



**National Centre for
Earth Observation**
NATURAL ENVIRONMENT RESEARCH COUNCIL



Developing Priorities for Future UK-Led EO Missions

8th September 2011

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- **Objective of Session**
 - **Developing Indicative EO Missions**
 - **CEOI Challenge Workshops**
 - **Indicative missions – current status**
 - **Next Steps**
 - **Potential UK Missions**
 - **Closing Discussion**

The CEOI Challenge Workshops



Indicative Missions

- Merge Science Drivers with satellite observables.
- Look to generate outline mission concepts that can be developed
- Outline technology drivers

Science Area	Mission	Instrument /CEOI Technology	Flight Opportunity	Status
Methane Measurement	GMES Sentinel 5 pre-cursor	GRISM based high resln SWIR spectrometer	ESA Sentinel 5 pre-cursor	Flight development in progress
UT/LS Composition	PREMIER	STEAM-R TIDAS (eg for AMIPAS TIR-FTR)	ESA Earth Explorer 7	In Phase A
Sea State	Integrated Altimetry mission	SGR-ReSI	TechDemoSat-1	High Flight Readiness
Temperature and water vapour profiles	EPS 2nd-Generation	Microwave sounder and imager	MetOp – 2G	In Phase A
Air Quality	Tbd	CompAQS	Bi-lateral or TechDemoSat-n	Under development as CityScan (ground based)
Canopy Measurement	SpecL	Multi-spectral Lidar	ESA Earth Explorer 8+	Proposal not selected for EE8 - under further development
Clouds and Wind	MISR-lite	Multi Angular IR Stereo Radiometer	Iridium Next-generation & Earth Explorer 8+ NASA Earth Venture	Under consideration for NASA EV and Iridium Next
Topography/Strain	SuperSAR	Interferometric SAR	ESA Earth Explorer 8+	Proposal not selected for EE8 - under further development
GHG over the tropics	Tropical Carbon Mission	CMS (Carbon Monoxide and Methane Spectrometer)	NASA Earth Venture 2 bi-lateral	Bi-lateral funding required
Establishing climate benchmarks	Clarreo	SW spectrometer, IR interferometer, GNSS RO receiver	NASA Decadal Survey	Mission on hold
Atmospheric composition	Tbd	Laser Heterodyne Radiometer	tbd	Development and miniaturisation of instrument in progress
Atmospheric Composition	Tbd	Hollow Waveguide based Lidar	A-SCOPE et al (EE8+)	Technology well developed ~TRL5
Oceanography	Tbd	Wavemill	tbd	Early CEOI and ESA studies
Atmosphere, land	Tbd	Microslice and integral field spectrometers	tbd	Using technology developed for space science applications

Next Steps

