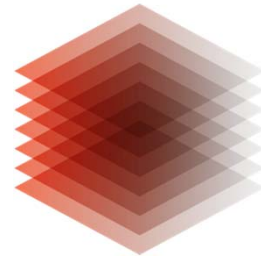


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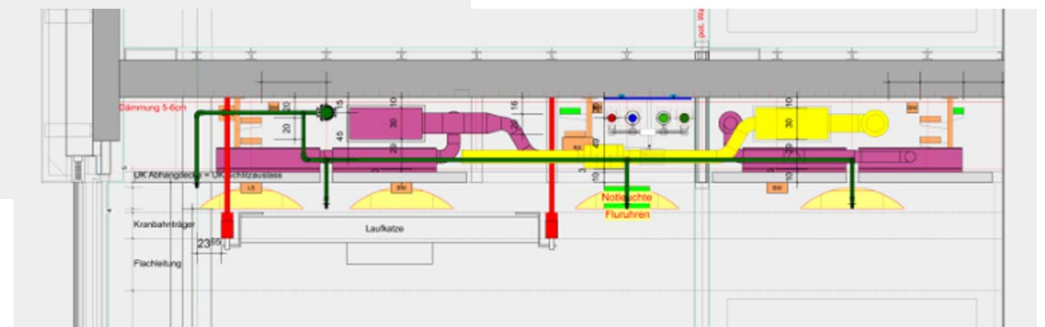
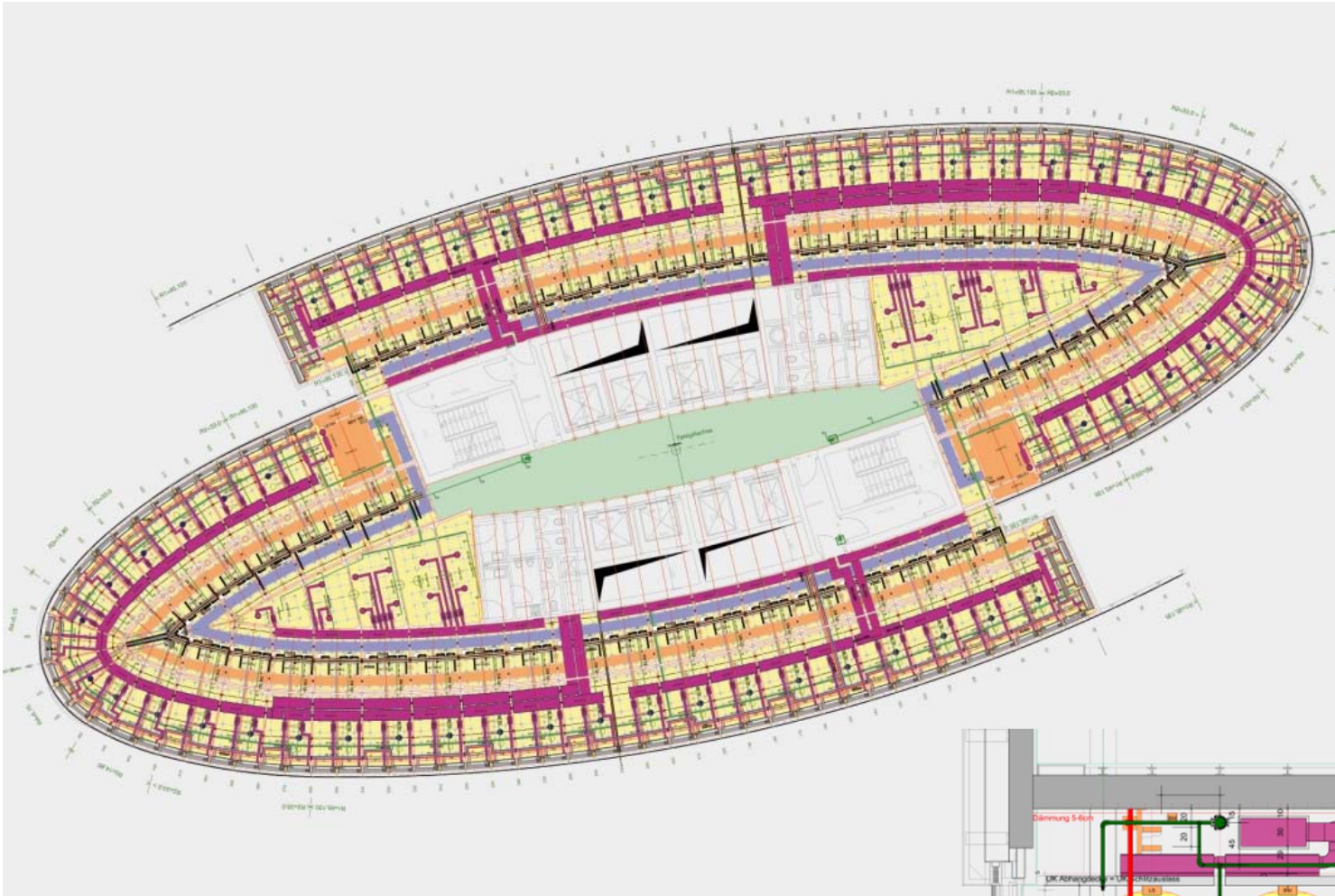
**TIB**

# 10 mins on **Blockchain for Architecture**

Ina Blümel

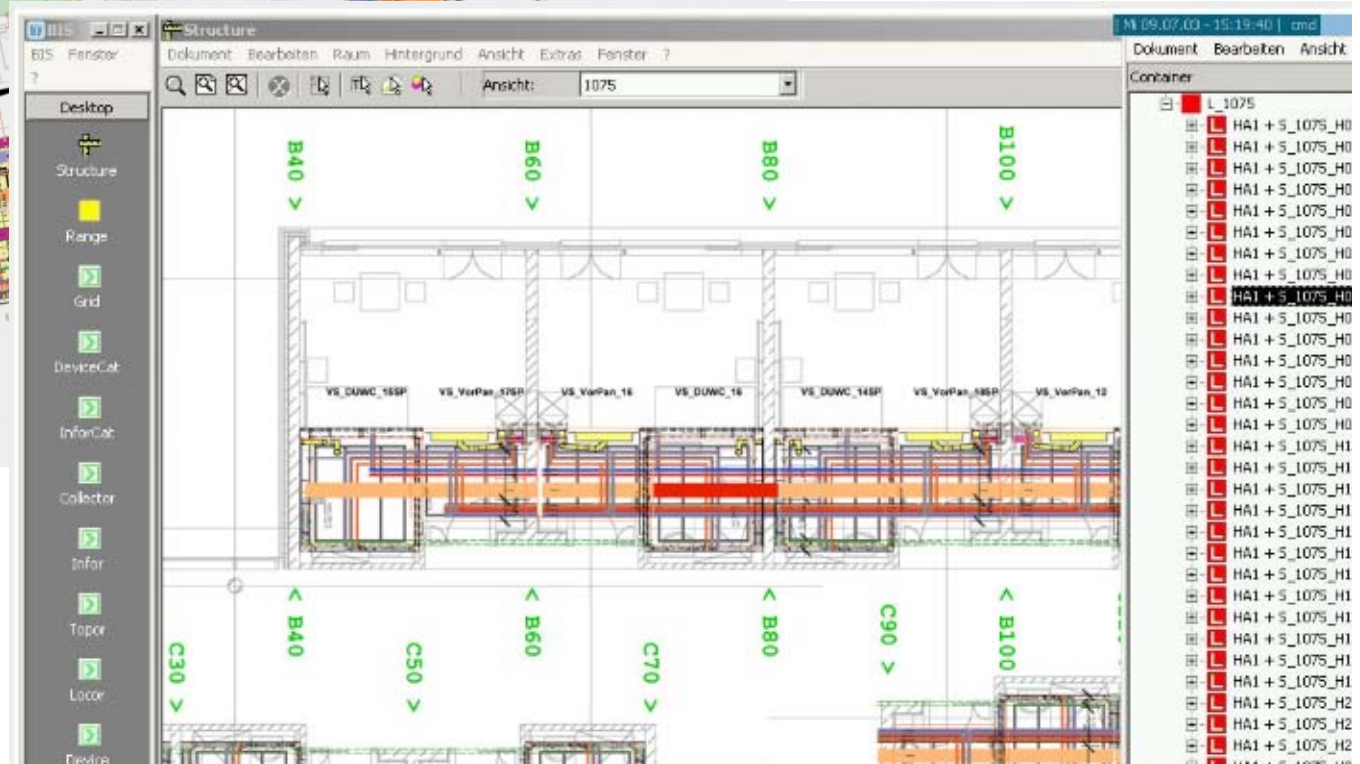
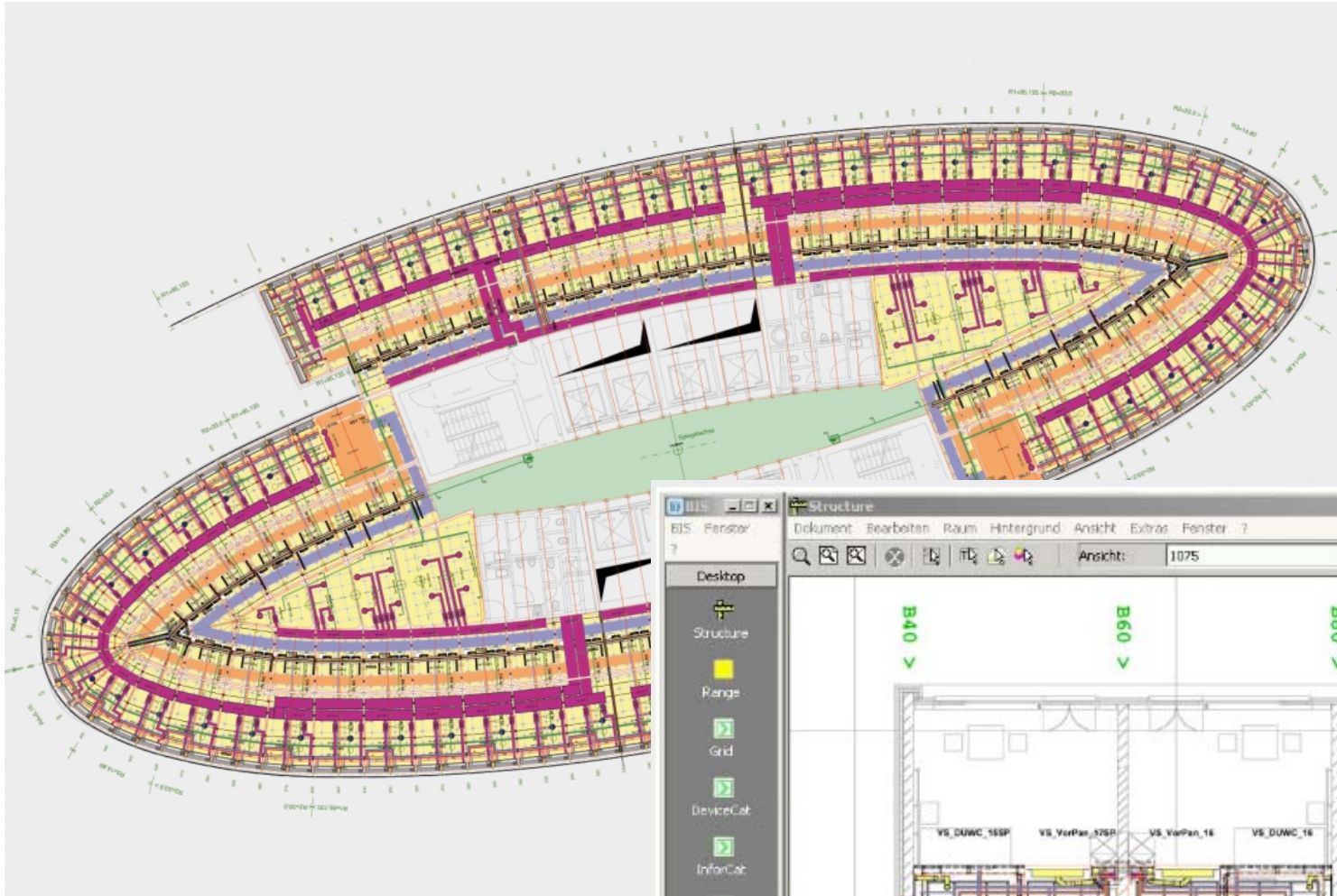
German National Library of Science and Technology (TIB)  
& Hannover University of Applied Sciences and Arts  
SEED, Davos, February 2019

# One architecture, many parties



<http://www.digitales-bauen.de/>  
GAP 15 office building Düsseldorf & Roche  
BSN 10 Basel, Bürgerheim Villingen  
coordination planning

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# One architecture, many parties



The image displays a software interface for architectural coordination planning. On the left, a large grid of colored modules is shown, each labeled with a letter (A, B, C, D, E, F, G) and a count. To the right, a 'Katalog der Technikmodule' (Catalog of Technical Modules) lists the following:

- Modul an der Fassade** (Module at the facade):
  - Modul B: Anzahl: 22 Stk.
  - Modul B': Anzahl: 22 Stk.
- Modul im Flur** (Module in the hallway):
  - Modul F: Anzahl: 15 Stk.
  - Modul F': Anzahl: 15 Stk.
- Modul am Kern** (Module at the core):
  - Modul C: Anzahl: 13 Stk.
  - Modul C': Anzahl: 14 Stk.
- Modul an der Ecke** (Module at the corner):
  - Modul A: Anzahl: 4 Stk.
  - Modul E: Anzahl: 4 Stk.
  - Modul D: Anzahl: 4 Stk.

Below the catalog, a 3D cutaway view of the building is shown, with various levels and components labeled. A vertical list on the right side of the interface shows a list of components, including 'L\_1075' and 'HA1 + 5\_1075\_H0' through 'HA1 + 5\_1075\_H2'. At the bottom left, a navigation menu includes 'Informac', 'Collector', 'Infor', 'Topor', 'Locor', and 'Devicor'.

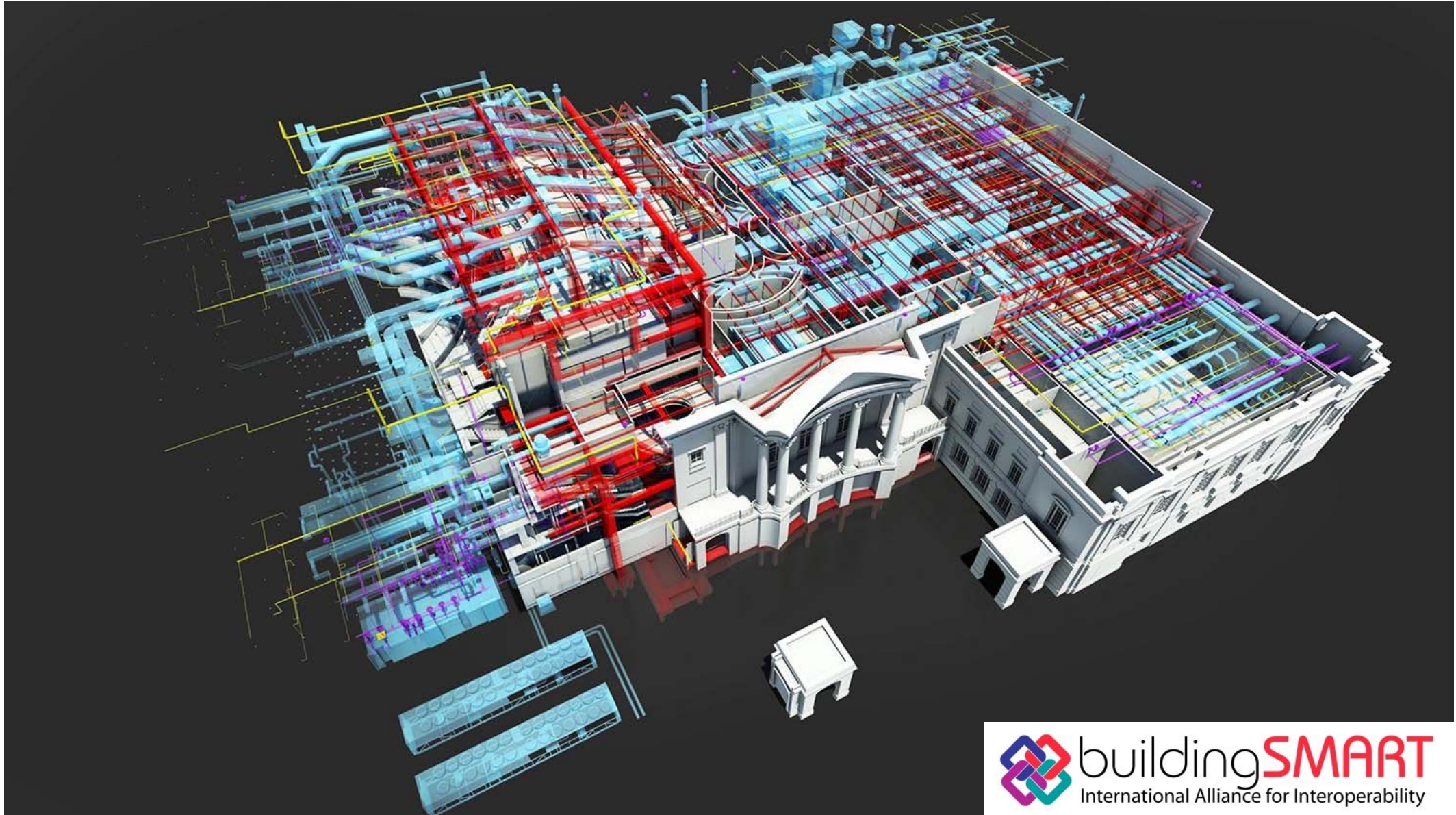
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# One architecture, many parties



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# Building Information Modeling (BIM)



# BIM challenges



- Who owns which piece of data when they are all put together?
- Can I trust the information? Can build my information into a specific source?
- Who did what in a model?
- How to ensure proper release of payment when things are done?



# Our first blockchain proposal



<b>CitizenBIM</b>
<i>Occupant-centered BIM solution for a low-carbon economy</i>

**Proposal full title:** *Occupant-centered BIM solution for a low-carbon economy*

**Proposal acronym:** *CitizenBIM*

**Type of funding scheme:** Research and Innovation Action (RIA)

**Date of preparation:** February 22, 2018

**Work Programme Strategic Objective:** LC-EEB-02-2018 “Building information modelling adapted to efficient renovation”

**Name of the coordinating person:** Dr. Ina Bluemel

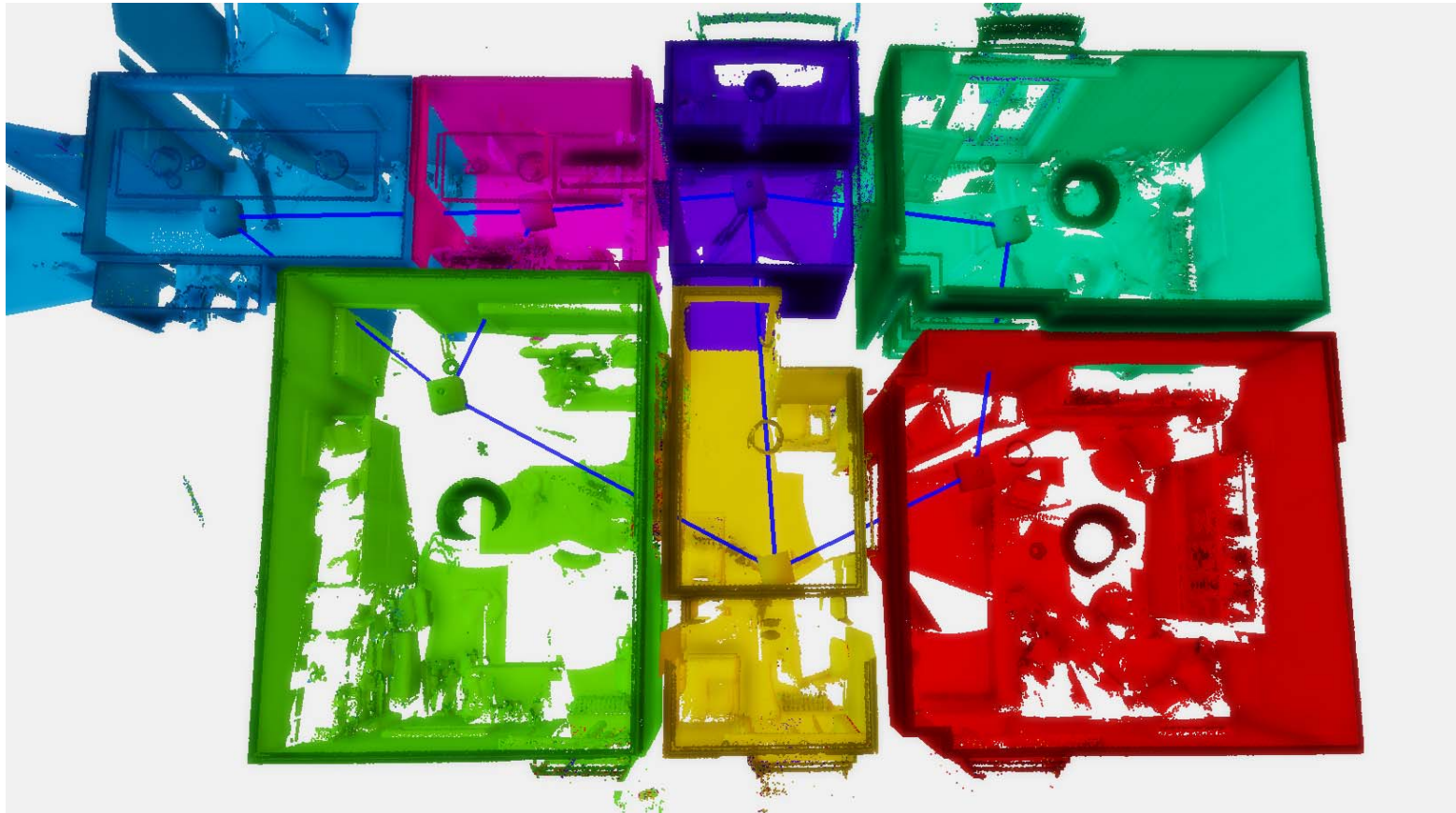
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Participant No *	Participant organisation name	Short Name	Country
1 (Coordinator)	Technische Informationsbibliothek	TIB	DE
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3	CITA	CIT	DK
4	CAD-Q/Symetri	SYM	SE
5	Krydsrum	KRM	DK
6	University of Bonn	UBO	DE
7	KU Leuven	KUL	BE
8	Snankin	SNA	FR



## Our first blockchain proposal



Tamke, Martin and Blümel, Ina and Ochmann, Sebastian and Vock, Richard and Wessel, Raoul. (2014). From Point Clouds to Definitions of Architectural Space - Potentials of Automated Extraction of Semantic Information from Point Clouds for the Building Profession. In *Fusion, Proceedings of the 32nd International Conference on Education and research in Computer Aided Architectural Design in Europe* (pp. 557-566). Northumbria University

## Peer reviewer quotes

1)

*“...the Blockchain technology is innovative and can be interesting during operations of the building. [...] The proposed approach to obtain a BIM model of an existing building using the sensors built into Smartphones or with connected accessory equipment is very disruptive. [...] However, even if the occupant accepts to open up his sensors to provide this data, the data might not be reliable enough to use it as relevant input for better renovation of a building.”*

## Peer reviewer quotes

2)

*“Blockchain technology is certainly a good approach for the secure exchange and archiving of data and information. However, this only has a secondary influence on the BIM market. The three real-life cases of Sweden, France and Denmark, are not clearly defined in the proposal. This measure and evaluation are not sufficient to suggest the impact of developed technologies and process.”*

3)

*“However, CitizenBIM needs to consider the potential risk of citizens’ responsiveness linked with age and their willingness to use a mobile phone.”*



**Ruben Verborgh**

@RubenVerborgh

Following



In connected smarted cities, there will be huge amounts of data everywhere. It is therefore important that people remain in control of their own data. My slides explain the [#Solid](#) ecosystem and how it can help with these challenges.

[rubenverborgh.github.io/CSCC2019/](https://rubenverborgh.github.io/CSCC2019/)  
[#CSCC19](#)

5:40 AM - 17 Jan 2019

15 Retweets 34 Likes



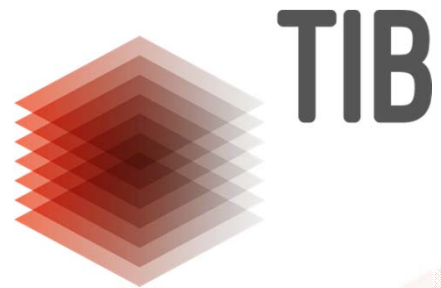
↻ 15

♥ 34



<https://twitter.com/RubenVerborgh/status/1085894604560498688>

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## Call for comments, ideas, ...

*Credits: Many thanks to Lambert Heller, Ingo Keck, and Simon Worthington for support and constant inspiring exchange!!*

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