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  - Outdated production systems have to be modernised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 Diagram (simplified)
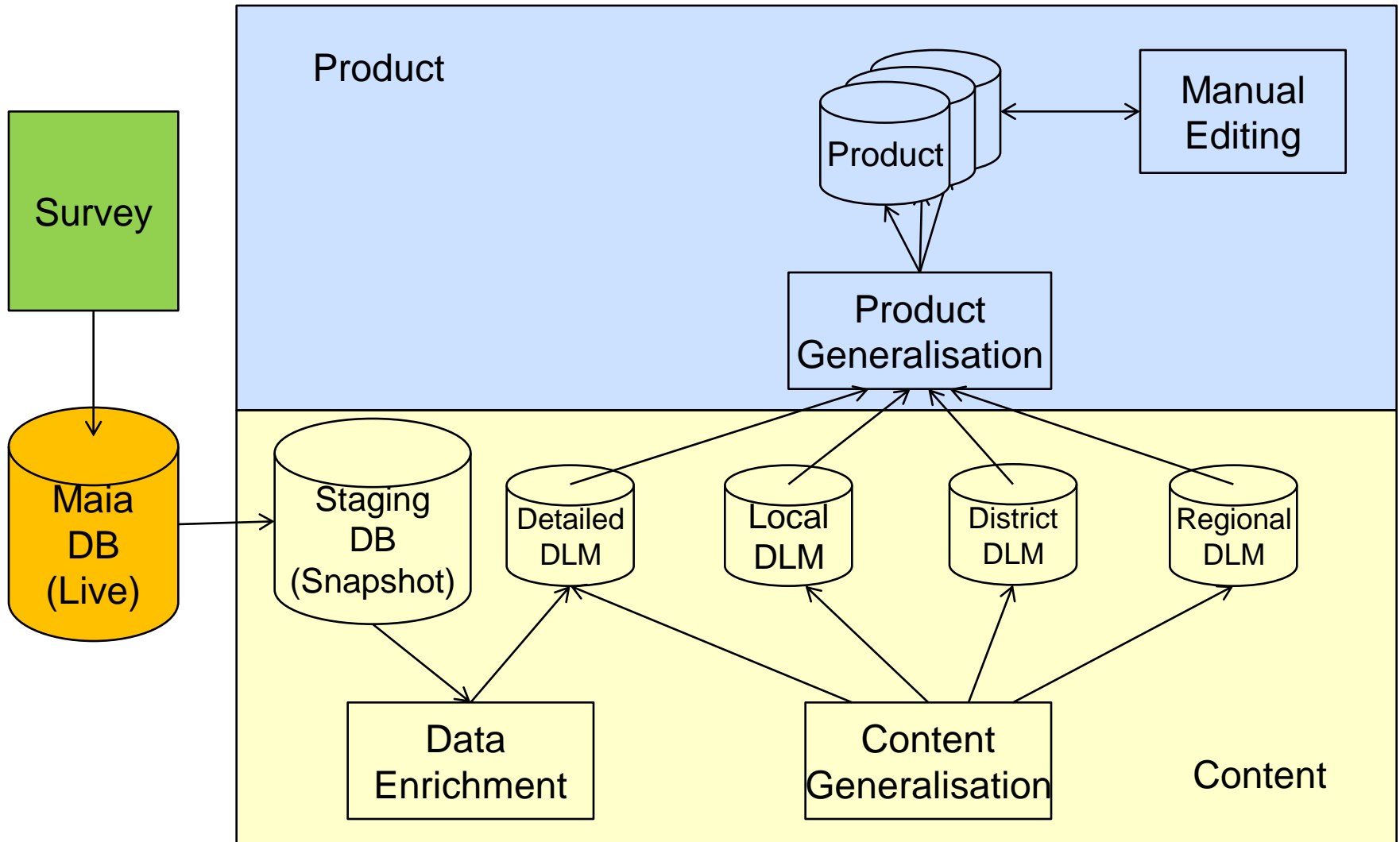
System Architecture: issues

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

- Efforts are made to maintain some degree of consistency among DLMs

Technology used in the system

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 22nd March 2013

Results

Source data

OS VectorMap® District beta

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?