



Towards an “operational” network of instrumented test-sites: LANDNET (Radiometric Gain)

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Requirement: Post-launch Cal/Val, interoperability, bias evaluation, “data-gaps”



- Large number of potential sites
 - Need ground data from some
 - Effort to collect significant and expensive
 - Number of acquisitions from sensors limited
 - Use for Interoperability
 - Need to reduce uncertainty improve traceability
- CEOS decision to establish a “sub-set” of sites to serve focus for community efforts - (range of characteristics)
 - Incorporate into all acquisition programs
 - Enable coordination and interoperability measures
 - Raise profile and status to facilitate investment
 - For radiometric gain want (~10)
 - Minimum criteria – regularly instrumented (ideally automated) + basics (uniformity, brightness etc)
- CEOS endorsed test-sites
 - Need to be characterised/monitored in “consistent traceable manner and data accessible & available
 - Maintained
 - Used consistently
 - Ideally treated as an ensemble or network for all,

The image displays two web interfaces related to satellite calibration and validation. The top screenshot is the 'USGS Remote Sensing Technologies Project' Test Site Catalog, titled 'Catalog of World-wide Test Sites for Sensor Characterization'. It features a world map with color-coded regions and a list of test sites including Algeria 1-5, Australia, Brazil, Canada, China, Germany, Hungary, India, Japan, Korea, Mexico, and the USA. The bottom screenshot is the 'CEOS Cal/Val Portal', which provides a structured overview of 'Landsat 7 Test Sites (CEOS Reference Sites)'. It includes a table with columns for Site Name, Country, Region, and Instrument, listing sites like the 'Landsat 7 Test Site' in the USA and 'Landsat 7 Test Site' in the USA. A map at the bottom of the portal shows the locations of these sites across the United States.

Towards A Network of Reference Standard Sites for Post-Launch Calibration

- Establish a global instrumented and automated network of test sites (GIANTS) (Teillet et al., 2001).
- Support a small number of well-characterised benchmark test sites and data sets.
- Standardize a core set of surface sensors, measurements and protocols.
- Process all data sets identically at a central 'secretariat'.
- Supplement other calibration approaches, reduce the effort required, and provide consistency.

Feb 2008 (Phoenix) IVOS identified

8 Reference standard sites
(3 automated)

5 pseudo invariant sites + Moon



CEOS Reference Standard Tests Sites



Initiated:

site descriptor template
guide to characterisation

comparison to look at traceability
and variance of methodologies

CEOS WGCV:IVOS “instrumented sites” (LandNet)

Reference stds for radiometric gain (land imagers) Ideally Need Ten!

- Standardised procedures to aid characterisation (and for new sites)
- Comparisons of “field measurement” techniques to ensure consistency



A QUALITY ASSURANCE
FRAMEWORK FOR
EARTH OBSERVATION

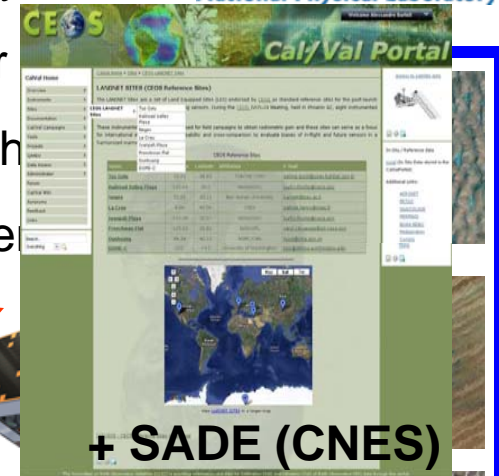




Instrumented Sites Radiometric Gain



- Documented similar characterisation methods
- Core set of instruments
- Common data formats
- Autonomous auto



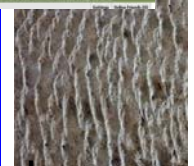
+ SADE (CNES)

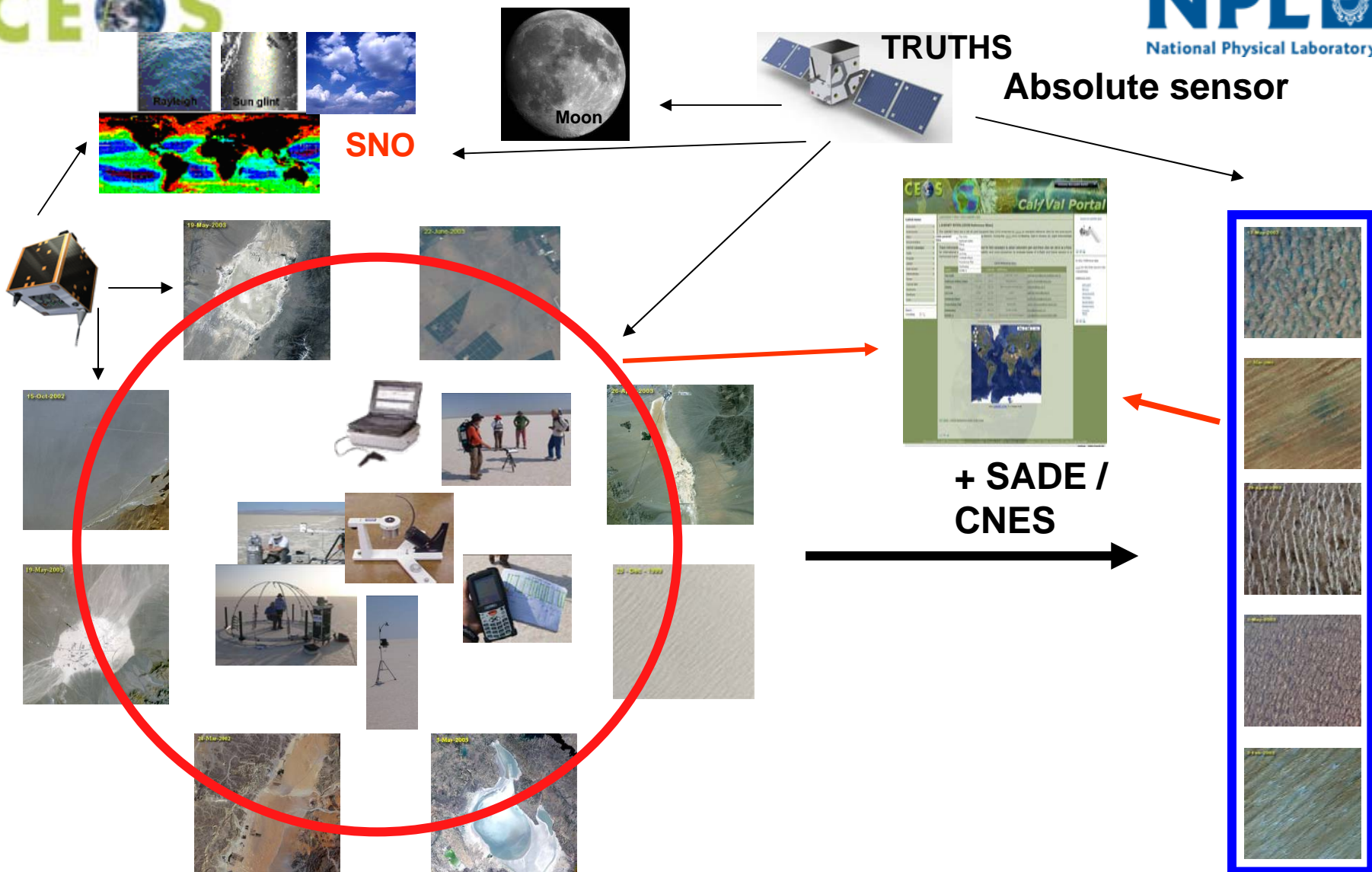
Linked by Network of sites satellites



- ground data to portal
- satellites can identify issues
- ensemble of data from multiple sites reduce uncertainty

- need open data policy
 - sites need to be funded for continuity
- Pseudo-Invariant Sites**
Long term funded
Stability Monitoring

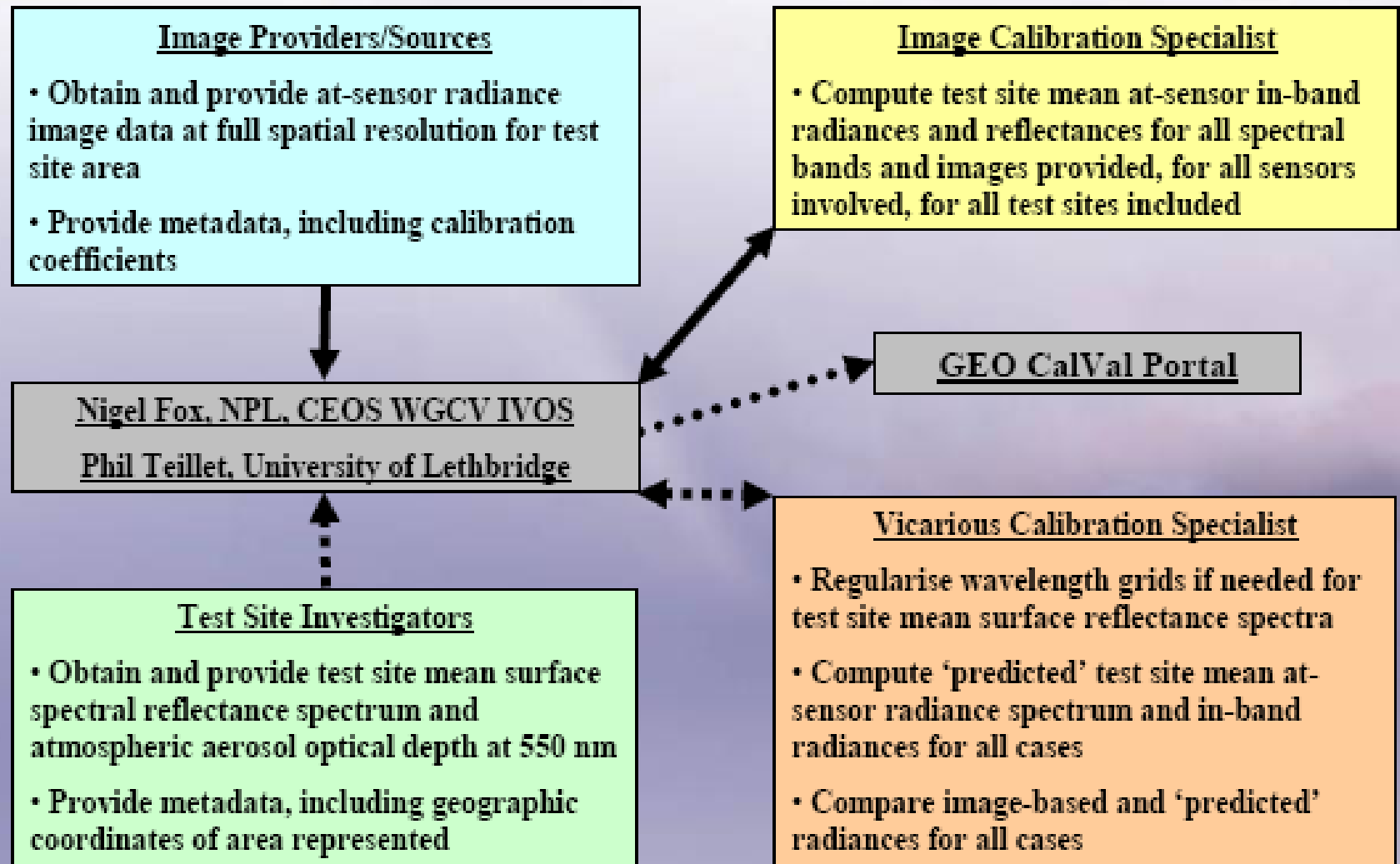


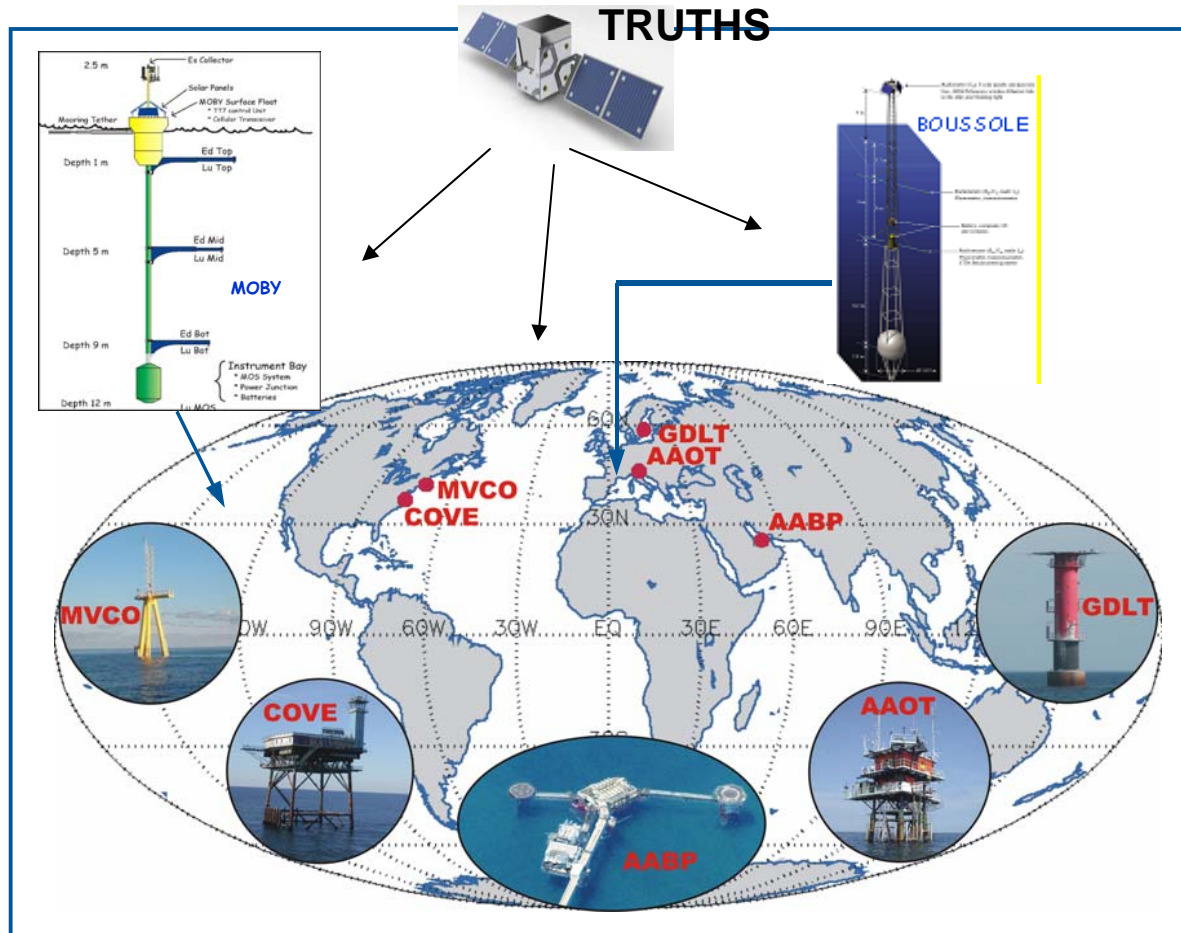


Instrumented Sites
Radiometric Gain

Pseudo-Invariant Sites
Long term trends
Stability Monitoring

Flow Chart Summarizing the Concatenation Pilot Study Concept





Next steps:

- Establish agreed procedure for use of test sites
- Best practise for atmospheric correction
- Core instrumentation / automation
- Detailed site selection criteria
- Test-sites in regular Satellite acquisition programmes
- Collect satellite data sets (SADE)
- Data policy
- Long-term funding
- Data base for ground data