AS-BUILT MODELLER

Automatic modelling software for architectural environments

Contact information

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Technological Offers type

Technological solutions

Research and innovation areas

- Architecture, Baukultur and Creativity
- Digital Technologies, Artificial Intelligence, Cybersecurity, 5G, Robotics
- Science For Engineering and Architecture

ODS

Available from: 2021

Where?

MERCATOR: Geoinformation and Smart Systems Technology

Keywords: | architecture | building | digital twins | modeling

Solution for the automatic generation of digital twins of building interiors and

exteriors.

Description of the technological basis

As-Built Modeller is a software application that automatically identifies architectural elements and models the interior and exterior of buildings three-dimensionally. The data source is an unorganised point cloud from both dynamic and static terrestrial laser scanning (LiDAR). In the fields of architecture, engineering, construction, and building management and services, there is currently a great deal of demand for generating 3D models of buildings using point clouds. However, at present there is no single tool available that solves the problem of identifying and modelling objects automatically. As-Built Modeller is a development that solves the problem of automation when working with point clouds. The end product it offers is a digital building model that can be transferred to a building information model (BIM).

'As-Built Modeller reduces processing and modelling times from six working days to one'

A BIM is obtained in minimal time from millions of points with centimetric precision'

Business needs / application

- In the last decade, demand for the generation of digital twins in the architecture and civil engineering field has increased considerably.
- Thanks to advances in technology, the quickest and most reliable way to capture data is using laser devices for mass point gathering.
- Companies are looking to cut down on the time it takes to produce 3D models from point clouds. To do that, it is necessary to have process-automation tools.
- As-Built Modeller is an IT solution for automating the processing of point clouds used to create 3D models.
- Using the models created with As-Built Modeller, BIM models are generated quickly and accurately.
- These days, there is a desire to carry out projects in line with the Sustainable Development Goals. In order to meet some of those goals, companies need to use innovative applications that reduce execution times and promote economic growth.

'Point clouds are very powerful and valuable data sources. Processing them automatically is a huge challenge, due to the large volume of data'

Competitive advantages

- As-Built Modeller is one module of a powerful software package called MDTopX, which is used by numerous users involved in point cloud and digital model processing.
- Using As-Built Modeller, it is possible to identify various architectural elements in a building's interior and exterior automatically, reducing processing times from six working days to just one.

References

- As-Built Modeller has been used to process various projects in different settings, documenting both interiors and exteriors: multi-storey buildings, office interiors, car parks, historic buildings, etc.
- In quality controls, overall accuracy figures of more than 90% have been obtained.
- It is based on functional libraries included in the MDTopX program, which came about more than 20 years ago and offers numerous editing tools for point clouds and digital models. It is currently used in dozens of engineering companies and national and international public institutions.

Stage of development

CONCEPT

RESEARCH

LAB PROTOTYPE

INDUSTRIAL
PROTOTYPE

PRODUCTION

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