

# Minutes

Meeting 2nd Joint SIG 3D and OCG Workshop on the CityGML UtilityNetworkADE		
Participants		
Joachim Benner	KIT	<a href="mailto:joachim.benner@kit.edu">joachim.benner@kit.edu</a>
Isaac Boates	EIFER	<a href="mailto:Isaac.Boates@eifer.uni-karlsruhe.de">Isaac.Boates@eifer.uni-karlsruhe.de</a>
Egbert Casper	SIG 3D	<a href="mailto:cas@sig3d.de">cas@sig3d.de</a>
Paul Haering	EIFER	<a href="mailto:haering@eifer.org">haering@eifer.org</a>
Karl-Heinz Häfele	KIT	<a href="mailto:karl-heinz.haefele@kit.edu">karl-heinz.haefele@kit.edu</a>
Andreas Koch	EIFER	<a href="mailto:koch@eifer.org">koch@eifer.org</a>
Thomas H. Kolbe	TUM	<a href="mailto:thomas.kolbe@tum.de">thomas.kolbe@tum.de</a>
Gerald Kreuwel	AED SICAD AG	<a href="mailto:Gerald.Kreuwel@aed-sicad.de">Gerald.Kreuwel@aed-sicad.de</a>
Tatjana Kutzner	TUM	<a href="mailto:kutzner@tum.de">kutzner@tum.de</a>
Alexandru Nichersu	EIFER	<a href="mailto:Alexandru.Nichersu@eifer.uni-karlsruhe.de">Alexandru.Nichersu@eifer.uni-karlsruhe.de</a>
Wolfgang Renz	HAW Hamburg	<a href="mailto:Wolfgang.Renz@haw-hamburg.de">Wolfgang.Renz@haw-hamburg.de</a>
Younis Saida Saeedrashed	CFS	<a href="mailto:younus.saida.69@gmail.com">younus.saida.69@gmail.com</a>
Alexander Simons	EIFER	<a href="mailto:simons@eifer.org">simons@eifer.org</a>
Beata Sliz-Szkliniarz	EIFER	<a href="mailto:Beata.Sliz-Szkliniarz@eifer.org">Beata.Sliz-Szkliniarz@eifer.org</a>
Steve Smyth	OpenSitePlan	<a href="mailto:steve@opensiteplan.org">steve@opensiteplan.org</a>
Lydia Trzcinski	CSTB	<a href="mailto:Lydia.trzcinski@cstb.fr">Lydia.trzcinski@cstb.fr</a>
Klaus Viebig	SIG 3D	<a href="mailto:klaus-viebig@t-online.de">klaus-viebig@t-online.de</a>
Jochen Wendel	EIFER	<a href="mailto:Jochen.Wendel@eifer.uni-karlsruhe.de">Jochen.Wendel@eifer.uni-karlsruhe.de</a>
Edmund Widl	AIT	<a href="mailto:Edmund.Widl@ait.ac.at">Edmund.Widl@ait.ac.at</a>
Minute taker	Location/Date	
Tatjana Kutzner / Alexandru Nichersu	EIFER, 2./3. March 2017	
Begin	End	
12:00 p.m., 2 March 2017	1:00 p.m., 3 March 2017	

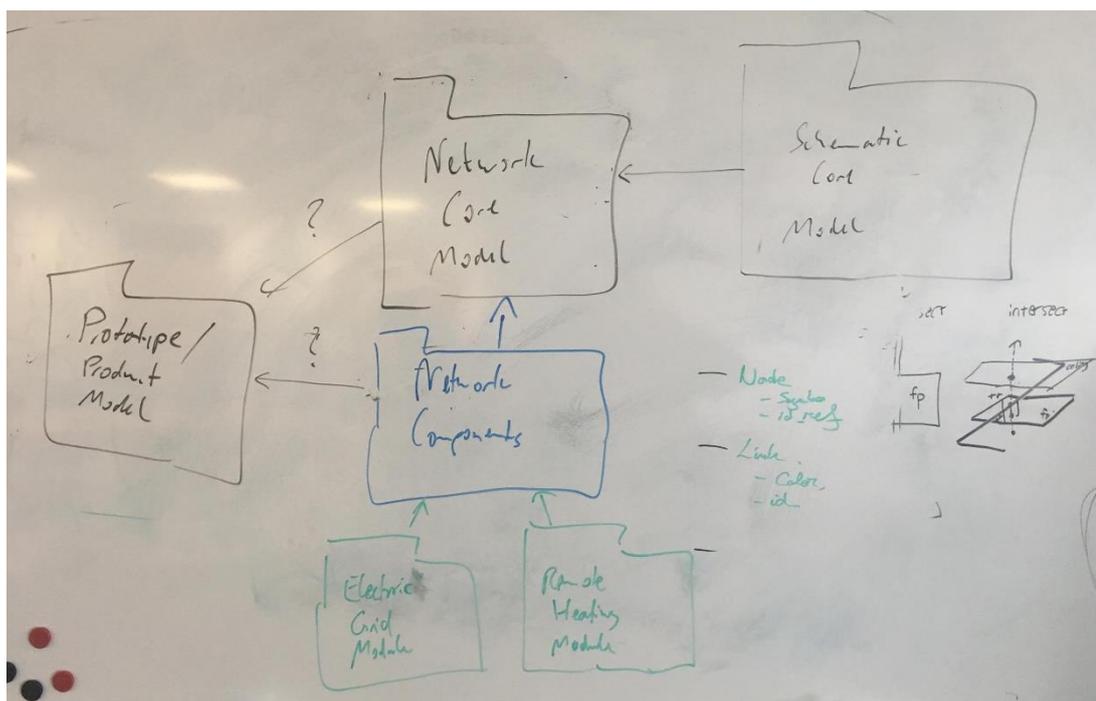
## Results

<p><b>1. Presentations</b></p> <ul style="list-style-type: none"> <li>New participants gave a short introduction of him/herself in the round of introductions. The presentations are available for download here: <a href="http://en.wiki.utilitynetworks.sig3d.org/index.php/2017_KA_Agenda_of_the_Workshop">http://en.wiki.utilitynetworks.sig3d.org/index.php/2017_KA_Agenda_of_the_Workshop</a></li> <li>Thomas gave a short introduction to the UtilityNetworkADE for the new participants. The presentations are available for download here: <a href="http://en.wiki.utilitynetworks.sig3d.org/index.php/2016_M_Agenda_of_the_Workshop">http://en.wiki.utilitynetworks.sig3d.org/index.php/2016_M_Agenda_of_the_Workshop</a></li> </ul>
<p><b>2. Points of discussion / Topics for future research</b></p> <ul style="list-style-type: none"> <li>Naming of feature types and attributes: <ul style="list-style-type: none"> <li>Feature type "<b>Cable</b>": The electricity domain differentiates between "cable" (buried in the ground) and "line" (not buried). → This differentiation is currently not represented in the ADE. It could be represented using the attribute "class".</li> <li>Attribute "<b>isTransmission</b>" of class "Cable": The term "transmission" refers rather to the transport of a commodity between source and distribution station, whereas the term "distribution" refers to supplying a commodity to the end user. → The attribute should be renamed.</li> </ul> </li> </ul>

- **LOD** concept:
  - It is still unclear, what the different LODs for utility networks look like (e.g. LOD0 = line, LOD3 = 3D shape including repair work).  
An approach could be the use of LODs like in road networks.  
→ Needs further discussion.  
→ See also figure on the last page for an example.
  - LODs need to be discussed separately for topographic representation, topologic representation and functional aspects.
  - Do we need a “section” concept for managing sections of a network with different LODs?
  - The LOD concept could connect different pieces of infrastructure as different levels of connected entities
- Do we need to add the concepts “**schematics**” and “**prototypes**” to the ADE?
 

If yes, e.g. as separate packages as shown in the figure below?

  - Schematics: Schematic representation of a network which uses symbols for the individual network elements.
  - Prototypes: Network elements such a pumps, valves, pipes which are used multiple times in a network and exhibit the same nominal values.



- The **3D representation** of pipes is still an open issue. Extrusion geometries are not supported by GML. Additional geometry types should possibly be added.  
Also, adding the 3D of a pipe would add a very big amount of data, something that a CAD system would not have a problem with.
- Information on who manages the network might be required in certain use cases. AED-SICAD, for instance, adds client information (person / company) to each object.  
→ This kind of information could be included by adding the attributes “**owner**” and “**operator**” to the class “AbstractNetworkFeature” or by adding a class “Actor” which is connected to the class “AbstractNetworkFeature” by means of two associations with the role names “owner” and “operator”.

- **Trustworthiness** of data could be important as well in some use cases. Could be added by means of metadata, by adding information on the data source or a link to the data source.
- An exact **definition** of the term “Utility Network” is required.
- How to deal with **terminal elements** (e.g. streetlamps), as they represent city furniture at the same time as well?
- How to represent the **link** between building and network? More links might be required, e.g. links to loads.
- For **demand-side management** the model needs to be able to connect to data from external sources. → Data could be included or linked.
- **Topology** is important. We want to have an approach to flexibly react to the changes which have an impact on the simulation. We need to look at the topology of the network from yesterday to 10 years from now. Clarification is required: topology, as defined by the ADE, is the state of the model for AIT (Edmund Widl)
- **Temporal dimension** is important for our use cases.
- **Energy flow**: Is there a need for it to be defined, for example in simulations?

### 3. Prioritisation of commodities and use cases / Matrix

- Commodities and use cases were prioritised by the participants to determine on which of the commodities and use cases to focus first.
- The matrix started at the last workshop was continued in a more elaborate form based on the prioritisation. Once the matrix is finished, it will in this way become easily visible which use cases have the same modelling requirements and can, thus, be consolidated and considered jointly when working on enhancing the support of these use cases by the UtilityNetwork ADE.

→ **The Excel files containing the prioritisation and the matrix are attached to these minutes**

### 4. To Dos

- Participants look for scenarios which are currently not representable by the ADE or where it's not sure how to represent them.
- Participants think about examples which require connection to sensors / realtime data and about examples which don't require this connection.
- Participants check for test data which can be provided on github for use by this working group.
  - Alexandru: Test data KIT campus north?
  - Lydia: Data for simulations?
  - Gerald: Fictive test data Berlin? ESRI solution template samples?
- TUM/KIT maintain UML model.
- TUM provides help with transforming data to CityGML using FME.

- KIT checks and visualises XSD.
- Participants check UML model regarding unclear naming of classes and attributes, missing classes and attributes and provide feedback using the github issue tracker.
- Suggestions of new classes and attributes always need to be provided together with a suitable definition. This definition will also be added to the UML model and be used in the feature catalogue.

## 5. Observations

- **Joachim Benner:** Fundamentally, the extension cannot be fully exhaustive – not all data related to the network should be in our standard and, furthermore, we should relate to existing standards.
- **Klaus Viebig:** We should use very stable parameters, like the ones used in cadastre. At the same time, we should avoid being BIM-like, as large content of very detailed information makes BIM hard to use.
- **Thomas Kolbe:** The Utility Network ADE is not to replace other utility-specific data models. It is for bringing the utility network together with city models and allow for connectivity to existing standards.
- **Gerald Kreuwel:** The power lines modelling of high and middle voltage used to be the only thing that mattered 5 years ago, while today, due to the *Energiewende* the lower voltage is becoming increasingly important.
- **Edmund Widl:** For electrical networks attention should be payed to what is a network, it would not include the production facility, for other domains this needs to be clarified first.

**Next workshop:** June 30, 2017 at AIT, Vienna



Example: One Line Diagram, Detailed Schematics and Topographic Representation

