

The intelligent solution for converting electoral registers to BS7666

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Case Study

Metropolitan Police Service
IA were commissioned to integrate the Metropolitan Police Service (MPS) address data with the NLPG.

The initial phase of the work related to the conversion of the MPS command and control centre operational address gazetteer to BS7666 format including data cleansing, deduplication and identifying anomalous records. The data was then matched to the NLPG to provide cross-references to facilitate data sharing between MPS and local government via unique property and street references (UPRN and USRN).

The second phase of the work centred around data cleaning, conversion and matching of additional MPS address databases in the form of their "Alarms" information used in the dispatch of units following break-in to alarmed property monitored by MPS.

The Ministry of Justice is working towards the Co-ordinated on-line Record of Electors (CORE) which will provide options for a UK wide system of on-line access to register data.

The first stage of this project is to achieve consistent data quality within Electoral Management Systems (EMS). Improving the integrity and accuracy of local registers by standardising the data within them is essential in achieving the Ministry of Justice's objectives. An elector's address is a key component of a register entry, and it is this data, along with the name and date of birth of the elector that needs to be structured in a standardised manner. The British Standard for addressing is BS7666 and the National Land and Property Gazetteer (NLPG), a database produced by local government, is the only national address database that fully complies with the Standard.

The Intelligent Addressing solution

Intelligent Addressing (IA) is an information management specialist and data provider, focusing on land and property data, particularly addresses. As well as being the joint venture partner with local government (IDeA) in the development of the NLPG, IA also manages the national datasets for local government; the NLPG and the National Street Gazetteer (NSG).

Creating and maintaining large address datasets to a high standard requires specialist expertise and knowledge. Data is an essential yet high-cost resource to maintain. Intelligent Addressing helps organisations find, utilise and manage the information that they need and provides services to any organisation that depends on the accuracy, manageability and versatility of its information. IA has developed proprietary software specifically for converting, cleansing, de-duplicating and matching large address datasets.

Intelligent Addressing has three key skills areas, some of which are unrivalled in the UK:

1. Management of address data hubs

IA manages the NLPG and the NSG hubs on behalf of local government. This involves collating about 20,000,000 records received from 376 local authorities each month and the secure distribution of different cuts of datasets totalling about 40,000,000 records to some 551 organisations on different media under the terms of the Mapping Services Agreement (MSA).

2. Data cleaning and matching

Over the course of the last two years alone, IA has cleaned over 1 billion address records and matched them to the NLPG. Data has included addresses in many different formats and derived from the postcode address file, Ordnance Survey ADDRESS-POINT, council tax, national non-domestic rating lists, electoral registers, police command and control data, utilities, land charges, land registration, and housing associations.

In several instances, IA has been retained to help keep address data contained in other databases synchronised with the NLPG.

IA is experienced in managing the following data issues:

- address anomalies
- inaccurate addresses
- address duplications
- variable quality of data indexing
- lost records
- currency of data
- incomplete lists
- misdirected mail
- inability to link or match two datasets together with certainty
- inability to match one record (eg on ownership) to others (eg on planning, land charges, maps etc)

3. Consultancy

IA advises organisations on matters relating to land and property addressing. It has provided advice for the original development of BS 7666, the UK's addressing standard, and has remained actively involved in its periodic reviews. IA's consultancy services are at present used widely within local government, the emergency services and utilities.

Working with NLPG data

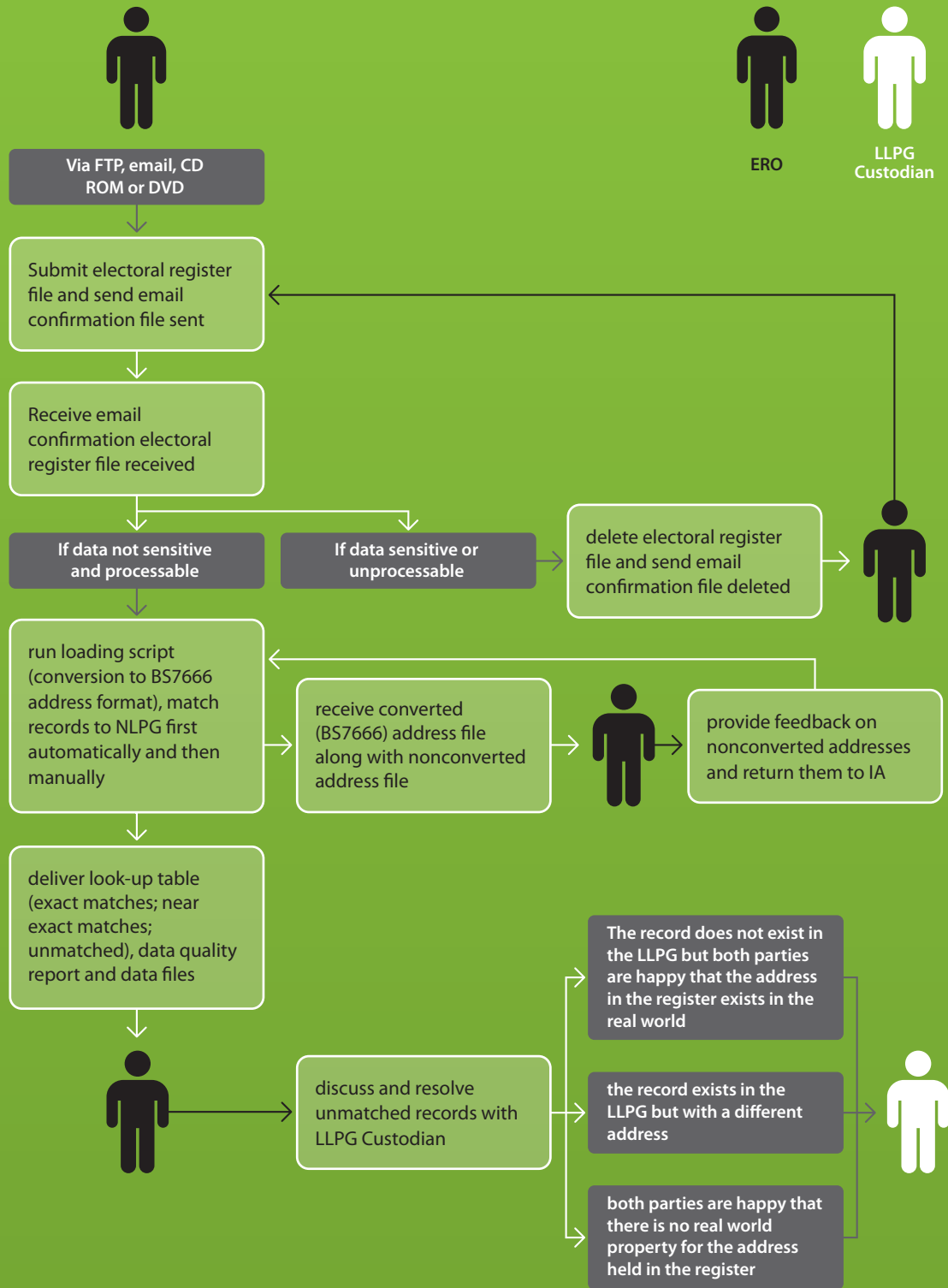
Over the past 8 years, IA has gained more experience than any other company in the country in matching datasets to the NLPG. Following a competitive tendering process of the MSA in 2005, IA was awarded the contract to manage the NLPG and NSG. Working under the framework created by the MSA, IA provides a number of services to local authority LLPG Custodians. The services relate to the provision and supply of land and property and street data services to and from the national datasets of the NLPG and NSG:

- hub provision and management
- data collation
- verification and validation
- data distribution
- support services
- inclusion of other key datasets, such as those from the Valuation Office Agency
- data cleaning services
- training outside support
- provision of a help desk, supporting documentation and user groups
- consultancy services

In delivering these services, IA has developed:

- well refined data receipt, processing, reporting and transfer processes
- an iterative process to work with organisations to resolve address matching issues
- access to the NLPG to match out-of-area addresses
- ability to send out-of-area addresses which haven't been matched to the relevant LLPG custodian for review/resolution
- proven matching algorithms which give authorities confidence in the matches made
- help desk and support for authorities to resolve the range of types of issue that always arise in matching data
- experience of working with most formats of local authority data.

Business analysis process for CORE project



Providing a standardised electoral register

The Ministry of Justice has directed Electoral Registration Officers (EROs) to ensure their electoral registers are in a standard format based on BS7666 and the NLPG using Unique Property Reference Numbers (UPRN) by December 2009. IA has devised an iterative process towards matching 100% of each local authority's electoral register data with the NLPG and enabling it to be maintained on an on-going basis thereafter.

The IA process

The process that IA will work through with the local authority to match their electoral register data to the NLPG can be seen on the enclosed insert 'Business analysis process for CORE project'.

Stage one – delivery to IA

The ERO can provide the electoral register data to IA in one of three ways:

1. via an email attachment
2. via FTP
3. via CDROM/DVD

The ERO should also send the name of the authority, the electoral register data, together with the UERN, the name of the software used and contact details for the primary and a secondary contact at the authority. No names of any electors should be provided.

The IA business manager will then send a confirmatory email, with a read receipt, that the electoral register file has been received.

The file will then undergo a manual inspection by a delegated IA member of staff. If the file contains any sensitive data under the Data Protection Act, the file will be returned to the authority, with a confirmation that the file has been returned. The file will be removed from all IA systems.

If the file does not contain sensitive data, it will be inspected for whether the data is in a processable format. If it is not, the file will be returned to the authority, with a confirmation that the file has been returned and the ERO will be asked to submit a new file.

Once the data has passed these first two checks, the job will be logged into IA's Business Management System (BMS), which will track turn around times and deliverables back to the ERO. The job cannot be closed until the ERO sends a confirmatory email that they are satisfied with the data.

IA will develop a data loading script for each of the five different electoral register management software products and use the appropriate script to begin the first stage of the data matching process.

Stage two – converting the data

This stage will involve running an electronic automatic data conversion script to convert the electoral register data to BS 7666 format. For the information of the ERO, all data that has been converted will be returned to the ERO by email in two files; the BS7666 converted data and the data that hasn't been converted at this stage.

Once the ERO has resolved the issues that have prevented the data from being converted, IA will add these records back into the process.

Stage three – matching the data

The complete converted data set will then be matched to the street and property records held in the NLPG and Unique Street Reference Numbers (USRNs) and UPRNs will be appended. As IA have access to the latest up to date version of the entire NLPG, any out-of-area addresses that are held within the register will be included in this process and matched to the NLPG.

Each match that is proposed by IA will be flagged with a key to identify the algorithm used to make the match. This allows IA to report back to the ERO on the quality of the proposed matches and to split them into two broad categories of exact matches and near exact matches.

Updating the job record in the BMS will signify the end of stage three.

Stage four – final inspection of the data

Before any results are returned to the ERO, IA will carry out a manual inspection of the unmatched records for further cleaning and reformatting of the data. The data will then undergo a further, final, match to the NLPG.

The job record in the BMS is then updated and stage four is completed upon return to the ERO of a look up table of exact matched records, near exact matched records and unmatched records. In addition, IA will also provide a list of properties classified as residential in the NLPG that do not appear to have a match within the electoral register. This final list may help to highlight omissions from the register.

Stage five – resolving any anomalies

On receipt of the unmatched records, the ERO will need to work with the LLPG Custodian to resolve the remaining address anomalies.

There are three possible reactions to an unmatched record:

- The record exists in the LLPG but with a different address
The UPRN will be added to the register
The LLPG custodian may decide to add the address from the register as an alternative address into the LLPG
- The record does not exist in the LLPG but both parties are happy that the address in the register exists in the real world
A new entry will be added to the LLPG and the appropriate UPRN added to the register
- Both parties are happy that there is no real world property for the address held in the register
The address is removed from the electoral register



Case Study

FiReControl

IA was commissioned in a consultancy role to support the FiReControl project by lending it's expertise in address matching to the initiative. The work, commissioned by CLG, involved comparing the current data used by the Fire Services to the NLPG in order to associate any currently held associated data relating to historic incidents or specific risks to an NLPG UPRN.

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Deliverables to the ERO

There will be 5 deliverables to the ERO:

1. look-up table of matched records (both exact and near exact)
2. table of unmatched records
3. processing report
4. complete set of converted addresses for the electoral register
5. list of residential properties not represented in the register

Once these have been emailed to the ERO, with a read receipt, the job record in the BMS will be updated.

The ERO will be asked to provide email confirmation that the deliverables have been received. Once the ERO has confirmed that they are satisfied with the job, and the data has been satisfactorily reloaded into the authority's EMS, it will be closed off in the BMS and an email sent to the ERO to confirm that the work is also signed off by IA as complete.

The electoral register data will then be maintained through links with the authority's local land and property gazetteer, with access to the NLPG for out of area addresses. All new records in the electoral register will require a UPRN.

Strength of the IA process

Over the past nine years, IA has cleansed and matched billions of addresses to the NLPG and has developed intimate knowledge of the data formats and the most effective way to manage the process.

IA has worked with every LLPG custodian in England and Wales to quality check their records before incorporating them into the NLPG, therefore IA has a unique relationship with the custodians and matching every type of address record.

The 'five stage' process outlined above uses IA's proven matching algorithms for data matching and conversion and provides confidence to the customer that every address has firstly gone through an automated process before more 'problematic' addresses are manually inspected. Every step of the process is logged by the BMS and regular reports are sent to the customer. The job is not signed off until the data is successfully reloaded into the customer's software.

Testimonial

IA is a very accessible service provider and it is highly evident that the focus is very much centered on the customer. Both project and support staff are always contactable, and are able to offer not only professional, but more importantly, practical advice to issues as and when they arise. The development and advancement of gazetteer management under IA's governance has resulted in significant business development benefits to Local Authorities in the UK which has had major impact on improving overall service delivery to our customers.

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