Australia – HyspIRI Partnerships

Alex Held, CSIRO

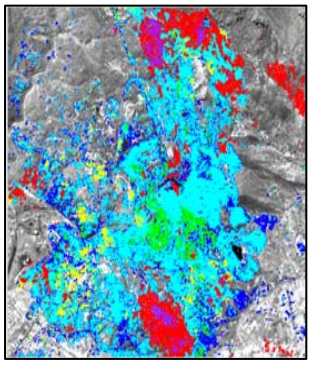
Australia and NASA HyspIRI

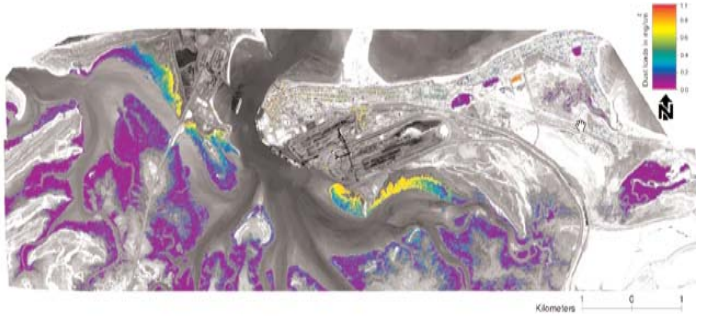
Our interests

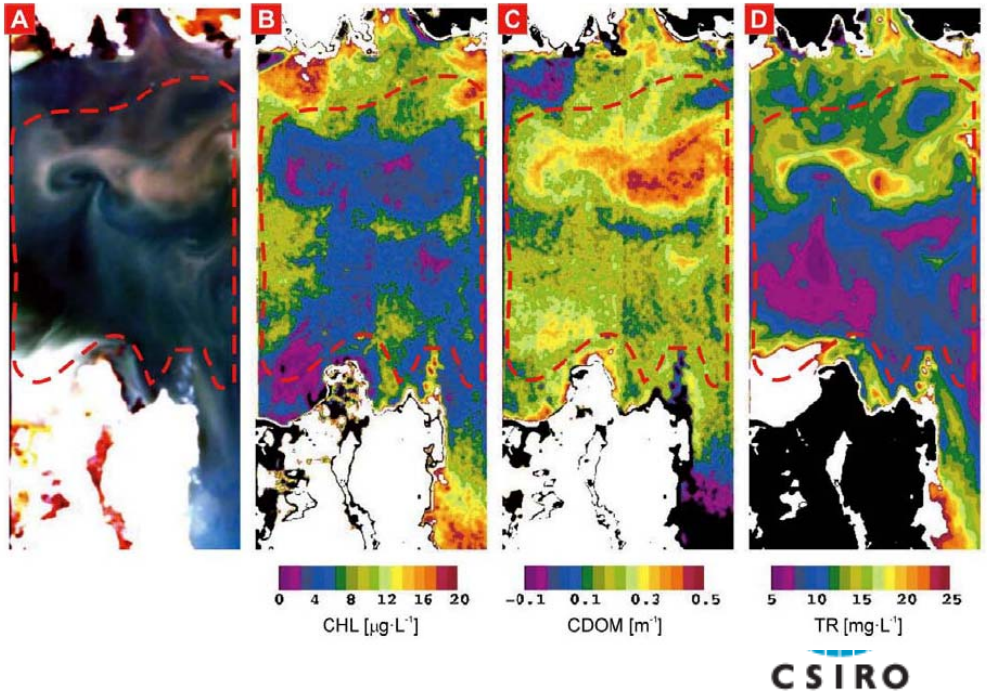
CSIRO and Australian research community have an interest in future use of wall-to-wall, systematic data acquisitions of spaceborne imaging spectroscopy (hyperspectral) data for a wide range of national priority mapping and monitoring applications, which include:

- •Geological Mapping and Exploration
- •Coastal water quality monitoring
- •Agricultural crop and condition monitoring
- •Forest degradation monitoring
- •Minesite and pollution monitoring
- •Fuel type and fuel load mapping

New national programs such as projects under the ASRP, plus the “Terrestrial Ecosystem Research Network - TERN” (like the US NEON) and the “Integrated Marine Observing System – IMOS” provide excellent platforms for collaborations on improving ways to characterise land-surface dynamics and coastal & marine environments over Australian terrestrial and marine areas.







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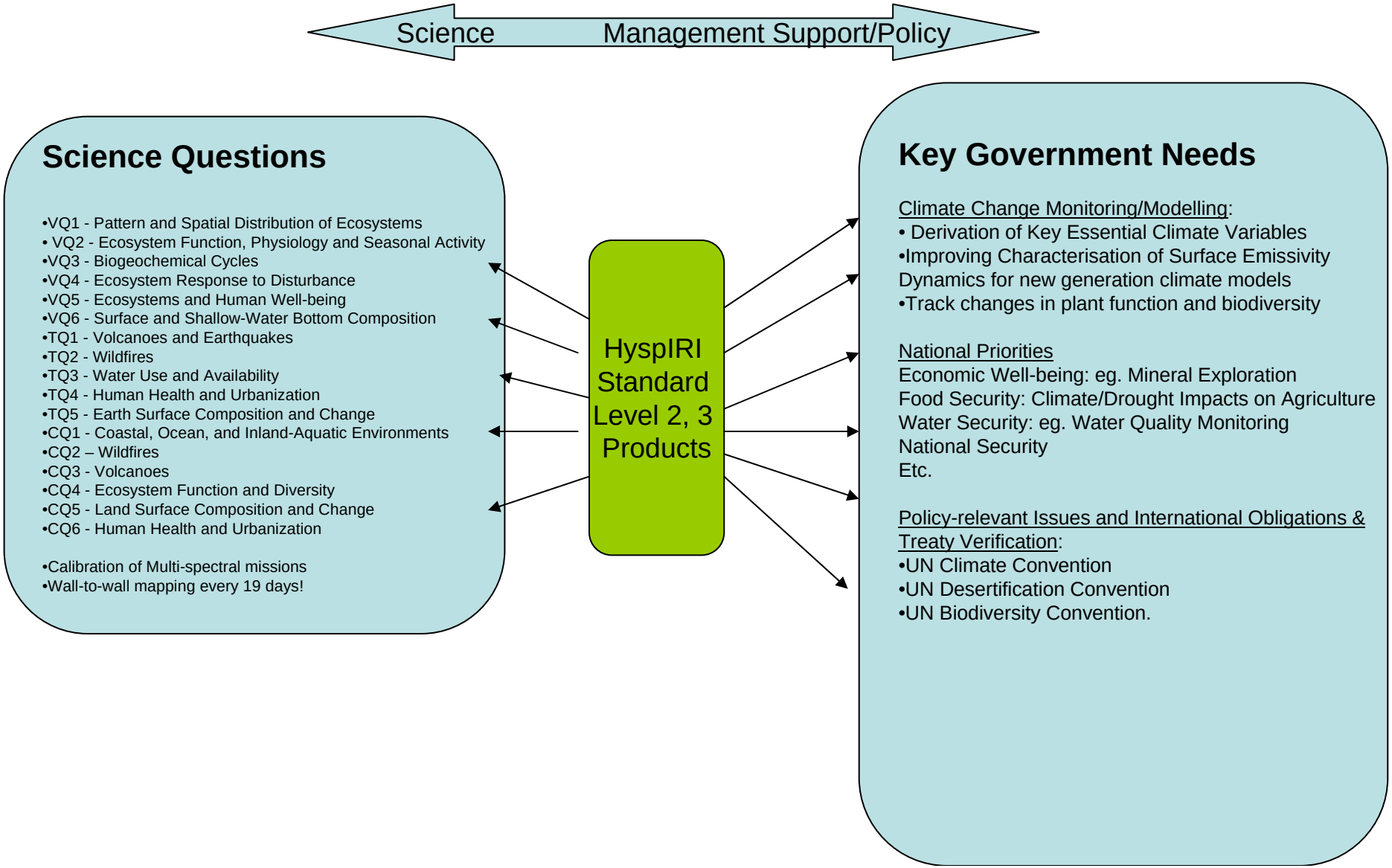
Multiple Uses for Imaging Spectroscopy Missions: Australian Context



New Australian Space Research Program ($40+m)

- Started July 2009
- Includes a Space Policy Unit
- Funding Stream A: Space Education Development Grants
- Funding Stream B: Space Science and Innovation Project Grants

Among many others in Australia, CSIRO is proposing 3 'hyperspectral' projects:

1. **Continental-scale hyperspectral terrestrial, coastal mapping and monitoring program**
2. **Development of a prototype thermal infrared (TIR) spectroscopy sensor**
3. **Continental Cal/Val Program**

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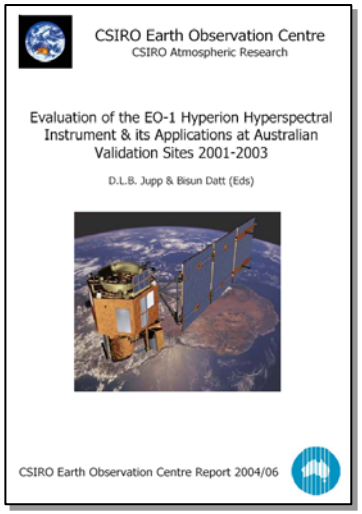
Australia - US Collaborations/Partnerships

What can we offer:

•Extensive experience in Applications Development, as demonstrated during EO-1 Science Validation Team participation, and ongoing use of Hyperion data.

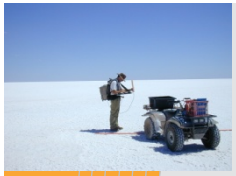


•Radiometric calibration/validation: Part of large research infrastructure programs

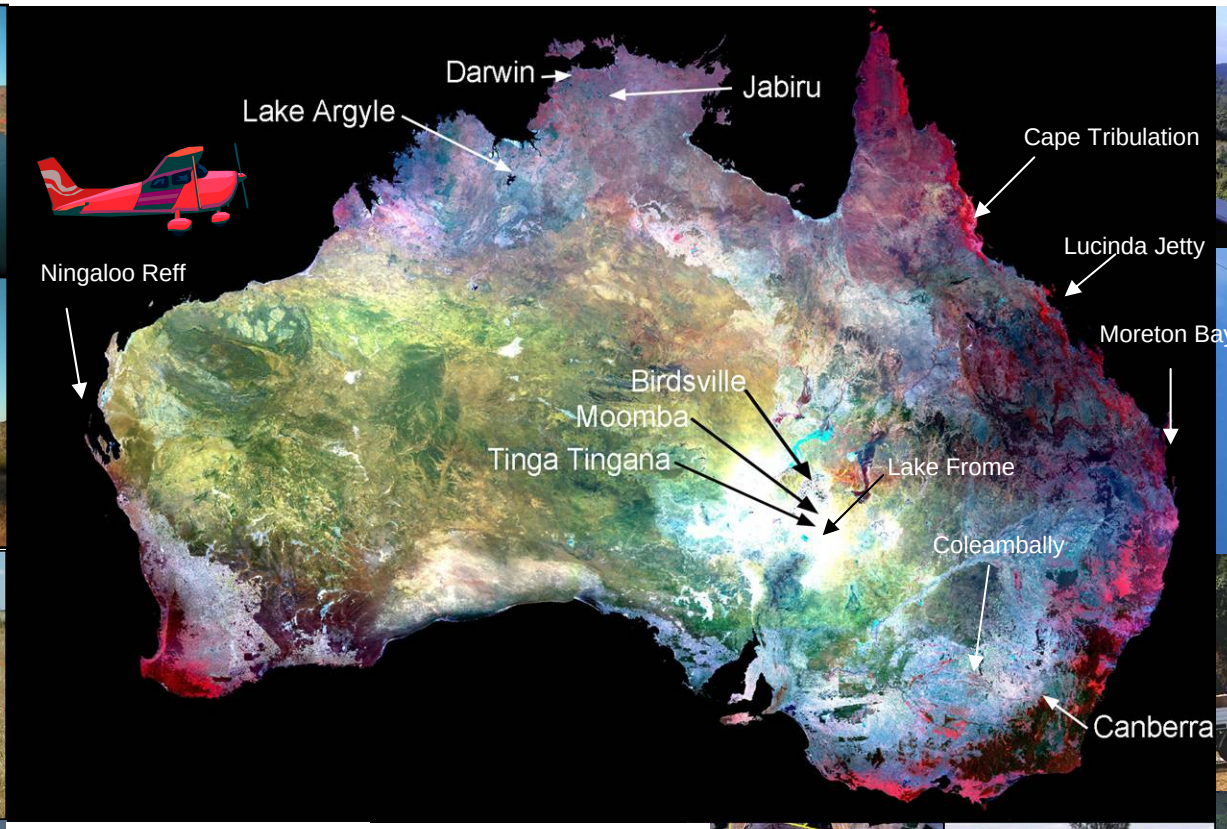
Lake Frome, Lake Fefroy, Lake Argyle

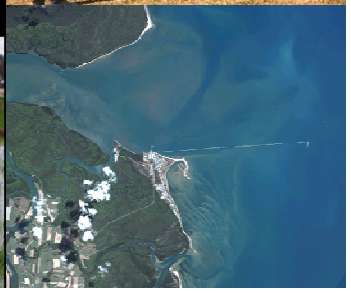
•Access to airborne data from Hymap and other imaging spectrometer data sensors

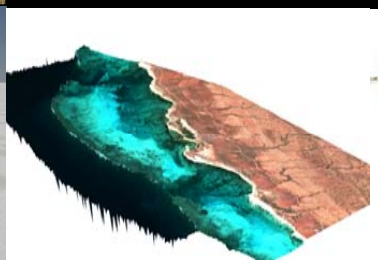
• Future direct-readout capabilities, and processing via X-, Ka-band stations (Hobart & Darwin)

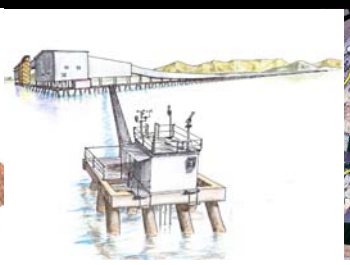


Australia hosts a large variety of sites and surface types for use in **Vicarious Radiometric Calibration** and for Level2, 3 **Product Validation**

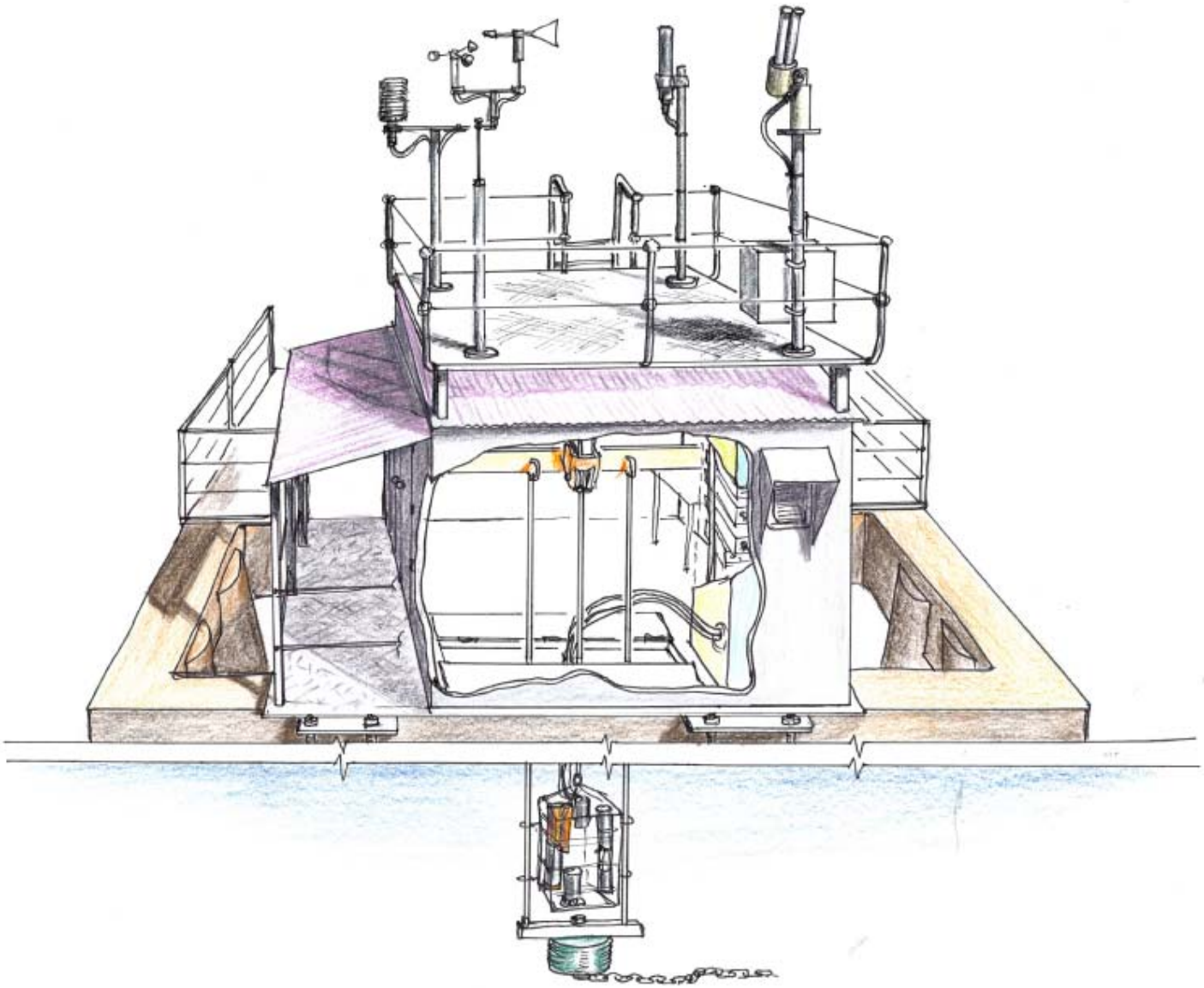




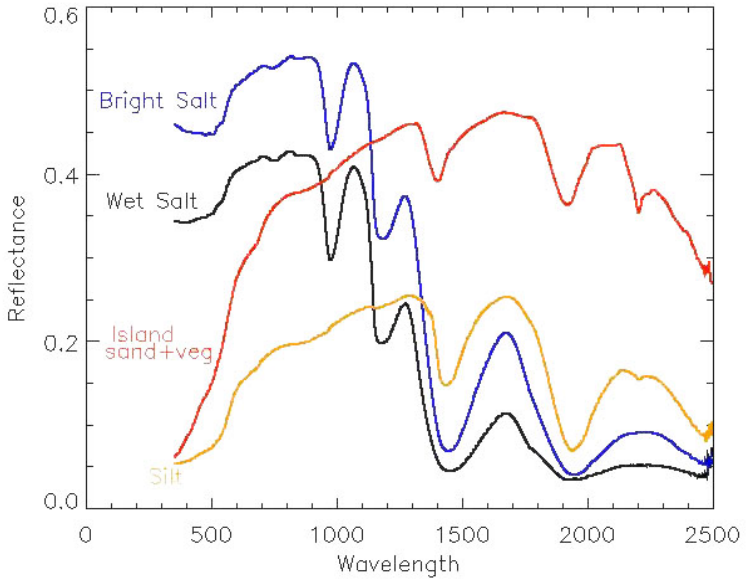


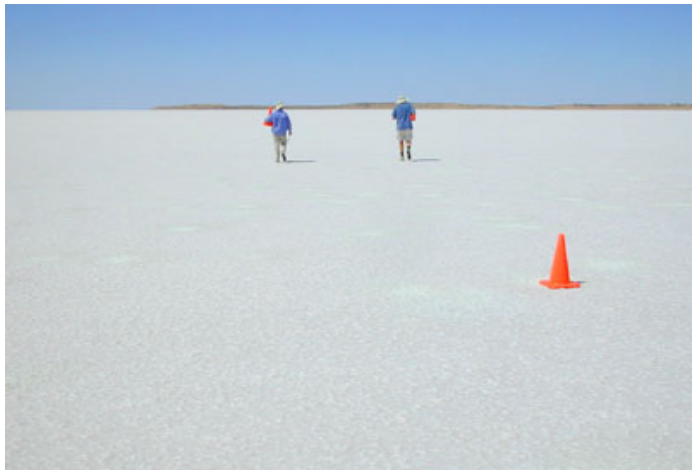


Sketch of LJCO facility



Establishment of Key Post-launch Spectroscopy Instrument Calibration & Validation Sites





Upgrading Satellite Reception Facilities & National Data Networks

- Upgrading current facilities in Darwin & Hobart to dual-pol X-band and Ka-band downlink
- Science program on satellite – ground lidar communications
- Interconnected national broadband to international data centres
- Mass-data processing R&D