All Fields marked with * are mandatory.

Change Request #:	**315**
Assigned OGC Document #:	**13-091**
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Document Name/Version:	*City Geography Markup Language (CityGML) Encoding Standard / 2.0
OGC Project Document:	*12-019

If this is a revision of a previous submission and you have a Change Request Number, then check here:
☐
Enter the CR number here: [　　　　]
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Title:ⓘ	* [CityGML SWG] Integration of utility networks into CityGML
Source:ⓘ	*Technische Universität Berlin; Special Interest Group 3D - Modeling group
Work item code: ⓘ	
Category:ⓘ	* [B (Addition of feature) ⬍]

Reason for change:ⓘ	* Currently CityGML lack a rich information model for multiple and different underground structures such as gas, power, freshwater, and wastewater utility networks. Complex analyses or simulations such as collision detection (e.g. excavator vs. pipe), determination of explosion impact determination of damaged objects), and simulations predicting, for example, the spread of water in a flood scenario above and below the ground require the 3D topographic representation and description of the components of the utility network of a city. Due to the fact that the different types of infrastructure of the city lie above and in between each other the embedding into the 3D space plays an important role. Furthermore, 3D visual inspection helps in getting a better understanding of the spatial relations of the networks relative to each other. Network analyses such as the calculation of slope or slope change becomes possible. Thus, it is conceivable that a 3-

	dimensional description of the city as well as a suitable 3D description of the underlying utility network has to be realized. The 3D objects of the network must be integrated into the 3D space of the city and thus they can be queried in the context of a disaster management.
Summary of change:🔵	* Precise and comprehensive knowledge about 3D urban space, critical infrastructures, and belowground features is required for simulation and analysis in the fields of urban and environmental planning, city administration, and disaster management. In order to facilitate these applications, geoinformation about functional,semantic, and topographic aspects of urban features, their mutual dependencies and their interrelations are needed. . Existing utility network models are commonly tailored to a specific type of commodity, dedicated to serve as as-built documentation and thus are not suitable for the integrated representation of multiple and different utility infrastructures. Moreover, the mutual relations between networks as well as embedding into 3D urban space are not supported. The integration of utilities into CityGML shall provide the required concepts and classes for the integration of multi-utility networks into the 3D urban environment. It should cover the topological and topographic representation of network entities and the functional and semantic classification of network objects.
Consequences if not approved:🔵	
Clauses affected:🔵	* CityGML Core module, Transportation module, Building module
Additional Documents affected:🔵	
Supporting Documentation:🔵	
Comments:🔵	
Status:🔵	Assigned ⬍
Assigned To:🔵	CityGML SWG ⬍
Disposition:🔵	Referred ⬍