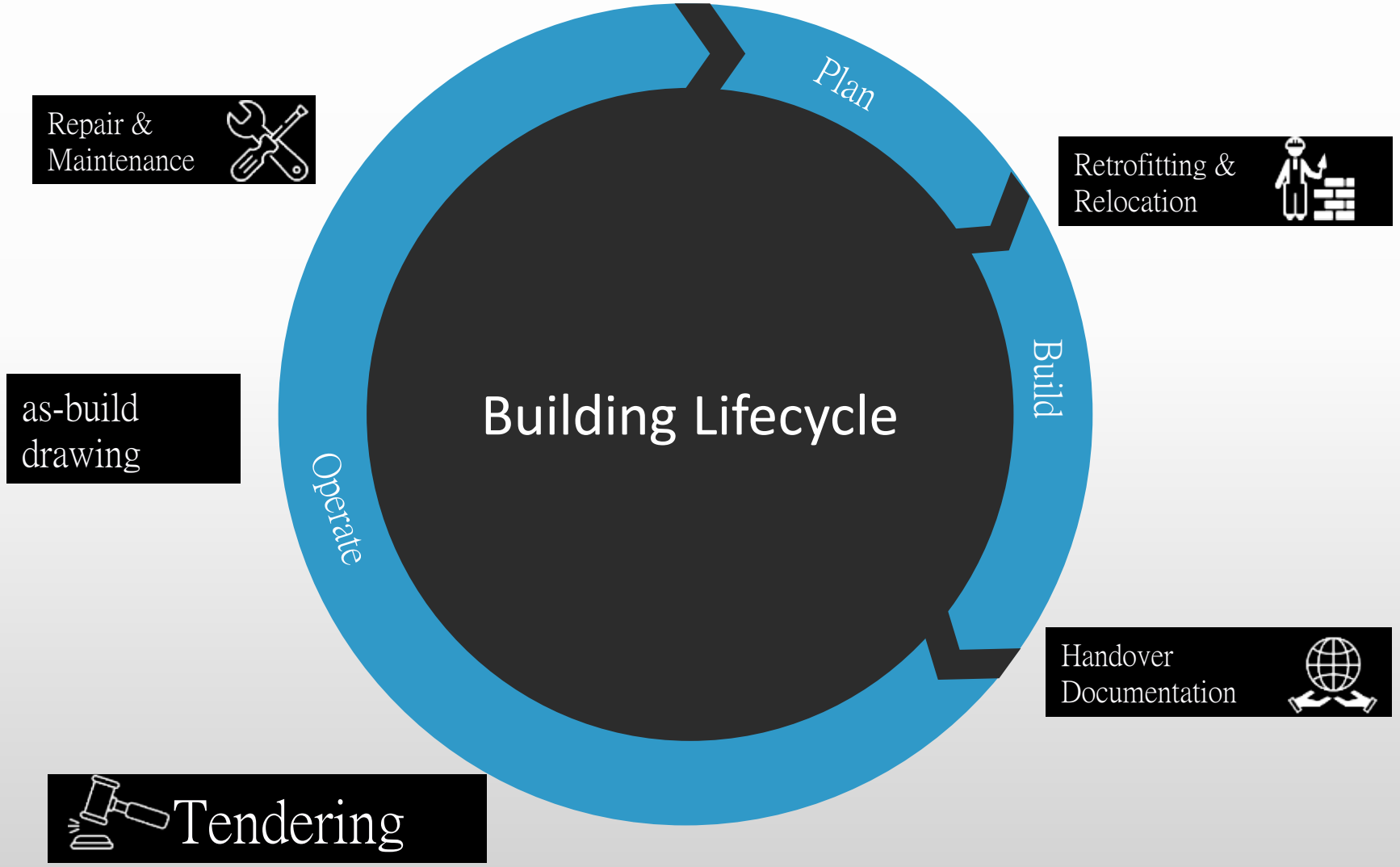
QUALITY MANAGEMENT

NavVis

佳 澤 工 程 有 限 公 司

Delta Pyramax Engineering Ltd.

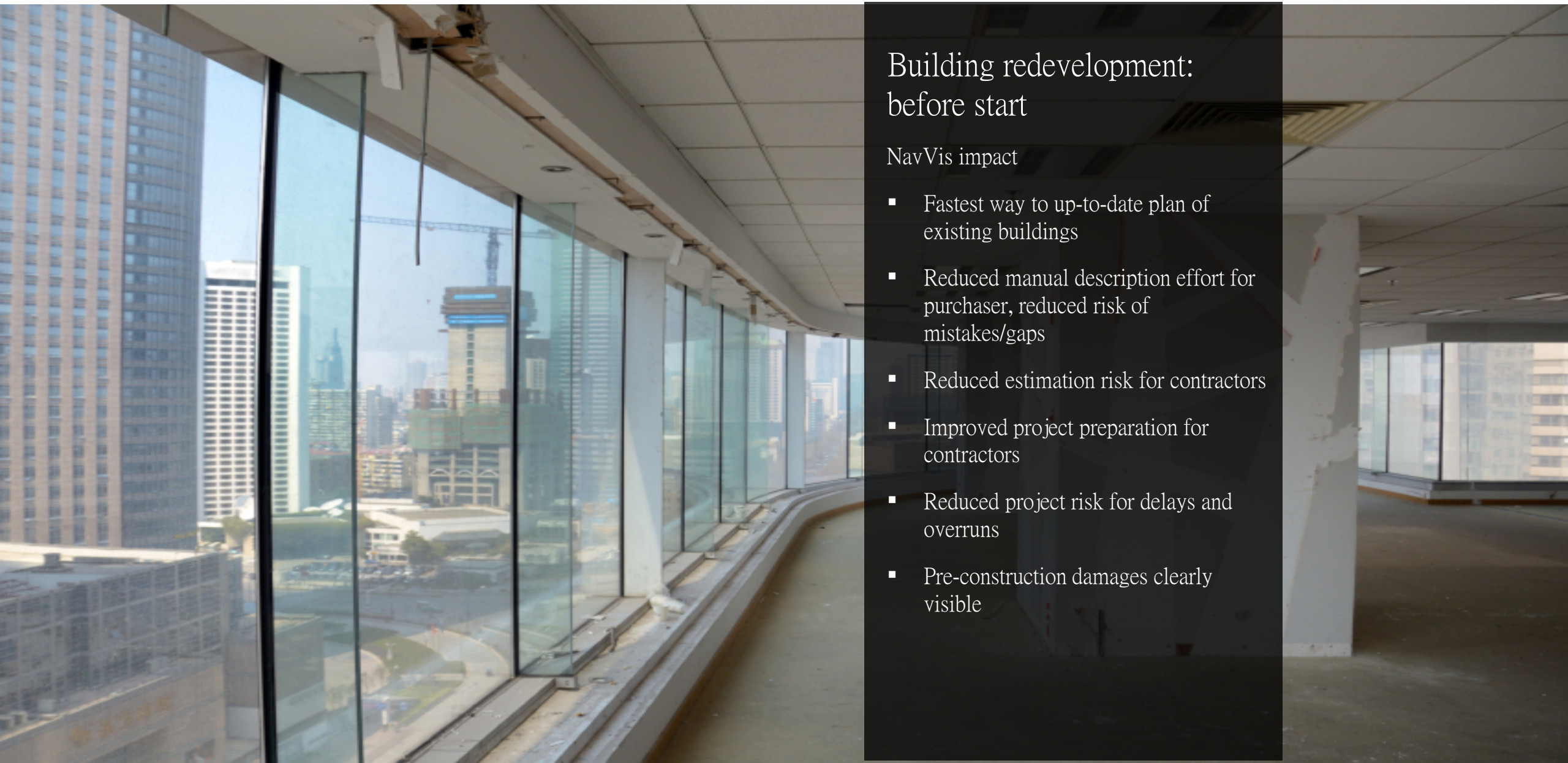
Project cycle



VALUE ADDED / IMPACT

- SPEED: the IMMS gives users an efficient way to capture the data needed to create and update as-built BIM models.
- ADDITIONAL DELIVERABLES: reality capture devices capture not just point clouds but also 360 degree immersive imagery without any additional scanning.
- AUTOMATIC DATASET ALIGNMENT: using NavVis SLAM anchor ground control points during scanning automates dataset alignment, significantly reducing the post scan workload.
- USABILITY: Unlike BIM models, everyone can use the IV virtually walkthrough the building, add and search for information and even take measurements.
- EASY PUBLISHING: the floorplans, immersive walkthroughs and point clouds can be sent to the client as a link and accessed in any browser.

USE CASE 1
SCAN TO CAD/BIM FOR UP-TO-DATE PLAN

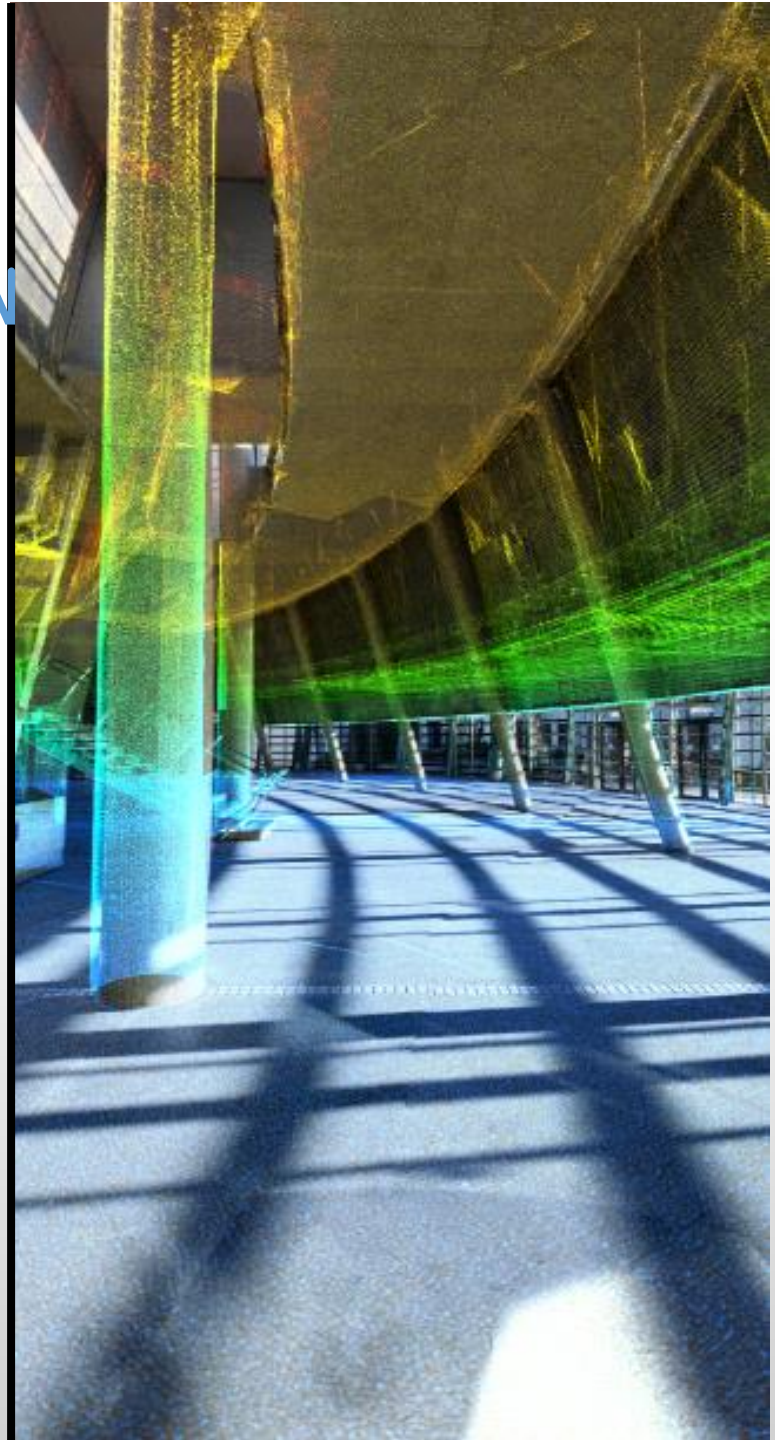


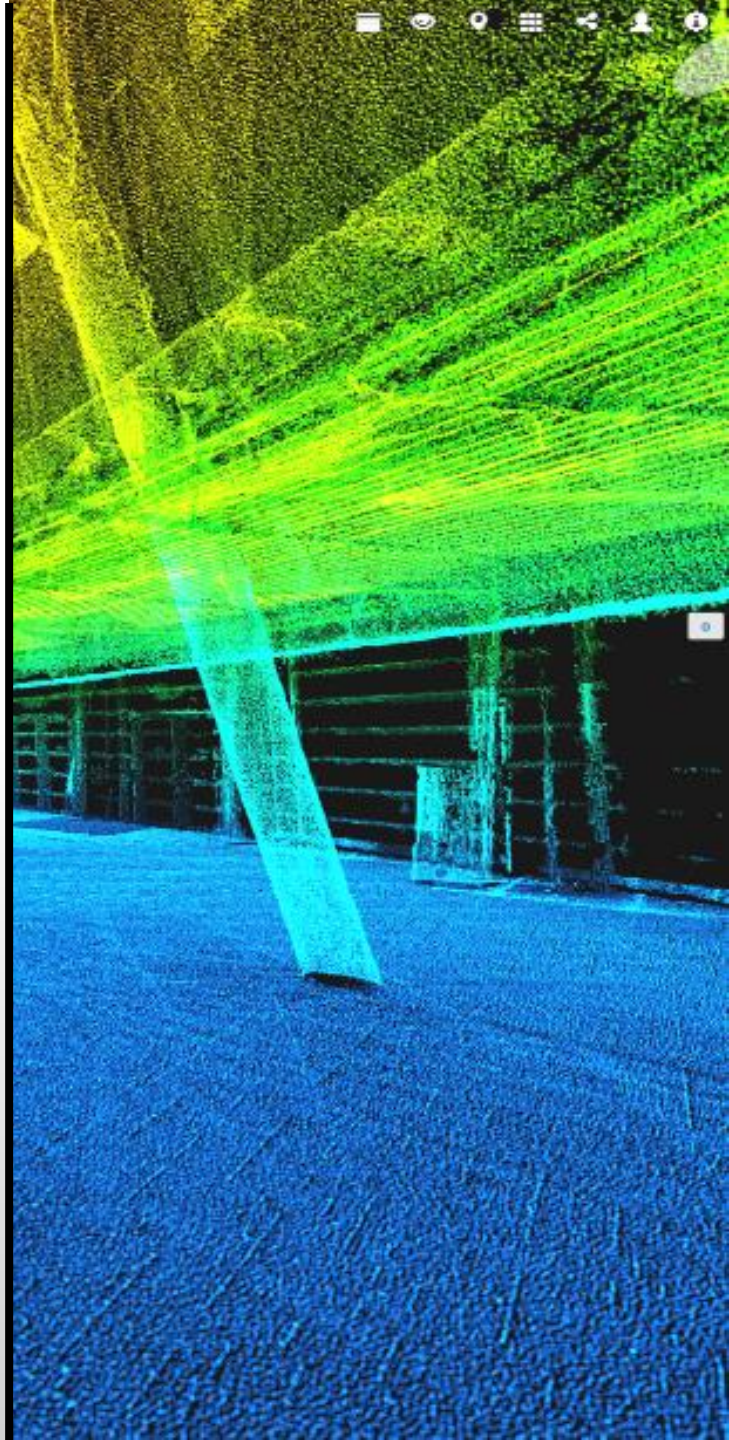
Building redevelopment: before start

NavVis impact

- Fastest way to up-to-date plan of existing buildings
- Reduced manual description effort for purchaser, reduced risk of mistakes/gaps
- Reduced estimation risk for contractors
- Improved project preparation for contractors
- Reduced project risk for delays and overruns
- Pre-construction damages clearly visible

USE CASE 1
SCAN TO CAD/BIM
FOR UP-TO-DATE PLAN



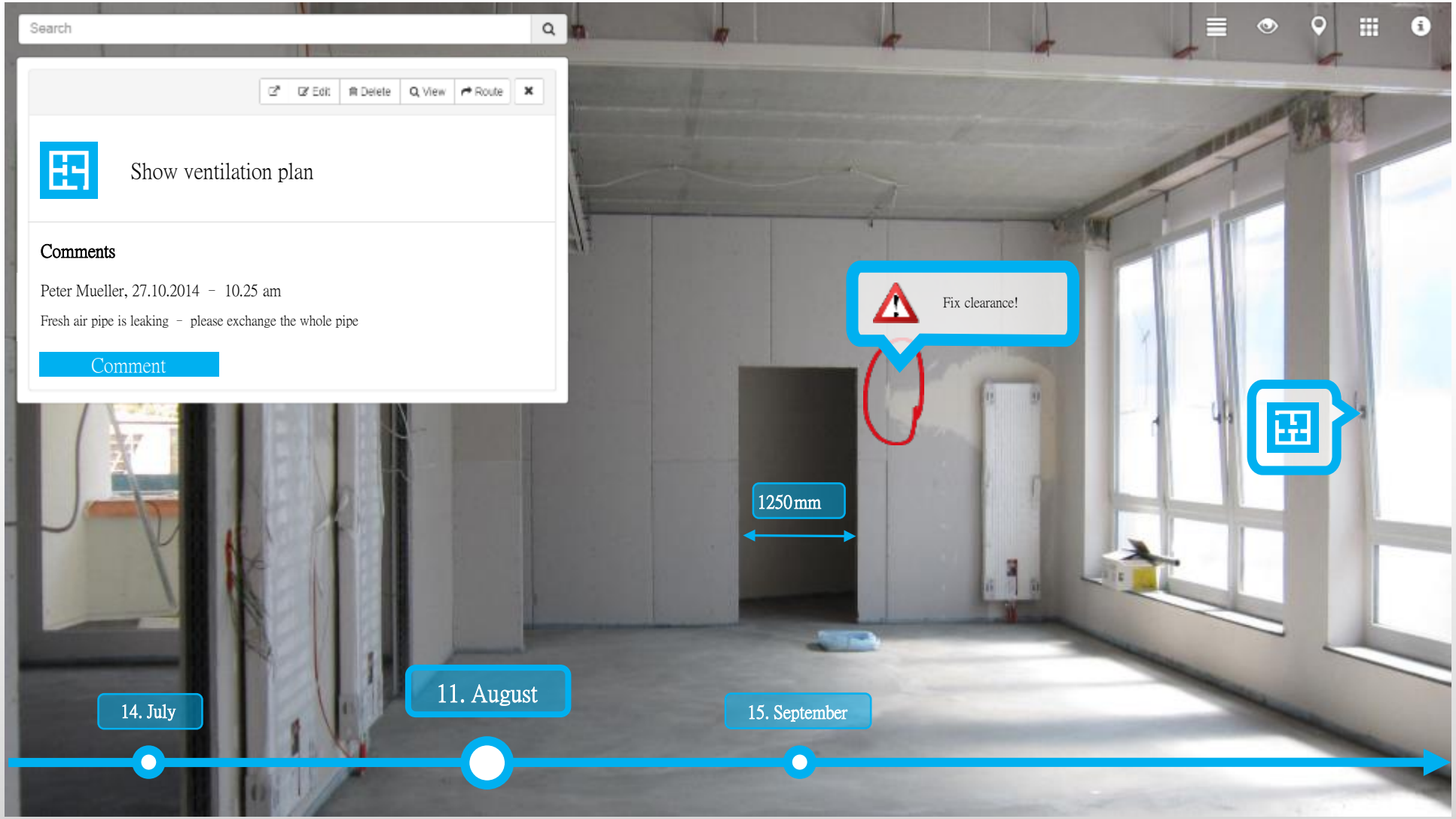


#PointCloud

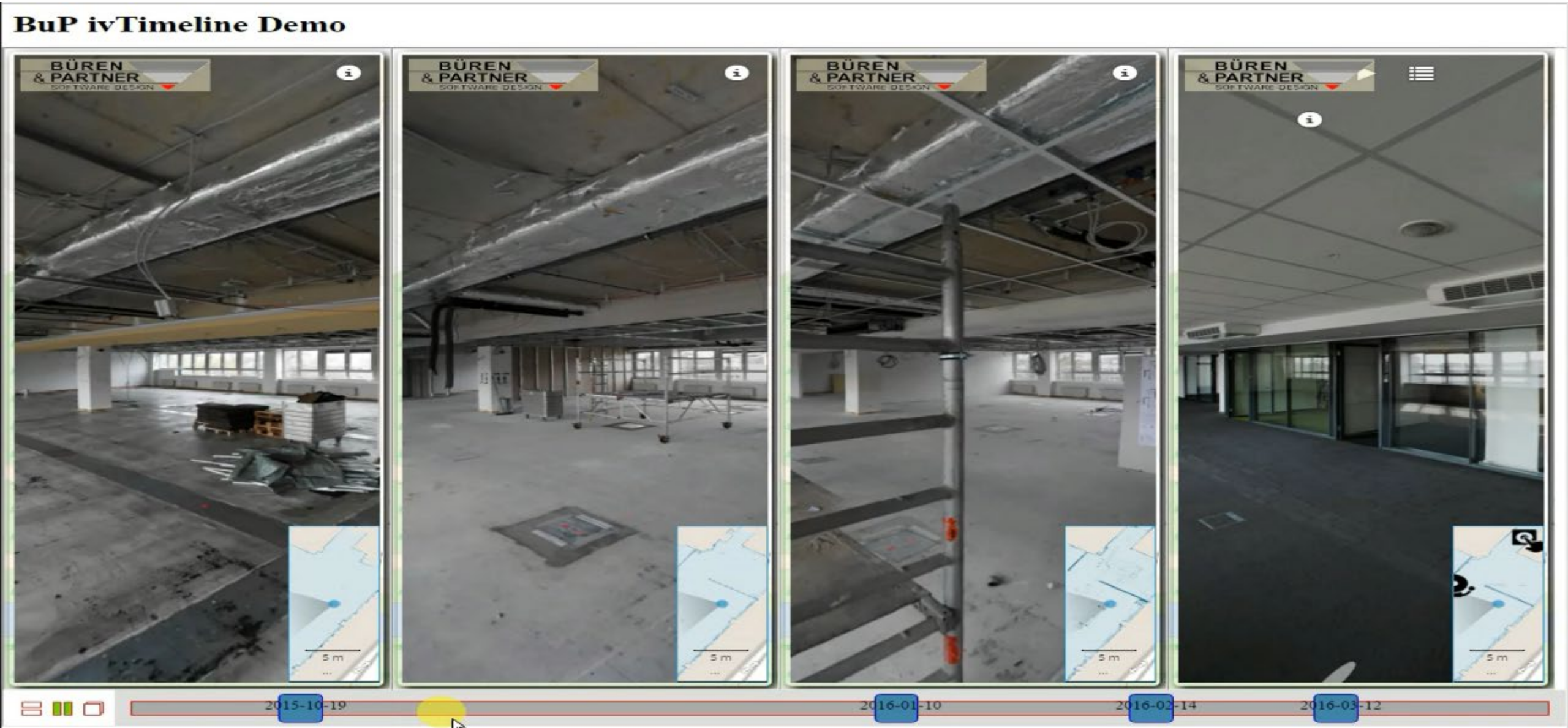
High detailed point clouds

Sophisticated viewing experience

USE CASE 2
CONSTRUCTION MONITORING



USE CASE 2
TIMELINE COMPARISON



BÜREN & PARTNER SOFTWARE-DESIGN GBR

For more than 30 years we develop, maintain and support high quality technical software systems, mainly in the domain of automotive, aerospace, telecommunication and medical systems.

Based on those experiences we offer our customized services to support the NavVis ecosystem including mapping services (optional with camera head lowered by 10-20 cm), customized postprocessing, integration of mapping results with existing software applications, development of NavVis-based (web) applications, NavVis system support (backed by NavVis 3rd level support), hosting of NavVis-recordings (in cooperation with partners) and customized trainings in mapping practice and postprocessing.

LOCATION:

Nuremberg, Germany

CONTACT INFORMATION:

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BUSINESS REGIONS:

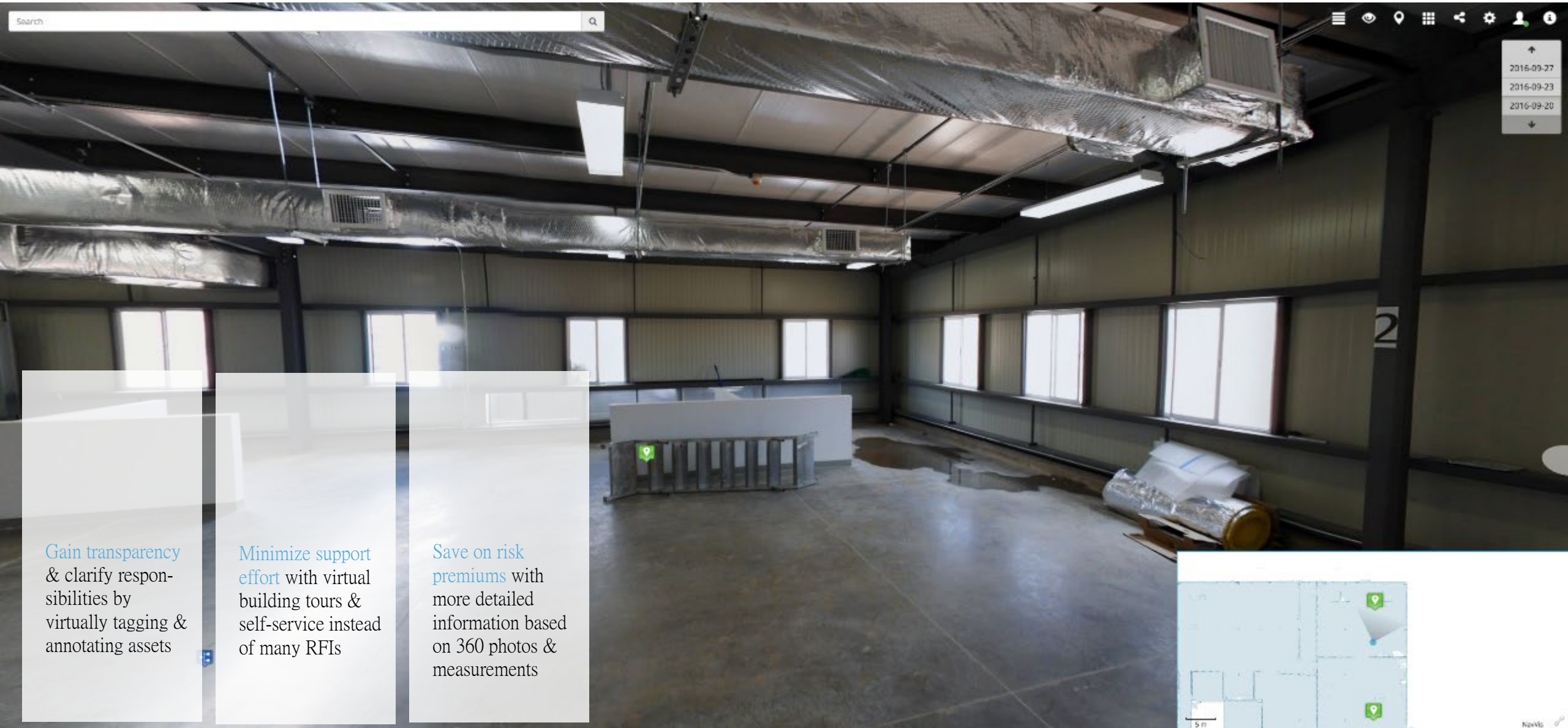
Germany
Austria
Switzerland
France

OFFERS:

Mapping
System Integration
Software Development

USE CASE 3
HANDOVER

USE CASE 4
VISUAL BIM FOR TENDERING

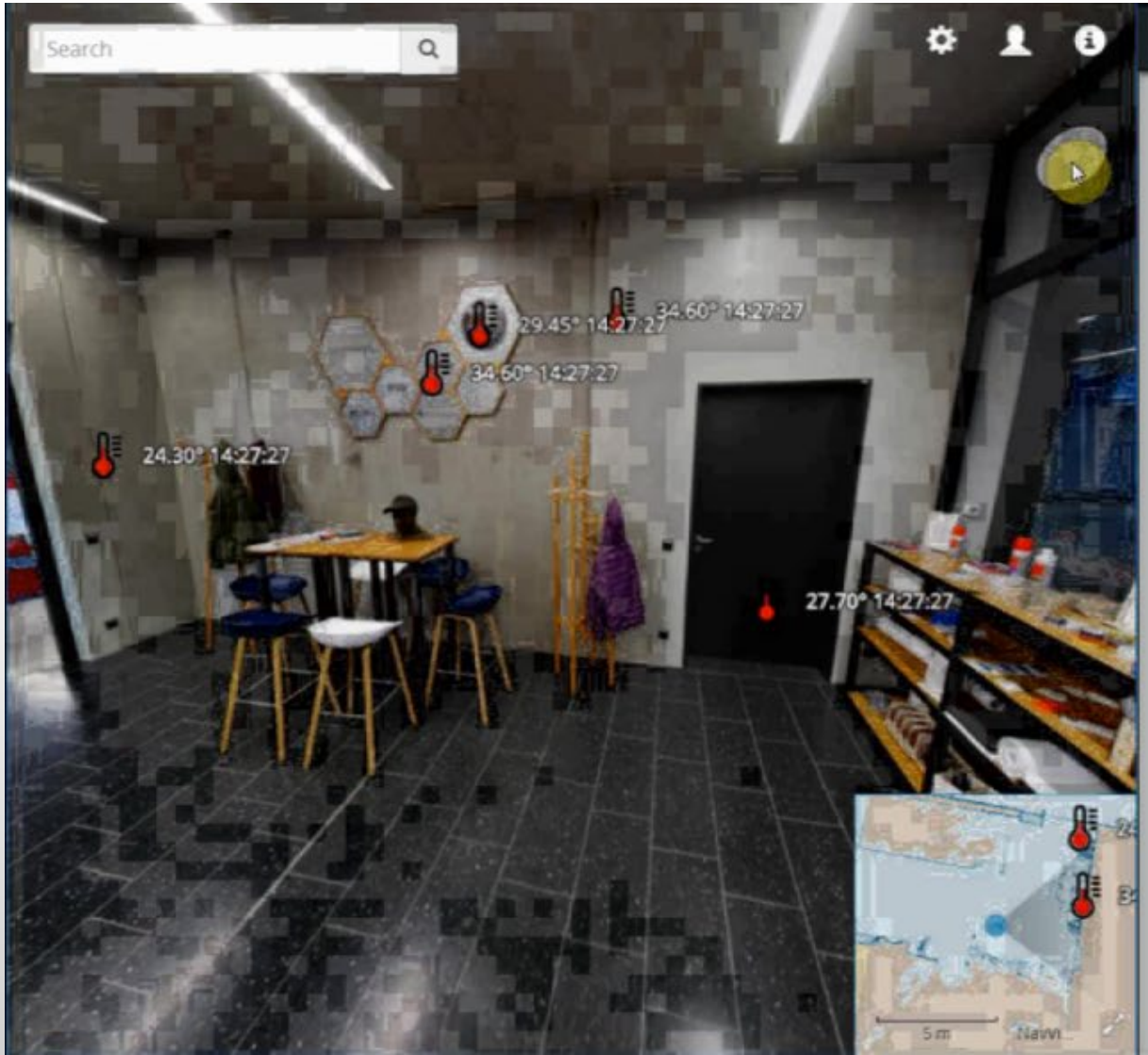


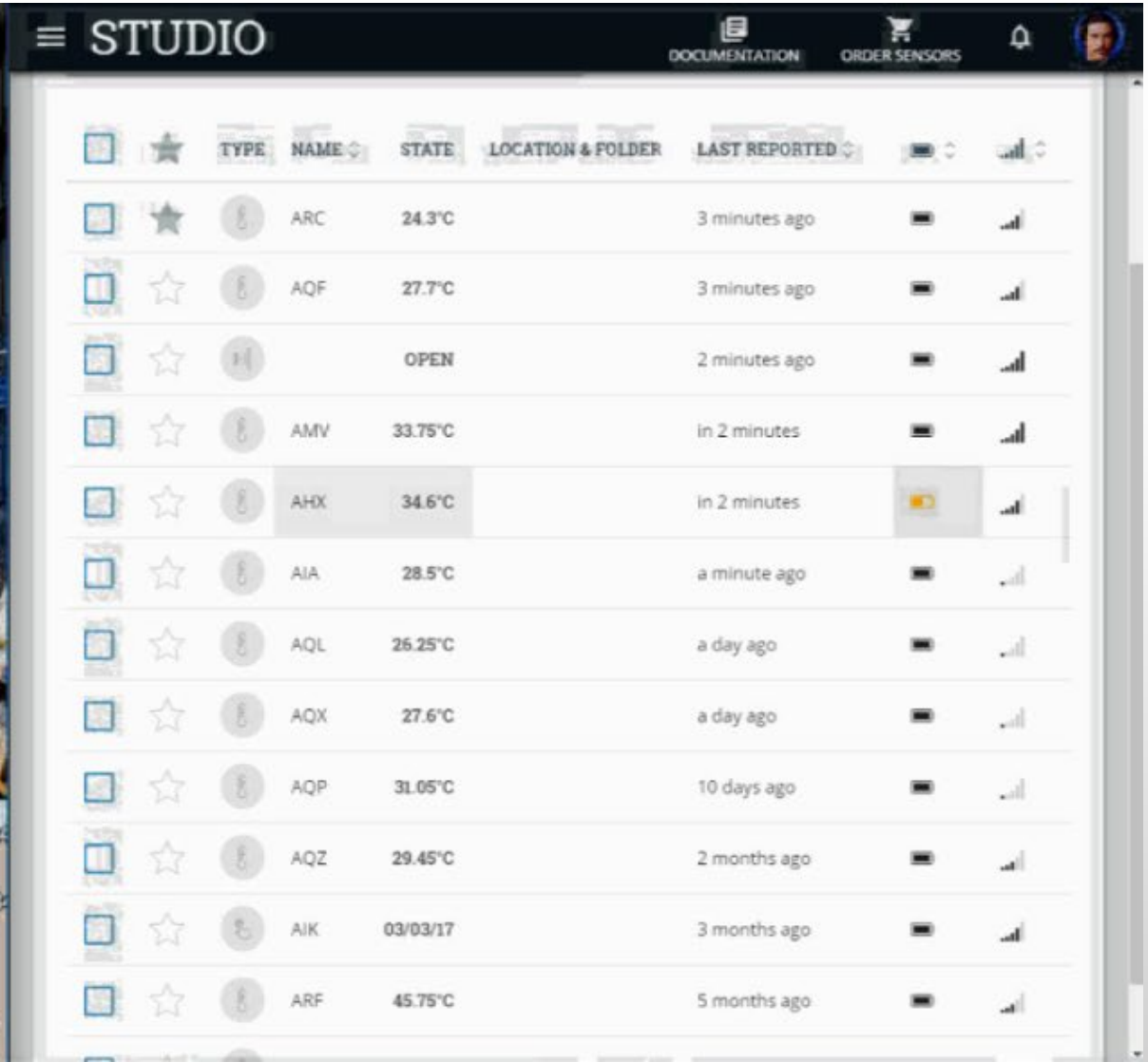
Gain transparency & clarify responsibilities by virtually tagging & annotating assets

Minimize support effort with virtual building tours & self-service instead of many RFIs

Save on risk premiums with more detailed information based on 360 photos & measurements

USE CASE 5
FACILITY MANAGEMENT - IoT LIVE SENSOR DATA MONITORING



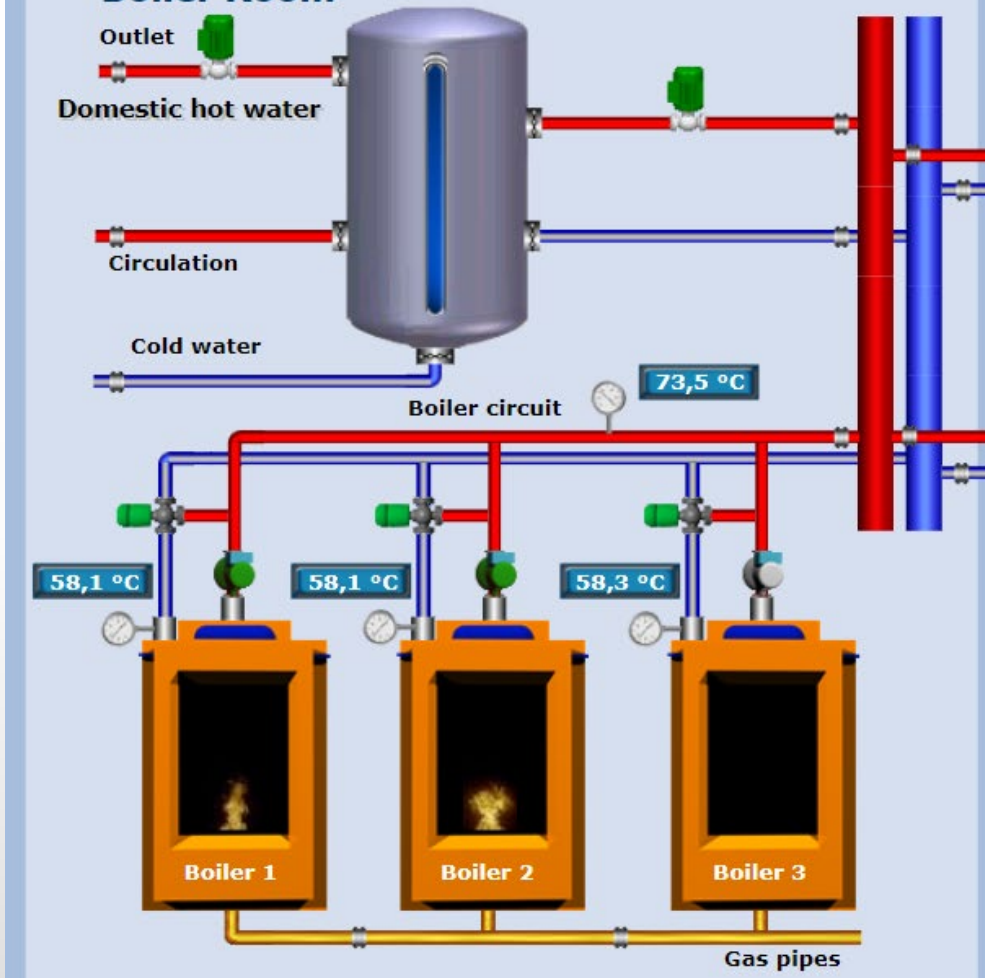



搜尋
58.8 °C
建築: GEOVAP | 樓層：5
分享選單
路徑
PLC Tecomat1.tvv1 | Id: 41
R4
Reliance
61.0
60.0
59.0
58.0
57.0
56.0
29.11.
29.11.
29.11.
29.11.
29.11.
30.11.
75.8 °C
58.8 °C
59.1 °C
59.3 °C
5
4
3
2
1
0
-1
58.8 °C
5 m
NavVis, © Mapbox, © OpenStreetMap

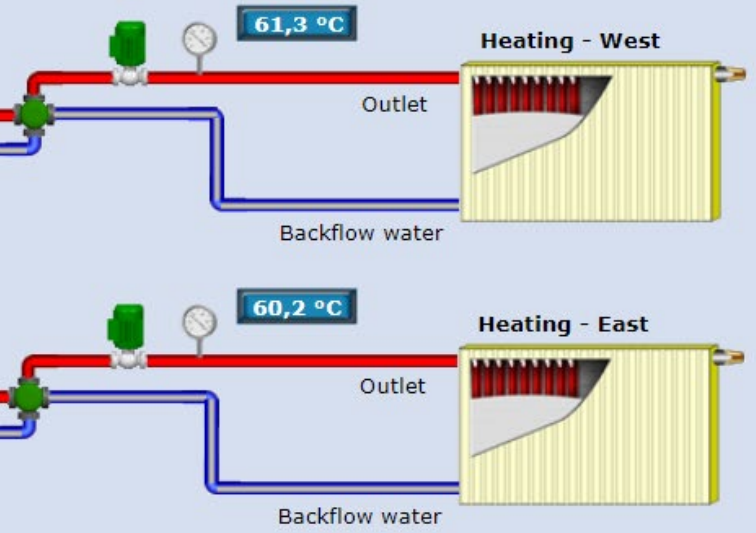
Heating of the GEOVAP company building

Boiler Room | Temp. Trends | Process | Česky | English

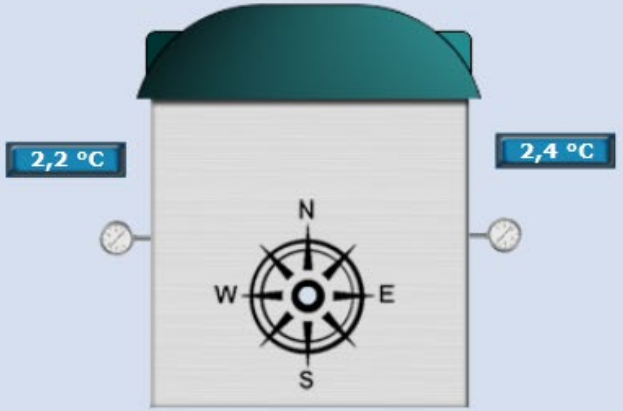
Boiler Room



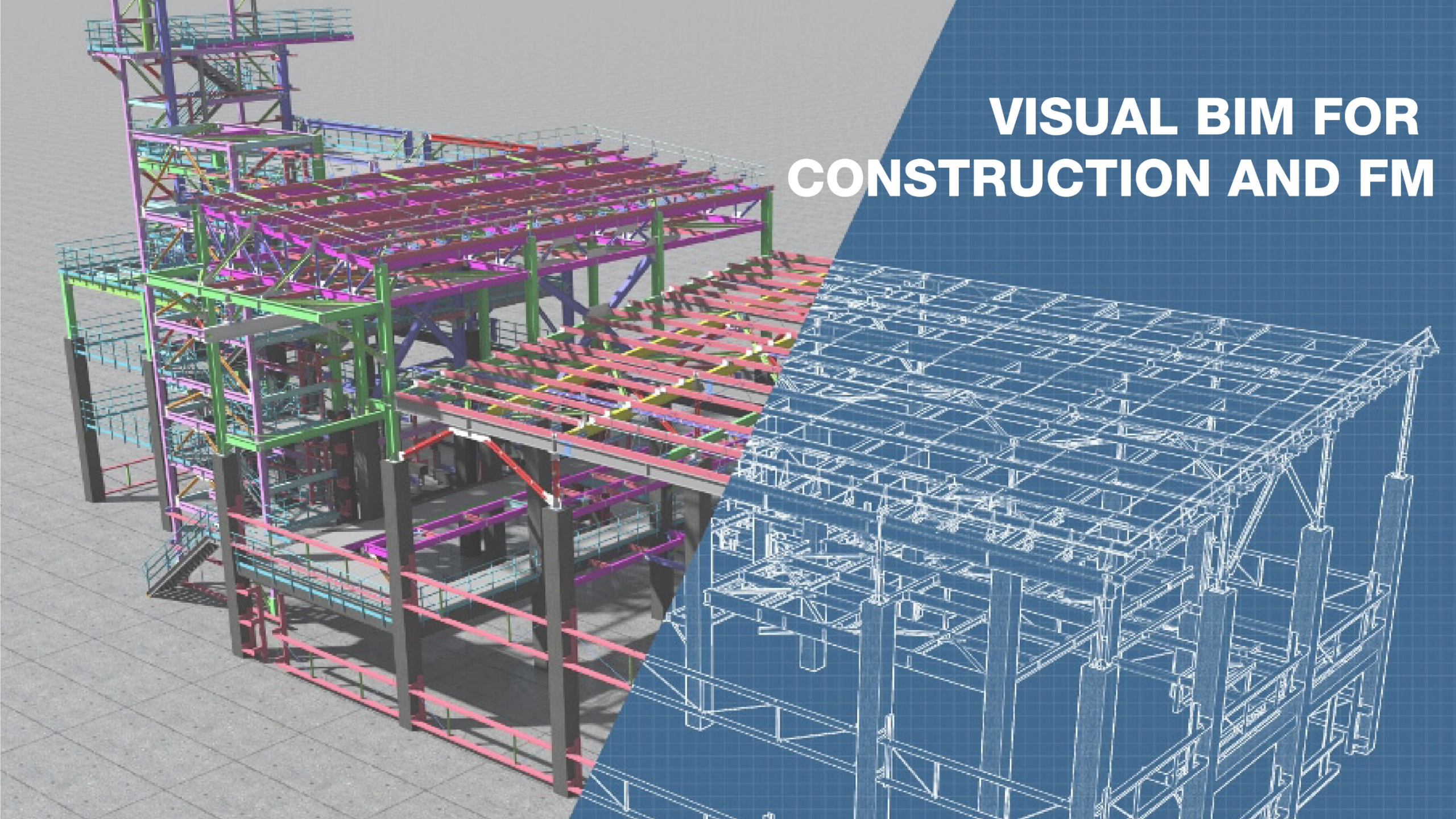
Heated Rooms



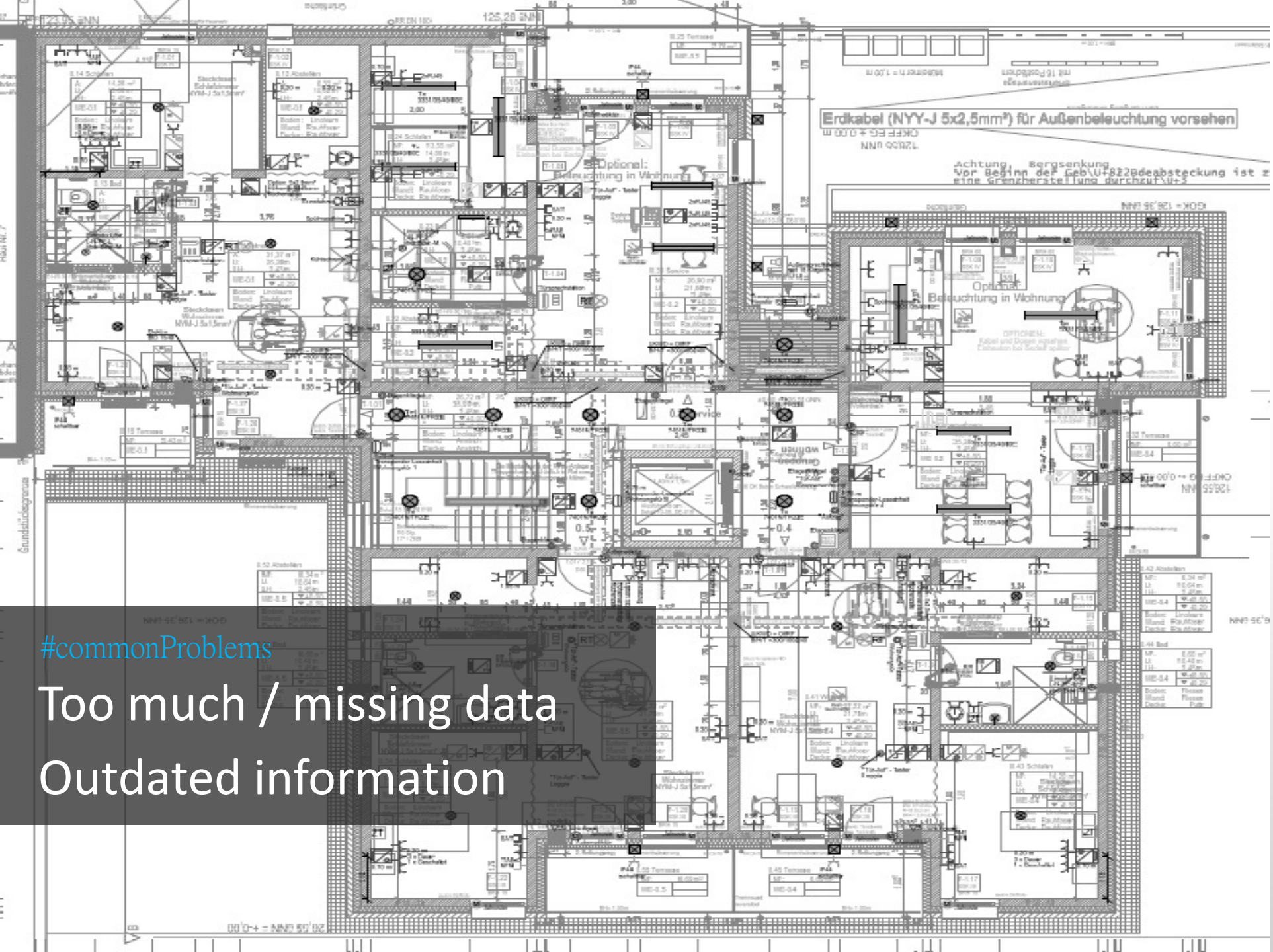
Outside Temperature



POWERED BY: Reliance Industrial SCADA/HMI system



VISUAL BIM FOR CONSTRUCTION AND FM

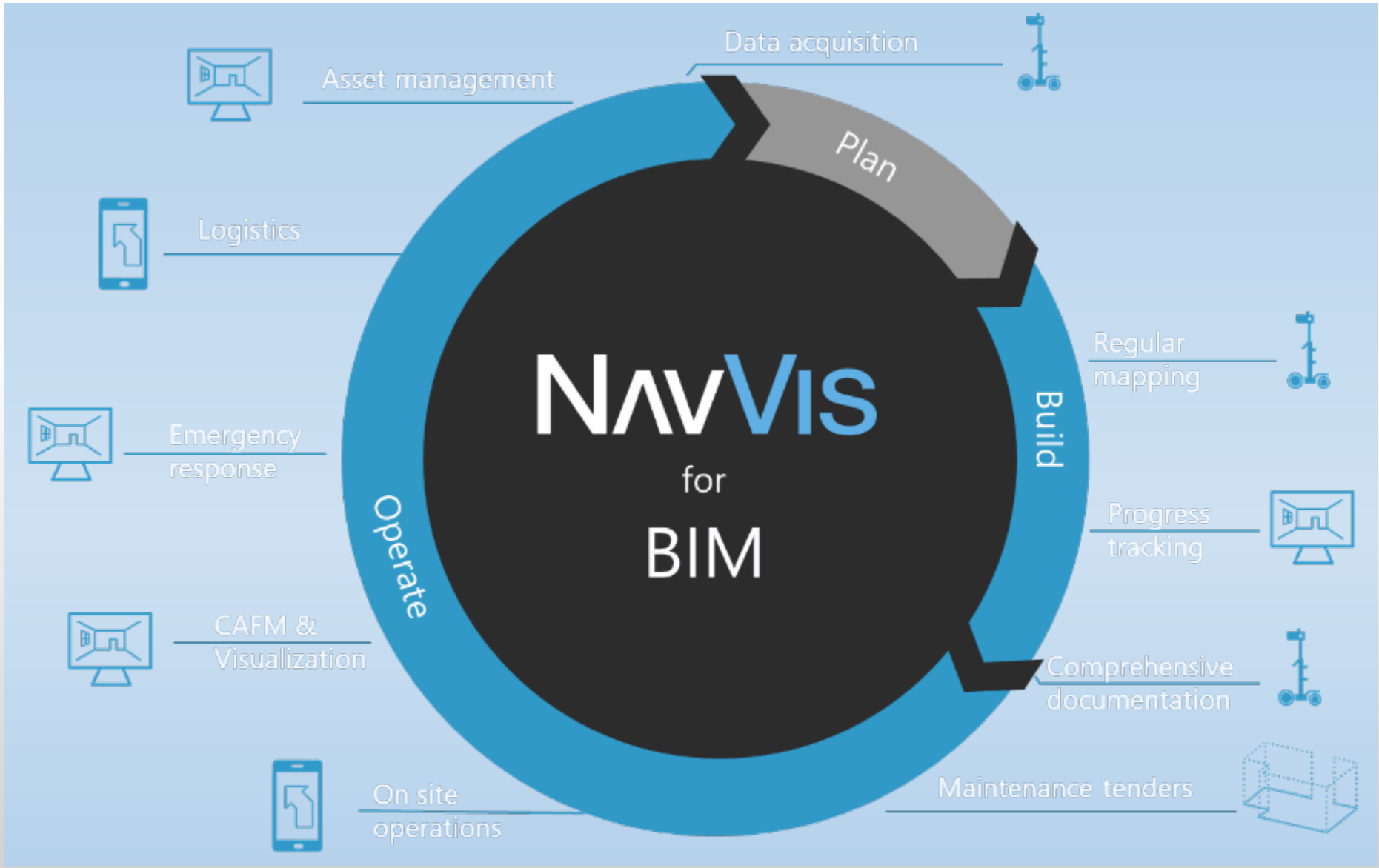


#commonProblems

Too much / missing data

Outdated information

USE CASE 6
DIGITAL TWIN

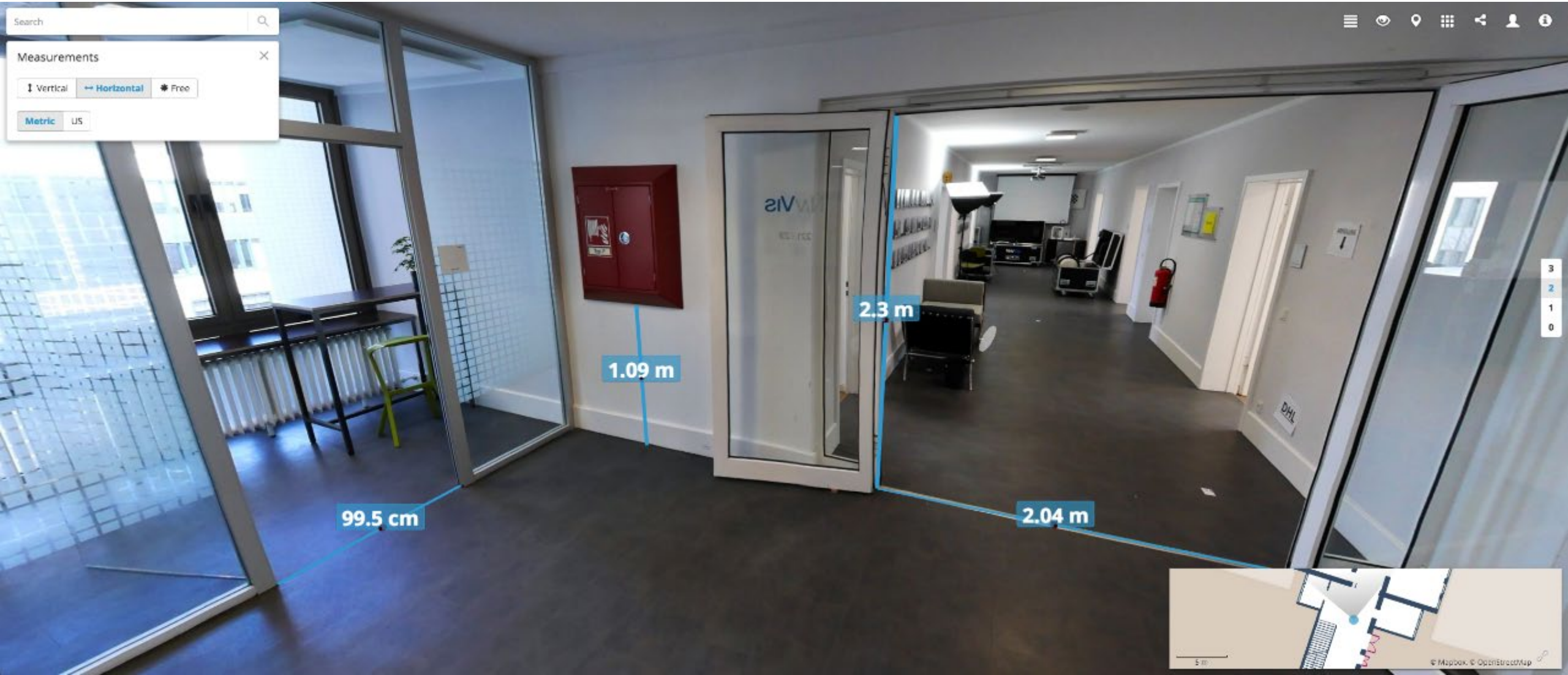


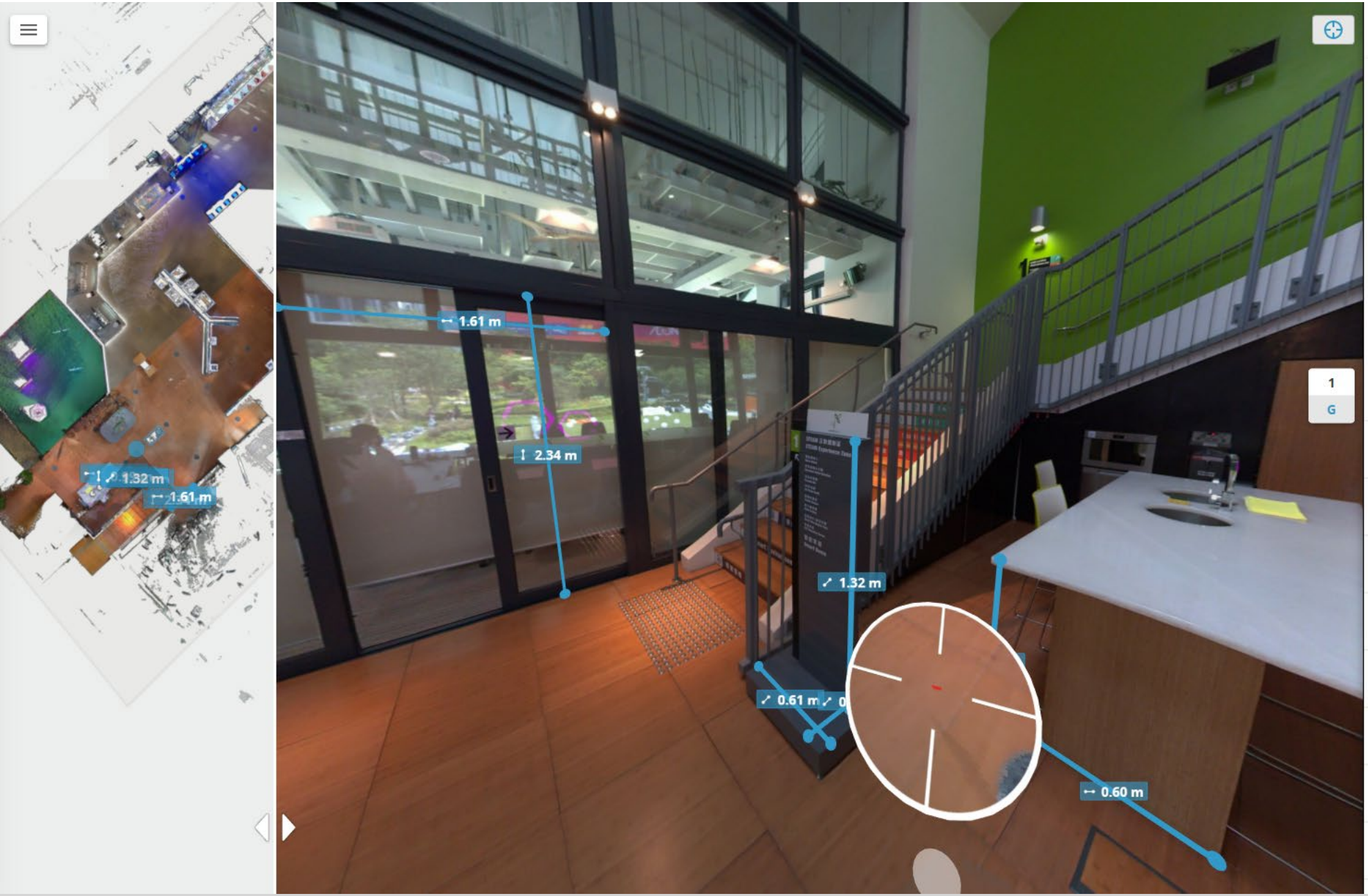
USE CASE 6
BIM For Everyone

CAD software	NavVis technology
▪ Skills and knowledge needed to edit and work with a CAD model	▪ Intuitive, browser based 3D visualization , no technical expertise needed
▪ Professional surveyors	▪ Anyone can use the VLX TO WALK ON SITE
▪ Building is scanned once as costs are very high	▪ Scans can occur on a regular basis, making it easy to keep building data up to date
▪ Special interface such as IFC are needed to share the model	▪ Information can be electronically sent as a link
▪ No browser based view available for an easy integration into existing FM software	▪ Open APIs

Visual BIM – the digital twin of a building

Immediate reality capturing vs. slow model drawing





測量

自由

距離 多邊形

水平

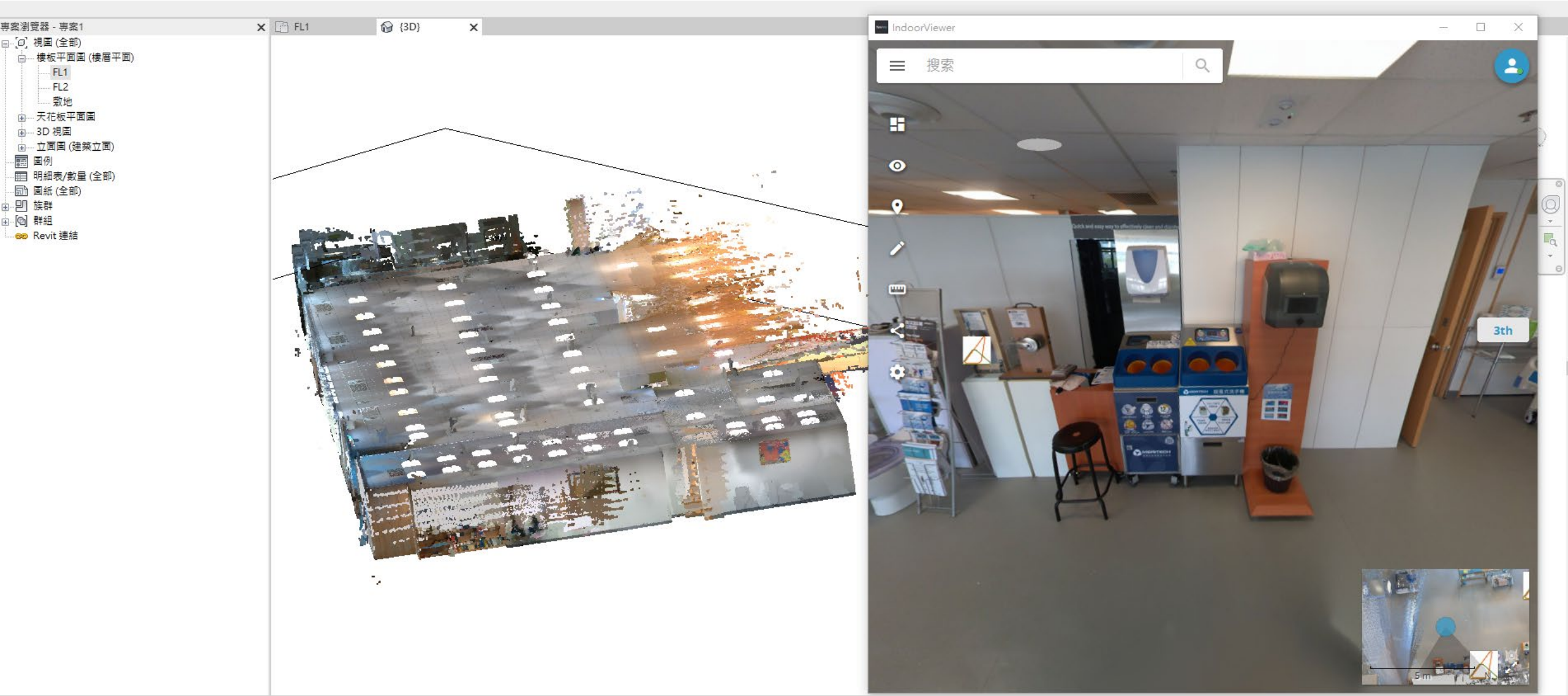
距離 多邊形 矩形

垂直

距離 多邊形 矩形

距離	0.56 m
距離	0.61 m
距離	2.34 m
距離	0.99 m
距離	0.60 m
距離	1.61 m
距離	1.32 m

Comparing Point Cloud with reality



NAVVIS VLX
LIVE DEMONSTRATION

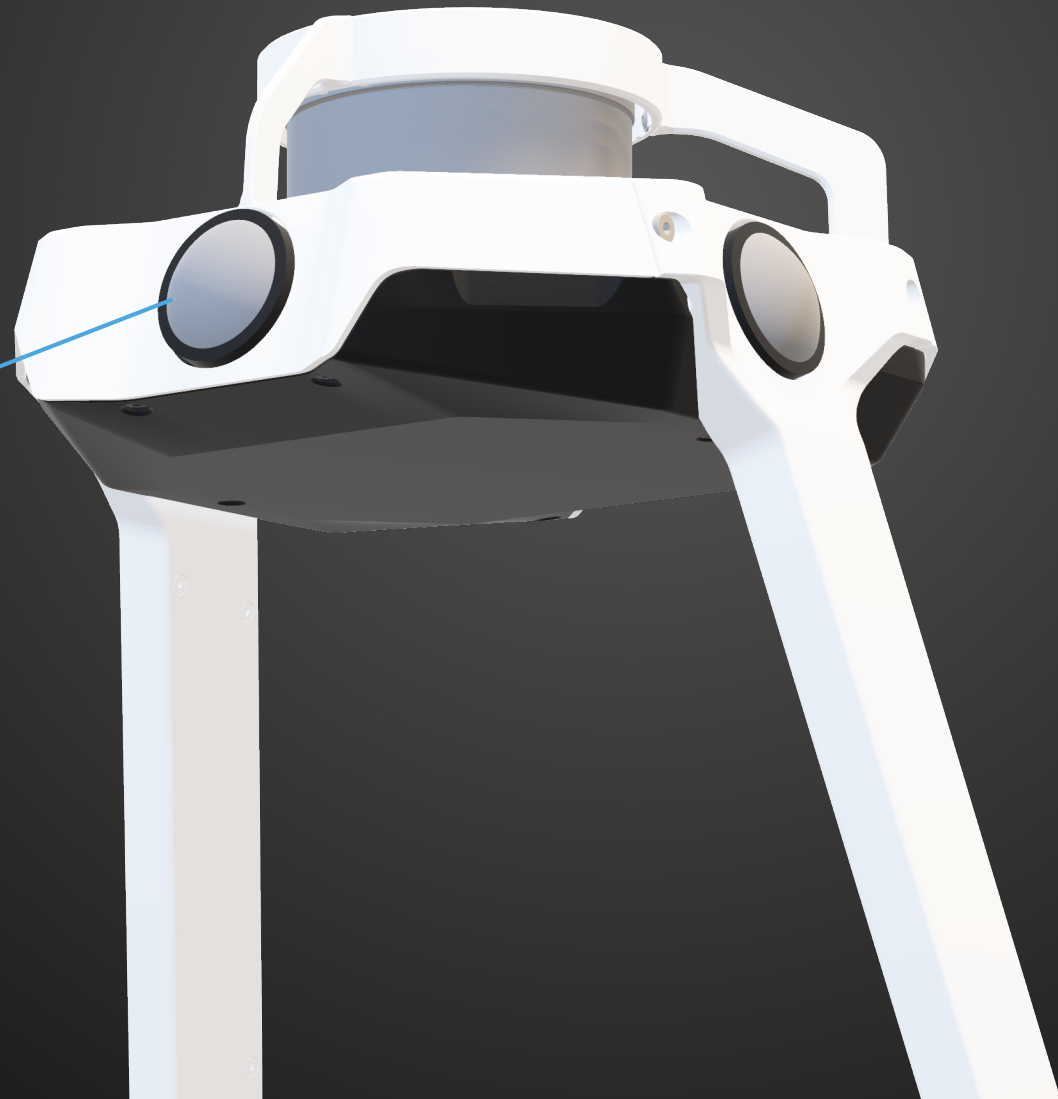
NAVVIS VLX INDOOR MOBILE MAPPING SYSTEM

Wearable device featuring next generation SLAM:

- Navigate into any space
- Sensors are protected
- Always have real-time interface and map in view

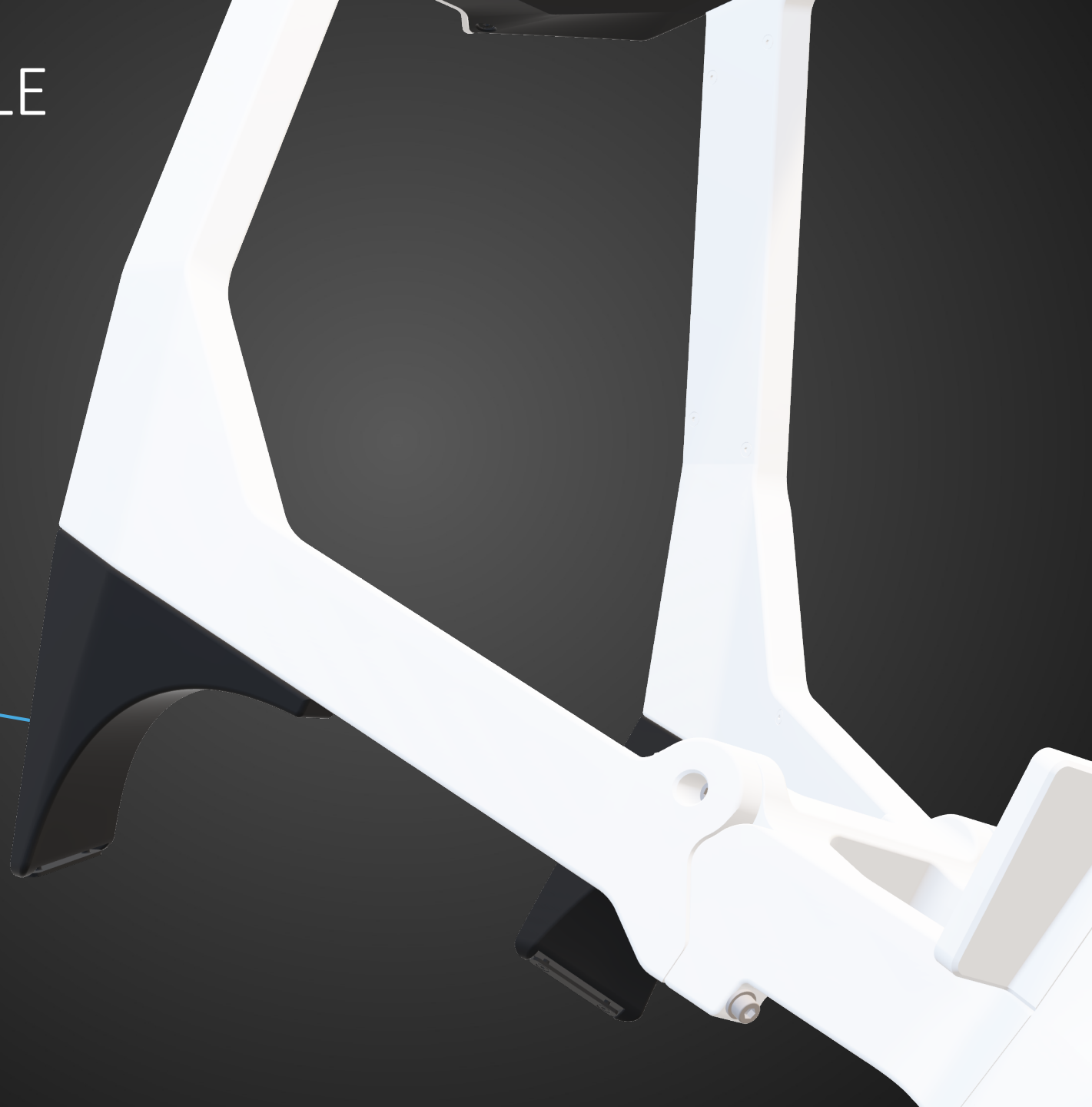
NAVVIS VLX INDOOR MOBILE MAPPING SYSTEM

Four 20 MP cameras arranged for perfect 360° panoramas



NAVVIS VLX INDOOR MOBILE MAPPING SYSTEM

Comfortable shoulder rests for hands-free operation

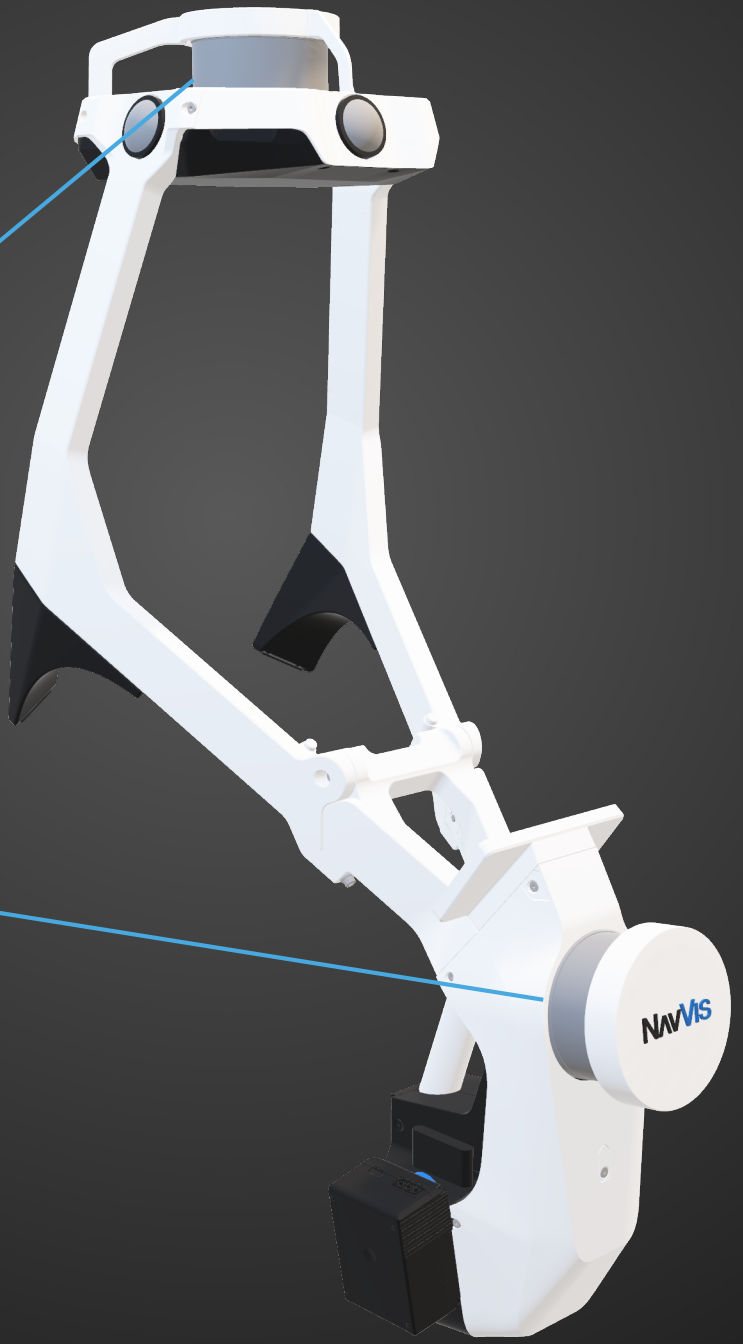


NAVVIS VLX INDOOR MOBILE MAPPING SYSTEM

Two lithium-ion batteries for hours of mapping (also hot swappable)

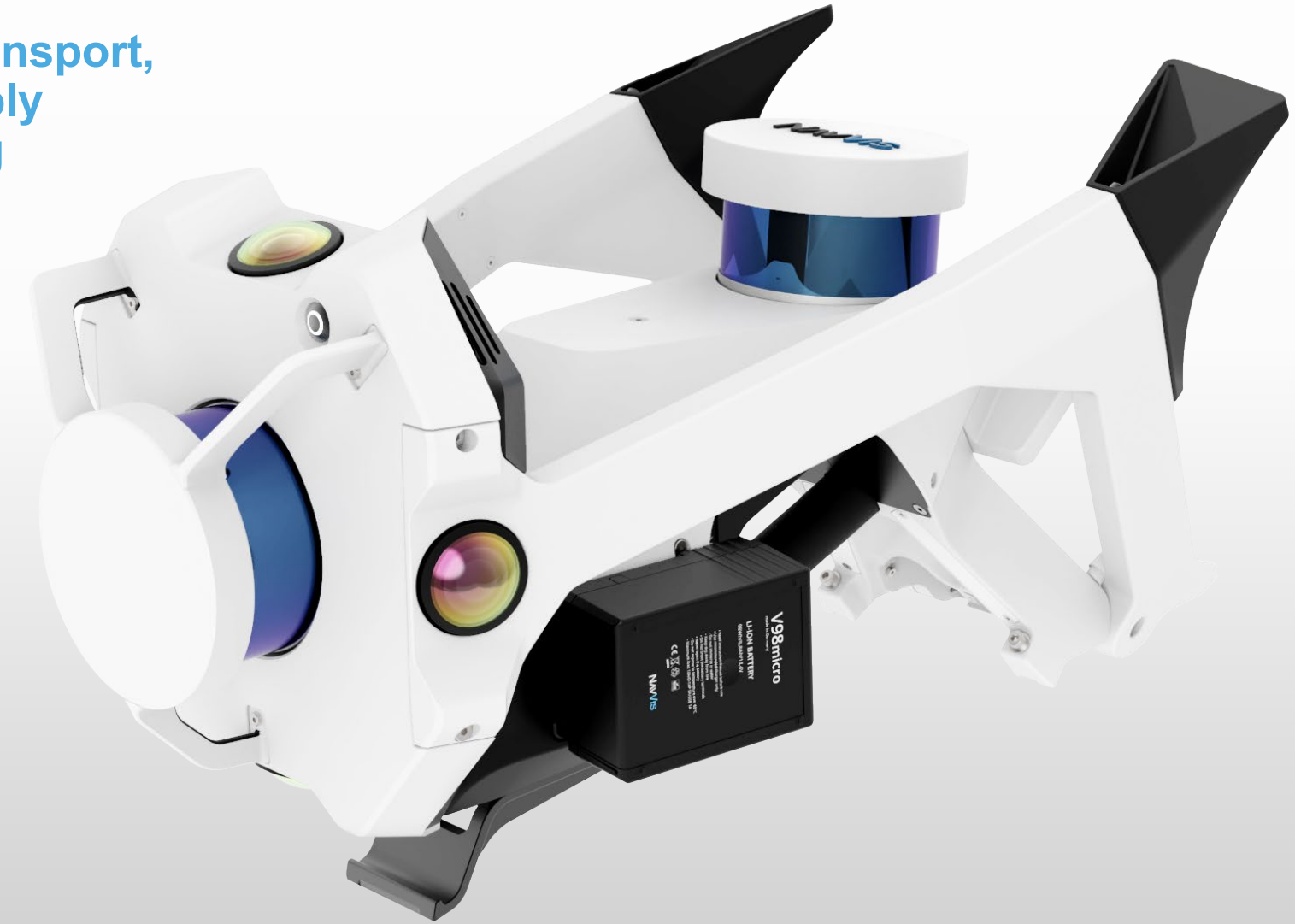
NAVVIS VLX INDOOR MOBILE MAPPING SYSTEM

Two LiDAR modules with 100-meter range powering the most advanced SLAM in the industry



A SMART PACKAGE FOR SMART WORK

Secure case for easy transport, all tools included – simply unfold and get scanning



NAVVIS VLX INDOOR MOBILE MAPPING SYSTEM

Monitor progress and quality while mapping.
NavVis real-time interface features:

- Always in view
- High resolution OLED display
- Dataset management
- Real-time quality map
- Covers indoor, outdoor, and multi-story scans

GROUND CONTROL POINTS

Align point clouds with control points on wall and ground for quality assurance.
NavVis control points:

- Ground and wall targets
- Simply touch the target and trigger
- Control data quality, align datasets, and eliminate drift on long scans

THE BEST MOBILE POINT CLOUD
DATA QUALITY. FULL STOP.

NavVis VLX accuracy specs

Local accuracy:

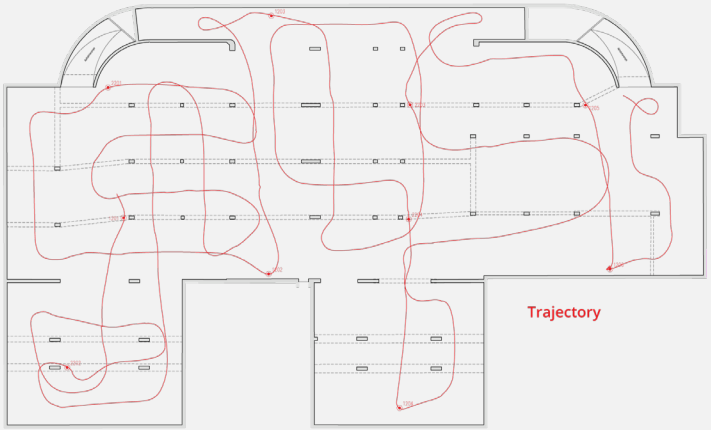
8mm at sigma one (68%)

Local accuracy is measured and validated systematically based on a 100 sqm testing room

NavVis VLX accuracy case study

Absolute accuracy: **(results from one casestudy)**

- **8mm at sigma one (68%)**
- **18mm at sigma two (95%)**



Environment: a parking garage of 1.500 sqm

END

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