UNIVERSITY OF COLOGNE

INSTITUT FÜR DIGITAL HUMANITIES UNIVERSITÄT ZU KÖLN

THE VIRTUAL CAMPUS PROJECT

Modelling data for AR Historical Tours with CIDOC CRM and the CRMgeo and CRMact extensions

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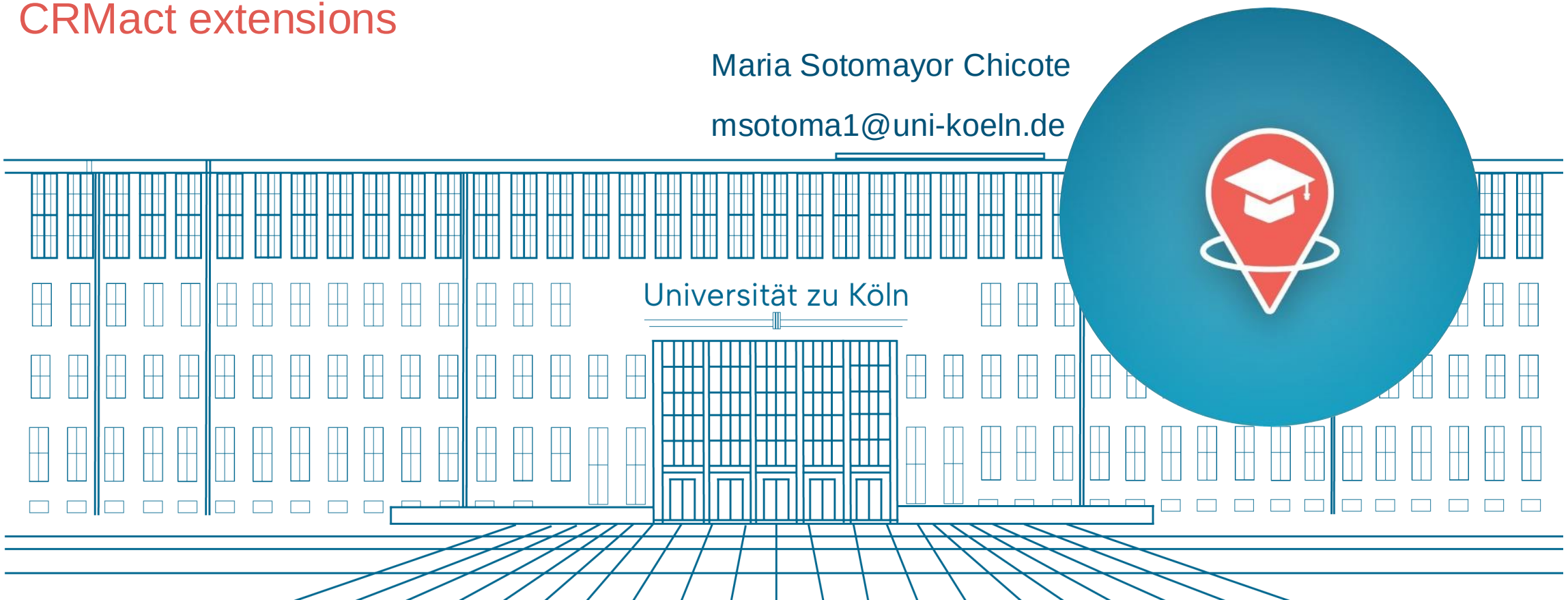


THE VIRTUAL CAMPUS PROJECT

- Project partners:
- April 2023 – September 2026
- **Goals:**

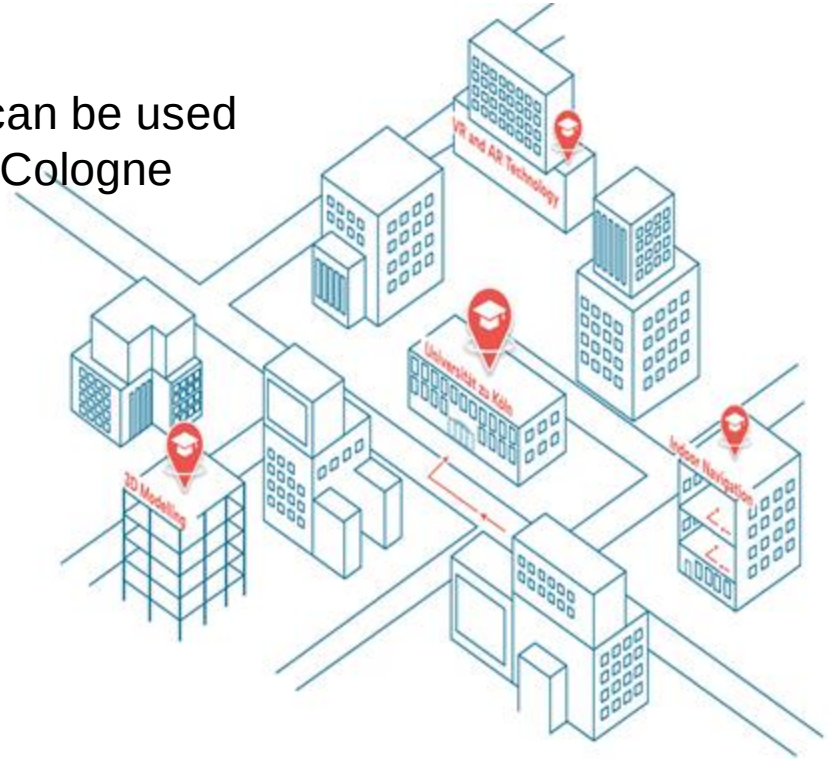
- Explore how Virtual Reality and Augmented Reality technologies can be used to enhance both teaching and daily campus life at the University of Cologne

- Improve finding one‘s way on the UoC campus

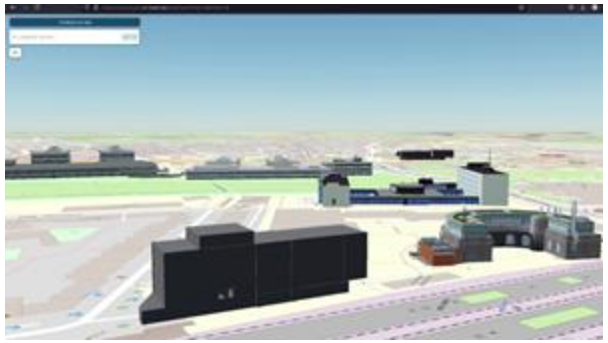
- Provide information on accessibility of buildings and paths

- Create 3D models of (some) of the buildings of the Campus

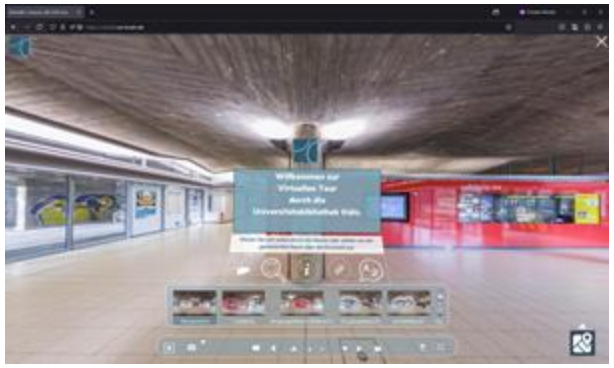
- Project website: https://virtueller-campus.uni-koeln.de



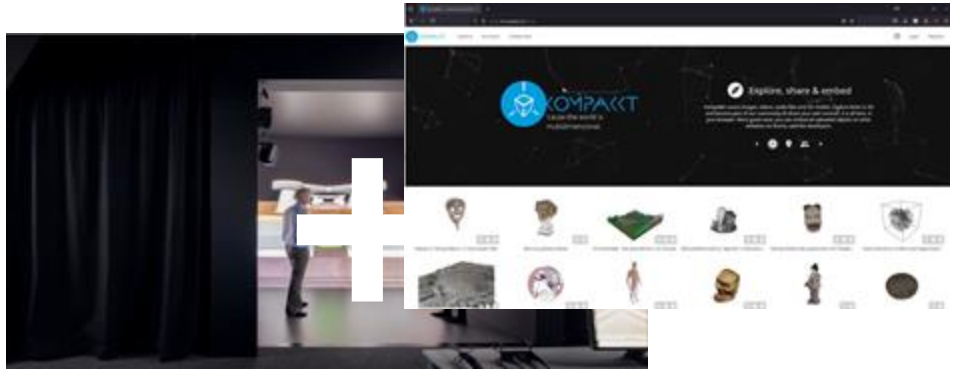
THE VIRTUAL CAMPUS PROJECT



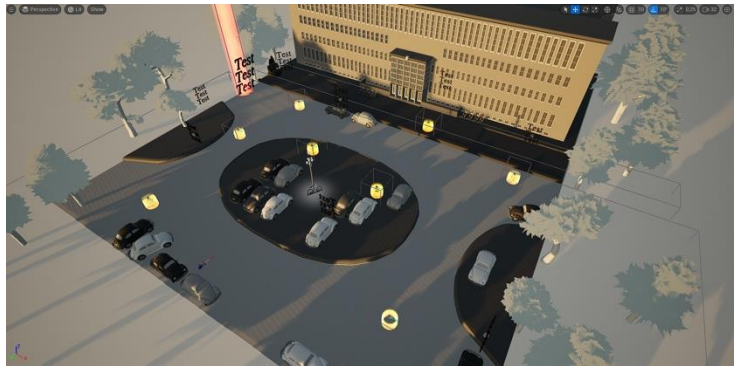
3D building models



360° virtual tours



Kompakkt viewer for the CAVE



Teaching: seminar and hackathon

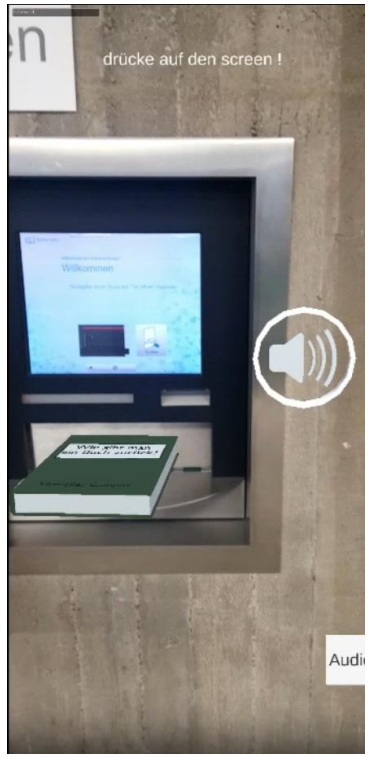
MOBILE APP- AR NAVIGATION + AR TOURS

- Flutter + Unity
- Help students to navigate the UoC campus to find:

  - Buildings and rooms

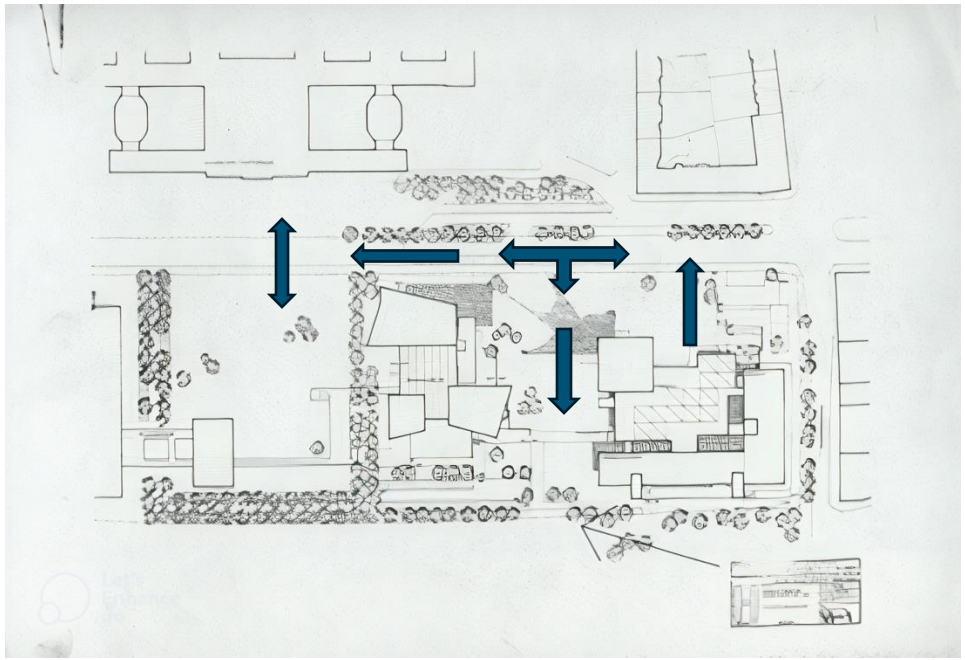
  - Books/media

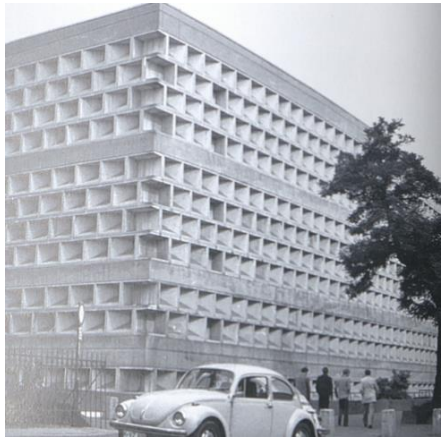
  - …
- Location-based information on buildings (services, opening hours…)
- AR tours→ Historical AR tours

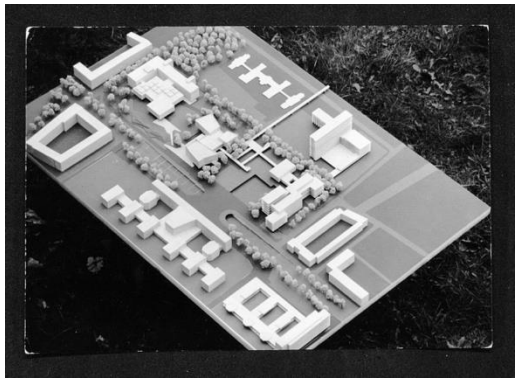


THE UNIVERSITY CAMPUS- BRUTALIST ARCHITECTURE

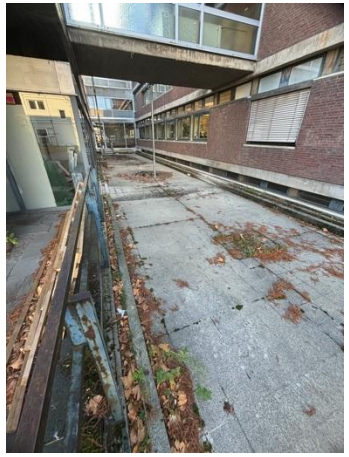
- Rolf Gutbrod, Gottfried Kühn and Jürgen Hans Grümmer
- Integrated system ➡ **Energy flowing** through buildings and open spaces (lost nowadays)

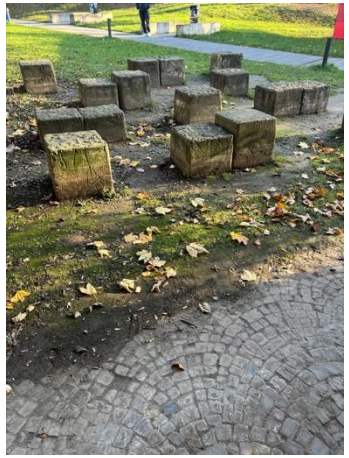
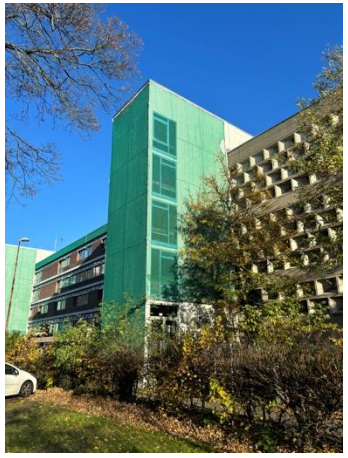






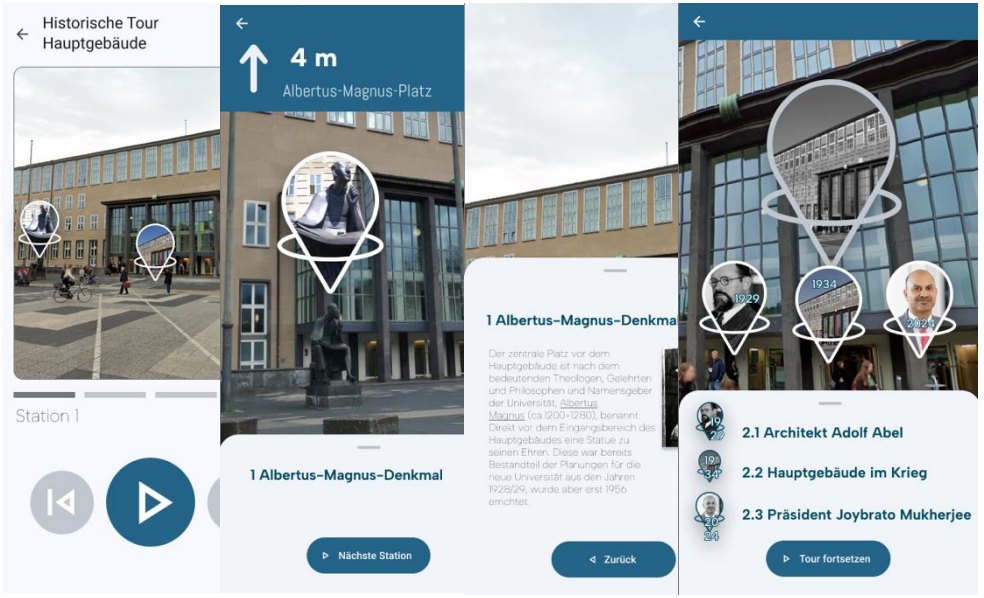
What is visible to us?



- **2010:** Universitätsforum in monument register list
- **2020:** Gutbrod buildings and surrounding landscape protected as built heritage

AR HISTORICAL TOURS

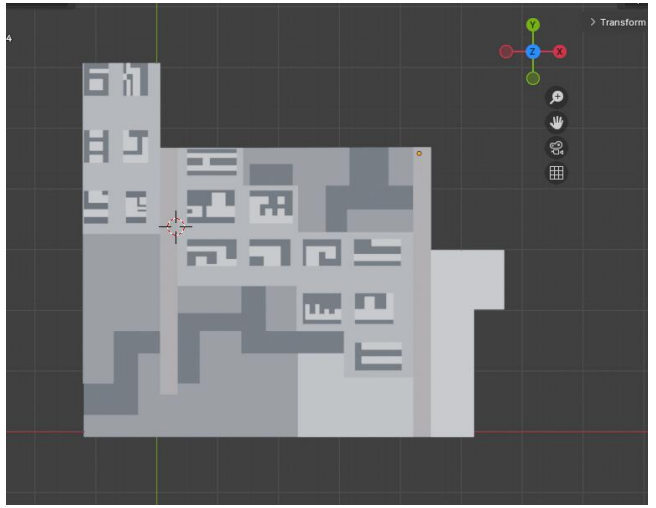


Why AR?:

- The AR navigation feature exists anyways
- AR tours: interactive, location-based, can be done at any time, multisensory, hopefully compelling

Current status:

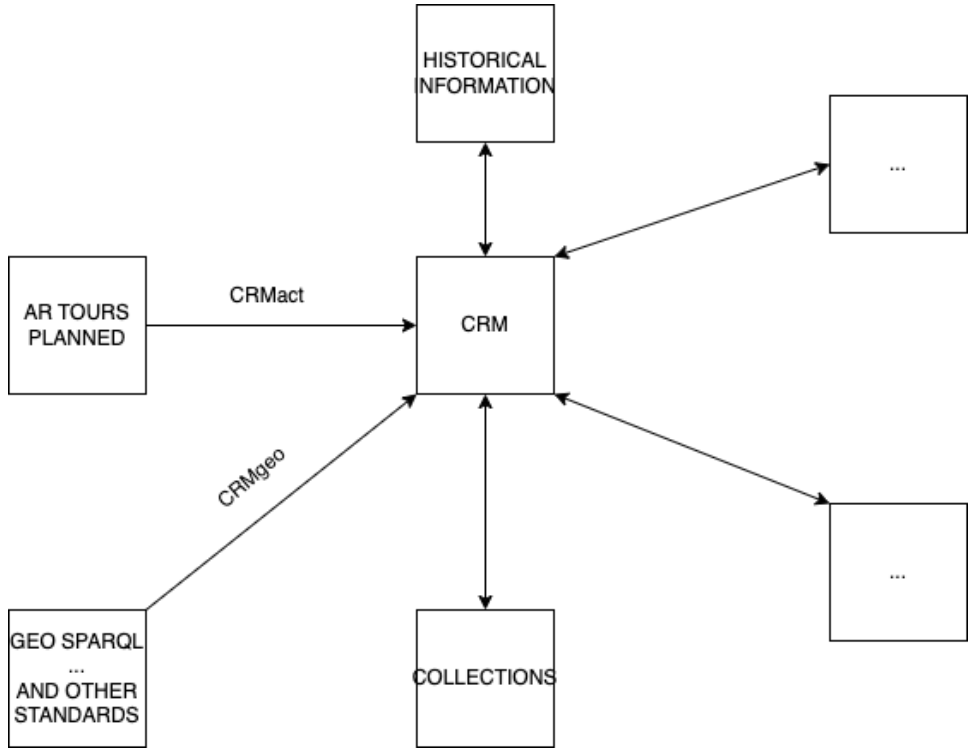
- Functioning AR navigation for outdoor areas (AR tour prototype is still being developed)
- 3D reconstructions to be displayed in AR-> mosaics of Albertus-Magnus square



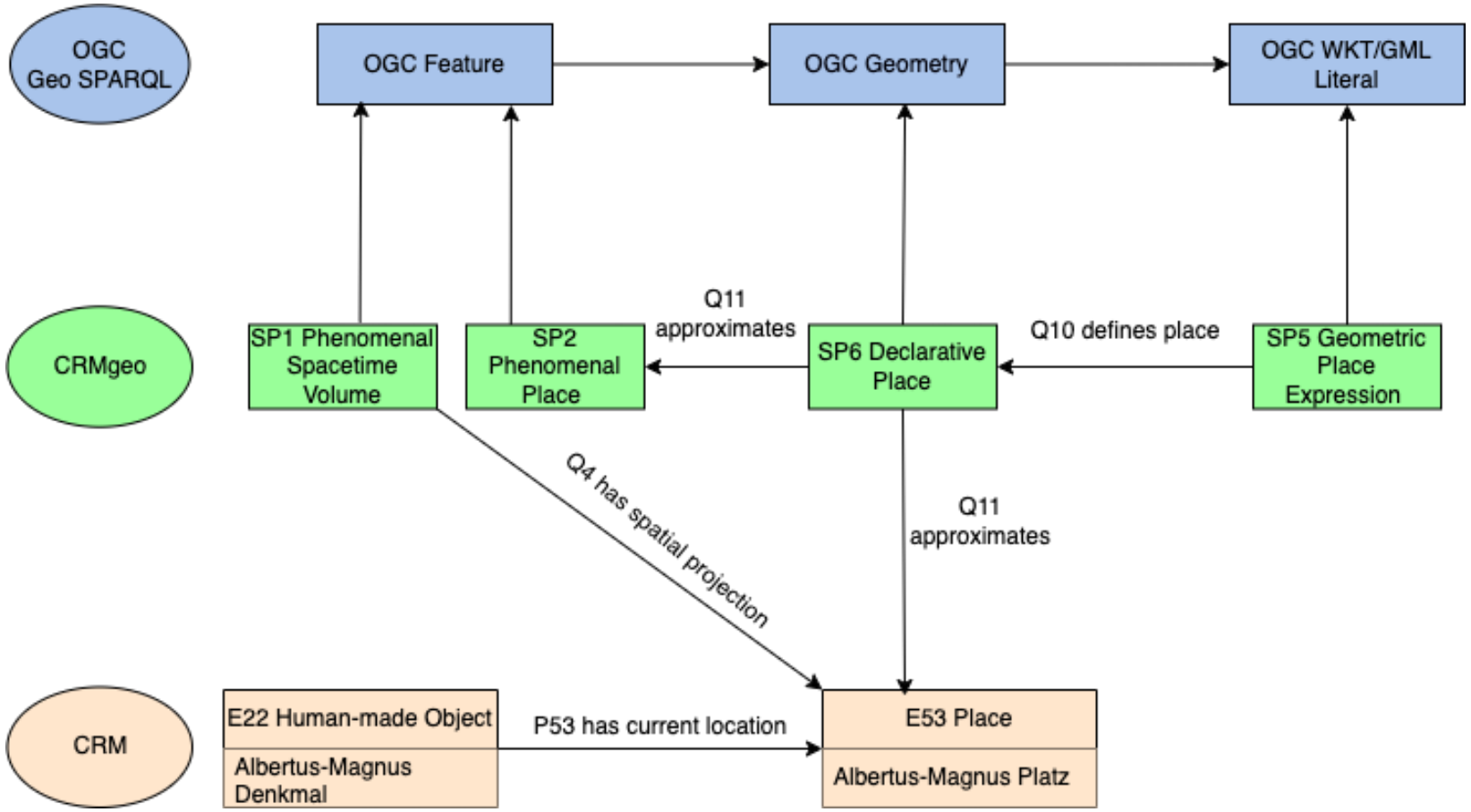
WHY CIDOC CRM?

- **Event centered ontology for integration:**

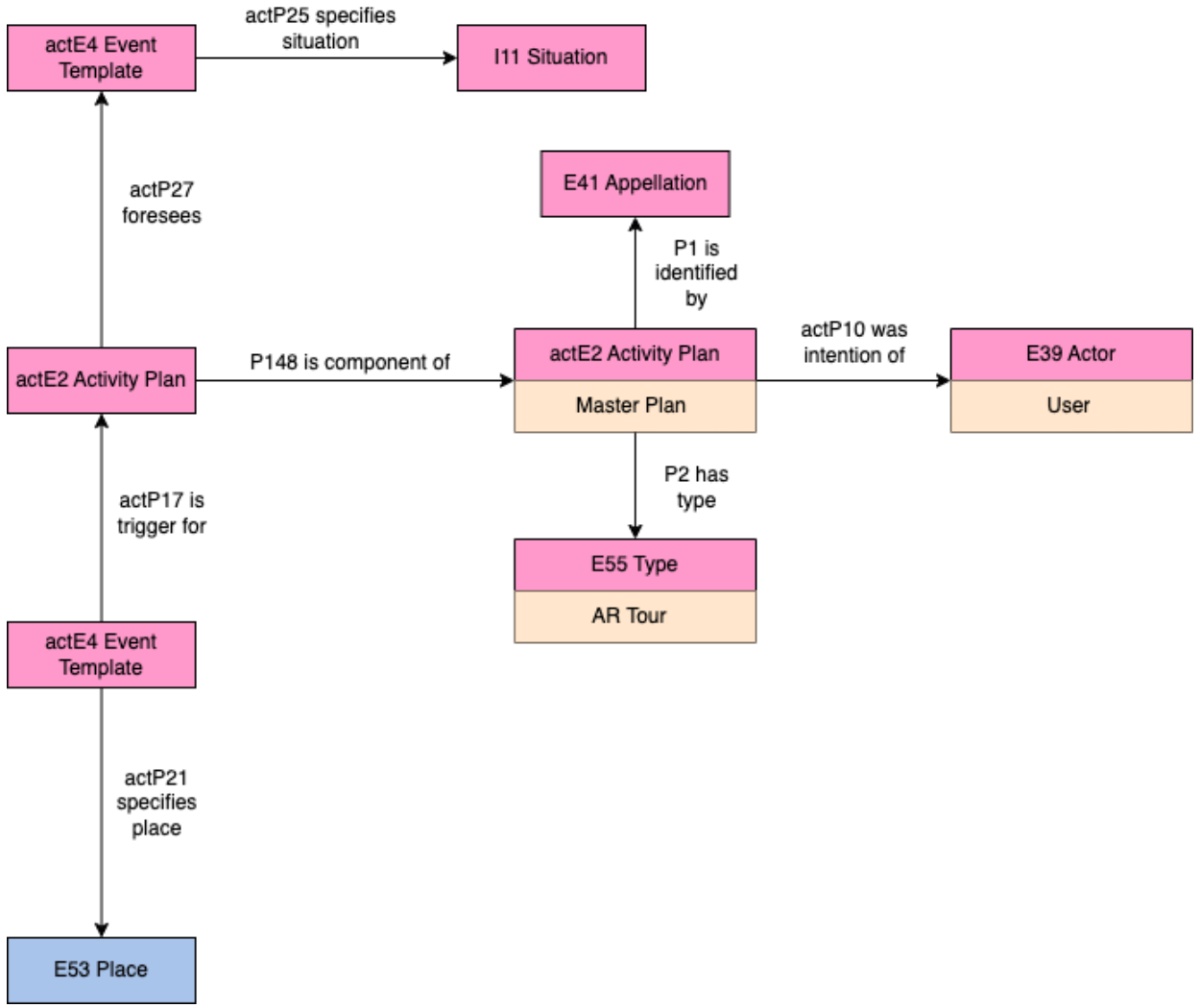
- Historical information (both tangible and intangible)
- Geospatial data (CRMgeo)
- Planned activities as AR Tours (CRMact)



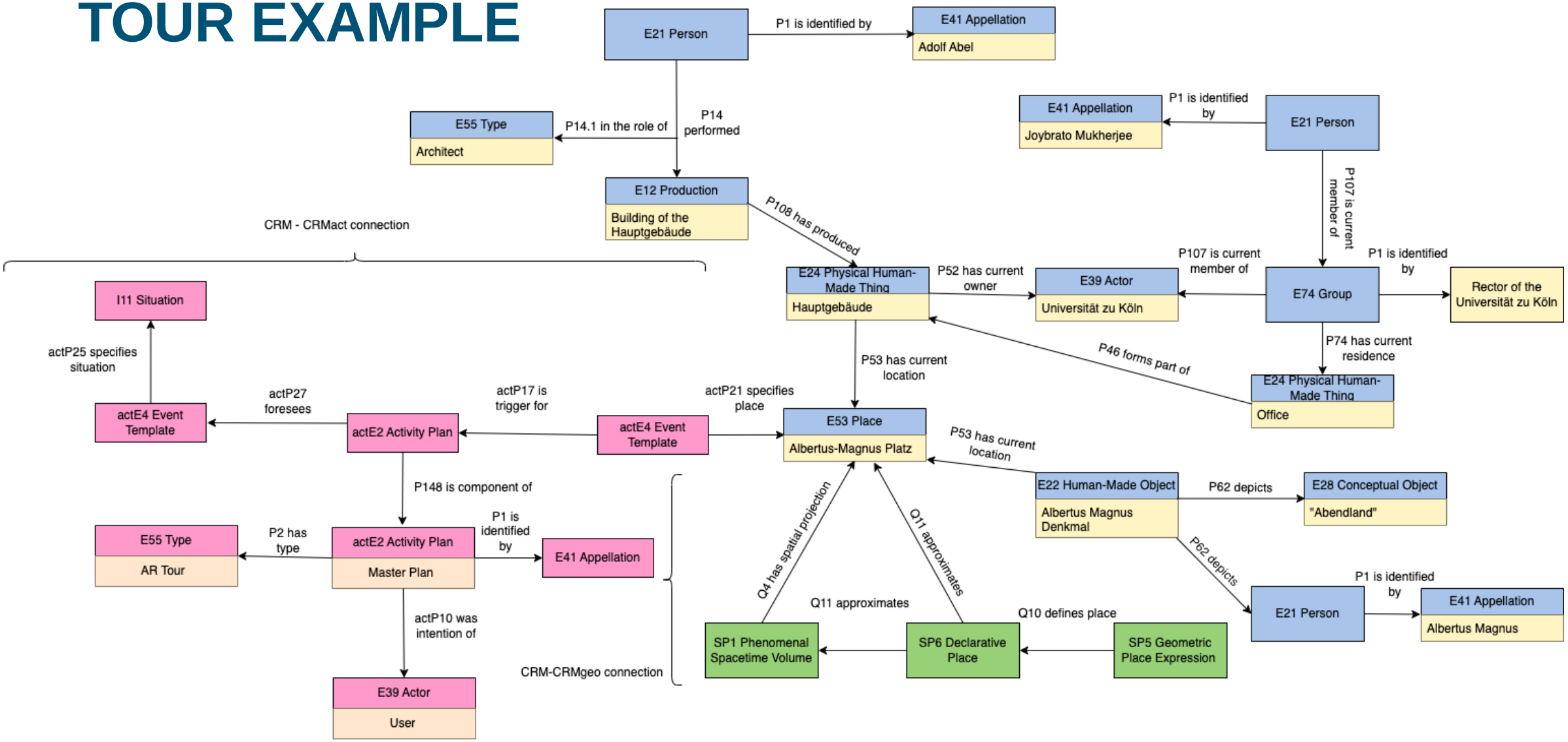
INTEGRATION OF GEOSPATIAL DATA



INTEGRATION OF AR TOURS PLANNED



TOUR EXAMPLE



CONCLUSIONS AND NEXT STEPS

- We created a framework (and we would like to receive some feedback, comments, ideas… ☺)

- **Next steps:**
- We need to populate it with external data
- Further develop more tours