

ACCORD Digitisation Methodology

Training material

Cardiff University

The information in this document is provided as is and no guarantee or warranty is given that the information is fit for any particular purpose. The user thereof uses the information at its sole risk and liability.



European Union

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement no. 101056973



Innovate

UK

UK Participants in Horizon Europe Project ACCORD are supported by UKRI grant numbers 10040207 (Cardiff University), 10038999 (Birmingham City University and 10049977 (Building Smart International)



Digitisation methodology

- Provides a methodology for digitalising and formalising regulations and compliance-related documents.
- Builds on the Architecture Engineering and Construction Compliance Checking Ontology (AEC3PO).
- Contains a novel Domain Specific Language (DSL) for building compliance built upon AEC3PO.







Who should utilize the digitization methodology?

• Regulatory experts – and those who are familiar with data formats such as IFC







Phases of the digitization methodology









• **Content Extraction**: The regulation to be considered will be manually transformed into a spreadsheet-based format that can then be automatically parsed to produce initial input for the manual digitisation methodology







The identification of clauses, paragraphs and individual words and phrases, as well as the specification of their logical relationships, will be done using the RASE methodology.

Passageway leading to a building There shall be an easily noticeable <u>passageway</u> with a width of at least <u>1,200 millimetres</u> and a <u>smooth, hard</u> and <u>non-slippery</u> surface that leads to the <u>building</u> from the <u>boundary of the plot or building site</u> and from the <u>space</u> and <u>area</u> that serve the use of the <u>building</u>. The gradient of the passageway located in an <u>outdoor space</u> may not <u>exceed five per cent</u> If there are <u>steps on the passageway</u>, there shall also be a <u>ramp</u> or a <u>permanently installed device intended for lifting persons that is suitable</u>

for a user of a wheelchair and walking frame with wheels.

The provisions of this subsection do not apply to a detached house , semi-detached house or townhouse if providing an accessible passageway







• Expression Authoring: This step will formalise the extraction of individual logical decisions. In most cases, this will be as simple logical operations; however, to deal with complex cases, a simple expression language will be proposed for use.

• **bSDD Mapping:** The mapping to the execution context will be performed using the BuildingSMART data dictionary; terms identified in the previous steps of the methodology will be mapped to terms within the bSDD.







Phases of the digitization methodology









Role of NLP in the digitization methodology

The ACCORD automated methodology will be driven by NLP. This is made up of the following phases:

Structural Segmentation: This component will separate a document into segments/blocks.

Information Extraction: (1) identifying informative text blocks, (2) identifying entities described in informative text blocks, and (3) identifying relationships/connections between entities

Rule Generation: This component will map the information extracted from the text (e.g.,

content structure, entities, and relationships) with a rule format to generate the rules.







Thank you!

Follow us







Access our website





This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement no. 101056973



Innovate

UK

European Union

UK Participants in Horizon Europe Project ACCORD are supported by UKRI grant numbers 10040207 (Cardiff University), 10038999 (Birmingham City University and 10049977 (Building Smart International)



Partners



Ajuntament de *** Malgrat de Mar



Republic of Estonia MINISTRY OF ECONOMIC AFFAIRS and Communications



Conseil des Architectes d'Europe **∂**⊂*⊂*−

C∂.€.

eu

Architects' Council of Europe



BIRMINGHAM CITY University



The Catalonia ITeC Institute of Construction Technology

laSalle UNIVERSITAT RAMON LLULL

JÖNKÖPING UNIVERSITY











ontotext



TEGEL PROJEKT GMBH





Funded by the

European Union

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement no. 101056973





