



ACCORD Semantic Framework

Training material

Cardiff University

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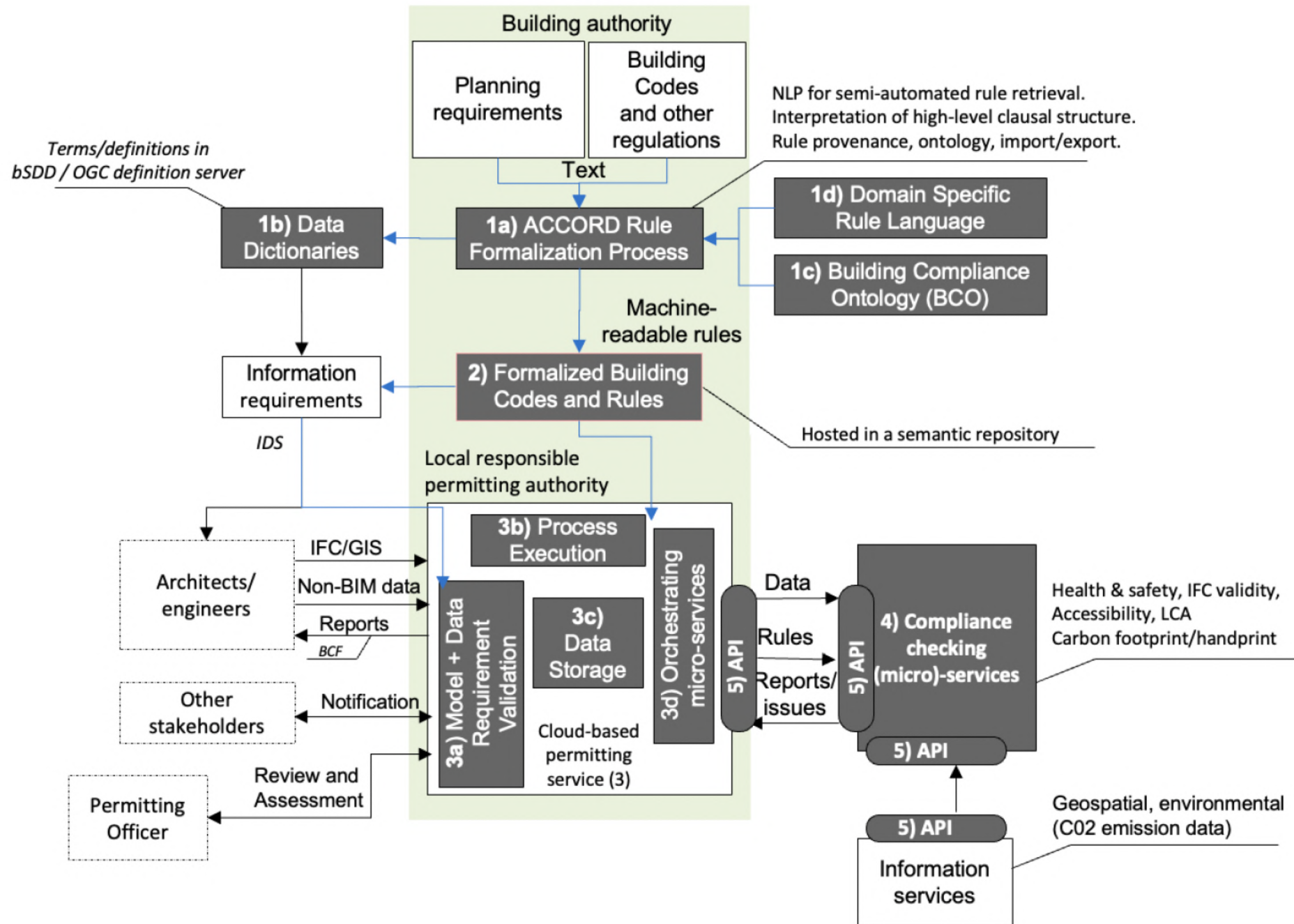
ACCORD Semantic framework

- The semantic framework consists of :
 - Cloud services
 - Building compliance
 - Information services
 - A rule formalisation tool to ease the creation of machine-readable rules from text-based regulation.
 - All integrated using open APIs and semantic models
- This framework will allow and encourage open innovation, enable the development of a new generation of semantically aware digital permitting and automated compliance tools that can scale digital permitting and compliance processes from national, isolated efforts to a whole-European scale.



Who is the semantic framework for?

- The framework is for people seeking to develop or implement digital permitting or automated compliance checking





Deriving the Semantic Framework

The ACCORD proposal documented functionality that the ACCORD framework should have, these elements are key early requirements of the ACCORD framework.

Additionally, high level requirements were elicited from previous projects, a landscape review, industry survey and standards.

Additionally, user requirements for demo use cases were defined.





Landscape Review

All partners contributed to a review of:

- **Academic Projects and Methods** - 29 academic studies.
- **Relevant Software Tools and Technologies** – 20 existing software tools reviewed.
- **Existing EU Projects and Efforts** – 9 existing projects across EU and world reviewed.
- **National Adoption Efforts toward Digital Building Permit Processes** - across 5 countries with applicable efforts
- **Analysis of Relevant Standards:** 86 related standards reviewed.





State of the Industry Survey

- Built on previous work from BSI Regulatory Room & DCOM(UK)
- Focused on understanding views on
 - the possible adoption and benefits of digital building permitting and automated compliance checking
 - how to achieve wider adoption
- A total of 472 responses received.





Survey Result:

A vision toward partial-automation with human oversight

- Either partial-automation or full automation are possible in the next 10 years.
- The preference is for maintaining a final human sign-off regardless of the level of automation achieved within the process.
- The key desired outcomes
 1. time savings
 2. increase in certainty
 3. cost savings
 4. increasing awareness of compliance during the design
 5. auditability





Survey Result:

Key obstacles to overcome when adopting digital building permitting

- Obstacles
 1. differing processes between territories/countries
 2. lack of digital skills in regulators
 3. lack of software tools
 4. No standard specification of design documentation
- Key requirements for digital building permitting
 1. Standardised submission processes
 2. Ability to link BIM to GIS
 3. Intuitive user-friendly user interface
 4. Extensive training and support
 5. Open access to high level result data
 6. Simple clear processes



Importance of the semantic framework for ACCORD Project

It has informed the development of the Building Compliance Ontology

It has informed the development of the Manual, Hybrid and NLP based formalization methodology, and the supporting rule formalization tool.

Finally, it will provide a starting point for the elicitation of technical requirements and the design of the ACCORD cloud platform.



Thank you!

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