LFM **Modeller**
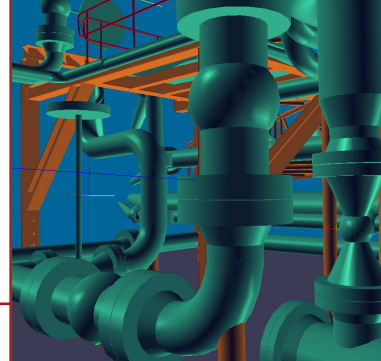
Create as-built 3D CAD models from laser scan data

3D laser scanning offers considerable benefits to plant revamp and plant asset management projects. Owner Operators can fully understand the as-built condition of their plants, to ensure the plants operate productively, to address safety and regulatory compliance, and to launch brownfield upgrade and revamp projects.

However, the process of modelling 3D laser scan data can be a time-consuming exercise, as fitting structural elements and modelling single pipe runs can be a slow and error-prone process. With LFM Modeller™, creating as-built 3D CAD models has never been easier, and users are provided with a great set of tools in order to increase productivity. As a result, productivity is greatly enhanced compared to previously available software.

Not only are they easy to design, but the 3D models created in LFM Modeller are also exceptionally accurate and are relied upon by leading Owner Operators to document their as-built conditions for safety, inspection, maintenance and training purposes.

Extensive CAD manipulation and editing facilities allow the user to manipulate the model until the modelling objectives have been achieved.

During the modelling process, LFM Modeller examines the laser scan data to select the appropriate library entity, visually feeding back the modelled data at all times into the BubbleView.

Business Benefits

▪ Productivity
Huge productivity gains through greatly reduced costs and compressed timescales.

▪ Intuitive
Easy-to-use and intuitive user interface allowing engineers to model in the BubbleView™.

▪ As-built export
Produce validated and intelligent CAD models which are then exportable into a number of CAD systems.

▪ Standards library
Supports wide range of industry engineering specifications.

▪ Quality assurance
All modelled objects can be displayed within the BubbleView, ensuring immediate visual feedback of what has been modelled and what still remains.

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Key Features

▌BubbleView™ modelling
This incredibly fast and intuitive feature allows users to produce 3D CAD models directly from the laser scan data.

Modelling of complete pipe branches becomes a simple matter of 'sketching' a line along the length of the pipe and clicking on the start and end of elbows. During the sketching phase, a roll of the mouse by the user lets the system know what the underlying piping element is. Once complete, the fitting process and branch creation are then fully automatic.

▌Export 'as-designed'
Users are able to choose the status of the final model output, either as a pure 'as-built' model, or as an 'as-built' 'as-designed' model. The final model export can perform a correction which ensures the deliverable will be readily accepted by the target CAD package, with the required level of intelligence.

▌Component prediction
When modelling a pipe branch, LFM Modeller will intelligently present components from the standard library that are compatible with the previously modelled object. This reduces the time spent searching for the required component. Component prediction is one of the many features in LFM Modeller that greatly increase the efficacy of the 3D modelling process.

▌CAD connectivity
Translation between different CAD packages presents a major challenge. Both packages need to 'speak the same language'. LFM Modeller overcomes this issue allowing the customer to export directly to AutoPlant and CADWorx supporting .PXF and .PCF formats. It can also export .SAT, .DGN and .MAC files. If required, the export process can also realign the modelled components to produce an as-designed as-built model.

▌Intelligent export
As-built objects modelled in LFM Modeller carry 'more intelligence' than some rival packages, and more closely resemble the final native CAD formats. This means that less intervention is required within CAD by the LFM customer before they are able to work with the data. The intelligent export of 3D models into CAD is therefore more seamless and robust than ever before.
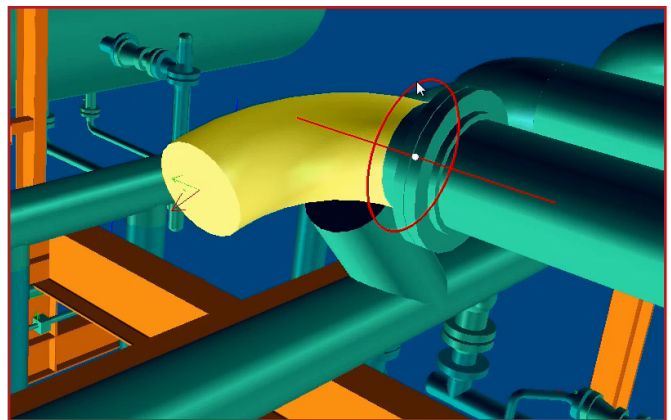
▌Read multiple laser scan formats
Import laser scan data from all the major scanner vendors. Even if the hardware system changes, the software solution does not have to.
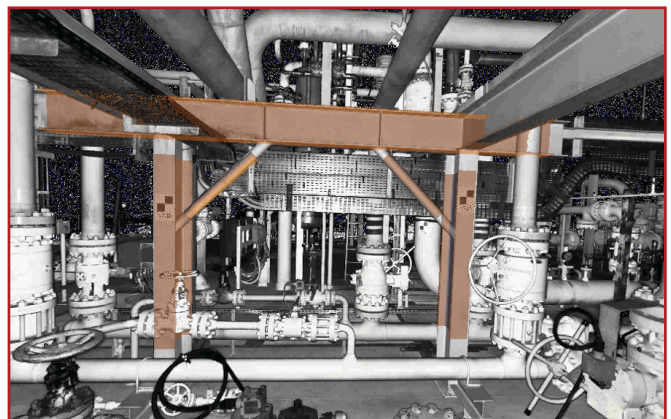
Scan data imported into LFM Modeller is relevant throughout the entire LFM Software portfolio.
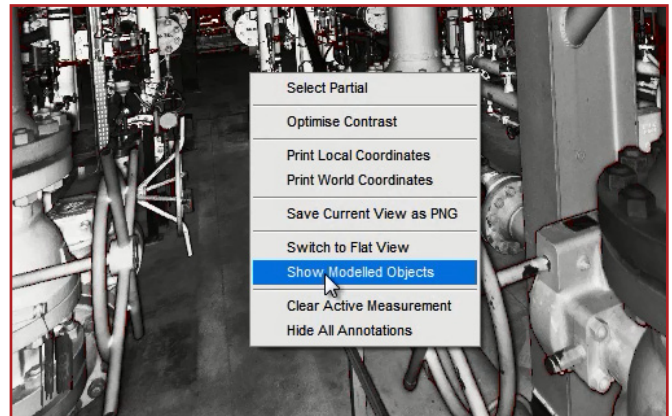
Easily show modelled objects in the BubbleView.

Dynamic object manipulation.

CAD objects can be displayed in the BubbleView for immediate visual feedback.

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