



Australian Government  
Geoscience Australia



# Government use of commercial capabilities – GA perspective

## Adam Lewis

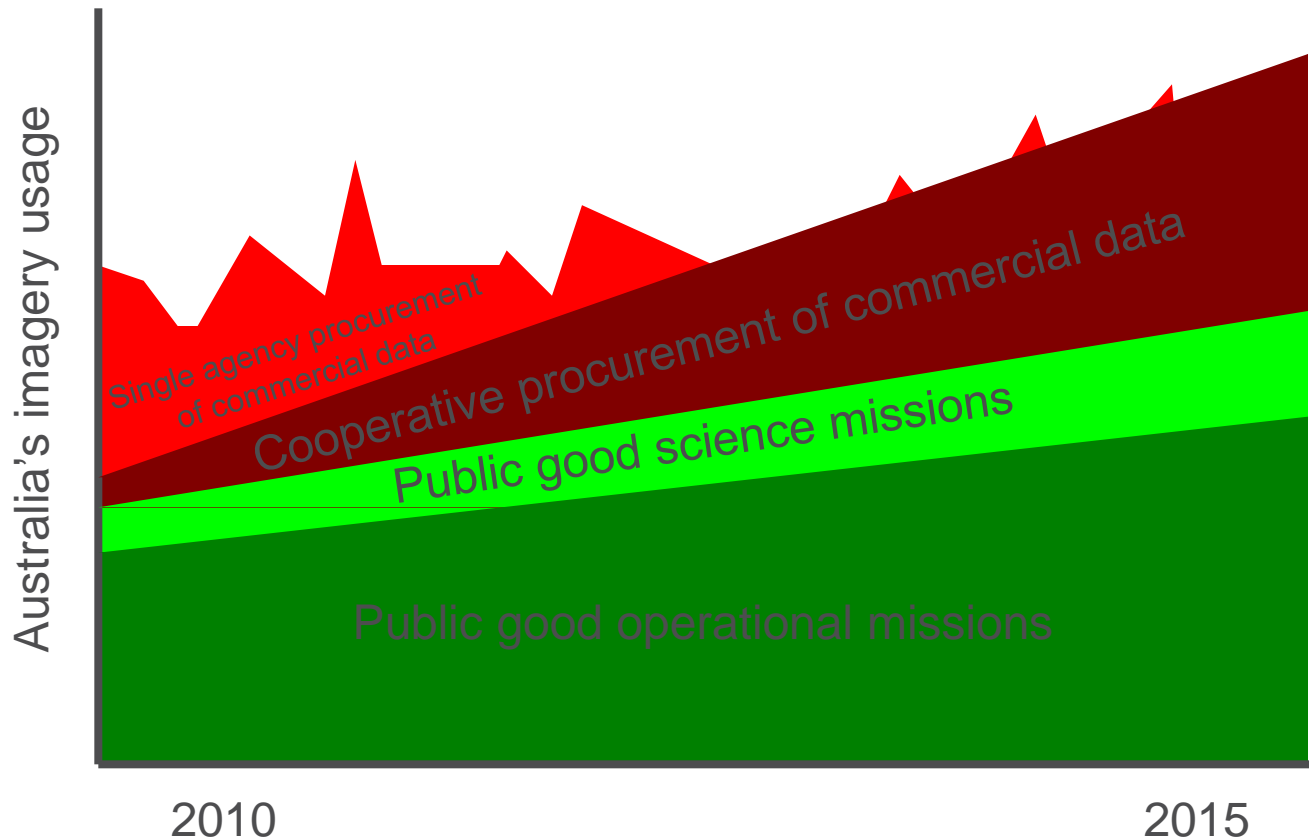
National Earth Observation  
Group Leader



# Outline

- What do our needs look like?
- Good stories
- What's working?

# Future sources of government EOS data



# GA role - public-good Earth observation

## Classified:

- military intelligence; police investigations
- optical and radar images
- capability provided through security partners

## 'Public good':

- medium resolution images, *Landsat, MODIS, ALOS*
- resource management, environment, minerals, petroleum, disaster response, crop monitoring
- vital to government business
- commercial applications

## Commercial:

- high resolution images, *SPOT, Ikonos, Quickbird*
- urban, topographic mapping, high value
- large sales to government (e.g., NSW SPOT)
- investment often underpinned by defence

## Weather:

Real-time,  
Geostationary

# Future needs for data

## Continuity of Earth Observations Data for Australia

Rolling review of requirements (anticipated next step)



Table ES-1 Priority Data Types: Satellite 5-Year Supply Continuity Risk and Key Providers

Priority EO Data Type	5-year continuity risk	Current key providers (and missions)	Future key providers (and missions)	Predominant Latency Requirement
Optical: Low Resolution	Low	NASA (MODIS) NOAA/EUMETSAT (AVHRR) JMA (MTSAT series)	ESA/EC (Sentinel-3 series) NOAA (NPP/JPSS series) JAXA (GCOM-C series) JMA (MTSAT series)	Hours/Weeks
Optical: Medium Resolution	High	USGS (Landsat-5/7)	USGS (LDCM) ESA/EC (Sentinel-2 series)	Days/Weeks
Optical: High Resolution	Low	USA commercial providers (Worldview, GeoEye)	USA & European commercial providers (Worldview, GeoEye, Pleiades) Airborne operators	Days/Weeks

# OGRE: Optical, Geospatial, Radar, and Elevation Supplies and Services Panel

## Driver

- more efficient and effective acquisition and use of commercial imagery supplies and associated services, and to encourage greater coordination and cooperation within the Australian Government.

## Mission

- Operate a procurement panel ... using standardised licensing arrangements and ... facilitate coordinated approaches to .. procurement, management and dissemination of data and services.

## Vision

- The Australian government has efficient and effective access to private sector capabilities in Earth Observation and Spatial Information.

# OGRE: Optical, Geospatial, Radar, and Elevation Supplies and Services Panel

## OGRE Performance October 2010 – June 2012












- 11.8TB data acquired (11.0TB stored in EODS)
- Total contract value of \$5,984,695
- 8 users from Federal and State government agencies
- 33 suppliers
- EOIs received from 30 new suppliers Jan – June 2012

# OGRE

## Removing / reducing the barriers

- Tender processes – pre-qualification
- Data licences

*Table 2. A simplified representation of OGRE Licence Levels*

LICENCE	IP OWNERSHIP	USERS
CC-BY CREATIVE COMMONS ATTRIBUTION 3.0 AUSTRALIA 	 SUPPLIER	 Everyone
OGRE A	 BUYER	 The buyer and whoever the buyer chooses
OGRE B	 SUPPLIER	 All levels of Australian government, Commonwealth (including ADF), State and Territory, Local and Municipal and natural resource management entities
OGRE C	 SUPPLIER	 All Australian Commonwealth entities (including ADF)
OGRE D	 SUPPLIER	 All nominated licensees

*Note: Actual legal terms and conditions will be used when contracting for supplies and services through the OGRE.*



# Where do OGRE data end up?

GA data and products are released “CC-BY”

Australian government policy – Office of the Australian Government Information Commissioner

Government can’t make ‘closed’ decisions – access to all the information will increasingly be an expectation of the electorate















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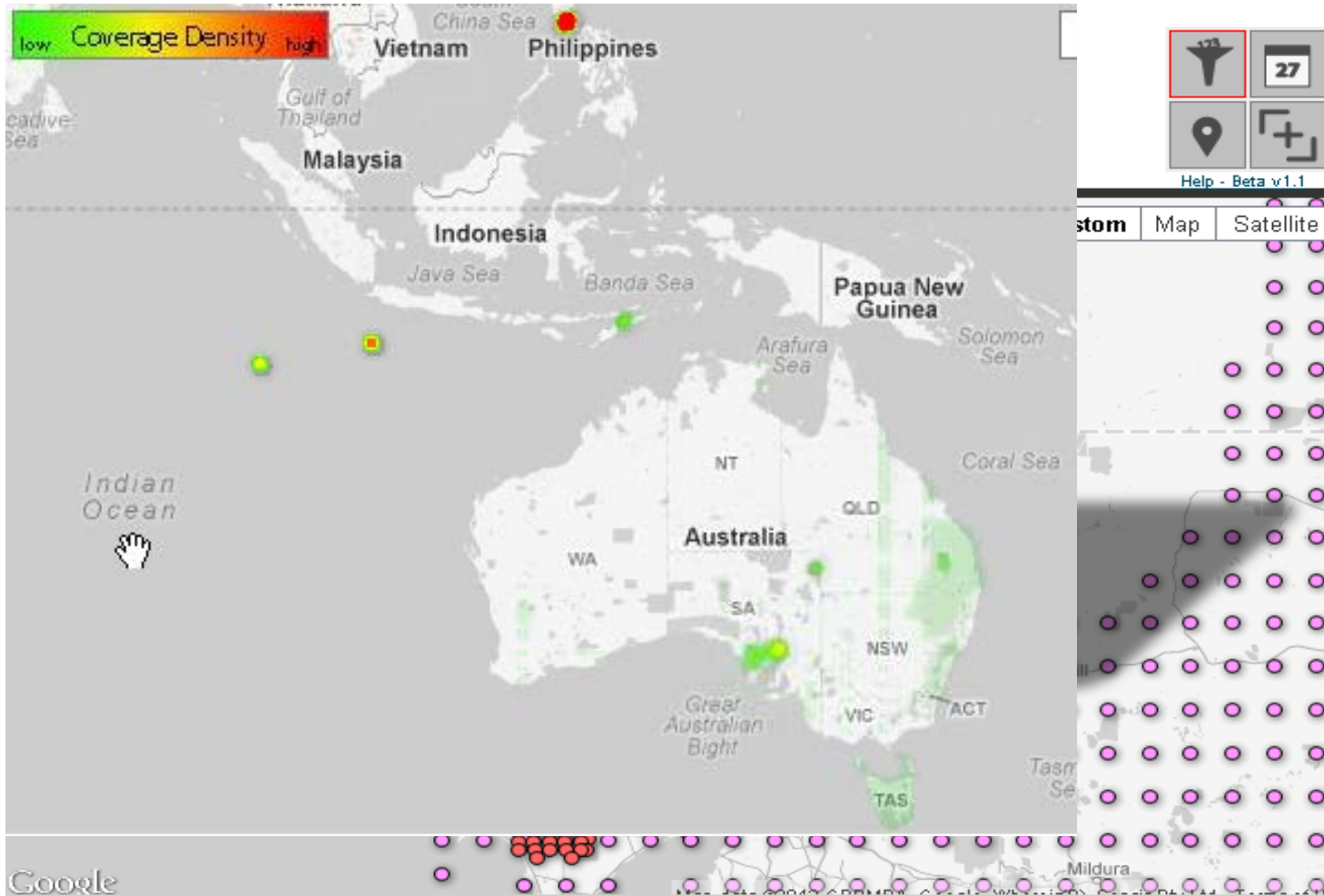
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# OGRE – data management and sharing

[www.ga.gov.au/earth-observation/ogre.html](http://www.ga.gov.au/earth-observation/ogre.html)



# OGRE Operational Activities

Standardised metadata and XML schema for EOS imagery to support improved data handling and discoverability

Revising operational model, including:

- Service catalogue (what GA does and doesn't provide)
- Improved governance framework
- Improved community engagement plan

Govdex ([www.govdex.gov.au](http://www.govdex.gov.au))

- OGRE Community of Practice
- Forum for cooperative procurement discussions
- Request an account from [OGRE@ga.gov.au](mailto:OGRE@ga.gov.au)

More info

# Success stories

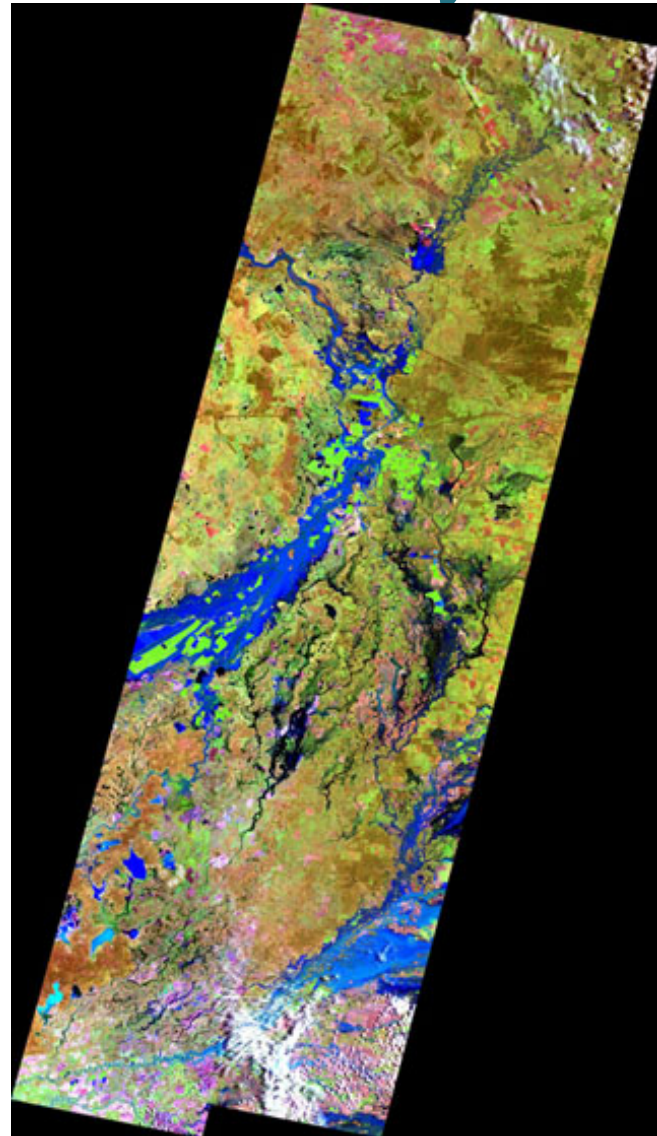
# Flooding in Queensland and NSW February 2012

February 2012

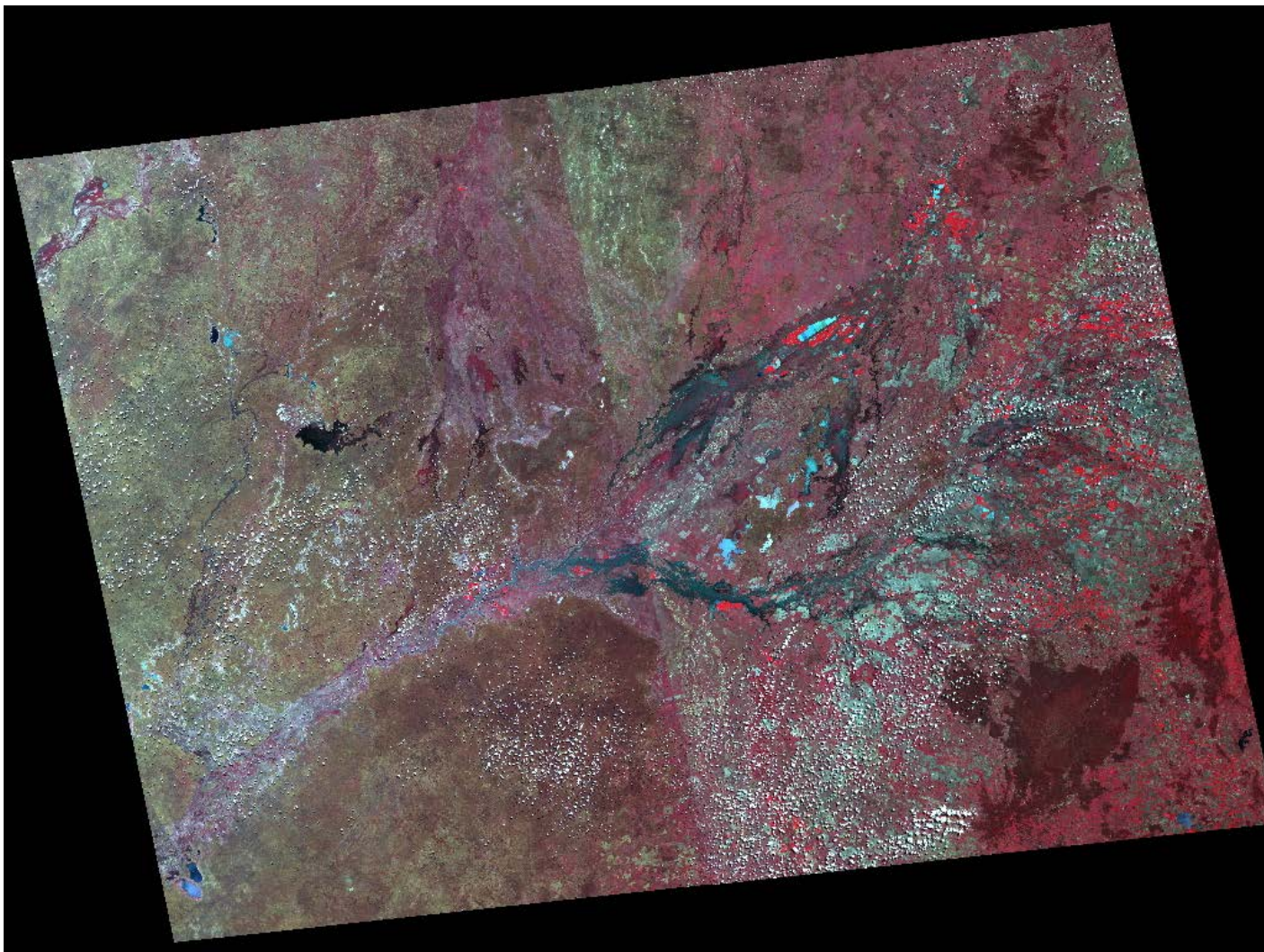
- Commercial Imagery used to track floods for the Darling, Lachlan and Murrumbidgee
- SPOT 4, SPOT 5, DEIMOS-1, TerraSAR-X, COSMO SkyMed, RADARSAT-2
- Almost all imagery captured under whole of government licence

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(SPOT 5 image showing Flooding of the Balonne River and lower Gwyder catchment)



# DMCII coverage of NSW floods



# Continental scale coverage as a Landsat gap-fill

Second generation DMC satellites:

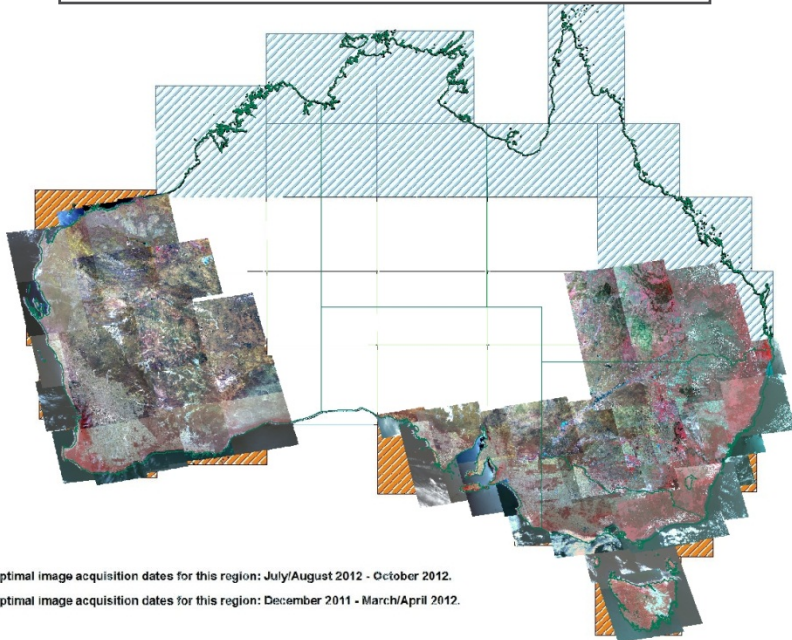
- UK-DMC2, DEIMOS-1, NIGERIASAT-X
- Spatial resolution: 22m
- Spatial accuracy: <17m
- Spectral bands: Green, Red, NIR
- Radiometric calibration accuracy:  
<5% absolute, <1% relative to Landsat 7

# Landsat 'Gap-fill' with DMCii

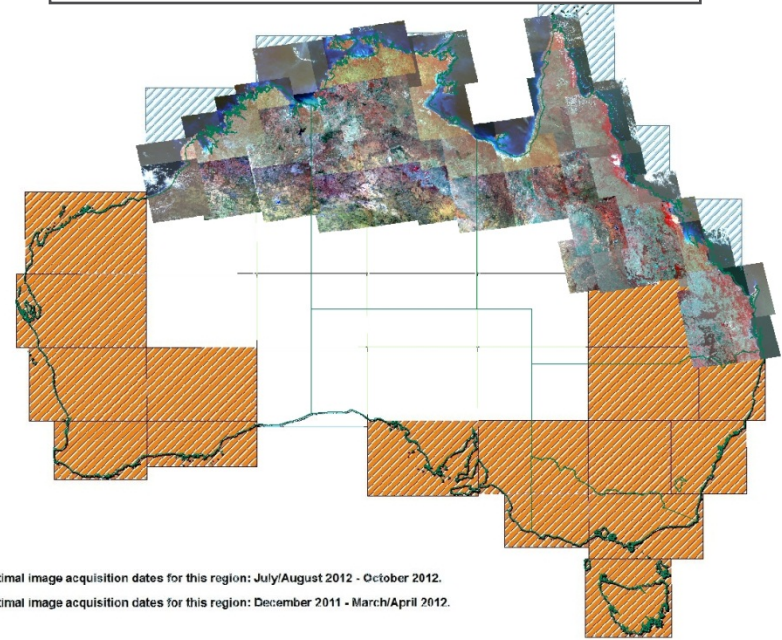
DMCii coverage (UK-DMC2)

- 90% cloud-free
- Creative Commons licensing

Window 1: Dec '11 – Apr '12



Window 2: July – Oct '12





# DMCii archives 2010 - 2011



# Brisbane



# Sydney



# What's working? / Challenges

Once – off broad area capture

- Data familiarity – new workflows are needed [unknown]
- Specifications - bands compared to Landsat [limitation]

Emergency response

- Tasking and / or prospective data capture [good progress]
- Near real time delivery [internet speeds]
- Licences [major issue]
- Analysis of the data to produce simple products (e.g., map of the flood). Standard methods and products are needed [needs work]

Repeat, broad area coverage for monitoring

- Affordability [far too expensive]
- Technical specifications [can't generally replicate Landsat]

Repeat monitoring of specific areas or features that may be of value

- Needs investigating



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Thank you  
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