Ordnance Survey Ireland’s Approach to Spatial Big Data Management
About us.....

Our History
• Founded in 1969
• Headquarters in Cambridge, UK with offices in Australia, Ireland, France and Belgium
• 200 staff
• AIM Listed

Our Business
A specialist solutions and services provider to data providers, government and utilities
Some of our Customers
Great Expectations
The Challenge

Data providers supplying rich, intelligent data
Assisting Humans
Delivering Productivity, Power & Performance
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National Mapping Agency
Established in 1824

HQ Dublin
Cork  Galway
Sligo  Kilkenny
Clare  Longford

640+ Terabytes
40 Terabytes per annum
Data from 1824 - 2014

Oracle Technology
Database 9i, 10g, RAC 11g, 12c
Spatial & Graph
WebLogic & BPEL
Workspace Manager
“the most significant revision to OSi’s data creation and management practices in over 30 years”

- Next generation national core reference data
- Foundation for National Spatial Data Infrastructure
- Seamless real-world feature data model
- Inter-feature references
Topologically seamless Skin of the Earth

Superimposed Features sit on top of Skin of the Earth

Network Features including “Way”, “Water” and “Rail”
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Next Generation Mapping

• Automation played a key role in its creation
  – Build real world features through rules and actions
  – Classify features and set properties
  – Data validation

Estimated 5 -7yr manual project

Completed in 18 months
Migrating from tiled cartographic data ….
Migrating from tiled cartographic data ....
…. to a seamless real-world feature database
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An Automated Approach
A Product Ready National Spatial Database
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Management Reporting
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Business Benefits

**Efficiency by Automating**

Do More With Less

**Efficiency by Consolidating**

- 21 spatial data silos
- 1 WebLogic deployment
- 1 RAC database
- 6 production application

**Performance Gains**

Survey to Supply

14x Faster
Performance Testing

`sdo_aggr_union` test

'Townland' polygon features from 5 counties in Ireland and creating an aggregate union of them.

6,510 polygons with an average of 372 vertices per polygon.

<table>
<thead>
<tr>
<th>Database</th>
<th>sdo_aggr_union Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>11g</td>
<td>9 mins 8 seconds</td>
</tr>
<tr>
<td>12c without SVA</td>
<td>5 mins 36 seconds</td>
</tr>
<tr>
<td>12c with SVA</td>
<td>14 seconds</td>
</tr>
</tbody>
</table>
Thank You

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