Quality Issues for ECV's and Climate Data: A CEMS Perspective

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CEMS Concept

- To allow EO and climate-based services to grow in the UK, by being underpinned by world class science
- To provide an infrastructure that can support and enhance both the science community and the derived services:
  - Data conditioning and access
  - Data storage and processing capability
  - Quality control (assessment & dissemination of information on data/product quality)
  - Data analysis tools / production capacity
  - Hosted service capabilities (from simple research tools, to fully commercial service offerings)
  - Data assimilation and data synthesis
  - Data Visualisation

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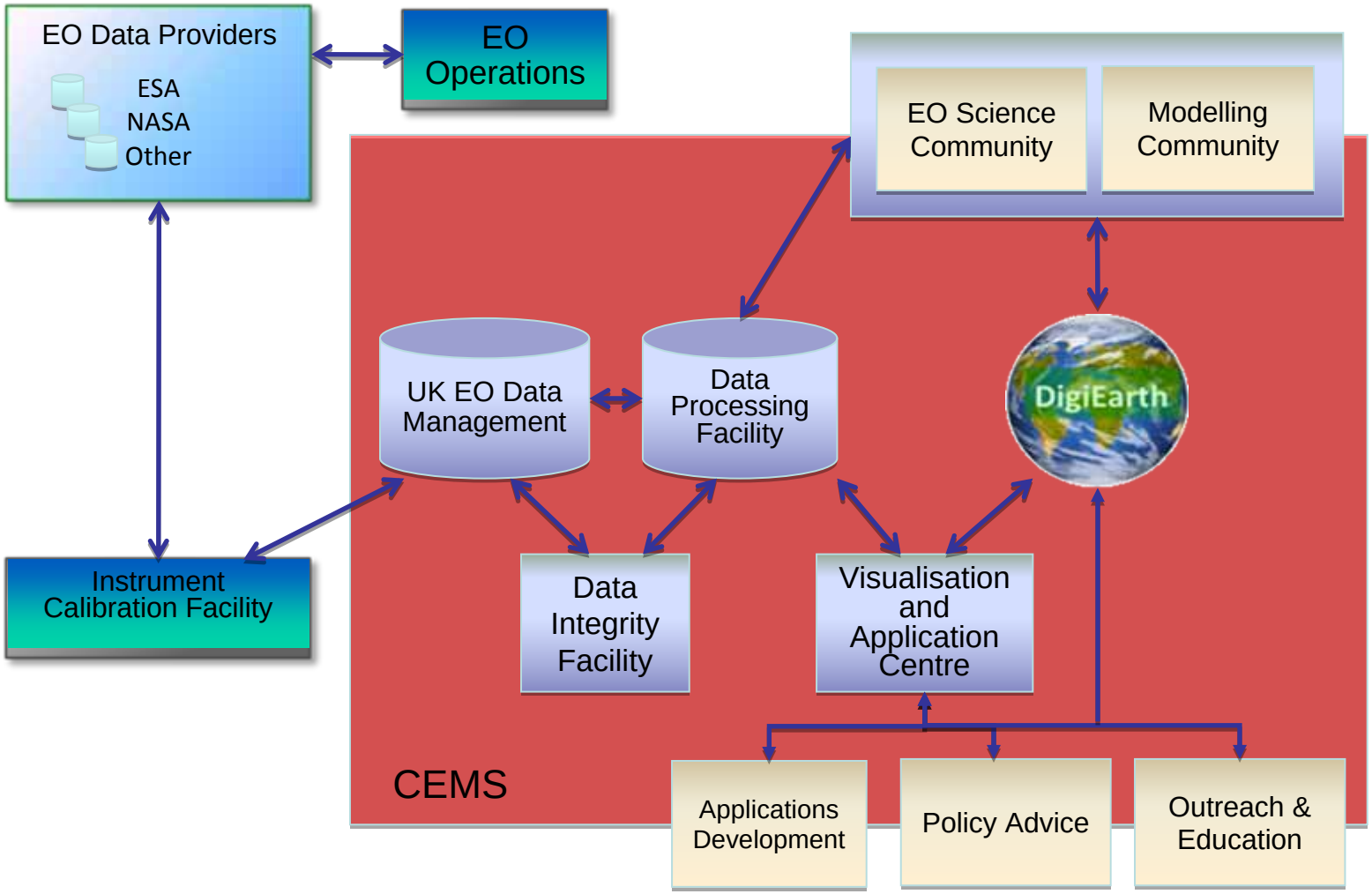
CEMS Concept – overall architecture



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Climate Services and Quality Indicators?

- What is a climate service?
  - Climate services is “the timely production and delivery of useful climate data

(*National Research Council, 2001*)

- Guiding Principles:
  - User centric
  - Supported by active research
  - Advanced information on a variety of space and time scales
  - Active stewardship – **quality, consistency, accessibility, and documentation (including limitations and uncertainties) of climate information are a ubiquitous concern of current users.**
  - Participation by government, business, and academia

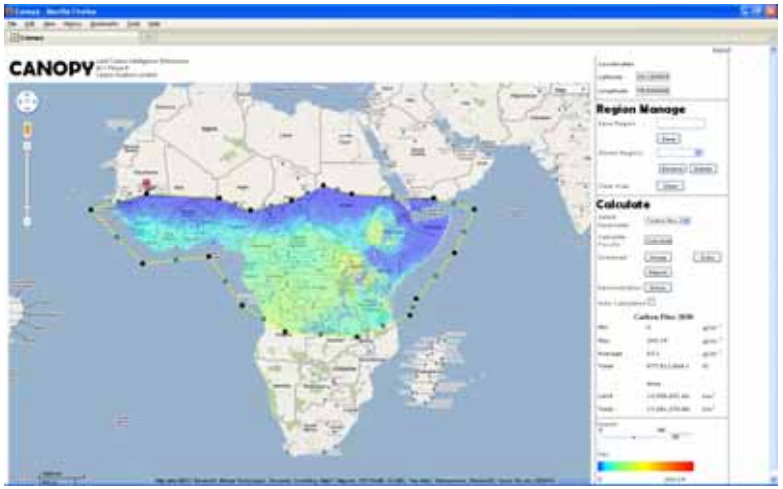
A Climate Services Vision: First Steps Towards the Future (2006)

- Quality indicators provide uncertainty and traceability – crucial for:
  - Assimilation to enable prediction/forecasting models
  - Maximising the uptake and use of data and enabling decision making
  - Stimulating the growth of climate services (and EO applications)

Key Commercial Examples

Carbon Trading

- Market worth $120bn in US alone, worth £trillion by 2030
- 2% of all deals trades spend on due diligence i.e. $2.4bn in 2010
- Initiatives like Canopy will enable the use of space data for large scale analysis of carbon stock/flux



Insurance

- London has £125b of assets in flood plains
- Offshore assets worth £trillions are susceptible to extreme weather events
- Accurate scenario modelling is required on which to base premiums. Are storms and high waves more likely to occur now than 20 years ago? What about in 20 years time?
- Extreme events can cause liquidity issues

Quality Indicators in data-sets are *absolutely critical* in order to understand errors, make predictions and manage risk!!

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Enabling Growth

Long term aims of CEMS:

- Generate growth of Climate/EO market (IGS#5/6)
- Enhancement of Space sector in the UK (overall IGS goal)
- Secure UK's position as a provider of world-class climate science
- Provide improved monitoring and enable prediction capability
- Position the UK to be the focus for the large climate-related programmes, such as the ESA CCI and the GMES Climate Core Service
- Exploit large potential value-added market for EO derived services

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Questions

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