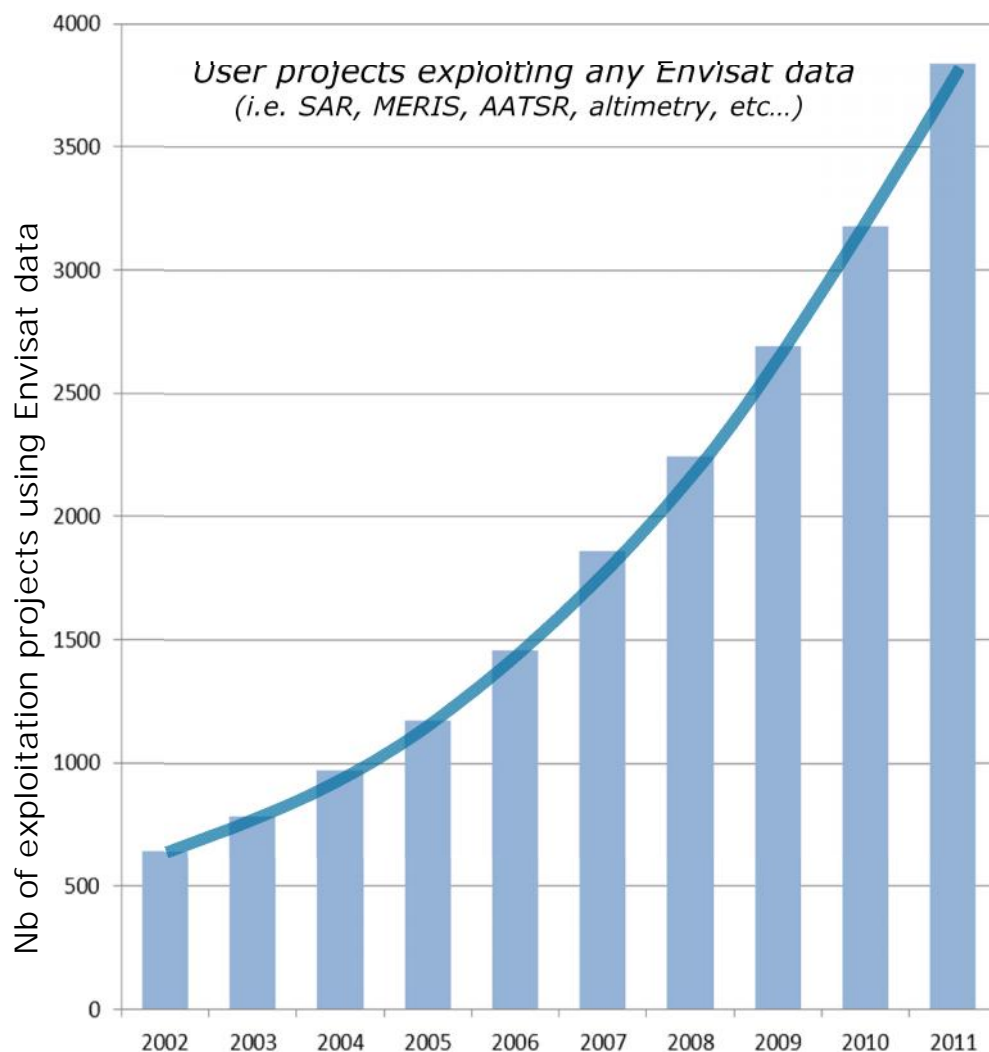


Total Landsat Scenes Selected By Users Since January 1, 2008





# Impact of elimination of barriers for EO data access: the Envisat case

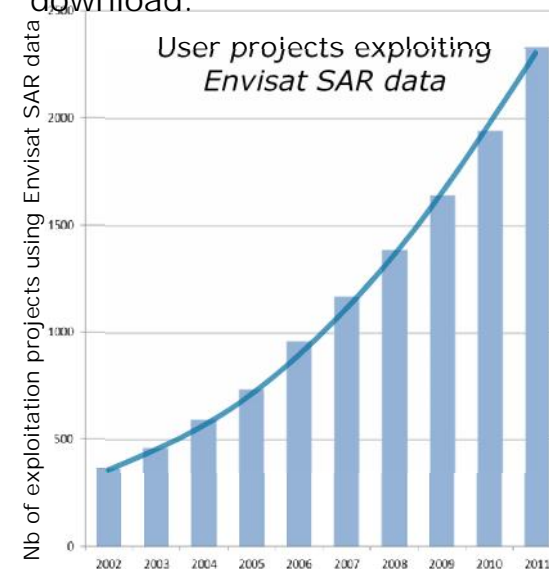


The gradual increase of the number of user projects exploiting Envisat data between 2002 (launch) and 2011 is a consequence of:

1. the usefulness and quality of the data,
2. the gradual elimination of barriers for data

access:

- access policy: decrease then removal of fees charged to users, simple user registration for on-line datasets for any type of use, i.e. science or commercial value-adding,
- access means: increased volume of datasets available on-line for direct download.





# GMES Open Data Policy - Summary

- GMES is a particular form of PSI comprising EO data and information
- Other domains of PSI (meteo, cartography, cadastral,) show that it has a good potential for re-use and can generate economic benefits beyond those covered by public use:
  - Strong increase in downloads / useage (10-fold to 100-fold)
  - Contribution to PSB revenues is low covering costs only
  - Increased revenue generation shown; evidence is growing
  - Employment and tax revenues follows increased use.
- Whilst studies have focused on the economic benefit that GMES can provide, little work has been done on the potential markets that can be created
- Experience in the other PSI domains suggests that GMES and the EO services sector offer good conditions for exploitation;
  - SME's, lack of legacy PSB's,

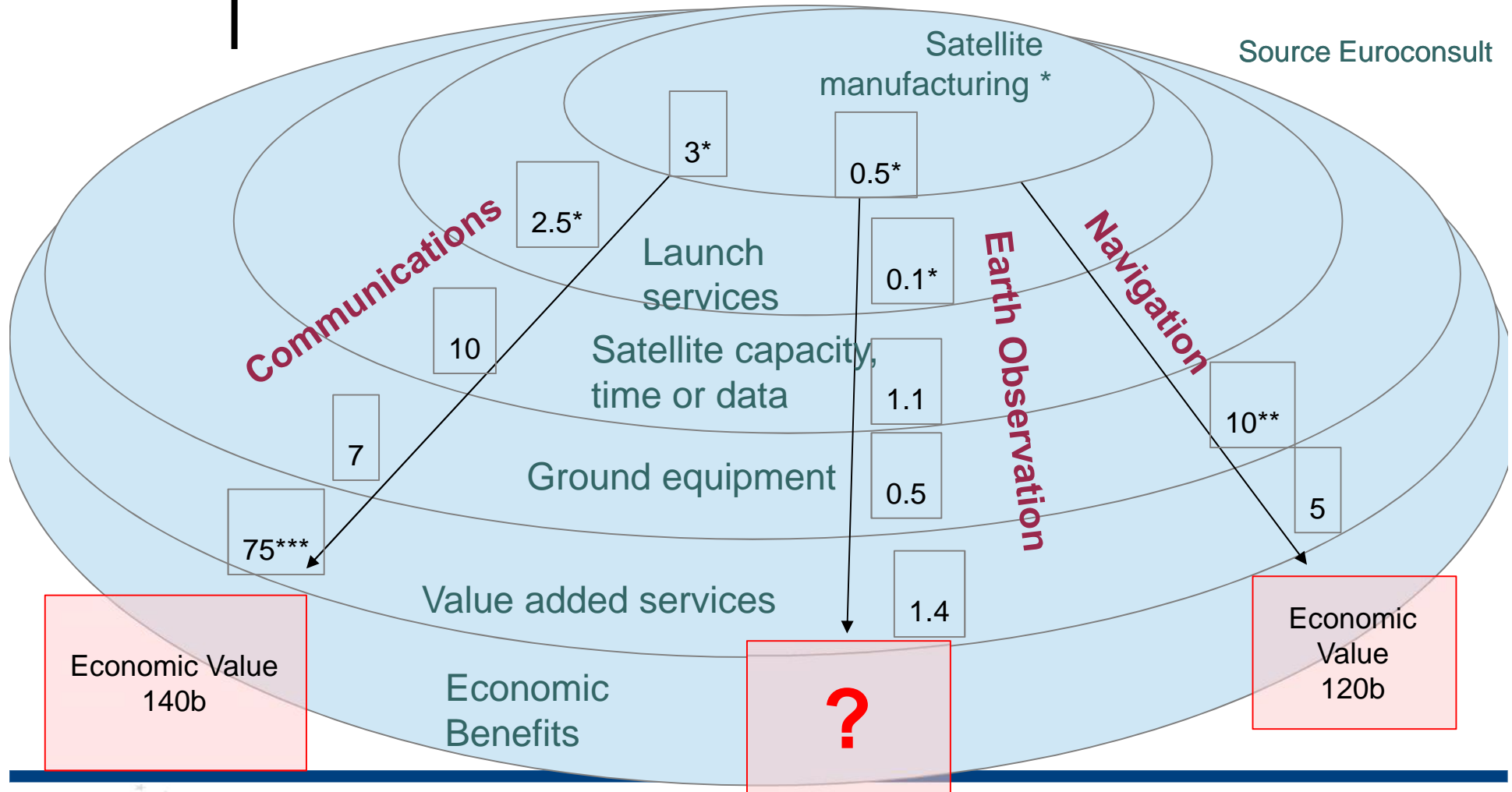


# The 3 value chains in commercial satellite application

## Estimates for 2009 in \$billions

(\*) significant annual variations related to the n. of satellites (\*\*) incl. Chipsets (\*\*\*) predominantly for direct tohome pay TV

Source Euroconsult



# Economic value of EO



We do not have good information on the total economic value of EO data; either EU or global. However some data-points do exist:

- Recent estimate for US Landsat economic value \$1.7b p.a
- ACIL Tasman study (2010) gives \$3.3b for Australia as a conservative estimate which scaled to EU GDP gives €32b
- Booz & Co estimate GMES contribution will be €10b pa by 2030.
- PwC estimated €34b pa in their 2006 report for ESA
- How to capture more value in the EO services industry?

Europe – GMES  
€30 B over 20 years  
Booz & Co

Europe – PwC 2006  
€34 B p.a



# The Value of Landsat - \$1.7b p.a.

Research Report by Booz & Co on the value of Landsat moderate resolution optical imagery:

Agriculture Forecasting & Management	USDA monitors global crop supplies to forecast shortfalls or gluts of various crops on the market- benefits U.S. food security, economic security, and national security.	\$630m
Climate Change Adaption	Data is used to monitor impacts of global climate change on remote regions including glaciers, rainforests, and coral reefs	\$240m
Monitoring Coastal Wetlands	Observe and track impacts of natural and human impacts on coastal wetlands.	\$230m
Disaster Management - Hurricanes	used to map and analyze hurricane paths to predict future occurrence paths and minimize economic damage and loss of life.	\$200m
Wildfire Analysis & Management	used to monitor active wildfires and assess historical fires to improve and target management practices; preventative measures are more effective and efficient than fire fighting.	\$15m
Monitoring Land-use change	The USDA Natural Resource Conservation Service identifies land use change and soil erosion; implement best management practices to preserve soil quality and target most vulnerable regions.	\$440m

Improving the Way Government Does Business; Adams & Pindilli. April 2012

[http://calval.cr.usgs.gov/wordpress/wp-content/uploads/Pindilli\\_JACIE\\_Presentation\\_final.pdf](http://calval.cr.usgs.gov/wordpress/wp-content/uploads/Pindilli_JACIE_Presentation_final.pdf)



## Landsat – 10 cases

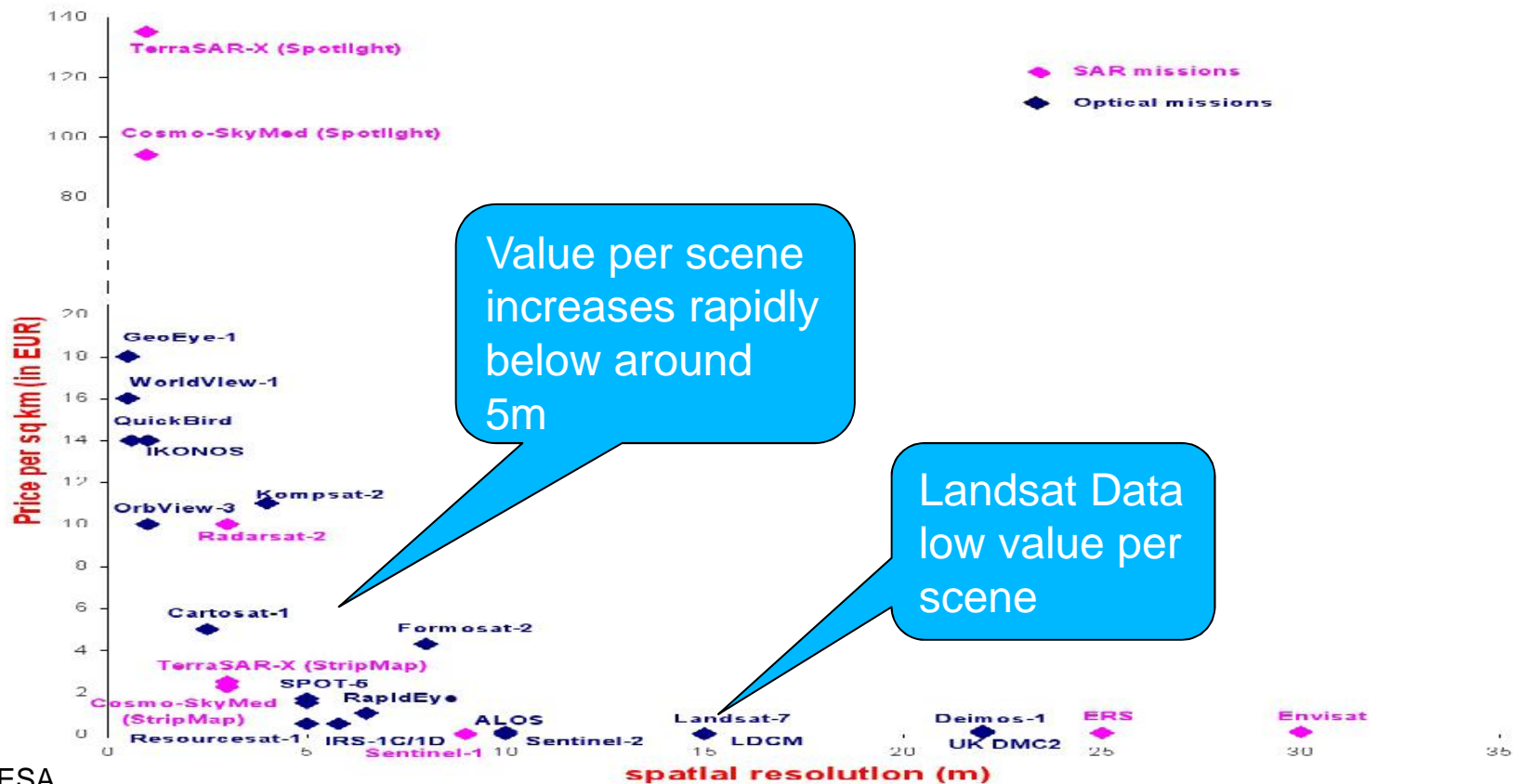
Detailed assessment of 10 cases using Landsat data show annual efficiency savings of around \$200m p.a.:

The Value Proposition for 10 Landsat Applications. Landsat Advisory Group, September 2012

Landsat Application	Annual Efficiency Saving
Monitoring Water Consumption	\$20m-\$73m
US Government Mapping	Over \$100m
Forest Health Monitoring	\$12m
National Agriculture Commodities Monitoring	Over \$4m
Flood Mitigation Mapping	Over \$4,5m
Forest Fragmentation Detection	Over \$5m
Forest Change Detection	Over \$5m
World Agriculture Supply and Demand Estimates	\$3m - \$5m
Support for Fire management	\$28-30m
Coastal Change Analysis Programme	\$1,5m



# EO Data – Price per sq km

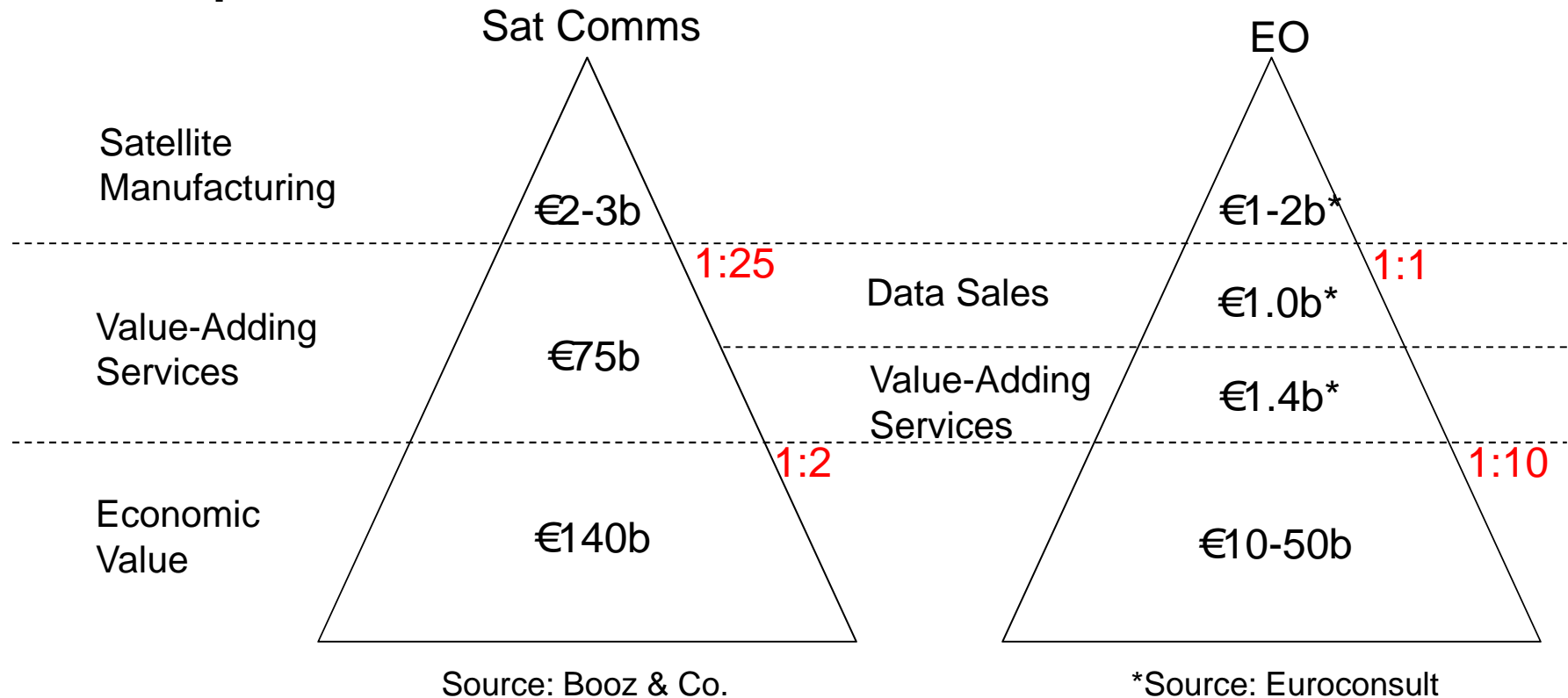


Courtesy ESA



# The Inverted Pyramid

All figures for 2011



How to get more value into the EO Geo-information Services sector?





## Conclusions

- Market growth for EO geo-information has been anticipated for many years
- The advent of many data sources with different characteristics ensures a stable supply for VA service providers.
- Stability in the market, throughout the value chain is essential to give companies confidence to invest in new products and services
- GMES as a first operational system has the potential to help stimulate the market and create sound bases for growth
- European EO service companies are well-placed to benefit but will need support if they are to be able to realise the potential offered
- Economic Value of the EO data and geo-information services is high (justifying the public sector investment). How can industry capture more of this value?



## EARSC and GMES Data Policy

Development of the market is best supported by raw data being made available at low or zero cost:

- Raw data from Sentinels should be free and open.
- Data from commercial satellite operators should be procured under appropriate license conditions.
- Core services to be freely and unconditionally available to all European users.
- Downstream services should be procured commercially on a fair and competitive basis.
- A registration system for GMES users should be put in place to ensure that basic quality conditions are met and licensing conditions are respected as well as achieving fair competition (reciprocity) on the international market.

**GMES business model : Free and open must support and not compromise Commercial models through the contributing missions**