Building a GeoKnowledge Community

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Overview

• What is Mimas?
• What is Landmap?
• Spatial Data Provider
  - Data Collections
  - Negotiating licensing
  - OGC services
• Metadata Provider
  - Enhancements Project
• E-learning
  - ELOGeo Project
  - Creative Commons
• Outreach
  - Widen awareness
• Technological Innovation
  - Kaia
  - WPS and linked data
WHAT IS MIMAS?

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Mimas Portfolio

- Archives Hub
- Census (CDU)
- Copac
- ESDS International
- Hairdressing Training
- Jorum
- JSTOR
- Landmap
- UK Institutional Repository
- UKPMC
- Web of Knowledge
- IESR
- Intute
- Zetoc

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WHAT IS LANDMAP?
Individual Registrations

- 13 new institutions licensed for Landmap
- 1117 registrations so far this funding year
- Exceeds last year total registrations 793
SPATIAL DATA PROVIDER

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Data Collections 1

Optical & Thermal

Elevation

Colour Infrared © Bluesky 2008

25m Landmap DTM © The University of Manchester/UCL, 2001
<table>
<thead>
<tr>
<th>Optical/Thermal collection</th>
<th>Format</th>
<th>Temporal scale</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landsat 7</td>
<td>Erdas Imagine</td>
<td>1999 - 2001</td>
<td>UK</td>
</tr>
<tr>
<td>Mediterranean Landsat</td>
<td>Erdas Imagine/GeoTiff</td>
<td>1990, 1992, 2000</td>
<td>Cyprus &amp; Spain (E&amp;W)</td>
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<tr>
<td>Spot</td>
<td>GeoTiff</td>
<td>1995 - 1996</td>
<td>British Isles</td>
</tr>
<tr>
<td>TopSat</td>
<td>GeoTiff</td>
<td>2007 - 2009</td>
<td>Global locations</td>
</tr>
<tr>
<td>Colour Infrared</td>
<td>GeoTiff</td>
<td>2007 - 2010</td>
<td>England, Wales &amp; Scotland (not complete coverage)</td>
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<tr>
<td>Historic AP</td>
<td>MrSID</td>
<td>1940s/1950s</td>
<td>(main cities)</td>
</tr>
<tr>
<td>Modern AP</td>
<td>MrSID</td>
<td>1970 – 2009</td>
<td>Main conurbations in UK</td>
</tr>
<tr>
<td>Meris</td>
<td>GeoTiff</td>
<td>March 2011</td>
<td>Order on request</td>
</tr>
<tr>
<td>Thermal</td>
<td>Erdas Imagine &amp; JPG</td>
<td>2009 - 2010</td>
<td>Some of main conurbations in UK</td>
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<tr>
<td>Elevation collection</td>
<td>Format</td>
<td>Temporal scale</td>
<td>Coverage</td>
</tr>
<tr>
<td>-----------------------------</td>
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<td>-----------------------------------</td>
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<tr>
<td>75m SRTM</td>
<td>Erdas Imagine</td>
<td>2000</td>
<td>British Isles</td>
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<tr>
<td>25m Landmap DTM</td>
<td>Erdas Imagine</td>
<td>2000</td>
<td>British Isles</td>
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<tr>
<td>KGPS Survey</td>
<td>Shapefile/KML/GML</td>
<td>2000</td>
<td>6,400 km of roads</td>
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<td>5m Bluesky DTM</td>
<td>Erdas Imagine</td>
<td>2009</td>
<td>England and Wales</td>
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<td>5m/2m GetMapping DTM</td>
<td></td>
<td></td>
<td>Scotland</td>
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<tr>
<td>0.25 - 1m LiDAR</td>
<td>Erdas Imagine</td>
<td>2005 - 2007</td>
<td>Metropolitan areas</td>
</tr>
</tbody>
</table>
Data Collections 2

Radar

Alternating Polarisation

Image Mode

Feature

© ESA, 2004

Alternating Polarisation

Image Mode

Streaming |||| 100%

Eye alt 674m

Image © 2007 The Geospatial Information Group
<table>
<thead>
<tr>
<th>Radar collection</th>
<th>Format</th>
<th>Temporal scale</th>
<th>Coverage</th>
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<tr>
<td>Envisat ASAR</td>
<td>Ortho GeoTiff</td>
<td>2004 plus</td>
<td>UK (full)</td>
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<td>Image Mode</td>
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<tr>
<td>Alternating Polarisation</td>
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<tr>
<td>Wide Swath</td>
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<tr>
<td>ERS</td>
<td>Ortho GeoTiff</td>
<td>1995 - 1999</td>
<td>British Isles (full)</td>
</tr>
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<td>ERS 1</td>
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<tr>
<td>ERS 2</td>
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<td></td>
<td></td>
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<tr>
<td>ERS Coherence</td>
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<tr>
<td>ALOS PALSAR</td>
<td>Ortho GeoTiff</td>
<td>2007 - 2009</td>
<td>British Isles (partial)</td>
</tr>
<tr>
<td>Feature collection</td>
<td>Format</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-----------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Heights</td>
<td>Shapefile format</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Class</td>
<td>Shapefile format</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UKMap (Base, Overlay, Points, Addresses, POI, Heights)</td>
<td>Shapefile, dbf</td>
<td></td>
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</tbody>
</table>
OGC Standards

- **WMS** - deliver a portrayal of the data within data collections through Kaia
  *Open to all* (except for Modern and Historic Aerial Photography)

- **WFS** - deliver shapefiles and GML
  *UK Federated Access* (data licensing restrictions)

- **WCS** - deliver IMG, GeoTiff, NITF, ECW, JPEG 2000
  *UK Federated Access* (data licensing restrictions)

- **CS-W** - deliver ISO 19115 metadata
  *Open to all*

- **WPS** - future work (funding bid to JISC submitted)
  *UK Federated Access* (data licensing restrictions)
Metadata Enhancements

Survey Response
- 80 participants responded to the User Requirements Metadata Survey
- 96.2% agrees quality of metadata information is important for their research e.g. acquisition; coverage; pre-processing steps to inform interpretation
- Current dataset metadata converted from FGDC to ISO standard

Progress
- Sourcing metadata information (dataset level)
- Collaboration with EDINA, Go Geo portal
- IESR update (service level)
- User testing & Assessment

Is metadata useful to your research?

- Not very useful
- Useful
- Very useful
- Extremely useful
View ISO19139 metadata direct from Landmap Kaia & download with the data

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Learning Zone

- **Airborne Imaging**
  Modern Aerial Photography for ArcGIS; Modern Aerial Photography for CR Viewer; Historical Aerial Photography

- **Applying Heights**
  3D Modelling with Google Sketch-Up; LiDAR Imaging

- **UKMap & Mapping**
  Landuse Mapping; Introduction to UKMap

- **Image Processing**
  ENVI; Idrisi Kilimanjaro; ERDAS Imagine v.9; Erdas Imagine 2010 and PCI Geomatica

- **Radar Imaging**
  Introduction to Radar

- **Classification Methods & Scripting**
  Object Oriented Classification; Python for ArcGIS

INSPIRE Conference 2011, Edinburgh 27 June - 1 July
• **Duration:** 6 months (JISC funded)
• **Partner:** University of Nottingham
• **Project Overview:** To create e-learning resources
  - Open Data
  - Open Standards
  - Open Software
• **15th March ELOGeo User Requirements Survey launched**
  - 105 Respondents so far (closes 27/04/11)
  - Will inform development of new materials
  - New content delivered through the Learning Zone
LZ Benefits

- **Increasing spatial literacy**
  - Undergraduates
  - CPD
  - Lecturers new to spatial data
  - FE
- **Capacity building in less traditional disciplines**
  - Architecture
  - Planning
  - Engineering
  - Biology
  - Computer Science
- **Provide learning resources around Landmap Data Collections**
  - Increase usage
  - Increase research impact by using spatial data adding a new dimension of investigation within non traditional disciplines

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Marketing Strategy

• Produce new Landmap overview leaflet & banners
• Develop a Landmap Roadshow for 2011
  - Go to different regions of the UK to promote to lecturers/postgraduates
• Develop key contacts lists
  - LinkedIn - Landmap Group
  - Twitter (148 followers)
  - Contact subject librarians and check web pages are up-to-date
  - Use lecturers knowledge to establish good venues for road shows
• Promote at events
• Regional seminar/training for undergraduates
• Librarian information days
Regional Undergraduate Seminar

“Lots of presentations – works well”

“Great balance between industry, research & organisations”

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UKMap Workshop

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TECHNOLOGICAL INNOVATION

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Kaia Geoportal

• Downloading data from our collections
  1) Download Original Data (for all data)
  2) Download a subset of the data via Web Coverage Service (WCS)
     • Select specific spectral bands
     • Format
     • Resampling method
  3) Extract Features – download as GML, KML or Shapefile

• Landmap Kaia is a single access point for previewing our data collections via Web Map Service (WMS):

• Landmap Kaia provides a portal for searching and previewing metadata through the Catalog Service for the Web (CS-W)

• Creating a customised map using Landmap data and saving the map as a Web Map Context (WMC)

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Geo-Linked Data Project

Duration: 6 month

Project Overview:
This project aims to enrich the Web of data by using Semantic Web best practices to publish a subset of Landmap ISO metadata in Resource Description Format (RDF), for the high resolution image datasets.

Processes to be followed:
- Identifying data sources
- Modelling the ontology
- Generating the data in RDF
- Publishing the data to the web
Snapshots of Sample Files

ISO 19115/19139 Metadata

```
<gmd:geographicElement>
  <gmd:EX_GeographicBoundingBox>
    <gmd:westBoundLongitude>
      <gco:Decimal>-1.756813043167781</gco:Decimal>
    </gmd:westBoundLongitude>
    <gmd:eastBoundLongitude>
      <gco:Decimal>-1.5085406932456071</gco:Decimal>
    </gmd:eastBoundLongitude>
    <gmd:southBoundLatitude>
      <gco:Decimal>54.94757997721238</gco:Decimal>
    </gmd:southBoundLatitude>
  </gmd:EX_GeographicBoundingBox>
</gmd:geographicElement>
```

Converted RDF

```
<dc:subject>Newcastle_2010_16bit_mosaic_flight_1</dc:subject>
<dc:creator/>
<geo:lat>55.0148765113696</geo:lat>
<geo:long>-1.632676868206694</geo:long>
<dct:spatial>
  POLYGON ((-1.756813043167781 54.94757997721238, -1.5085406932456071 54.94757997721238, 54.94757997721238 -1.5085406932456071, 54.94757997721238 -1.756813043167781, -1.756813043167781 54.94757997721238))
</dct:spatial>
<created>2010-05-04T10:16:47Z</created>
<gmd:contact/>
```
Summary

• **Spatial Data Provider:**
  - Landmap supports the UK academic community to access and use *value-added* satellite and airborne datasets for *cutting edge research*

• **Metadata Provider**
  - Landmap is committed to provide open access ISO 19115 standard metadata for all data collections

• **Delivering E-learning Content**
  - Landmap obtain new learning materials to support teaching and learning. Our aim is to enable students and researchers from a *wide range of disciplines* to incorporate spatial data into their research.
  - New content released under Creative Commons licensing so open to all

• **Outreach and Training**
  - Increasing awareness and access to spatial data

• **Technological Innovation**
  - Provide data as OGC services, provide metadata as linked data and develop new services for our users such as WPS.
Thanks for Listening