Disaster Monitoring Constellation

Richard Peckham, Chairman UKSpace

October 2009
Disaster Monitoring Constellation (DMC)

• A Unique International Partnership Combining National Objectives, Humanitarian Aid and Commerce…

The Team

The Constellation

• ALSAT-1 (2002)
• NigeriaSat-1 (2003)
• UK-DMC1 (2003)
• BILSAT (2003)
• Beijing-1 (2005)
• Deimos-1 (2009)
• UK-DMC2 (2009)
• NigeriaSat-2 (2010)
• NigeriaSat-X (2010)
The Satellites

- A range of sensors:
  - Optical medium to high resolution
  - Radar (in development)
DMC International Imaging - DMCii

**Multispectral**
- GSD 32m, 22m (2009), 5.6m
- Up to 670 x 4,100 km images
- Daily Revisit
- Levels RAW to L1T Ortho

**Panchromatic**
- 4 & 2.8 metre GSD
- Up to 24 x 4,100 km images
- Large dynamic range
- Levels 1 & 2

**Hyperspectral**
- 18 metre GSD
- 64 Spectral bands
- Multi-look angles
- Levels 1 & 2

http://www.dmcii.com
The Applications

- Multispectral imagery at 32m and 22m GSD

Deforestation & Land Cover

Global Science, Climate change

Flooding, disaster response

Fires: prediction, tracking
DMC in the international charter

- International charter space and major disasters

- 2005-2008 DMC has:
  - responded to 93 activations
  - with 332 wide-area images

- Major campaigns in 2008:
  - Floods in Southern Africa
  - Earthquake in China
  - Cyclone in Myanmar
DMC and European Policy

The Disaster Monitoring Constellation addresses diverse European priorities aligning:

- Environmental monitoring
- Climate change monitoring
- Economic benefit
- International co-operation
- Capacity building in Africa

through a single programme

Demonstration of what can be achieved when government departments and industry work with a common aim
Next generation DMC

• SSTL currently finalising plans for the UK-DMC3
  – Based on design of NigeriaSat-2
  – Medium resolution and very high resolution (2.5m)
• Great potential for use in a variety of government applications
• 70% funding secured
  – Excellent opportunity for UK government to meet multiple objectives
    • International trade partnerships
    • Climate change monitoring
    • Support to sustainable development
      – Precision agriculture
      – Resource management
Mission results

- D M C + 4: 4m PAN Image of Tehran, Iran

Example of 4m hi-res image from Beijing-1
Conclusions

• DMC has “changed the economics of space” for land imaging
• It is a successful international collaboration
• Providing useful and timely data:
  – For commercial users
  – For government users
  – In many applications including land usage, agriculture, environmental monitoring & disaster response
• Demonstrating what can be achieved when government and industry work together