What is the Facilities Lifecycle 3D Model Standard (FL3DMS)?

FL3DMS is a USPI initiative that aims to achieve standardization across the process- and energy supply chains for the development, use and maintenance of 3D models. A team of 3D model subject matter experts were assembled from Owners, Contractors and Software Suppliers to deliver a standard.

Whilst working on the project, the team has developed a number of deliverables to achieve this goal.

The initial release, R 1.0 included a 3D Model Standard based on the company standards of the participants. It also included a Business Case for standardizing and maintaining 3D models during the lifecycle of a facility, based on experience from the Owners.

- A subsequent release of the standard, R 1.1, included unique numbering of the text clauses in the standard to enable requirements management, embedment in company standards and version history.
- In this latest release, 1.2, best practices for requirements writing have been applied and the requirements numbering has been extended to the 3D Model content requirements table. The release also includes a 3D Model Lifecycle Management Guide to guide Owners on how to manage 3D Models to extract more value from them.
- The future releases are expected to include greater specifics on As Built requirements, Modelling of Equipment/Skids, and 3D Model data needed to support Advance Work Packaging (AWP) and corrosion management. An implementation guide is also planned to accompany the next release.

What is the scope of the FL3DMS standard?

The FL3DMS specification is a practical, application neutral, specification for the structure and content of 3D Models, designed to guide the creation, handover and maintenance of 3D models in capital projects and assets. It is based on existing company standards and best practices of the FL3DMS participants and includes technical requirements for the creation and handover of 3D models to enable use-cases in projects and operations. These include 3D model design integration, construction, plant operations, Digital Twins and replication of 3D designs. The FL3DMS specification is recognized by participants and other parties as a solid basis for use in specifying 3D model requirements for facility projects.

From the first release to the current release the main structure of the specification hasn't changed. The main three parts handle requirements for the configuration, content, deliverables and the handover of 3D Models in projects. What has changed is that with this release the 3D Model Content Requirements Matrix is a separate deliverable with its own unique numbering scheme. This 3D Model Content Requirements Matrix is referenced from within the specification.

What's new?

In this new release, the clauses of the standard have been re-written to comply with IOGPs Guidance on Requirement Development , making the requirements clear and unambiguous, and enabling better specification of requirements by Principals to Contractors.

Table 5-1: Facility 3D Model Content Requirement Matrix and Table 5-2: Model Attributes, have been extracted from the standard and are now separate documents. There have also been minor improvements to the tables based on change requests.

The new Facility 3D Model Content Requirement Matrix is much improved over the previous table. The content has been updated and aligned with NORSOK Z-020:2024 Model requirement for 3D solutions thanks to a close collaboration with Standards Norway. It now includes unique numbering for each line of content and the addition of an aggregated level of content.
The aggregated level of content allows more mature supply chain partners to define the requirements in a way that is more aligned with the level of responsibility that is expected from the supply chain partners

Roadmap for next releases

During the FL3DMS face to face meeting in June 2024, the roadmap for the next release was agreed. This includes the development of an implementation guide that will provide guidance and support for the next release of the standard. Other topics include as-built requirements, integration of 3D model content from sub-suppliers and more data integration related topics including Advanced Work Packaging (AWP). Subsequent releases are also likely to address topics such as catalogue management and laser scanning.

How to join us

If you want to learn more about how to derive more value from the 3D Models of your company and you want to contribute to FL3DMS, we would welcome you in the FL3DMS team.

You can download the standard for free here

Please contact Vincent Grondman (vincent.grondman@uspi.nl), and we will set up a call to learn about your needs, tell you more about the project and share our joining instructions.