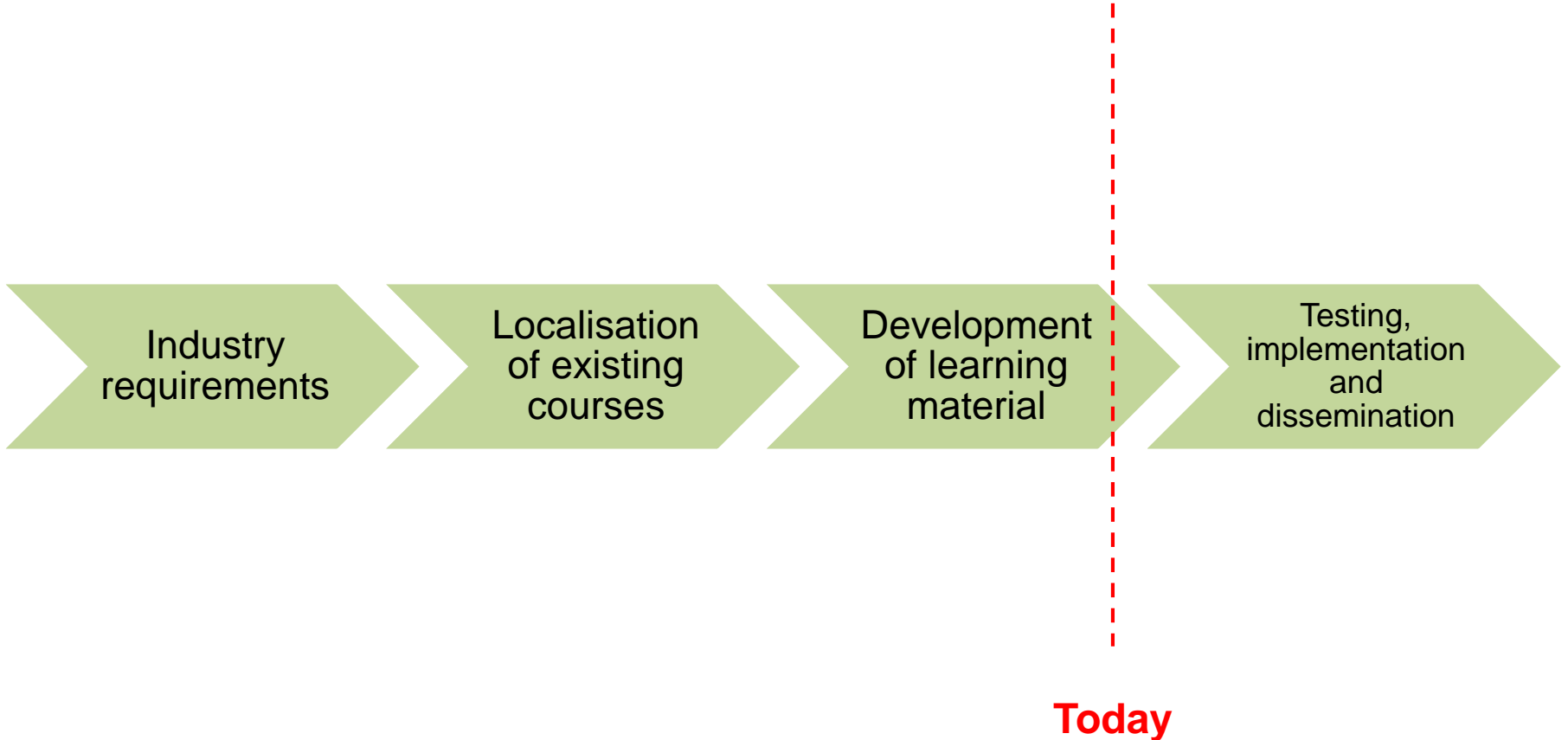




BIRGIT

## **BIRGIT - training on Building InfoRmation models integrated with Geographical InformaTion**

- Duration: Feb 1, 2022 – Jan 31, 2025
- Supported by the Erasmus+ program, KA2
  - Administrated by UHR, Swedish Council for Higher Education
- EU funding around 340 k€
- Partnership
  - Sweden: Ocellus, Novogit
  - Croatia: University North
  - Italy: GISIG, Forma.Azione
  - Spain: AIN
  - Belgium: EfVET
- Main project results
  - Learning material in English
  - Training courses provided in SE, HR, IT and ES



## Methodology and results

- Review of existing courses and learning material
  - Mainly desk study
  - Restricted to open licenses
  - Many courses on BIM fundamentals and GIS fundamentals
  - Very few courses and resources on BIM-GIS integration
- Survey of industry needs
  - Online survey and 9 interviews
  - Several occupational profiles needs skills in BIM-GIS integration
  - Integration more often in BIM environment than in GIS environment
  - Usage of and interoperability of standards is a key question
- Specification of VET courses
  - Brutto list of topics and desired learning outcomes

## Methodology and results

### Translation into English

- Digital Europe eTranslation service
- Worked fine – only minor manual editing needed

### Localisation into national contexts

- Digital Europe eTranslation service
- Worked fine – only minor manual editing needed
- No suitable data found for localisation

## Grouped into three learning packages

- Introduction to BIM
- 3D GIS, City Models and Digital Twins
- BIM-GIS integration

## Learning material in English

- Aimed for training providers
- Lectures, text and slides
- Assignments, with solutions
- Data from Zagreb city, Karlsruhe Institute of Technology (ifcwiki.org) and product training data
- CC-BY-SA license, unless otherwise stated by data provider
- Will be available at project web site (<https://birgitproject.eu/>)

## Localised learning material

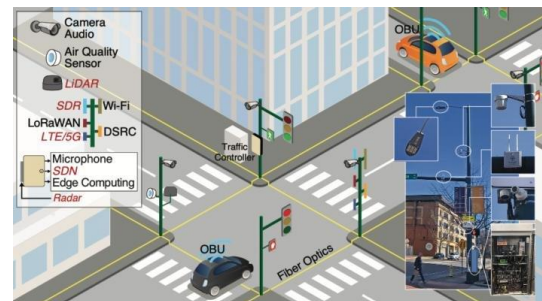
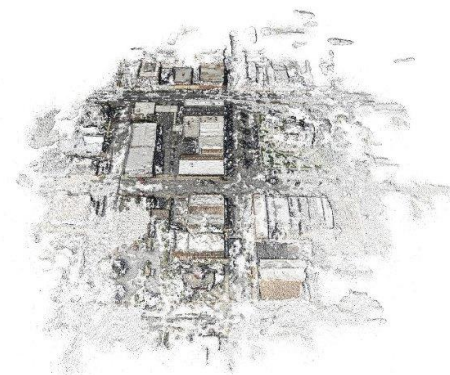
- Transformed into local requirements
- Translation, modifications

- Fundamentals of BIM
- Benefits of BIM
- LoD and 3D to 10D BIM
  
- Data management in BIM
- BIM processes and workflows
- BIM coordination
- IFC as a data exchange format
  
- BIM for infrastructure and facility management
- BIM for historical buildings



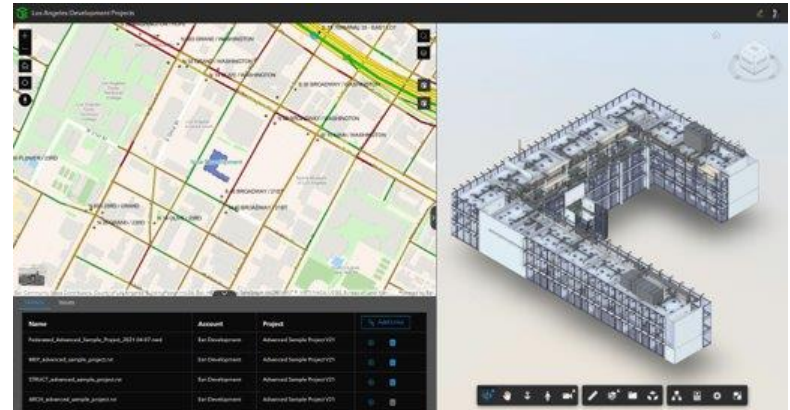
Levels Of Development. Source: [bibLus](https://www.bibLus.com)

- Concepts of 3D modelling
- Semantic City Models
- 3D data standards
  
- 3D data acquisition
- 3D data sources
- Creation of 3D building data from surveying data
- Extracting 3D buildings from point clouds
- Merging data having different LOD's
  
- Introduction to digital urban twins
- Sensor data standards
- Air quality programs
- Sensor alarms





- Introduction to BIM-GIS integration
- BIM-GIS integration workflow
- BIM-GIS data conversion
  
- BIM-GIS integration in project lifecycle
- BIM-GIS integration overview
- BIM-GIS integration use cases
  
- BIM-GIS integration for noise modelling
- BIM-GIS integration for urban design



## Testing of selected localised learning material

- In Uppsala (Ocellus), Varazdin (Uni North), Pamplona (AIN) and Perugia (Forma.Azione)
- Evaluation of learning achievement and usability of learning material

## Update of learning material

## Implementation

- New VET program considered in Uppsala (SE)

- Very few existing courses on BIM-GIS integration
- Digital Europe eTranslation service works fine, only minor manual editing required
- Limited supply of open source software for BIM applications and IFC conversion tools
- Limited access to BIM models
  - German BIM data used in Zagreb city
- Localisation process was very smooth, but the tutor might have to do some final personal adjustments

# Thank you

## Thank you for your attention



<https://birgitproject.eu/>

*This project has been funded with support from the European Commission. This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*