The DMC International Collaboration and
Serving Public Entities with Commercial
EO Data

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DMC International Imaging Ltd
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The DMC Concept

A Unique International Partnership Combining National Objectives, Commercial Applications and Humanitarian Aid

The Consortium

The Coordinator

The Constellation

- ALSAT-1
- NigeriaSat-1
- UK-DMC
- BILSAT
- BEIJING-1
- Deimos-1
- UK-DMC2
- NigeriaSat-2
- NigeriaSat-X
Global Daily Imaging

- 5 Satellites
- 650Km swath
- 32m Resolution
- Landsat Equivalent Bands:
  - 2 (Green)
  - 3 (Red)
  - 4 (NIR)
- Launched 2003-2005
- Global daily imaging opportunity
Second generation DMC satellites (2009+)

- UK-DMC2 and Deimos-1 launched 29th July 2009
- Improved resolution $\rightarrow$ 22m GSD (doubles pixel density)
- Improved MTF, S:N, Stability
- Maintains same wide swath (650km)
- Up to 2,100km along-track at full swath
- Faster X-Band downlink (replaces S-band)
- New operational modes, NRT Direct Downlink Service
California Forest Fires
Desert Agriculture, Libya

UK-DMC-2, 2010
DMC timeliness through collaboration

DMC 600 x 560 km Image
- single image from UK-DMC
- Most of England captured within 1 minute
- Ideal for consistent classification approach
  - Near real-time precision agriculture fully supported
  - Reliable multi-temporal coverage per season
- Many fewer images to process than Landsat
Regular wide area coverage: USA 2011-12

- Example of monthly (July) coverage mosaic: 96% cloud-free

Image courtesy of Astrium / Deimos Imaging
Current DMC Constellation

- UK-DMC2 (22m ms)
- Deimos-1 (22m ms)
- NigeriaSat-1 (32m ms)
- Beijing-1 (32m ms)
- UK-DMC (32m ms)

\[\text{Combined revisit every 1-2 days}\]

Launched 2011 (Commissioning):
- NigeriaSat-2 (2.5m Pan, 5m ms, 32m ms)
- NigeriaSat-X (22m ms)
Examples of DMC Data Supply to Public Entities

“Buy Once – Use Many Times”
UK-DMC2 Direct Downlink Service 2012+

- Near real-time direct downlink to Cuiaba
- Much more data available per month
- Upgrade from 250m MODIS pixel to 22m pixel for DETER program
- Imagery **openly accessible** through INPE website along with CBERS and Landsat
Australia 22m coverage 2012 (UK-DMC2)

- For Geoscience Australia / OGRE
- 90% cloud-free at 22m resolution, orthorectified
- New tasking: Southern Australia Dec 2011-April 2012
- New tasking: Northern Australia July-October 2012
- Creative Commons licensing
Brisbane
UK-DMC2 Archive Datasets 2010 / 2011
USA Multitemporal Monitoring

- For USDA Crop Monitoring
- Satellites used: Deimos-1 and UK-DMC2
- Complete coverage of lower 48 States every 15-days
- 12 coverages May–October (average 91% cloud-free in 2011)
- 150 Million km$^2$ of cloud-free imagery delivered
- USDA reported improved crop classification results

Image courtesy of Astrium / Deimos Imaging
# USDA Crop Classification Results: North Carolina Example

## Landsat & DMC

<table>
<thead>
<tr>
<th>Crop Type</th>
<th>Producer</th>
<th>User</th>
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Statistics courtesy of USDA
Netherlands Multitemporal Data Supply

- Procured by NSO (Dutch Space Office) via Astrium
- DMC 22m coverage of Netherlands 3x per week March-October; 2x per week November-February
- Continuity secured for 2012-2016
- **Data licensed for use by up to 20 organisations** within the Netherlands
• All of Sub-Saharan Africa in 1 year
• Supports multiple applications incl. land cover, forestry, emergencies
• 58 Countries
• >24,000,000 km²
• ~2,000 confluence points acquired cloud-free
• Licensing extended to all GMES & FP7 projects, European Institutions and NGOs
Disaster Response: International Charter

- DMCii and UKSA provide UK contribution to Charter
- 30-40 Disasters per year
- 100 -200 DMC images per year
- DMCii provides on call duty officer one week in eight
- Typically same day data delivery – no cost to users
Pakistan Floods 2010

UK-DMC2, 16th August 2010

UK-DMC2, 6th October 2010
Flood mapping from DMC imagery
DMC data for UK Academic Community

- Delivered through ‘Landmap’ – University of Manchester
- Data purchased once but available to thousands of eligible researchers
Future DMC Satellites

- 3-5 satellites to launch together
- ~20m spatial resolution; ~650Km swath
- **Constantly recording**
- All global land areas acquired every day
- Public/private funding model TBC
- Low cost data access for academic community
Questions?

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www.dmcii.com

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