Satellites;
We Use Them Everyday

Geoff Sawyer: Strategic Advisor to EARSC

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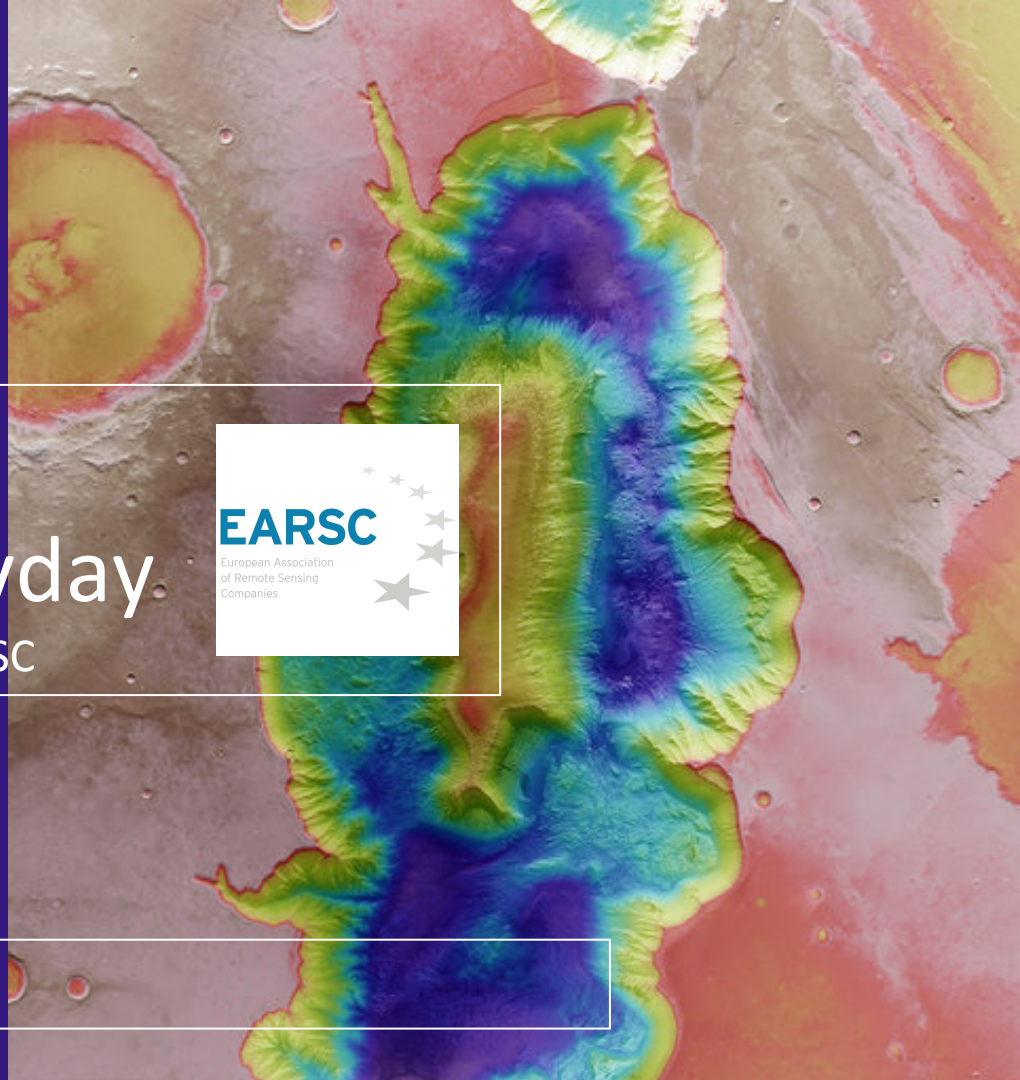
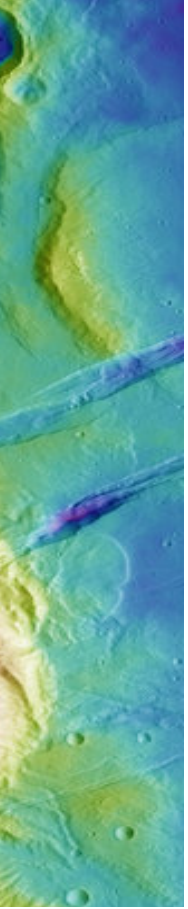
#switchtospace





Space is Everywhere

1. 50 years ago, space was a research activity in every sense.
   - Exploration, technology, science, applications

2. Now, in 2020, space has become a business activity which is present in our lives to an ever increasing extent.
   - Driven by digital and other technologies,

3. You can shape the next 50 years.
   - Earth science & climate, Moon / Mars exploration / Asteroid Mining etc etc etc.

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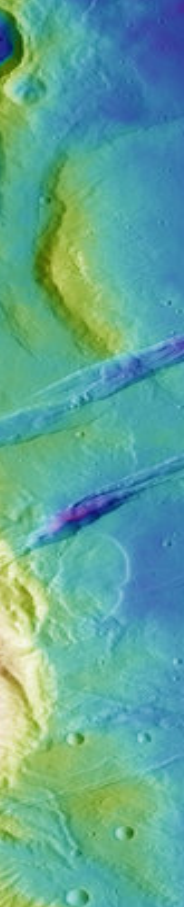

About Me and My (nearly 50 year) Journey

- Recently (semi)retired after nearly 50 years in the sector
- Engineer to Strategist passing many points (and many countries!!) along the way
- Born and educated in the UK but now living and working in Belgium for over 20 years
- How did I get here?
- Earth Observation will be the focus of my talk

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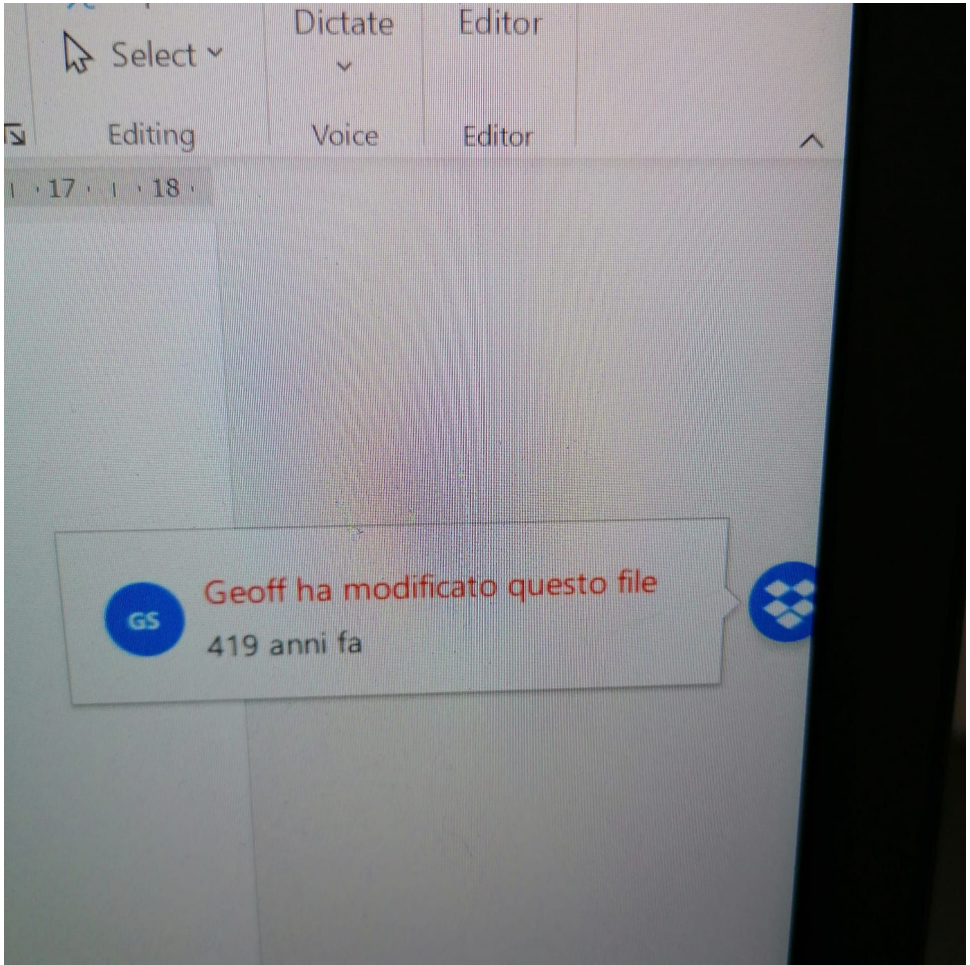
Almost 50 years - But time passes so quickly!



Geoff has modified this file 419 years ago!!

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Roadmap

- Earth Observation will illuminate my talk

Dartmoor in South-West England

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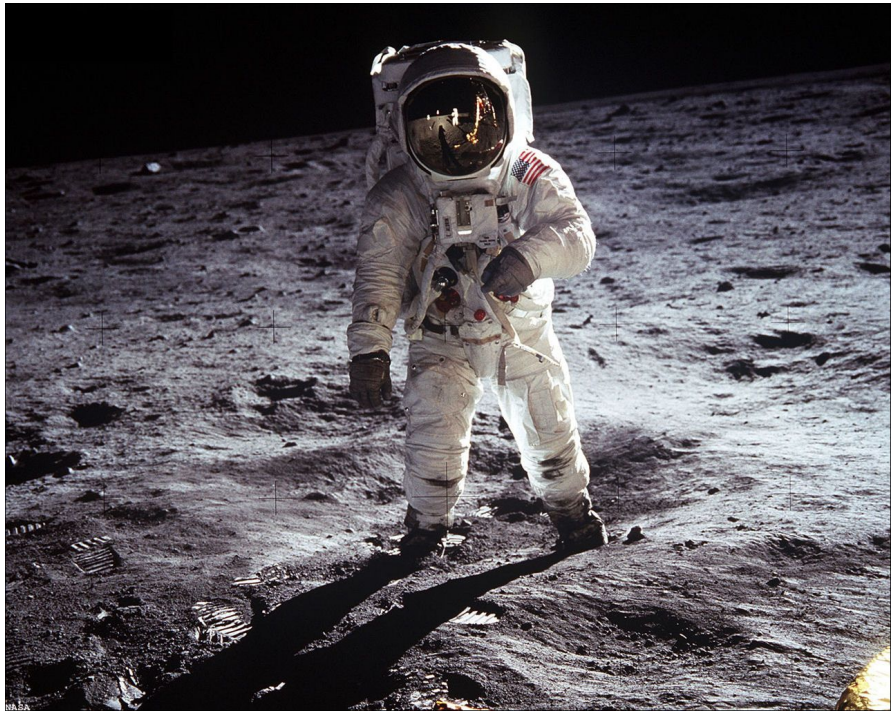
Space is Inspiring !



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Education

Southampton FC last home match at the old ground – The Dell

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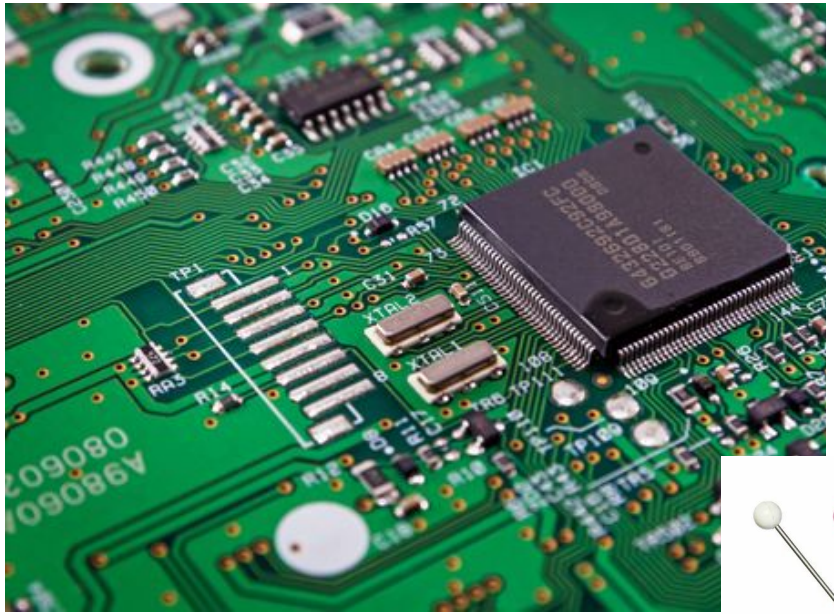
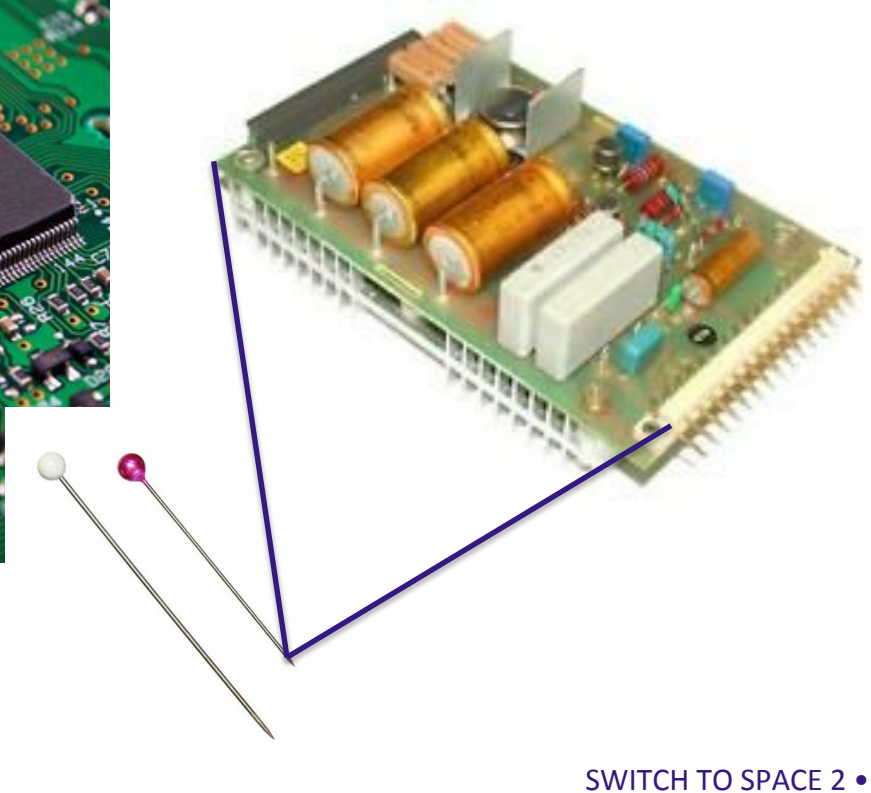
Electronics: Today and Yesterday





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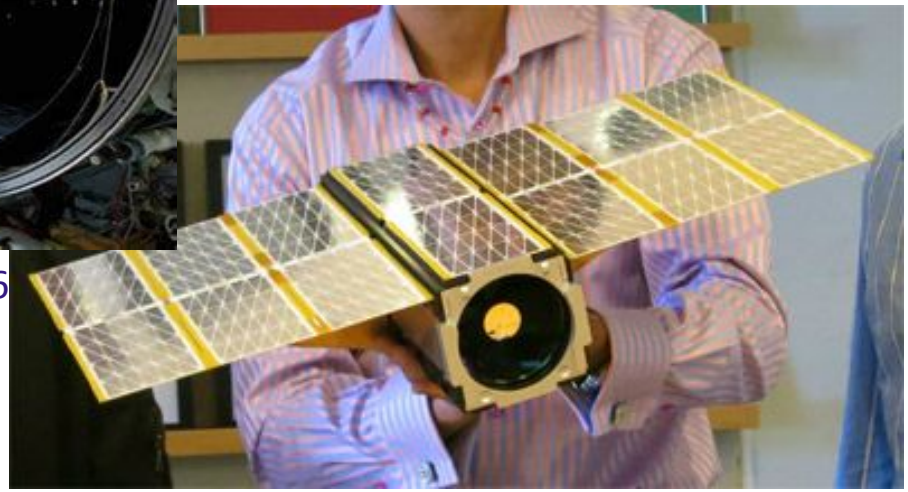
Impact of changing technology

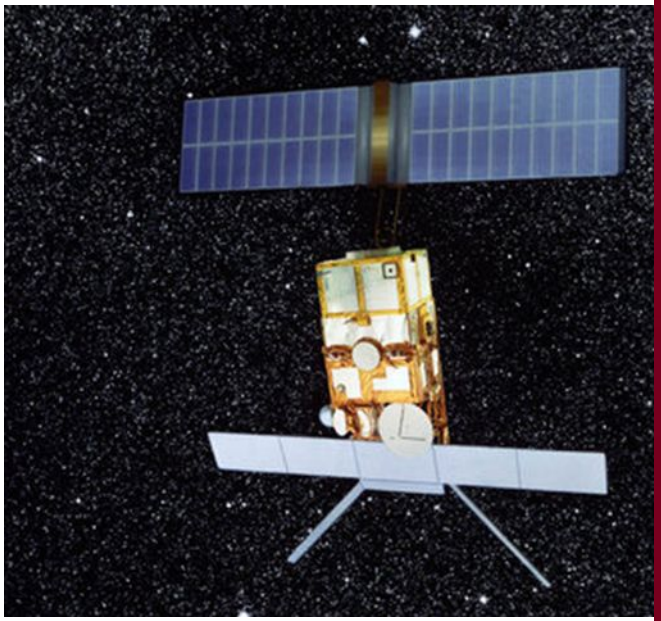
SPOT – French optical imaging satellite 1986

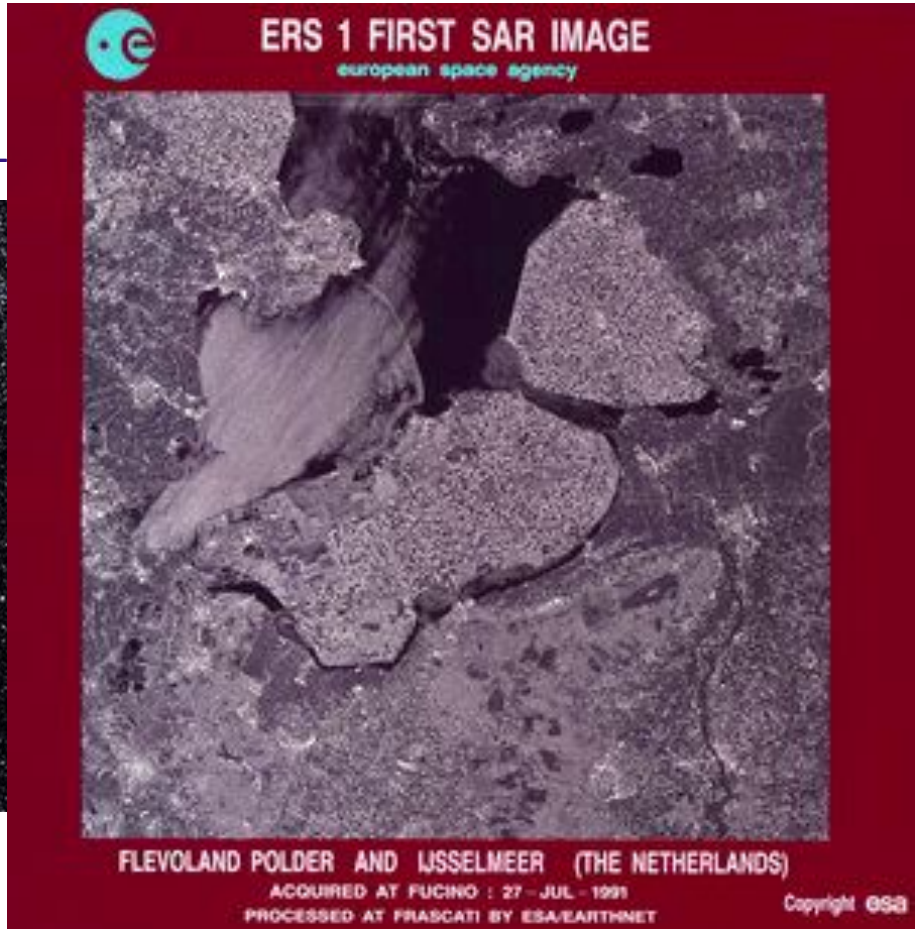
DOVE – PlanetLabs commercial optical imaging satellite - 2018



Engineering

European Remote Sensing Satellite –





Radar Systems Engineer = Analyst
European Synthetic Aperture Radar

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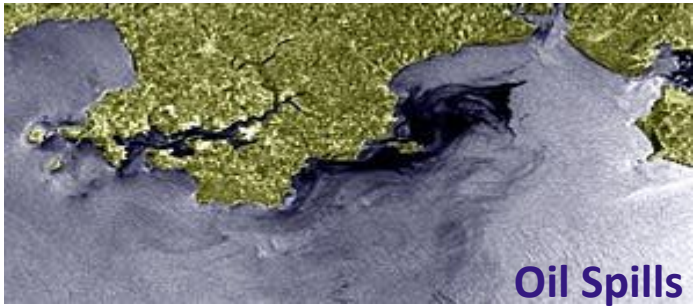
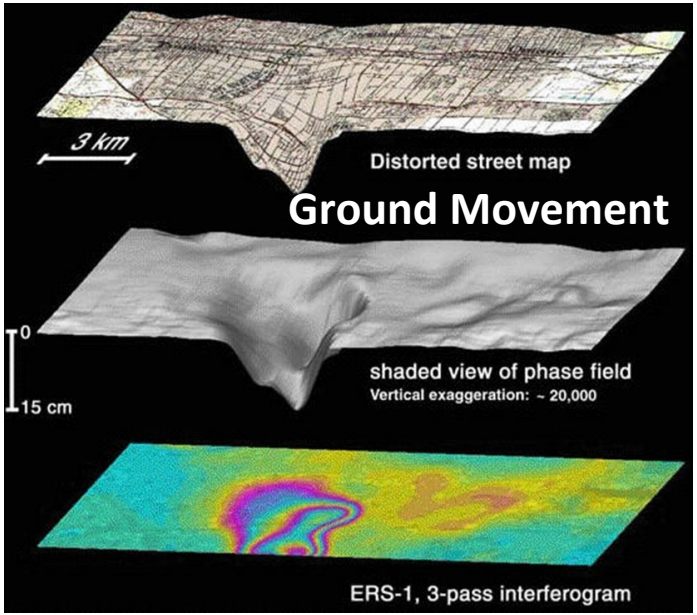
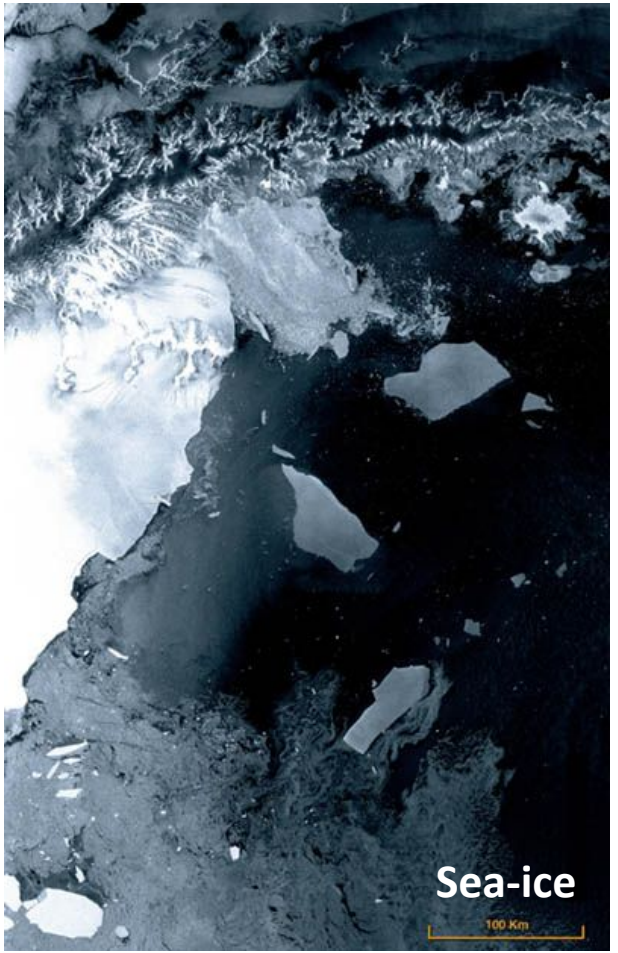
Applied SAR







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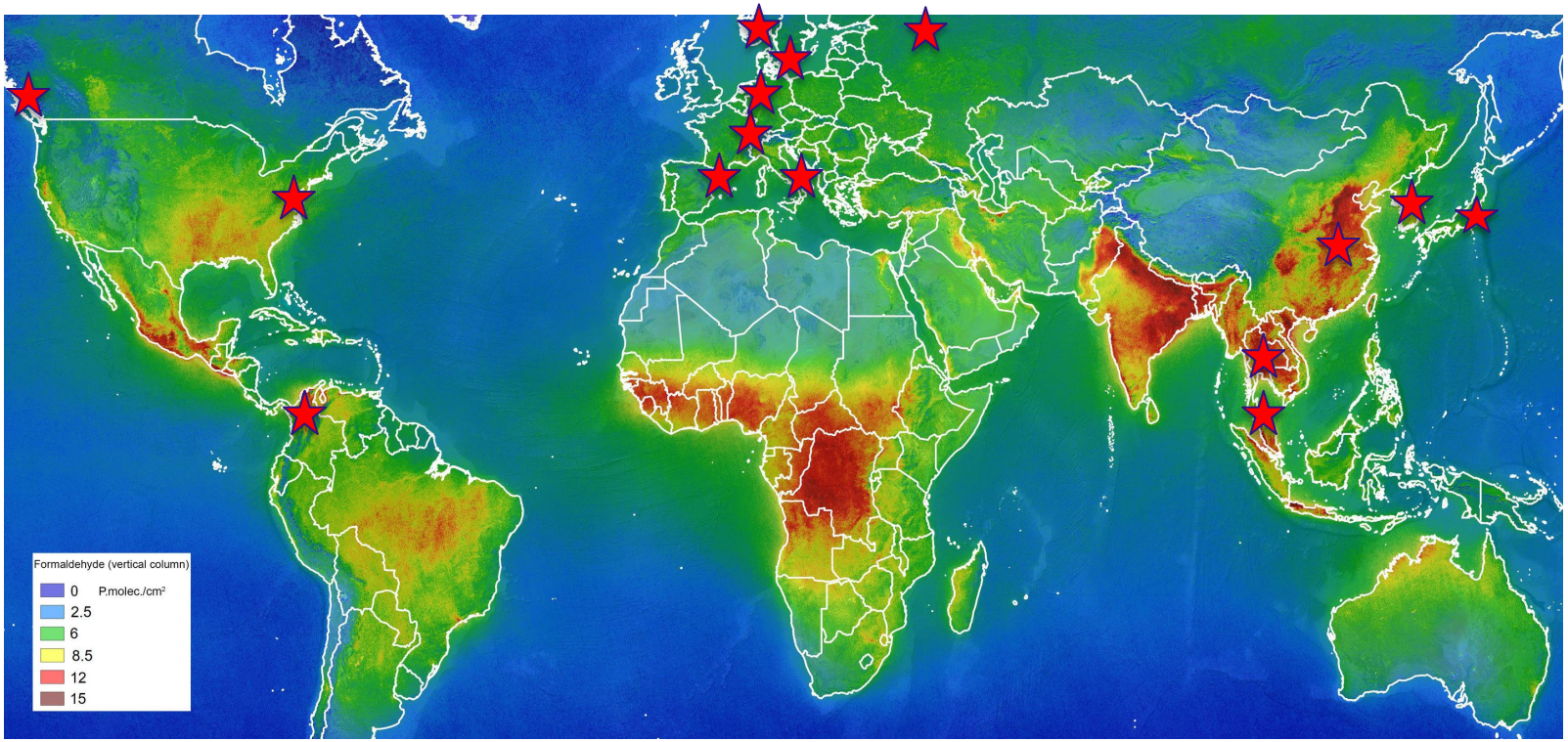
Selling / Marketing SAR around the world (1992-1998)

Sentinel 5p image of Air pollution (formaldehyde)



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Europe and Space

1998 = Brussels and GMES (Global Monitoring for Environment and Security)

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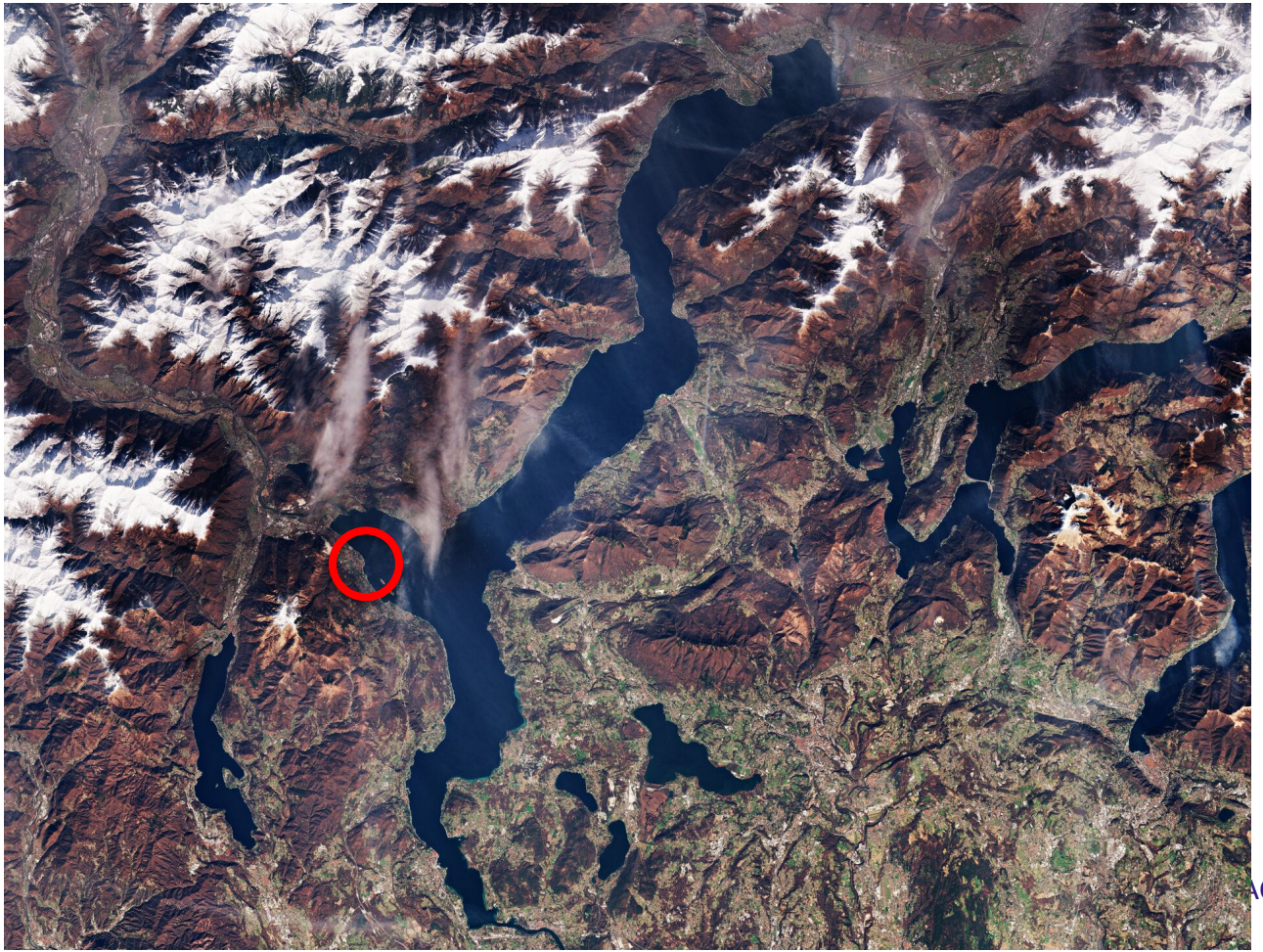
Baveno on Lake Maggiore – Where Copernicus started



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Copernicus – Europe's Eyes on the Earth

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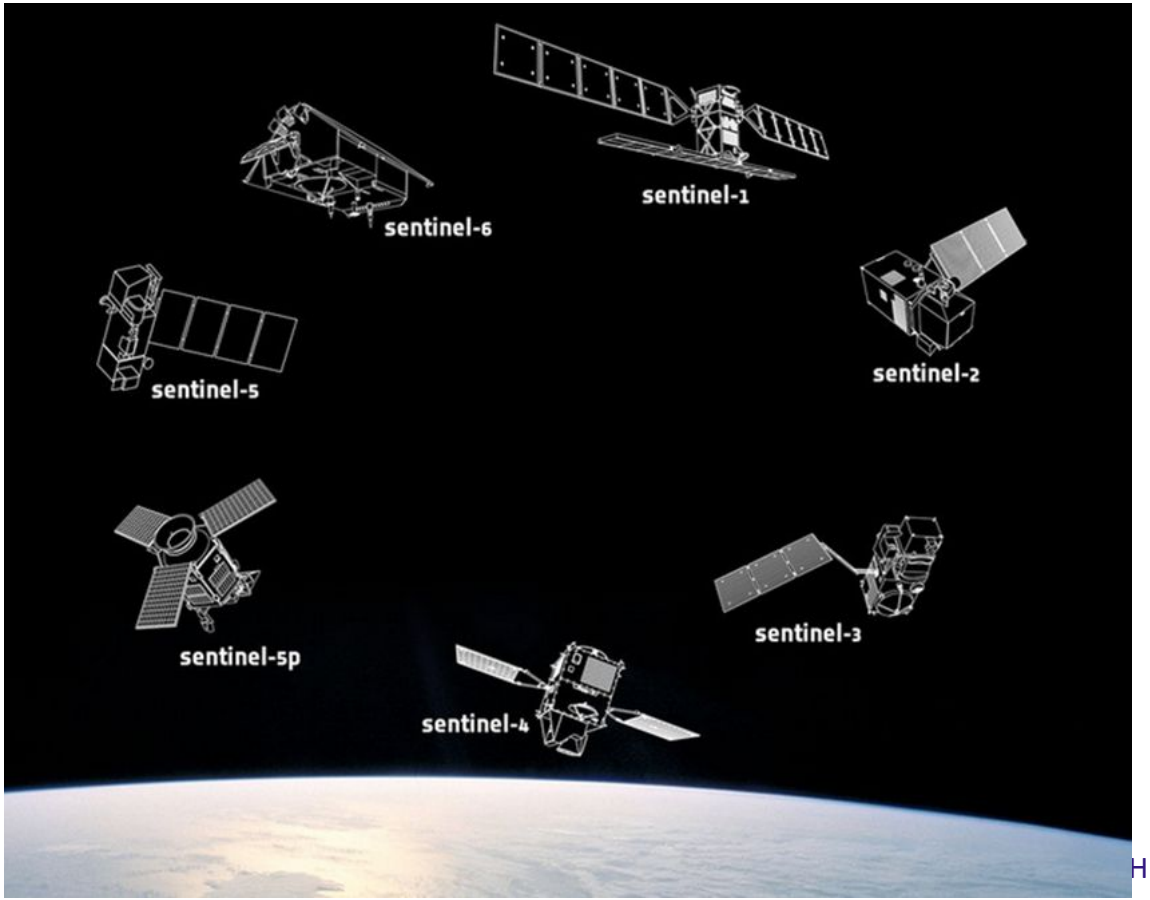
2020

Copernicus – Sentinel Satellites



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Airbus Headquarters in Paris

2006-2010

- Vice-president Strategist for Space
- Head of Group Business Intelligence

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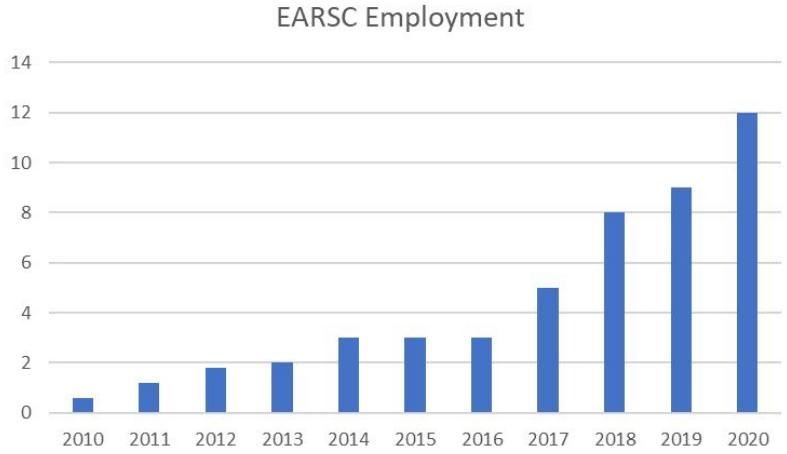
EARSC – Secretary General from 2011

- EARSC was formed in 1989
- In 2010, 1 part-time employee as executive secretary supporting the board
- Having been chairman from 1992 – 1997, and director from 2001 to 2010, becoming SG was an easy step to take



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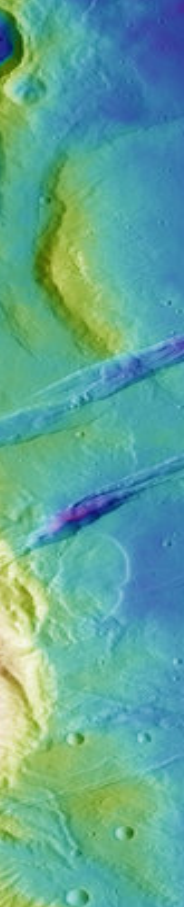

EARSC supports the European EO Services Industry

EARSC has 125 companies which are members of the network, all supplying EO services. We support them by:

- Providing information on the sector and its results
- Fostering the transition of research into commercial business,
- Opening up international export opportunities for European companies
- Supporting start-ups to grow and find opportunities for business collaborations

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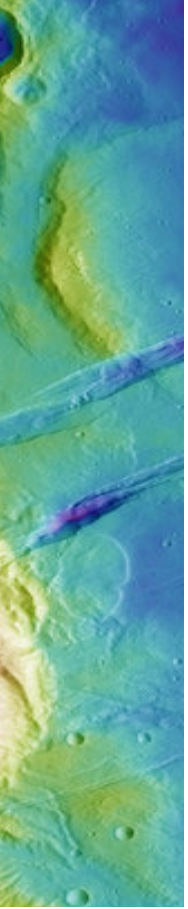

The Value in Earth Observations

Satellites are being used in many ways which impact our life.

Some examples for Earth Observations focusing on the use of the technique Interferometric Synthetic Aperture Radar (InSAR):

- capable of measuring vertical movement of the ground
- Very high precision (mm accuracy) over a wide area and good point separation on the ground (metres)
- Alternative techniques are very expensive or less accurate.

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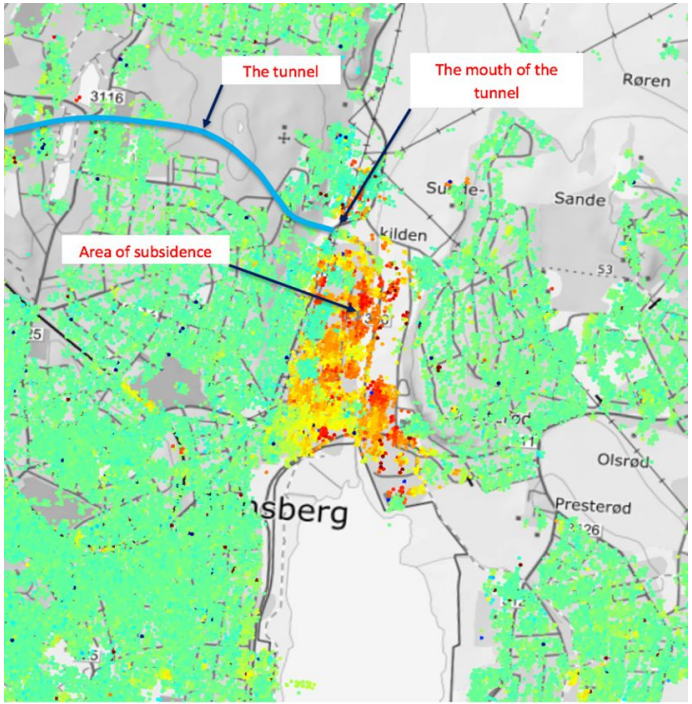
Ground Motion Service - Norway

SAR used by roads authority and engineers to measure large scale ground movement (vertical) at high precision



Benefit to Norway assessed at €4m to €8m per annum

Ground Motion Service - Netherlands

InSAR used by gas distribution company to monitor where pipeline connections are at risk of fracture and to plan replacement.

Benefit to the Netherlands assessed at €6m to €8m per annum

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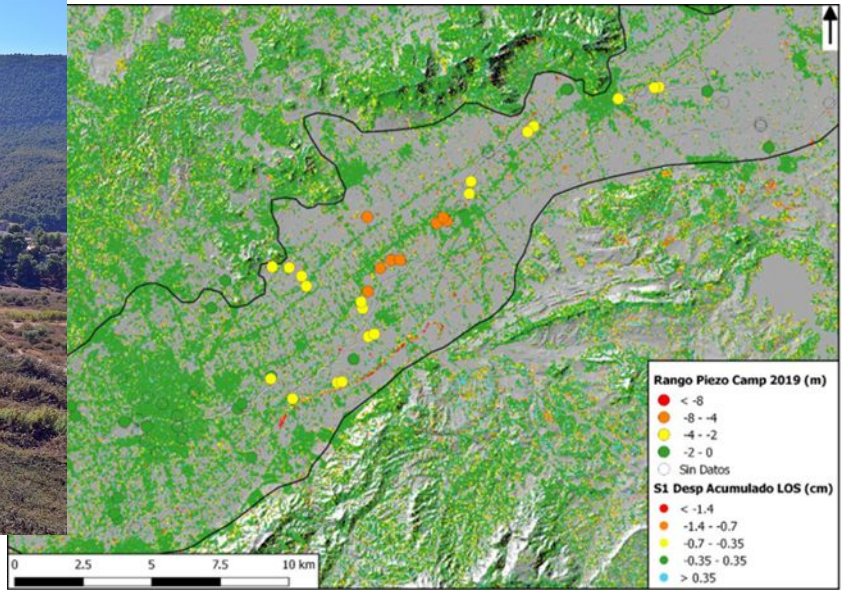
Ground Motion Service - Spain

InSAR used by river authority and engineers to measure large scale ground movement (vertical) at high precision to control impact of water abstraction



Benefit to Spain assessed at €32m to €72m per annum

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Growing Potatoes in Belgium

Sentinel-2 images help Belgium farmers grow more potatoes

Processing companies produce more frites for export.

€2m to €3m benefit to the Belgian economy

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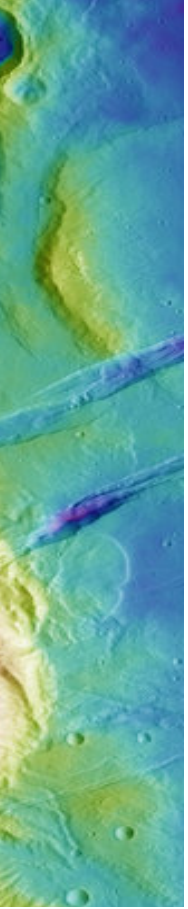

In Conclusion

One Career

Many Opportunities

Know which direction you want to go in

Learn, build a portfolio of skills

Stay open to choose the route

Have fun along the way

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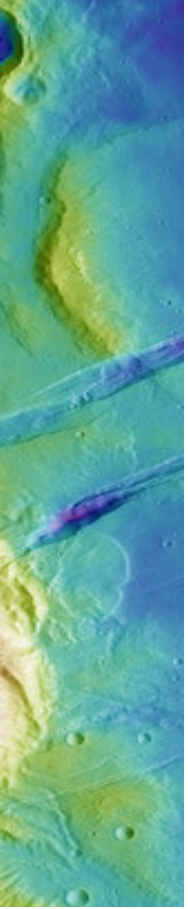

Skills and applying them

1975 Engineer – designing circuits

1982 Radar Systems Engineer – designing a space radar

1989 Image analysis and remote sensing

(a not very good) Salesman

1992 Manager

Marketeer

1998 Policy Maker

2001 Advocate – Lobbyist

2006 Strategist

2009 Business Analyst

2011 Secretary General of EARSC combining all these skills (maybe not engineering!)

2020 Strategic Advisor – continuing analyst role

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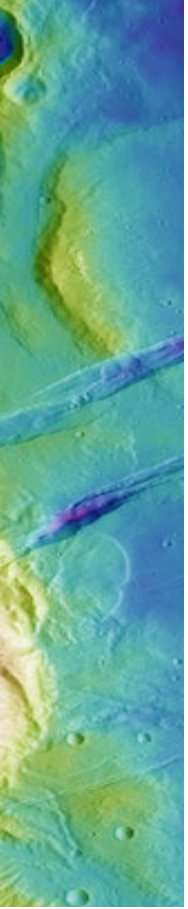

Agenda:

- The Future of Work in the Space Sector – Post Covid19
  Michel Praet: ESA; Head of Brussels Office

- EU Space: Benefits down to Earth
  Pascal Claudel: Galileo Supervisory Authority

Questions

- The Added Value of the Integration of Different Types of Remote Sensing Data
  Andre Jadot: CEO Eurosense

- Public Services and Spatial Data
  Eric Hallet: ISSeP (Institut Scientifique de Service Public in Wallonia)

- Using space technologies to locate emergency calls : Advanced Mobile Location
  Benoit Vivier: EENA (European Emergency Number Agency)

Discussion

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