



Earth Observation, Climate and Space for Smarter Government

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Head of Earth Observation

30 March 2015

<http://www.bis.gov.uk/ukspaceagency>



Overview



- UK Space Agency
- EO Importance and priorities
- Strategy Implementation Plans
- Applications and data
- Space for Smarter Government

UK Space Agency – Our Roles



Leadership

70 staff
\$500M p.a.

Policy &
Regulation



Education & Training



Programmes



Science &
Technology



Innovation &
Investment



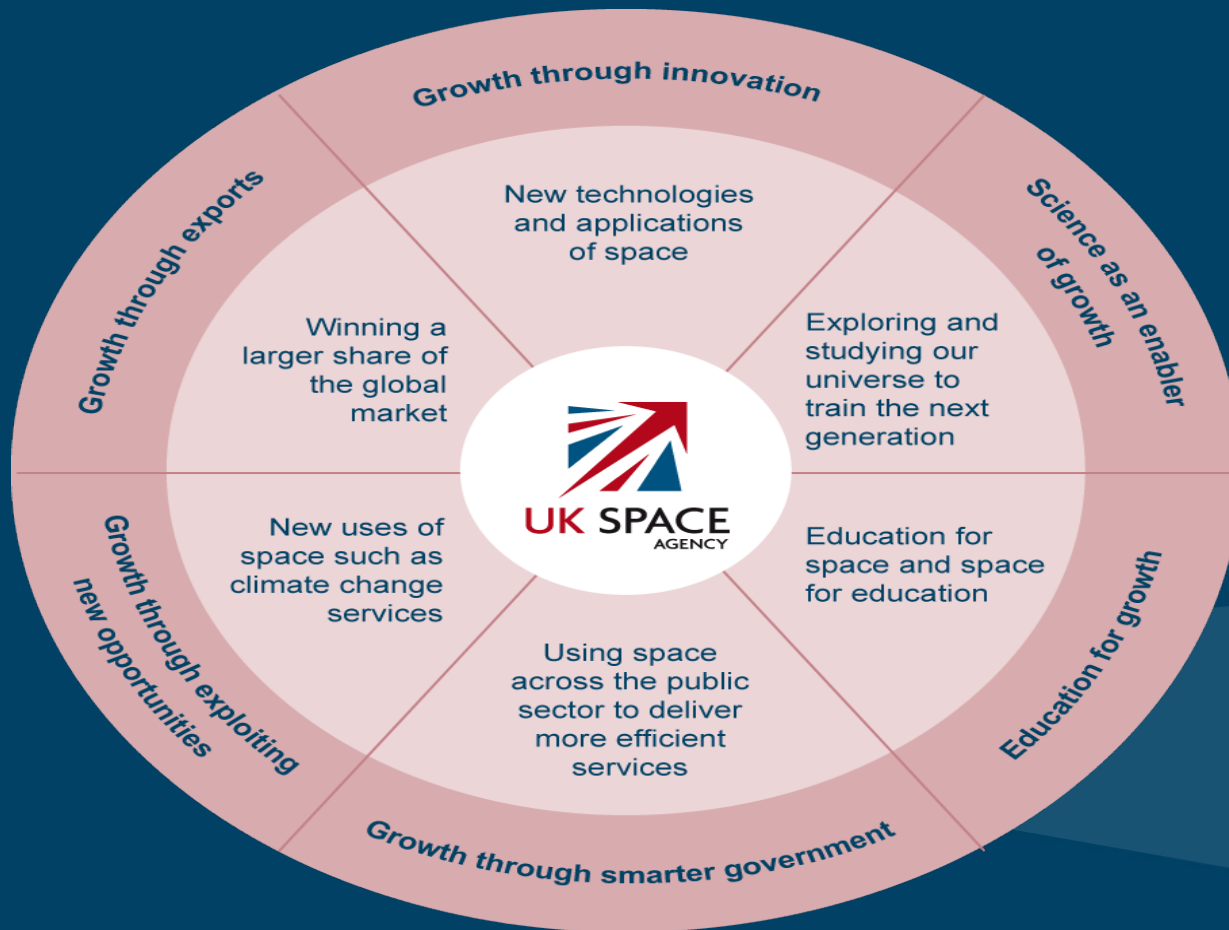
Business Growth



Partnership



Civil Space Strategy – six themes



Goal:
£40B sector by
2030

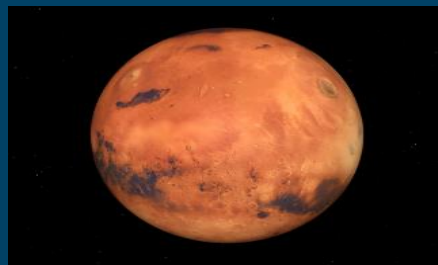
UK Space Agency – Our “Domains”



Space Science



Planetary
Exploration



EO
& Meteorology



Space Situational
Awareness



Telecomm



Navigation



Applications & Services



Manned Space



15/16 Corporate Plan - Top 5 KPIs

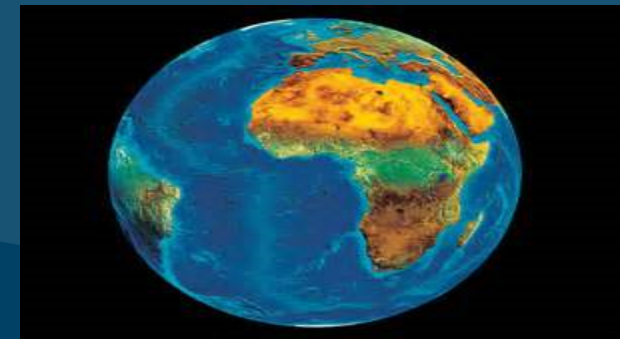
1. Preparation for Spending Review
 - *involving all our stakeholders and partners*
2. 'The Agency Story'
 - *Improving evidence on the value-added of the UK Space Agency*
3. Re-energising Earth observation activities
 - *Implementing the national EO strategy*
 - *new staff, closer alignment with wider space policy*
4. Efficient Programme Delivery
 - *Key local, national, European and global programmes*
5. Principia
 - *Maximise impact of Tim Peake's mission to the International Space Station for education and inspiration*

Earth Observation: why does it matter?



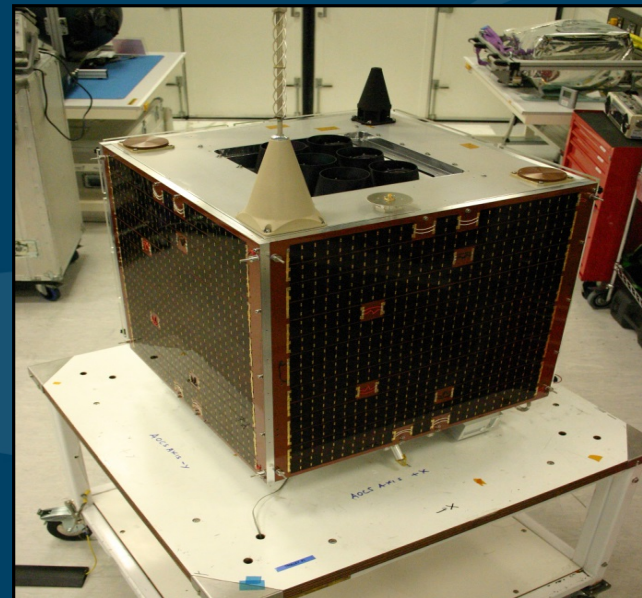
- Increasing society reliance on EO for weather and climate, disaster and environmental monitoring, risk management and mapping (sea level knowledge) etc.
- EO accounts for 28% of ESA budget (1254 Million Euros) and approx £80m year is from UKSA. This accounts for 27% of UKSA budget.
- But its 1% of the UK Space industry £11bn turnover, 3% of employment is EO related £110m
- But.. EO applications and services predicted to be central to space sector and space enabled economic growth with a goal of raising UK share of the expected £400 billion global space-enabled market to 10% by 2030.

*Size and Health UK Space Industry 2014, ESA webpage ,
Space Innovation and Growth strategy 2014-2030



UK Strengths

Satellite Manufacture



UK Strengths

**Satellite
Manufacture**

**Data Handling &
Cal/Val**

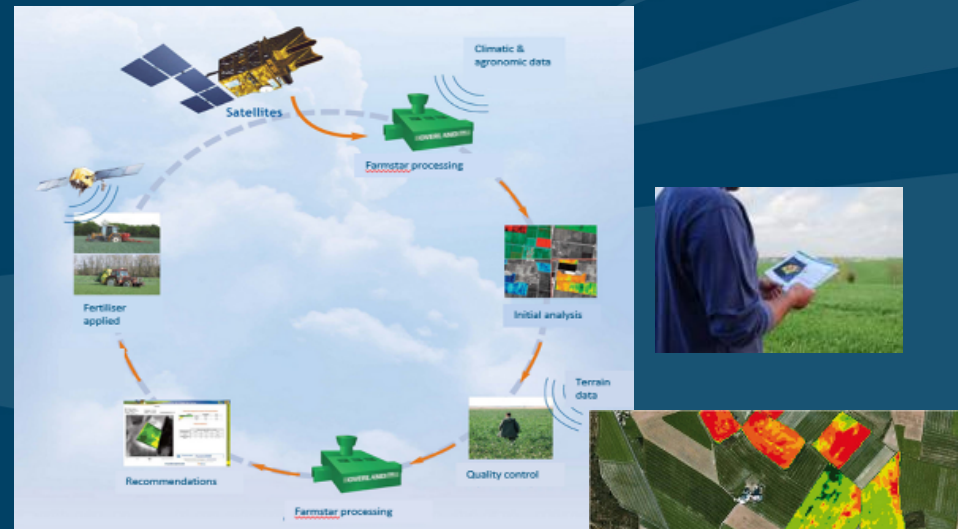


UK Strengths

Satellite Manufacture

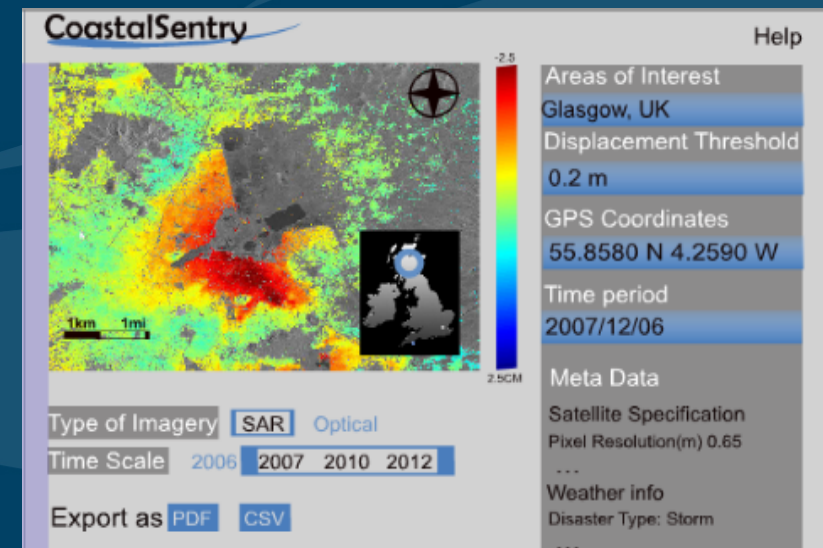
Data Handling & Cal/Val

Applications



What is the future?

- User led technologies and services – for non specialists
- Integrated observing systems, Networks and constellations
- Cloud computing
- Automated sensors - Internet of Things
- New types of data
- And more...



Realising EO opportunities requires:



- Long term vision - Strategy



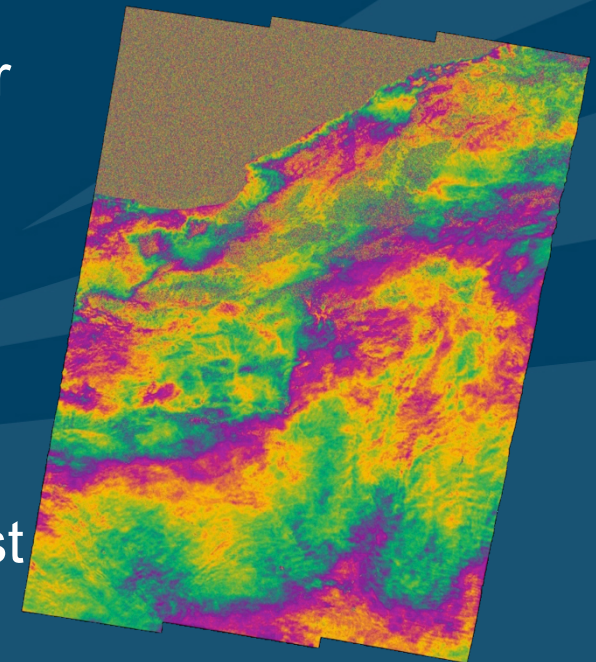
- Clear implementation plan
- Strong community
- Committed 'customers'

UKSA EO Strategy 2013-2016



Priorities:

- Use European programmes to secure returns for academia, government and industry
- **Build on UK leadership for environmental research and climate applications**
- Become global leaders in SAR technology and exploitation
- Increase leadership in developing small, low-cost missions



24 day Sentinel-1 pair
(Earth Metrics Ltd 2015)

Implementation plan



- Clear action plan July 2015 – November 2016
 - Removing barriers (data flow, culture change)
 - Pipeline of investment (evidence based and high return on investment)
 - Short term measures / quick wins

- Priorities to be considered at the EO Town Hall (18th June 2015)

- Strategy/implementation beyond 2016 will be driven by
 - the new government
 - the outcomes of this action plan esp. in regards to spending reviews and CMIN 16

What can UKSA do for EO?

Lead and drive the UK shared vision, working in partnership with the private sector, public sector and academia:

UK Leadership

- **Champion** EO
- **Build** relationships
- **Own** the IGS Actions
- **Strengthen** global position with international leadership
- **Develop and exploit** missions services and applications for policy obligations e.g. in climate change and for growth
- **Inspire** a new generation of scientists and engineers



Economic Growth

- **Use** public sector **investment tools** to grow the market share
 - Gather the evidence base for CMIN16
- **Use government levers**; Procurement, regulation, standards, fiscal incentives to derisk, unlock or remove barriers
- Ensure EO **data products and services** easily accessible
- **Open doors** for UK business to exploit global markets
- **Measure success**

Sentinel Data Access Service

Agreement signed 18th March 2015

The Satellite Applications Catapult will house the rolling archive of Sentinel-1 data

“By hosting a Sentinel data hub and making the satellites’ unique data readily available in the UK, we can continue our leading work in the field of Earth observation whilst opening up new business opportunities from the commercial development of space data”



Space for Smarter Government Programme



Space Growth Action Plan 2014 –2030
Science and Technology Committee Report 2013



SSGP Vision

- Government itself uses satellite enabled services for smarter, more efficient operations and making use of existing investment
- Government aspires to be a first, intelligent customer and drives growth through using satellite derived products and services.

To help public sector save money, innovate and make more effective policy decisions using space enabled services

Web: www.spaceforsmartergovernment.uk

Led by the UK Space Agency

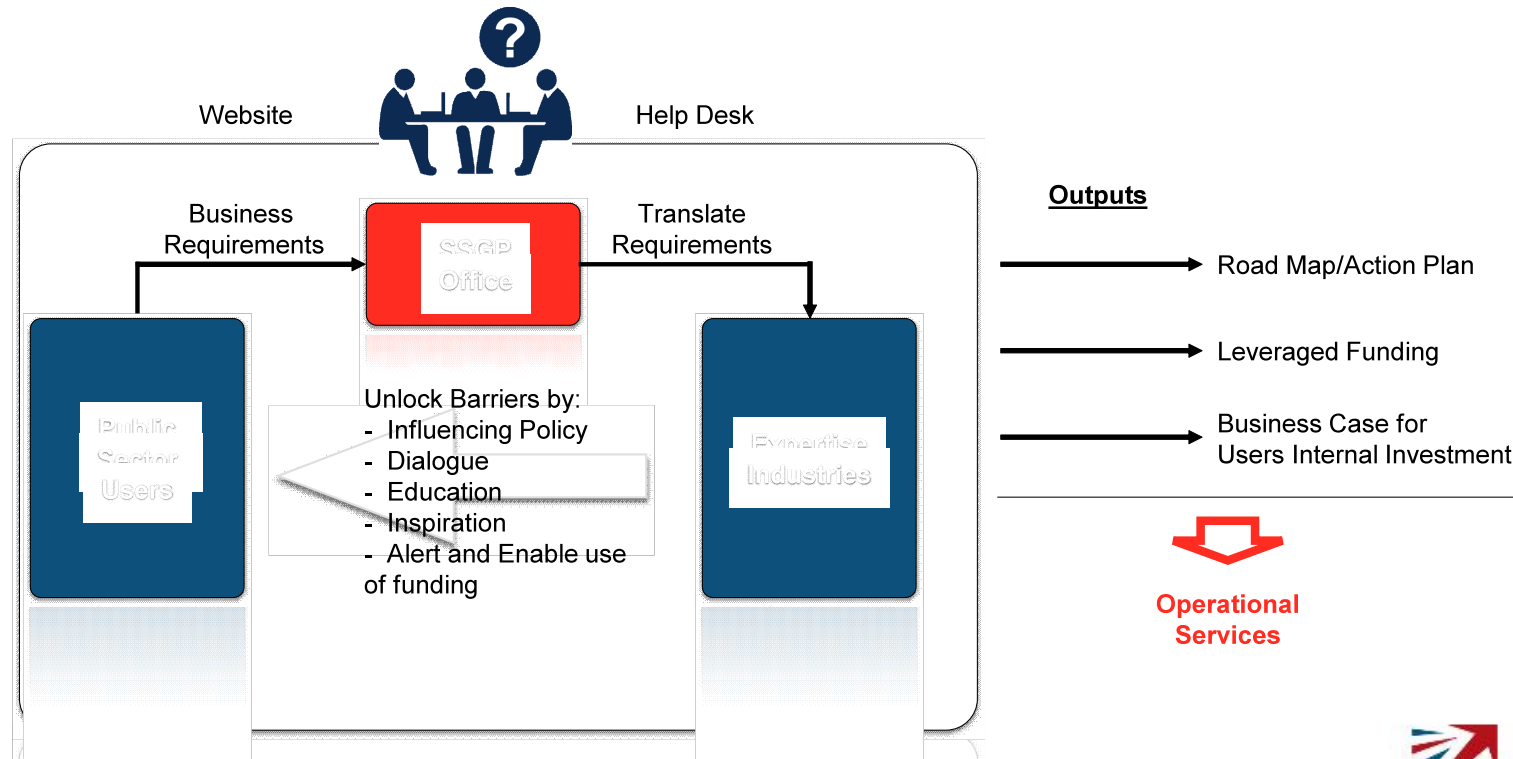
Delivered in collaboration with the Satellite Applications Catapult





SSGP What we do: Processes – Outputs – Outcomes

Points of Contact



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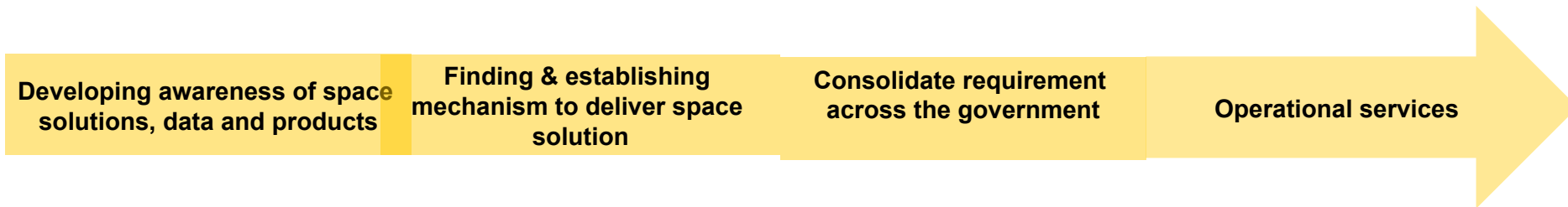
SSGP Focal Areas

ENVIRONMENT

LOCAL AUTHORITIES

TRANSPORT

NATURAL HAZARDS RISK MANAGEMENT (NHRM)



Each requires a partnership with end users to:

- Draft a strategic, long term vision / **road map** / action plan e.g.

By 2020 satellite data are playing an indispensable role in policy development and operations across the Defra network

- Create **tangible outputs** towards SSGP and end user goals in the short term

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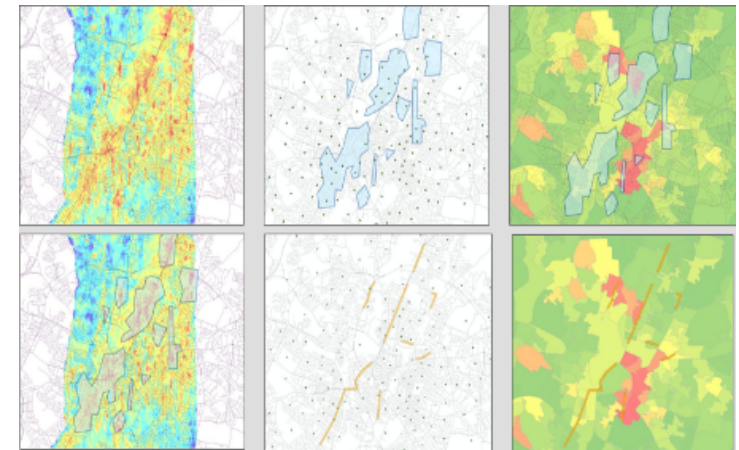
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Case Studies in ...



- Risk Response – flooding, coastal erosion & building movement
- Air Quality
- Mapping & Monitoring – assessing & identification
- Change Detection
- Agriculture – crop yield, catchment sensitive farming
- Always Connected – mobile screening, police, telemedicine
- Intelligent Transport
- Location Based Services (LBS) – waste management, tree mapping, graffiti, street scening



SSGP 1.4 Air Quality Hotspot Mapper

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Opportunities from Space – the perfect storm

- Technological advances in satellite capability
- Political commitment and funding for developing operational applications and services
- Skills and people across UK public and private sector
- Help to navigate the industry and technology



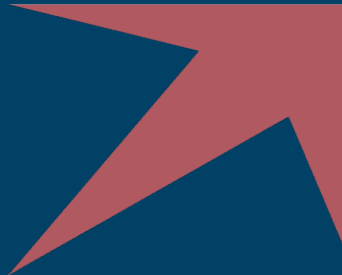
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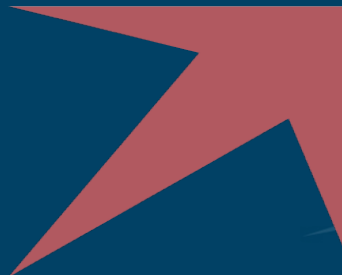
In Summary



 @spacegovuk



EO is an essential component of the infrastructure and contributor of economic growth, data and science.



Success requires growing existing UK strengths, seizing new markets and engaging the public sector as users. Copernicus is now a real opportunity.



A new UKSA EO team and implementation plan this summer covering all aspects of EO. Ideas welcome.

Thank you