Integrating Ireland's Authoritative Geospatial Information to Support Building Information Modelling

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Motivation

Building Information Modelling (BIM) is a key enabler for integrating building data across a buildings life cycle (BLC) and with other related data sources, for example, energy, occupancy, weather, etc. The Ordnance Survey Ireland (OSi) have a substantial data set, called Prime2, which includes not only GIS data, but also additional building specific data (form and function). Uplifting this building data will provide an authoritative basis for interlinking data about buildings in Ireland, supporting an iterative approach to generating BIM and opening up additional markets for OSi.

Research Question

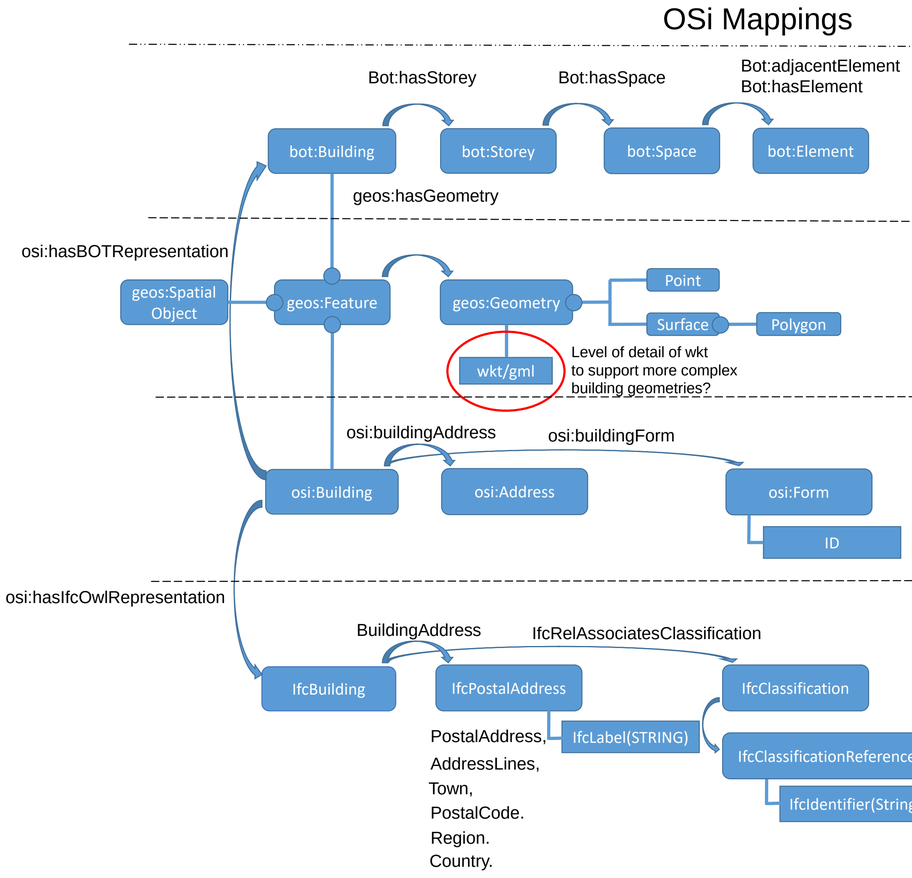
How can we take the Prime2 model as a basis for publishing OSi's authoritative building geometry data as Linked Data on the Web supporting BIM processes?

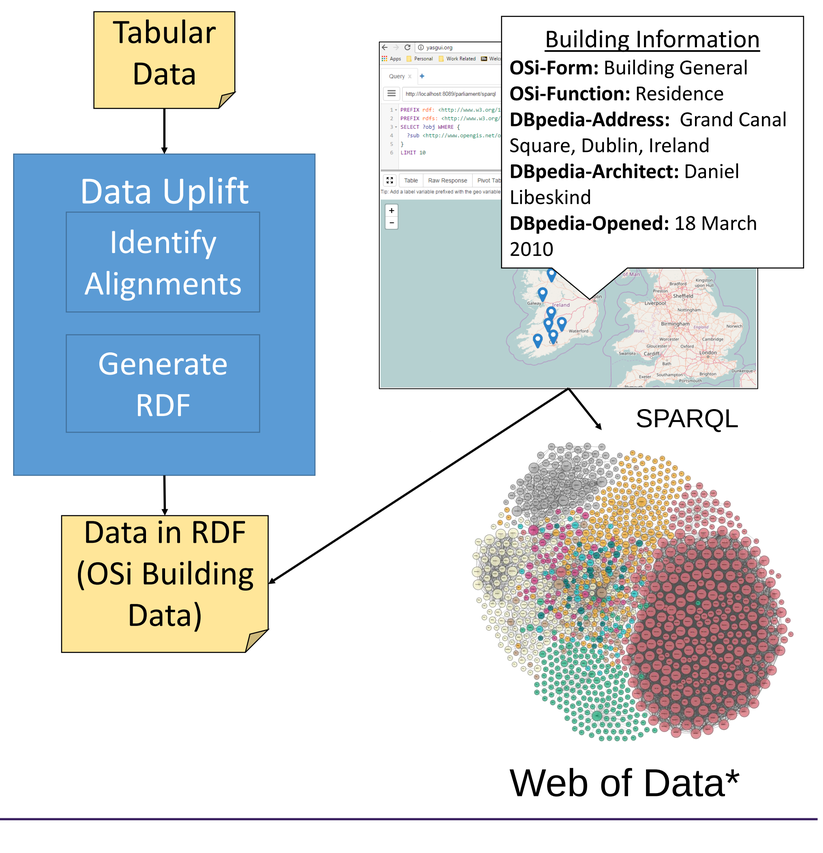
Goal

To make an authoritative geometry building data set available to support iterative development of licensed BIM in Ireland. This will support a wide range of use cases ranging from building navigation, energy efficiency, control, etc.

Potential Impact

- Availability of licensed building geometry data via standardized technologies resulting in an Interlinked BIM view.
- Allowing third parties to develop novel applications.
- Adding spatial information to external datasets with OSi's authoritative information and OSi's Linked Data endpoint as an information integration hub for Irish BIM.





Results and Discussion

- Exploration of concepts within existing BIM standards to support mappings with Prime2 building data.
- Development of initial mappings to BIM standards.
- Exploration of links to additional open data sets for generating more complex BIM models: Dbpedia.

Future Work

- Linking OSi data with some sample IFC OWL models to further validate the approach.
- Investigate ways to manage access control to so-called "closed" Linked Data.
- Methods to improve the transparency, traceability and reproducibility of data enrichment exercises

References

- Debruyne, C; McGlinn, K. McNerney, L. O'Sullivan, D. (2017): **A Lightweight Approach to Explore, Enrich and Use Data with a Geospatial Dimension with Semantic Web Technologies**. In GeoRich 2017, the Fourth International ACM SIGMOD Workshop on Managing and Mining Enriched Geo-Spatial Data. Held in Chicago, IL, USA.
- *Linking Open Data cloud diagram 2017, by Andrejs Abele, John P. McCrae, Paul Buitelaar, Anja Jentzsch and Richard Cyganiak. http://lod-cloud.net/

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Dá bhfuil romhainn
Science Foundation Ireland
For what's next

Ireland's European Structural and Investment Funds Programmes 2014-2020
Co-funded by the Irish Government and the European Union

European Union
European Regional Development Fund

The ADAPT Centre for Digital Content Technology is funded under the SFI Research Centres Programme (Grant 13/RC/2106) and is co-funded under the European Regional Development Fund.