

Tackling PAI at Colchester Borough Council

With the advent of GPS technology, Ordnance Survey Great Britain (OSGB) is now able to deliver its 1:2500 data to a greater degree of accuracy than was previously possible. Although the OSGB Positional Accuracy Improvement (PAI) programme “future-proofs” the data, it also means that many local authorities now experience a mismatch between their own datasets (captured to pre-PAI base data), and the new base data.

Colchester Borough Council (CBC) covers an area of approximately 130 square miles, with the Planning Department acting as custodian to over 150 data layers. Planning decisions can be affected by even the smallest infringement of constraint areas, therefore it is essential for CBC to have all its data in the correct position in relation to the underlying base data.

The Planning Department is addressing this issue with a combined solution from 1Spatial and DottedEyes based on an Oracle9i database. The process initially corrects their current features to pre-PAI base data, then “shifts” the features in each layer to the correct position, and finally snaps the features to the OSGB data. Throughout this entire operation the process maintains information about how all these features are related, this gives CBC accurate, error-free data that they can analyse to test the alignment.

Creating a solution

The main PAI shift is to be done using DottedEyes’ ShiftWiz application. Using the link files supplied by OSGB, ShiftWiz can quickly and easily shift CBC’s data from the pre-PAI location, to the new post-PAI location. Once the data has undergone this main PAI geometric shift, the majority of the CBC data will be positionally correct in relation to the new OSGB base data, which, in this case, will be OS MasterMap®.

Following the PAI shift, 1Spatial’s Radius Topology is being used to process the data. This processing confers some major benefits.

Error-free data

The processing will modify CBC’s asset data to remove small differences with the underlying OSGB data. This means that any changes to the underlying OSGB data will be automatically applied to CBC’s data. Once the data has been structured, Radius Topology will topologically maintain it for the duration of its life. Every time a piece of data is edited, deleted or created using CBC’s present MapInfo Professional software, the data is automatically validated according to Radius Topology’s business rules. This means that the data is always error-free and ready for fast and meaningful business queries

Ultra fast spatial query

Radius Topology enables users to save time by querying the underlying topology of their data instead of carrying out intensive spatial queries. Sensational speed increases have been achieved using this method on local authority polygon data. The topological information created by Radius Topology allows powerful analysis to be performed on the data, such as ‘Find all the roads that lie partly, but not completely along one or more political boundaries’.

Ann Hockey, Research and Resources Manager at Colchester Borough Council (CBC) said:

“One of the big positives we saw with Radius Topology was the continuing use for data cleaning after the PAI exercise itself has been completed. This will assure the quality of our data as we add further layers and expand the user-base.”



Original data overlaying PAI OSGB MasterMap



Corrected data after shift using ShiftWiz, and adjustments for real world change using Radius Topology

Centralised data for efficient e-government

The solution delivered by 1Spatial and DottedEyes brings CBC data together in a single Oracle database. This adoption of an enterprise solution will mean CBC is better placed to provide e-government services in the near future, as additional layers are added.

Interoperability between departments

Users throughout CBC are all able to use the same base data, no matter which application they choose for their task. MapInfo users within the Planning Department and Autodesk users within the Transportation Department can all have simultaneous access.

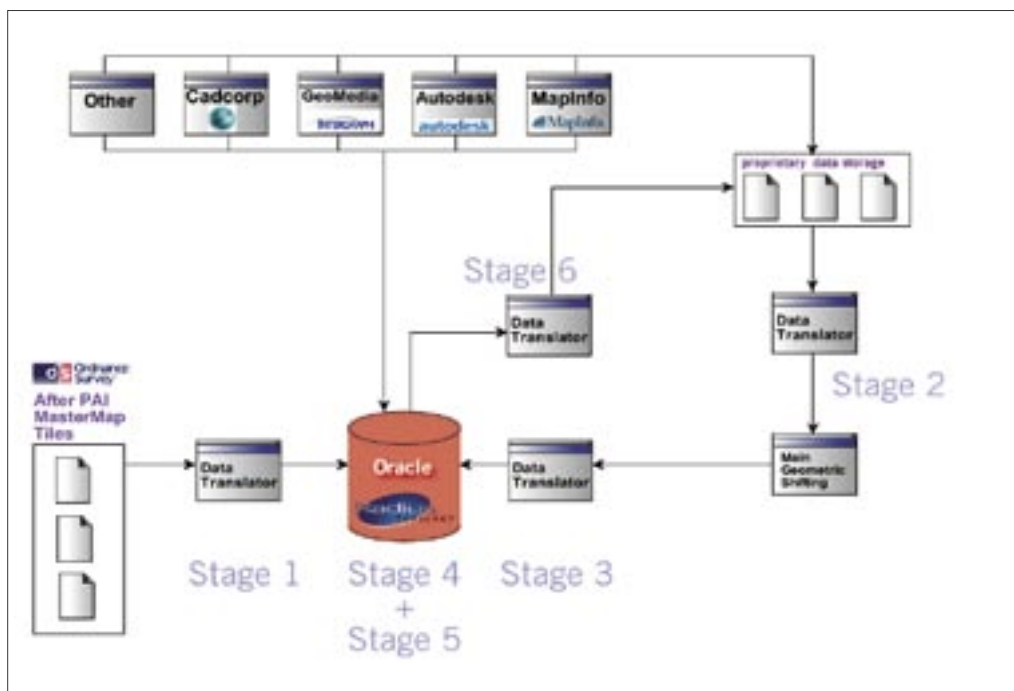
Mapping the real world

All departments across the council have access to each other's data; using attribute data from these different departments, features can be added together to create a real world view. For example, the council property at location x is a Grade II listed building whose grounds contain trees with preservation orders. In addition it has a LLPG reference, which would yield up all of this information in a single property search query.

Cutting costs

OS MasterMap is handled once for all of the departmental applications; this reduces costs whilst maximising the investment already made in the software tools.

CBC aims to complete this programme by summer 2005. By adopting an open, non-proprietary database approach to dealing with the PAI issue, and by structuring its data topologically, CBC is one step nearer a truly joined-up solution.



The PAI Data Re-engineering Flowline



1Spatial

Head Office

Cavendish House
Cambridge Business Park
Cambridge
CB4 0WZ, UK

International Offices

Rue de Colonies 11
1000 Brussels
Belgium

1 Nore House,
Riverview Business Park
Mahon
Cork
Ireland

Olavsgt. 39b
NO-3612
Kongsberg
Norway

3 Wellgreen Lane
Stirling,
FK8 2BS
UK