Maia, MRDP and the Future of OS Products

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Outline

• The (not so) good old days
• Maia, the source of all products
• Multi Resolution Data Programme (MRDP)
• OS VectorMap District (VMD)
• Challenges ahead
The (not so) Good Old days

• Once upon a time (not so long ago really), at Ordnance Survey:
  • Most of products are not connected to each other
  • Some products are not directly connected to the source database
    • Separate source database
    • Separate change detection/updating management
  • Some products depend on legacy hardware/software production system
    • Can’t be revised or upgraded
    • Hardware failure would have a big impact on product maintenance
Maia – to become the source of all OS products?

- Aim: to derive all products from a single data source
- Base data under ‘Geobase04’ specification
  - Form-Function model to maximise reclassification flexibility
    - Form: how a feature appears (in the real world or data)
    - Function: what a feature does (real world or on map)
- Large Oracle database
  - ~108-million Topographic area features
  - ~296-million Topographic line features
  - ~5.88-million Topographic point features
  - Many other feature classes (functional site, landform, named extent, etc.)
MRDP - The Multi Resolution Data Programme

• What is it?
  • Design and building the future Ordnance Survey map production systems (at middle and small scales)

• Why?
  • Customers have more and more specific requirements, they are no longer satisfied with the general purpose products we offer.
  • Outdated production systems have to be modernised

• Objectives
  • Bringing flexibility and efficiency in the way Ordnance Survey produces maps, while keeping some consistency across the products.
High level system requirements

- Produce reusable data components
- Produce a rich library of tools to derive data components at different levels of detail (generalisation)
- Support incremental updates
System Architecture: issues

• DLMs at different levels are NOT inter-linked at present

• Efforts are made to maintain some degree of consistency among DLMs
Main technologies used:
• 1Spatial for data transformation (data enrichment, generalisation)
• ESRI for manual editing
• Oracle for the database
• FME for simple data transfers (ETL)
VMD – building the first production system

• VMD: A product family to provide a customised geographic background for user overlay information
• Origin: derived from a Research prototype
• Key elements of the migration process:
  • Make the generalised features more reusable
  • Make the tools more reusable (for deriving other products)
  • Make the process more maintainable
  • Make the process more efficient
  • Make the process available in an enterprise system
• The first formal release (v1.0) is due on 22\textsuperscript{nd} March 2013
Results

Source data

OS VectorMap® District beta

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Implication

• MRDP will deliver the first map production system in Ordnance Survey which heavily relies on automated generalisation.

• The same system will get further developed to support the creation and maintenance of other products.

• Impact on research at Ordnance Survey
  • Reusable components and tools provide a good start for experimenting with on demand mapping.
Challenges ahead (1)

- How to minimise duplicated manual editing
  - Several DCMs derived from single DLM (so potentially duplicated manual editing).
  - Option to manually edit the DLM: more efficient, less reusable
- Incremental automatic update: how to re-apply cartographic editing after update
- Supporting analytical products (especially at smaller scales): maintenance will be difficult
Challenges ahead (2)

- On-demand mapping:
  - Exploiting MR-DB for specific requirements
  - More software for sharing/on-demand mapping: a simplified and unified data model will encourage and facilitate development of software companies and other developers?
- 3D?
  - At present, OS has no product yet (not one of current plan) but there is plan to put the 3rd dimension into base data
Questions?