



BRINGING HARMONY TO DISCORD

HAVE YOU EVER WONDERED WHAT IT TAKES TO MAKE HARMONISED PAN-EUROPEAN LOCATION DATA A REALITY? DAVID OVERTON SAYS THAT, THANKS TO THE ESDIN PROJECT, WE NOW KNOW... AND IT'S NOT AS HARD AS YOU MIGHT THINK!

Completed in February, the eContentplus-funded European Spatial Data Infrastructure Network (ESDIN) project was a collaboration between 20 consortium partners to help prepare data for the INSPIRE Directive. It was coordinated by EuroGeographics, the membership association for European National Mapping, Land Registry and Cadastral Agencies, and focused on the best way to use existing national spatial data infrastructures (SDIs) to create a European SDI.

The partnership showed that the INSPIRE dream is real and will be made more effective by applying common practical approaches to harmonisation in data and services. The project is now sharing its discoveries, tools, demonstrations and best practices to create a consistent and trusted European Location Framework (E.L.F.).

With a vision to create this ultimate reference framework, the ESDIN project needed partners representing the full value chain in the delivery of tomorrow's location services: data providers, developers, academics and software companies.

The project deliverables benefit those working at an international and national level, whether they are providers of data

and services, or users of them. These have:

- Improved process efficiencies for data production
- Enabled interoperability through the standardisation of data, process and service
- Demonstrated how a user's process will be better supported by reliable, consistent and trustworthy reference data and services

How did we understanding user needs?

Traditional desk-based research and stakeholder events only take you so far when looking at future needs. We therefore augmented these methods with primary research, following design principles with users to gain real insight. We discovered the importance of trust, flexibility and consistency when proposing future data and service provision. This was achieved by taking a customer journey with key users from European agencies... users who also attended technical and business workshops with commercial sector counterparts. These revealed that, to meet future needs in Pan-European data, a standardisation that goes beyond that proposed in the INSPIRE implementations is required.



Fig.1: Our partners and our project

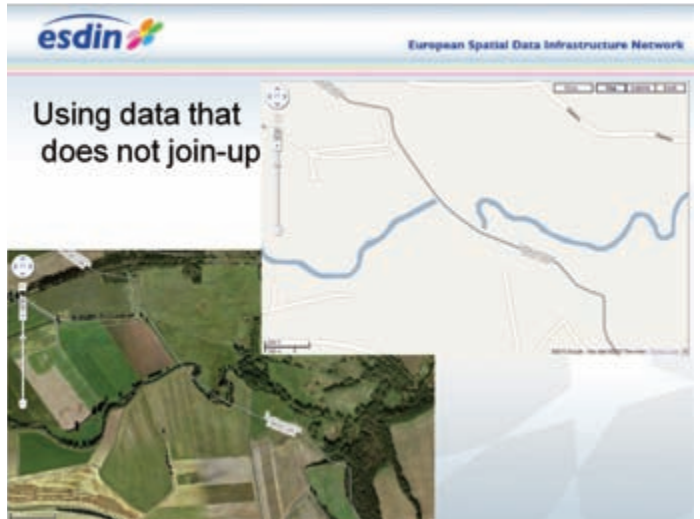


Fig.3: Compromises in data or cartography limit its use in services



Fig.2: The customer journey

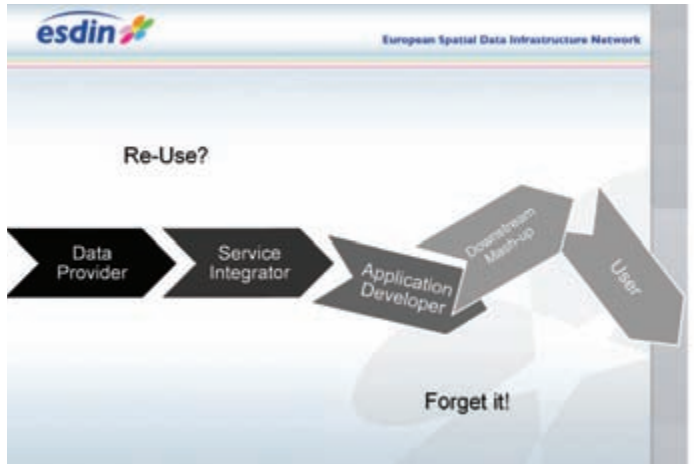


Fig.4: "Reuse" of PSI is difficult if the PSI is held against the wrong reference

National Mapping Agencies will provide INSPIRE services, so why bother with the project?

Compromises can be tolerated in a base map as long as the compromise does not affect use. If you are using an online navigation map to identify points of interest, you can create a useful service for ... referencing points of interest! Let's take bird nesting sites as an example. Take your service of nesting sites, incorporate (or mash-up) some habitat information and you realise that the cartography may not support this as the linear features may have been prioritised for foot or car navigation, not environmental analysis.

Thus the service is satisfactory for the initially intended "use" (placing points of interest on a map), but if we want to "reuse" it for another purpose, as required in the Directive on the re-use of public sector information (PSI Directive), we would need to start again with a different reference dataset.

An advantage in using official data from the national mapping and cadastral agencies is that they design their data for generic purposes.

The same issues arise, however even with INSPIRE-compliant data which means users can suffer from an unreliable reference if the pan-European or cross-border data is not:

- at the right quality level
- edge-matched correctly at a national boundary;
- generalised consistently; or
- lifecycle-managed effectively.

To some extent, these can be overcome with lengthy validation and, perhaps, adjustment of the users own data, all of which means that their service is unlikely to be a reliable reference for use and re-use. It is also an enormous barrier to use if such specialist skills are necessary.

How can the ESDIN results help you?

Go to www.esdin.eu FREE DOWNLOADS and look for the WP references given below;

Are you involved in INSPIRE compliance?

ESDIN provides the data specifications (small & medium (WP6) and large (WP7) scale) and transformation (WP10) tools to help you reach compliance in your national datasets.

Are you interested in maximising the use of your data? Perhaps in new foreign markets? Perhaps as a trusted and consistent reference for many PSI uses and beyond?

ESDIN provides best practice for managing the edge-matching of cross border features, and lifecycle management, at national and European level (WP9). ESDIN provides best practice on quality (WP 8) and maintenance of stable unique identifiers (WP9) at a European level.

Are you providing an INSPIRE service for any of the Annex I themes?

ESDIN has created and tested a number of services, data sets and processes. The test reports are available (WP12) ESDIN has documented and created services based on five such themes and tested each of these services and some of the processes involved. The test components are available under open licence (WP 12).

Will you provide view and download services?

ESDIN has created both view and download services (see the EuroGeographics YouTube channel); a browser-based client for view and download of data; and code (WP 11).

Will you want your view and download services demonstrated in test areas?

See how ESDIN partners have done this via the E.L.F./INSPIRE demonstrator (WP11) where we propose that view is free to all and download is via an authentication route.

Do you intend to generalise smaller scale products from larger scale versions and save time and money in production?

ESDIN proposes best practice on generalisation from medium to small scales.

Are you considering making your national data available via services alongside other national mapping and cadastral products from other countries?

ESDIN created a federation of data providers from national mapping agencies and academics which investigated federated security and proposed best practice in implementing Shibboleth authentication (WP11).

The project developed specifications and tools for data, processes and quality assessing as well as view and download services. For more information, visit www.esdin.eu where you will find free downloads and more information about the project.

So what happens now?

EuroGeographics' members are already working on realising some components of the European Location Framework (E.L.F.) using skills and experience gained from the successful delivery of a wide range of collaborative projects. The next stage is to develop a framework which involves:

- A set of specifications for reference data and interoperability services;
- Interoperability for topographic, administrative and cadastral reference data across resolutions and themes, and between countries
- Reference data services implemented by the Member States through their National

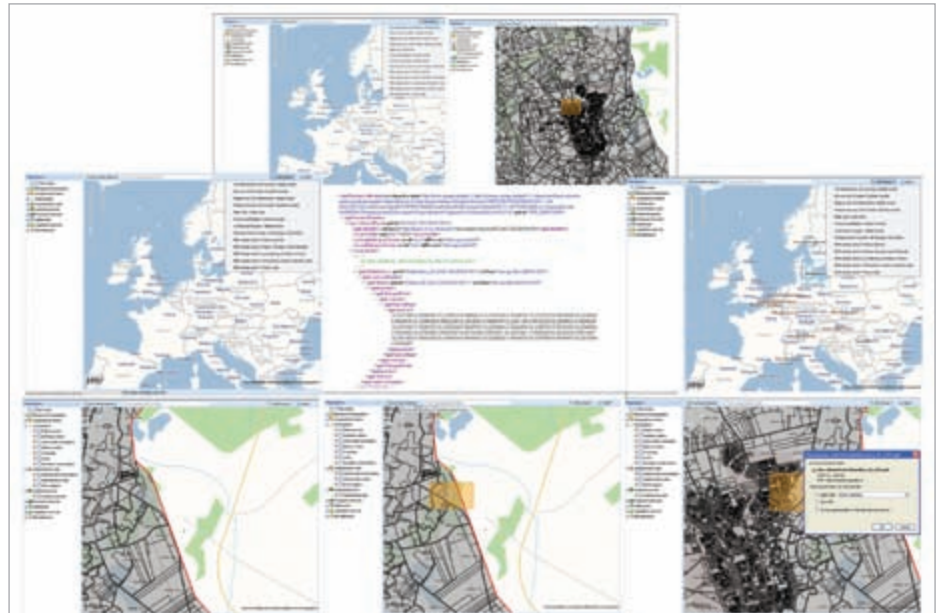


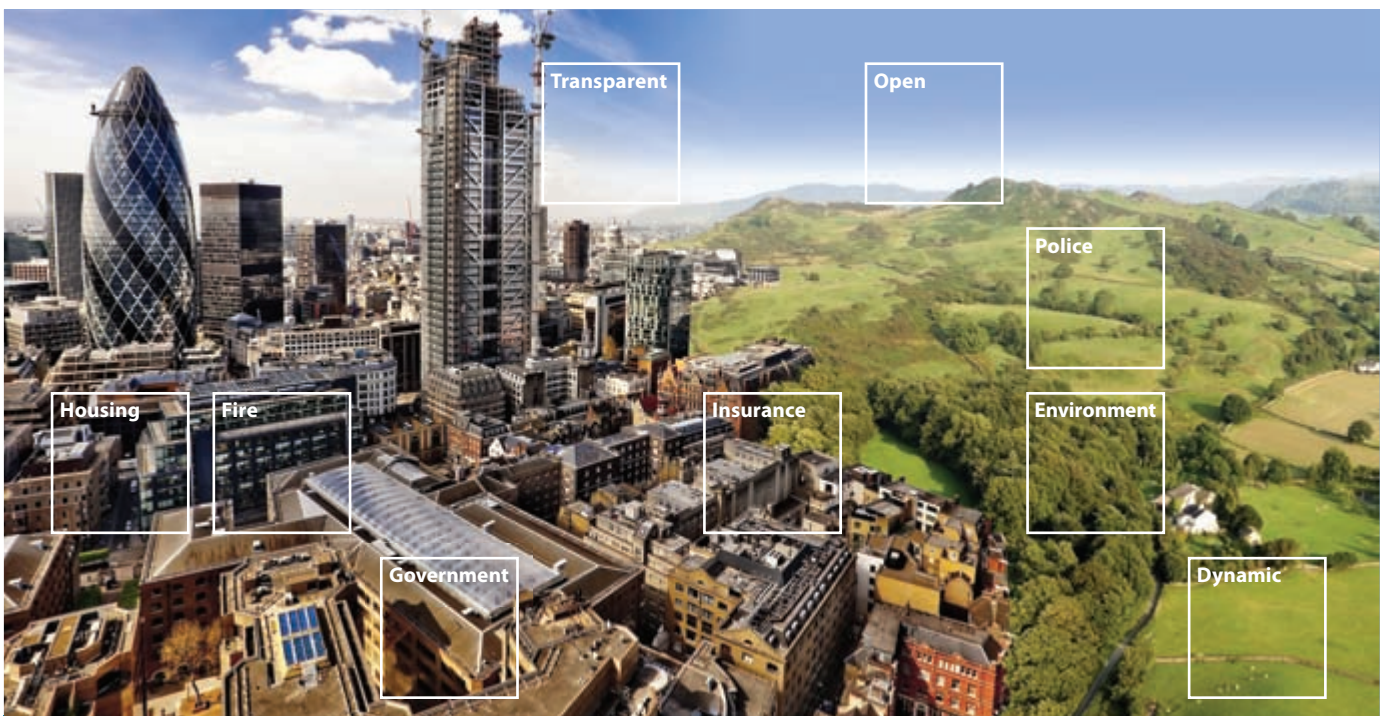
Fig.5: E.L.F./INSPIRE demonstrator showing viewing and downloading on some of the five INSPIRE Annex 1 themes explored in the project

Mapping and Cadastral Agencies;

- Interoperability services;
- Co-ordination by European organisations such as EuroGeographics;
- Funds from Member States, the European Commission and users; and
- An active community of users and other data providers, developers and service intergrators.

The ESDIN partnership and members of EuroGeographics have set up a task force to create plans for the E.L.F. and adoption of the E.L.F. specifications are already planned at both global and regional level. These will be made available through EuroGeographics existing product and service portfolio.

There are proposals for the E.L.F./INSPIRE demonstrator for viewing and download services to become publically



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Fig.6: The planned E.L.F. coverage at regional and global level.

available for national mapping and cadastral agency designated test areas as well as EuroGeographics' EuroRegionalMap, EuroGlobalMap and the EuroGeoNames service (each with download available after authentication). You can access the current view service via www.eurogeoinfo.eu.

To set the ball rolling, we are implementing EuroGeoNames, a service developed as a result of a previous EuroGeographics collaboration involving public, academic and private sector mapping, developer and geographical names expertise. Names are the first stage in the creation of the E.L.F. with the service providing an official source of endonyms and exonyms, a common and much needed reference for any search or context dependant application.

We expect many more national mapping and cadastral agencies to make their geographical names data available to the EuroGeoNames service as, adopting the EuroGeoNames data model and setting up a Web Feature Service (WFS) upon national names data, is the most efficient way to meet INSPIRE compliance for this important INSPIRE Annex I theme.

And next?

The creation of standards, tools, software, best practice and a community is critical to the success of the framework. ESDIN also proposed a new distributed architecture that will support a greater variety of service feeds and improve the user experience by hosting a cache of national mapping and cadastral agency data. We plan to exploit the benefits of recent cloud developments and are planning the next steps to make this a reality.

Why is EuroGeographics involved?

EuroGeographics brings together the European National Mapping and Cadastral Agencies so it is natural for the organisation to take a role in coordinating pan-European collaborations. As its history in developing Europe-wide data products from official sources has evolved, EuroGeographics has developed strengths in:

- Standards, via the RISE and EuroRoads projects
- Distributed geo-services, via EuroGeoNames



Fig.7: EuroGeoInfo - "Your Source for official European Mapping Information"

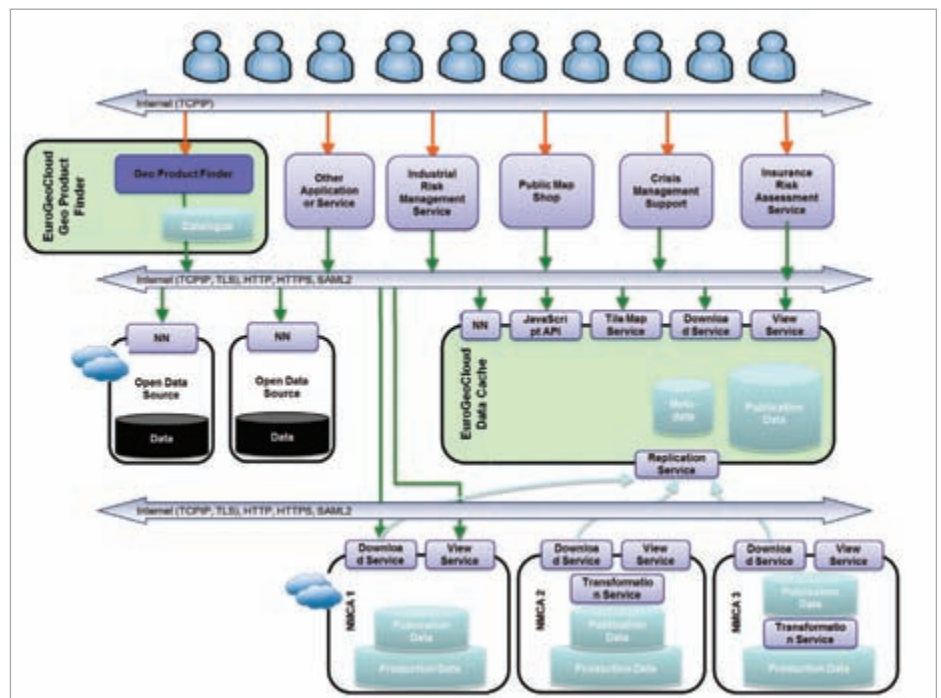


Fig.8: An architecture is proposed that accommodates different publishing models, supports numerous service feeds and outputs, involves a cache of official data and exploits cloud developments.

- Harmonisation to meet INSPIRE, PSI and Pan-European agency needs, via ESDIN

that significantly lower the barriers to the re-use of critical location data.

The Association also has a wealth of expertise in managing complex projects and collaborations, and is committed to implementing and enabling improvements

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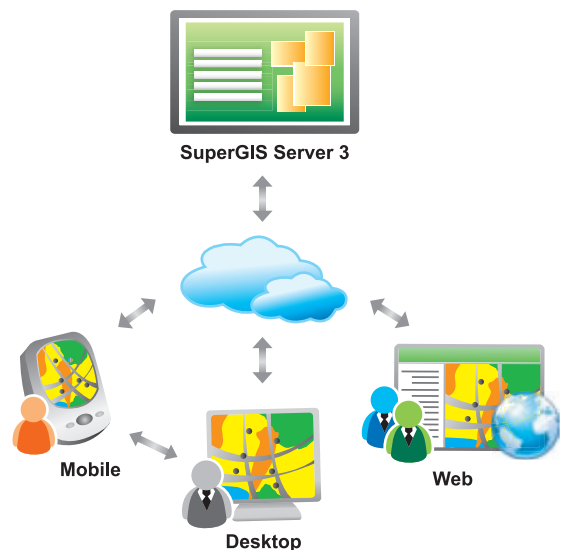


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