

# **NERC Technologies Theme**

**Dr Bill Eason**

**Science and Innovation Manager**

**Earth Observation, Technologies, Solar Terrestrial Physics**

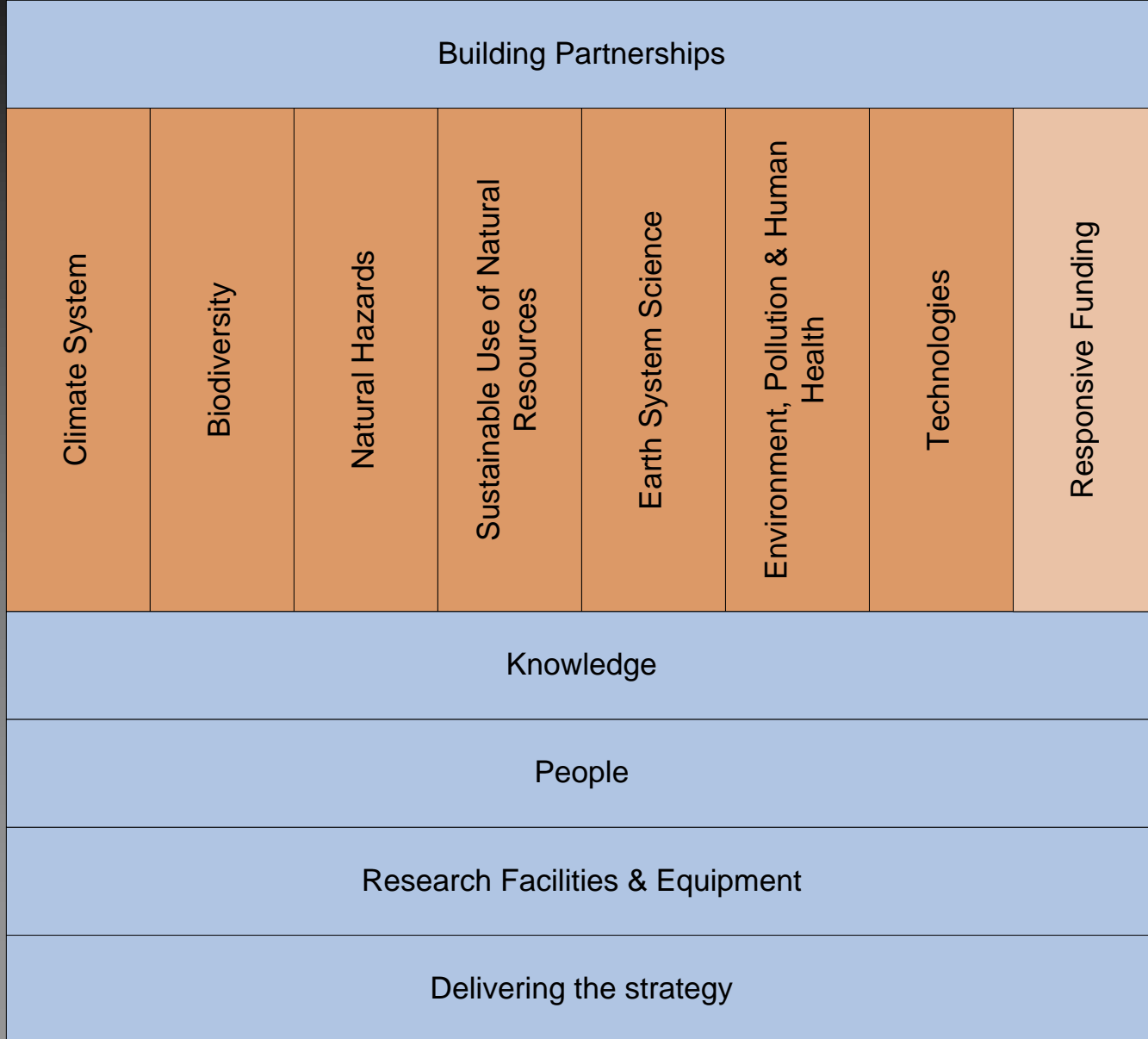


**NATURAL  
ENVIRONMENT  
RESEARCH COUNCIL**

# NERC Technologies Theme

- **The NERC Strategy and Science Themes**
- **Technologies overview**
- **Current and planned individual Actions**

# NERC Strategy



# NERC Technologies Theme

**Theme Leader: Professor Ally Lewis**

**Vision:**

Providing opportunities to develop and share new technological approaches across all NERC science disciplines

# NERC Technologies Theme

## Overall objectives:

- Novel innovative “technology-led” environmental science research
- Building capability and capacity
- Creating new partnerships – potential for **dual purpose and wider impact**

# NERC Technologies Theme

## Knowledge Exchange and Impact

- NERC Green Economy activity includes Environmental Monitoring as a focus
- Industry consultation on Remote Sensing
- Study on NERC support for Remote Sensing through NERC grants – published May
- CEOI Technology Showcase – 10<sup>th</sup> June

# Technologies theme

<i>Challenge Action</i>	EO and remote sensing	Field sensors and networks	Novel laboratory instruments	Models data and informatics
<b>2008</b>				
<b>Technology Clusters</b>	Promoting technologies across disciplines			Promoting technologies across disciplines
<b>Proof of Concept</b>	Developing new technologies at TRL1-4	Developing new technologies at TRL1-4	Instrumentation for fundamental parameters	Developing new technologies at TRL1-4
<b>2009</b>				
<b>Networks of sensors</b>		Scale up to high value demonstration networks		
<b>Analytical Science and technology</b>	New cohort to translate technological developments	New cohort to translate technological developments	New cohort to translate technological developments	
<b>2010</b>				
<b>Next generation platforms</b>	Mission science for aerial UAVs	Mission science for submersible UAVs	Instrument development	
<b>Metrology of climate variables</b>	Improving long and short term climate variables	Improving long and short term climate variables	Improving long and short term climate variables	

# Technology Proof of Concept

## 2008 Action

- £5.4M to develop new technologies at TLR 1-4
- £4.2M allocated (Round 1)
- Covers all areas of NERC remit and all technology challenge areas

# Analytical Science

## 2009 Action

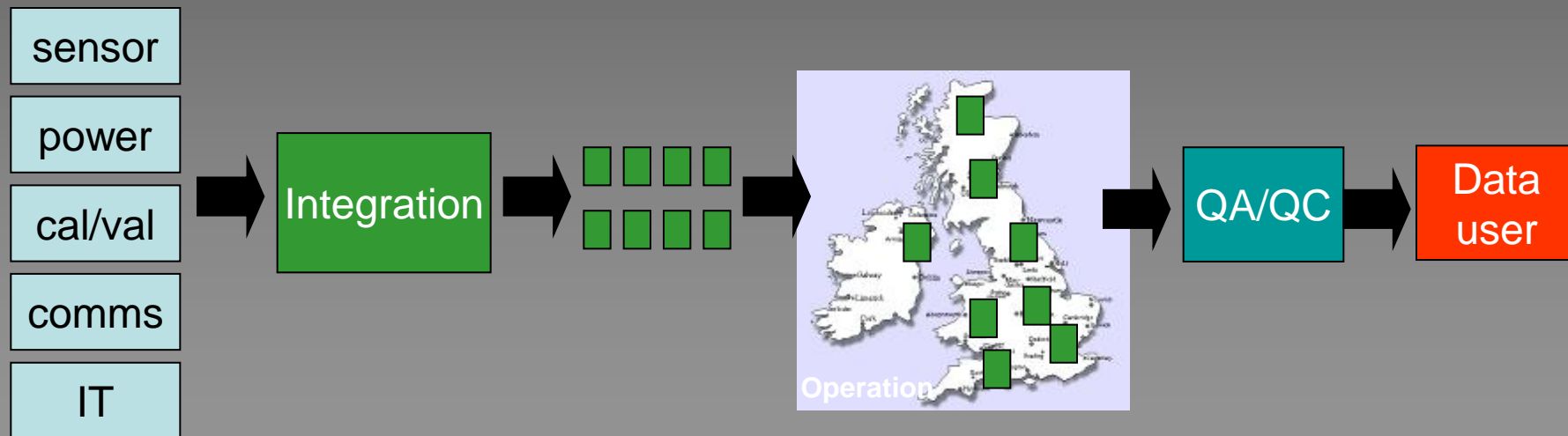
- £2.3M joint programme with Royal Society of Chemistry
- 28 studentships supported
- Covers all areas of NERC remit and all technology challenge areas



# Networks of sensors

## 2009 Action

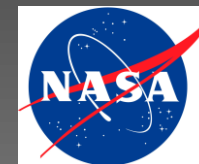
- Highly diverse technological approaches and applied science areas *e.g pollution, geohazards, rainfall.*
- Diverse partnerships needed enable end to end integration
- Up to five networks. **£5M from NERC** £0.9M from STFC, in kind DSTL.



Who?	Different HEI/RCC	HEI/RCC or Private	Manufacturer	Govt. Agency or service sector	NMS	HEI/RCC
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# NEW: Sensing for next generation platforms

Aerial platforms: Upper troposphere lower stratospheric science using High Altitude Long Endurance UAVs.



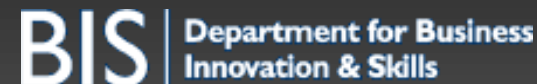
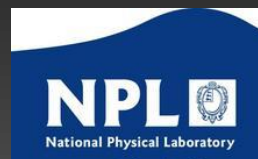
To support a consortium project to exploit a new NERC – NASA Dryden partnership for access to Global Hawk aircraft for geosciences research.

Projects can include any / all of the following components: forecasting, new instruments, mission science, data analysis.

Joint NERC/NASA community meeting 26th May

# NEW: Metrology of long and short-term climate variables

*'New technology for better data quality'*



Alignment of National Measurement System research programme with NERC needs.

New funding for NERC researchers to work specific on technology associated with long term observing metrology and data quality

- **Two** major research themes:
  1. Reducing uncertainties – EO data quality
  2. Gas and aerosol metrology
- 2010 – building evidence base of need, and potential impacts.