

HERON

A new way of working
with 3D real time mapping

SPAR Japan | 12/6 2017

HERON.®

WEARABLE LASER SCANNER



Surveying time: 1h,20min - walking mode

GEXCEL
GEOMATICS & EXCELLENCE

LIGHT & PORTABLE

BEST

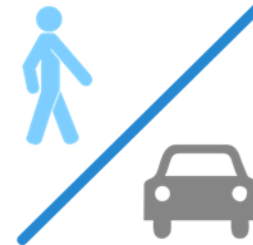
TIME SAVING



INDOOR

OUTDOOR

MOBILE



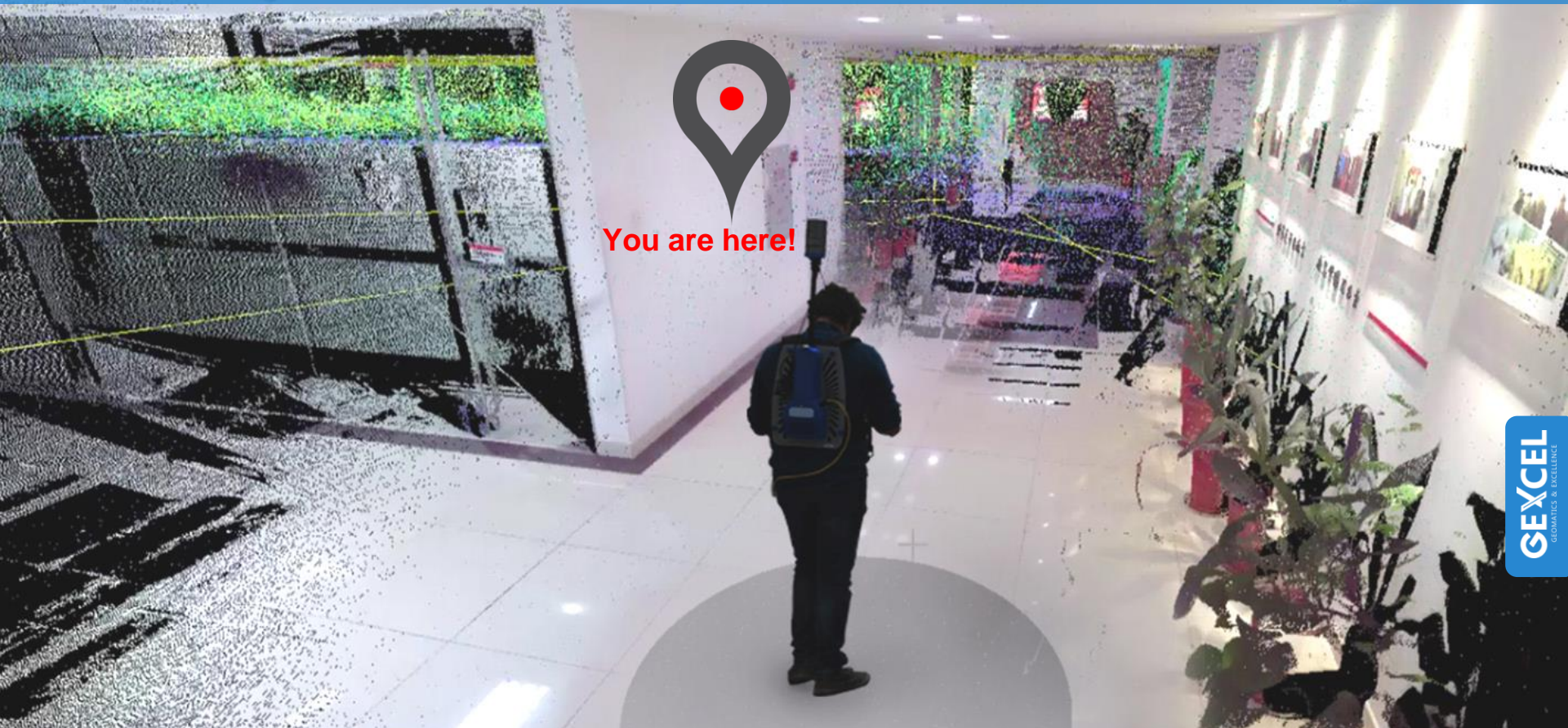
LIGHT AND EASY TO USE



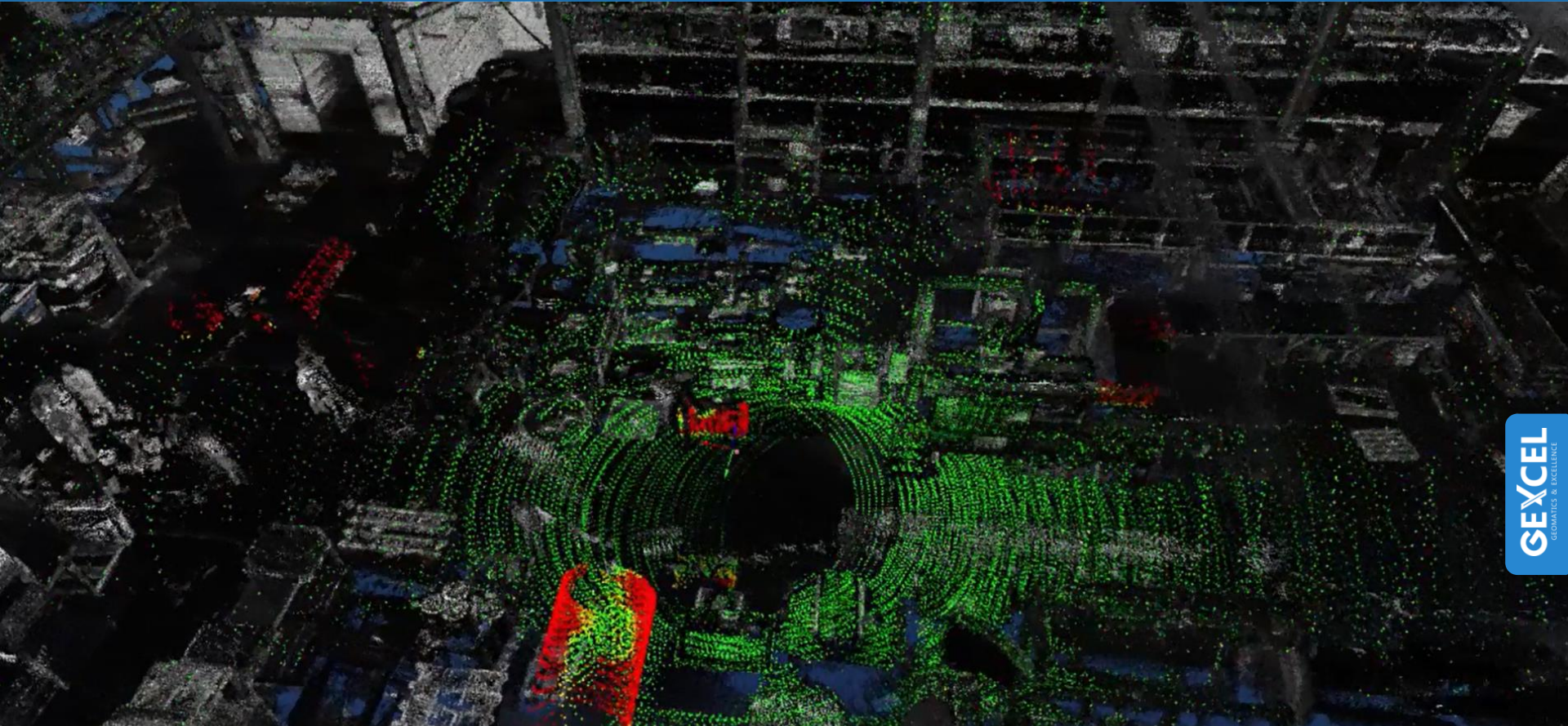
3D MAPPING IN REAL TIME



LOCALIZATION WITHOUT TARGET



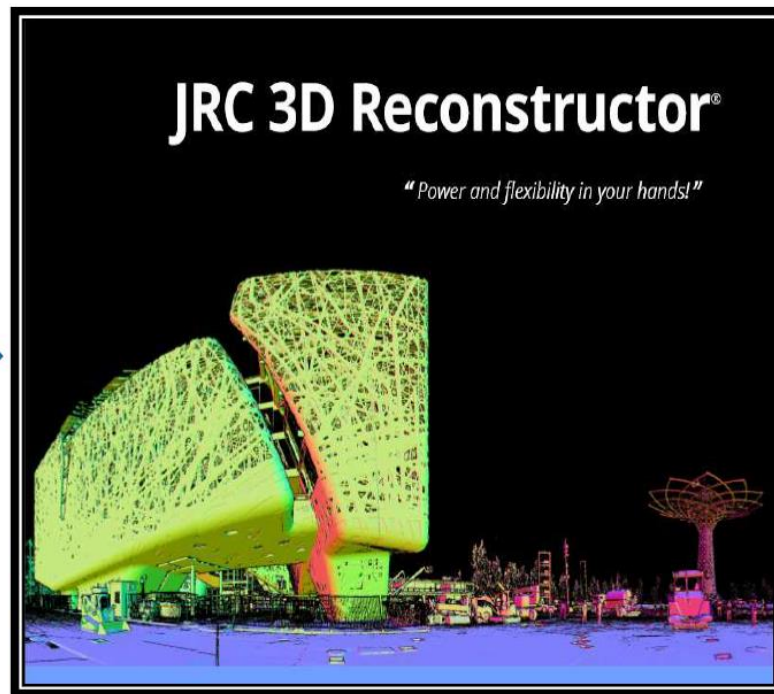
REAL TIME CHANGE DETECTION



FULL INTEGRATION WITH STATIC SCANNERS

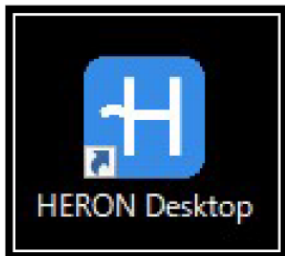


SOFTWARE

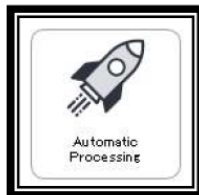


- ・後処理
(Odometer • Create Maps • Close loops)

- ・他の点群との合成、検査 等



後処理は基本的にオート機能にお任せでOK!



←このアイコンをクリックするだけ。



オートで
3ステップの処理
からエクスポート
までしてくれる。

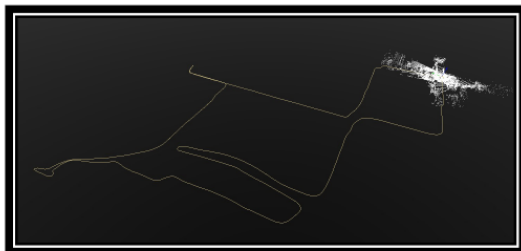
ステップ ①



ステップ ②



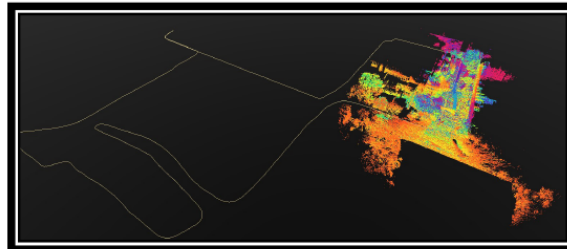
ステップ ③



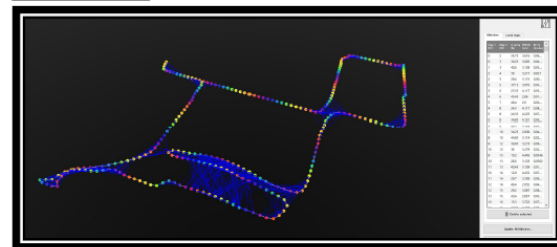
・ Odometer ・
特徴点を使って
軌跡（歩行経路）の
再計算。



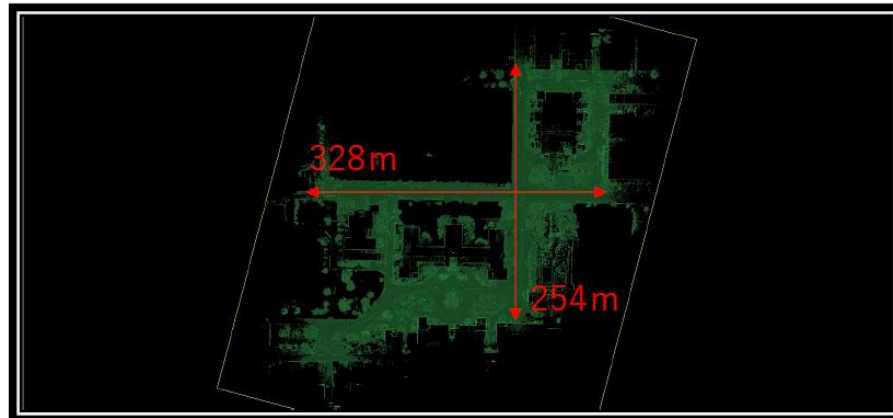
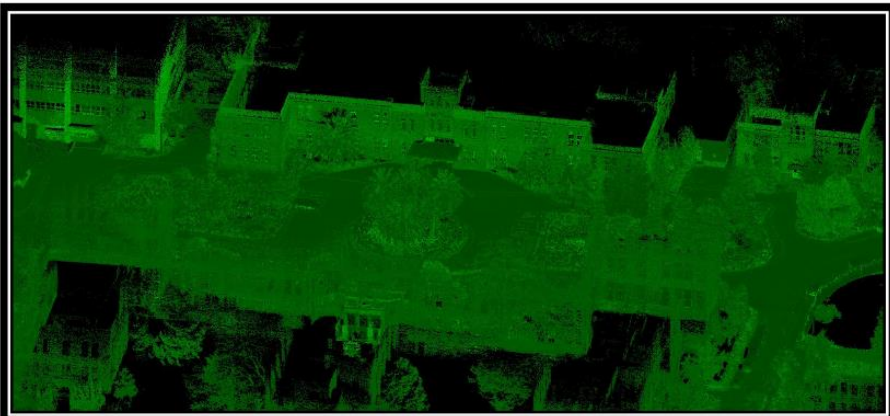
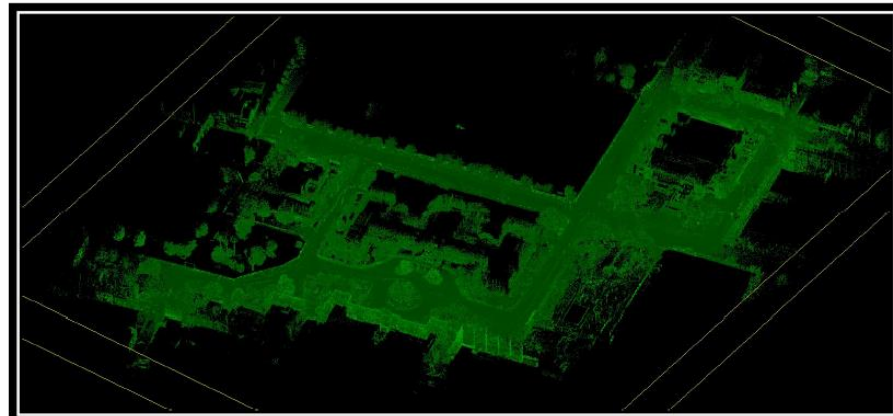
・ Create Maps ・
軌跡を基に数m単位ご
とのローカルマップを作製



・ Close Loops ・
作成されたローカル
マップのつながりを検
証し全体を修正



サンプルデータ情報



- ・計測時間 : 約 2 1 分
- ・計測範囲 : 左の画像参照
- ・生データの容量 : 2.70GB

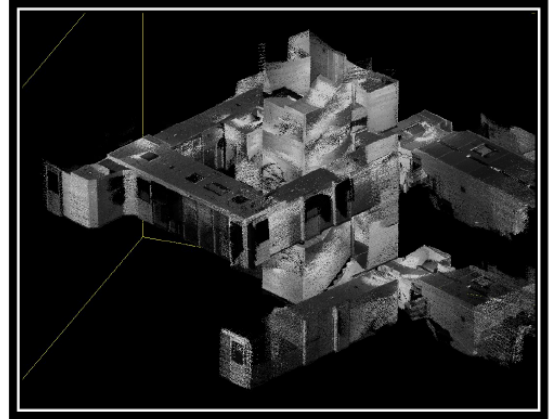
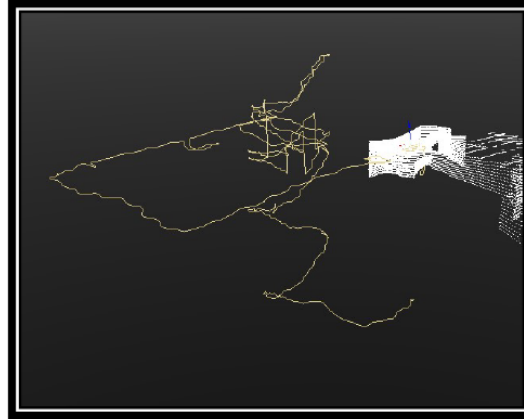
- ・後処理時間 : 訳30分
- ・有効な点群数 : 約 8 憶点
- ・最終完成データの容量 : 間引きや処理範囲の設定で調節可能 (画像のデータは11GB)

後処理機能の利点（手動処理）

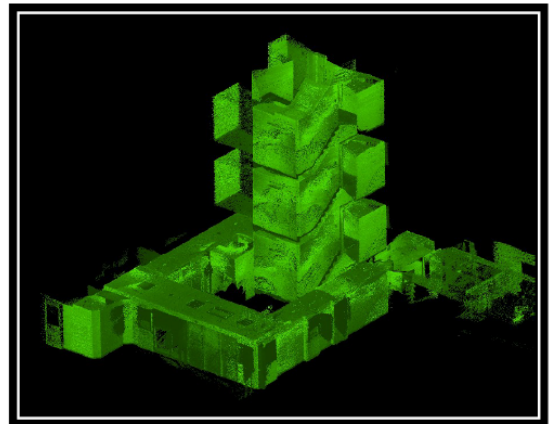
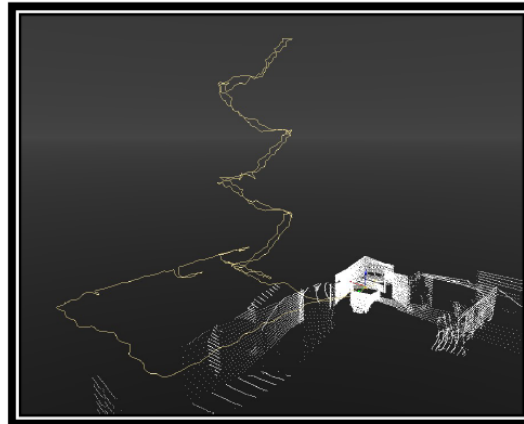


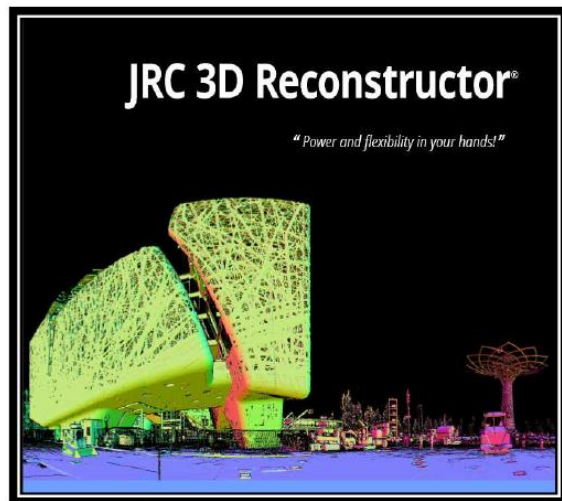
- 生データの軌跡
(計測時のリアルタイム誤差
結果を気にせずに計測)

自動処理



手動処理





主な機能

- レジストレーション
- オルソ画像の作成
- エッジの抽出
- メッシュの作成
- インспекション
(点群、CADモデルによる変位、
制度、経年変化検査)
- ポリラインの作成

など。

Technical Information JRC 3D Reconstructor® CONSTRUCTION

KEY POINTS

- Importing of raw data from different sensors and CAD models
- Direct import of RIEGL RiSCAN PRO projects and Z+F LaserControl projects
- Advanced data filtering
- Scans alignment and geo-referencing
- Mesh creation, editing and simplification
- Data extraction: cross sections, plans and elevations (ready for CAD); planarity and verticality maps; points surfaces comparisons (inspection)
- Export to CAD

IMPORT

- Point clouds from LiDAR, UAV, total station in open formats (txt, LAS, E57, ptx, pts, asc, ply)
- Scans from 3D laser scanner manufacturers (fls, zfc, rxp, 3dd, x3s, x3m, clr, cl3, dp, ixf, imp)
- Meshes and CAD models (dxf, ifc, stl, wrl, 3ds, ply, obj, dae)
- RIEGL RiSCAN PRO projects and Z+F LaserControl projects (thermal camera included)
- Raw scans colorization (FARO and TOPCON supported)

EXPORT

- point clouds (txt, LAS, E57, ptx, pts, asc, ply, ptc, ixf)
- 3D mesh models (dxf, stl, wrl, 3ds, ply, obj, dae)
- cross sections, edges, polylines (dxf, txt)
- planarity and verticality maps (bmp, txt)
- inspection report (pdf)
- volume report (pdf)
- video (avi)
- **new** ReCap 360™ formats (.rcp, .rcs) - through **Gexcel ReCap Plug-in**
- **new** JRC 3D Reconstructor projects (.recprj) and raw data (.rup, .rgp) to be directly imported into ReCap 360™ - through **Gexcel ReCap Plug-in**

OUTPUT

- point cloud models
- mesh models
- orthophotos
- orthographic, cylindrical, spherical and perspective 2.5D views (virtual scan)
- cross sections
- 3D model edges
- area and volume
- planarity and verticality maps
- points surfaces comparisons (inspection)
- distances and annotations
- fly-through videos



- Final Global Accuracy: ~ 5 cm
- Local Accuracy: ~ 2 cm
- Final survey resolution: ~ 2 cm
- Time of initialization: ~ 30 sec
- No stop working time: ~ 3 h
- Scanning rate: 700.000 P/sec.
- Working inside: YES
- Working outside: YES

• **NEW: now also with 360° camera**



FINAL RESULT: 3D MAP GENERATION



Walking mode – Indoor / Outdoor

Surveying time: 1h – Walking mode – Indoor/Outdoor

Vienna Downtown

FINAL RESULT: 3D MAP GENERATION

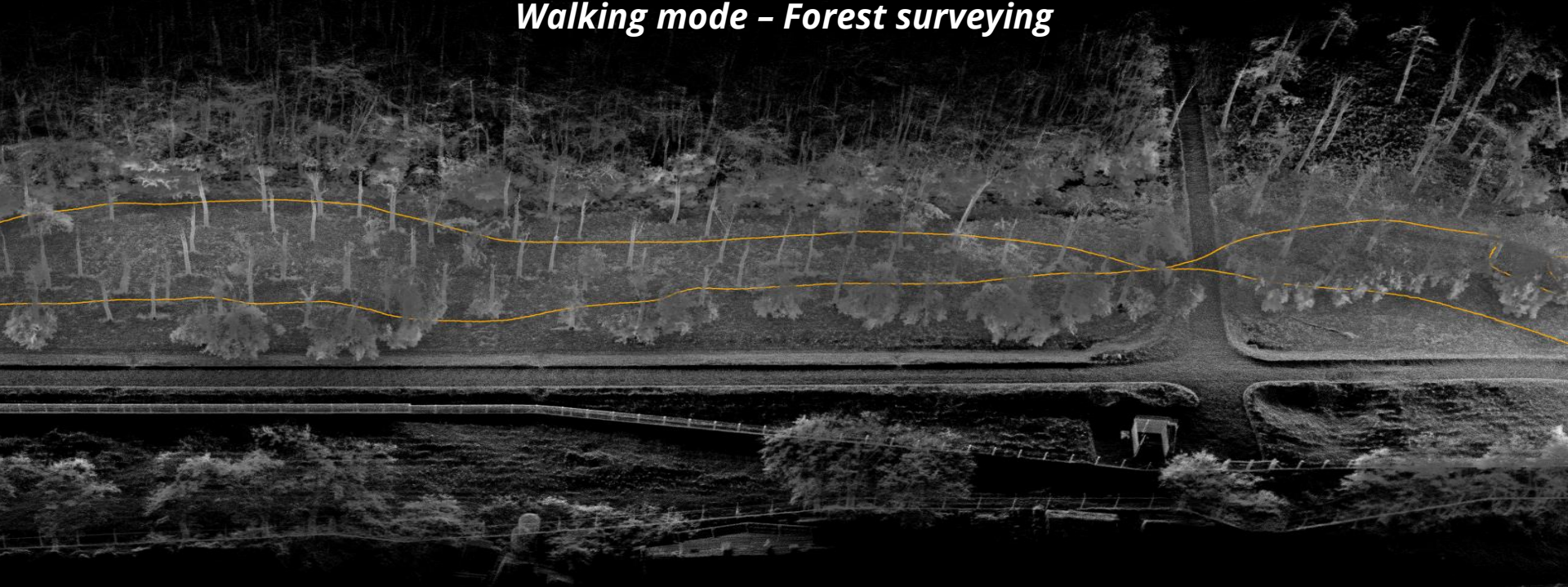
Driving mode

Surveying time: 25min – driving mode

Vienna Hofburg

FINAL RESULT: 3D MAP GENERATION

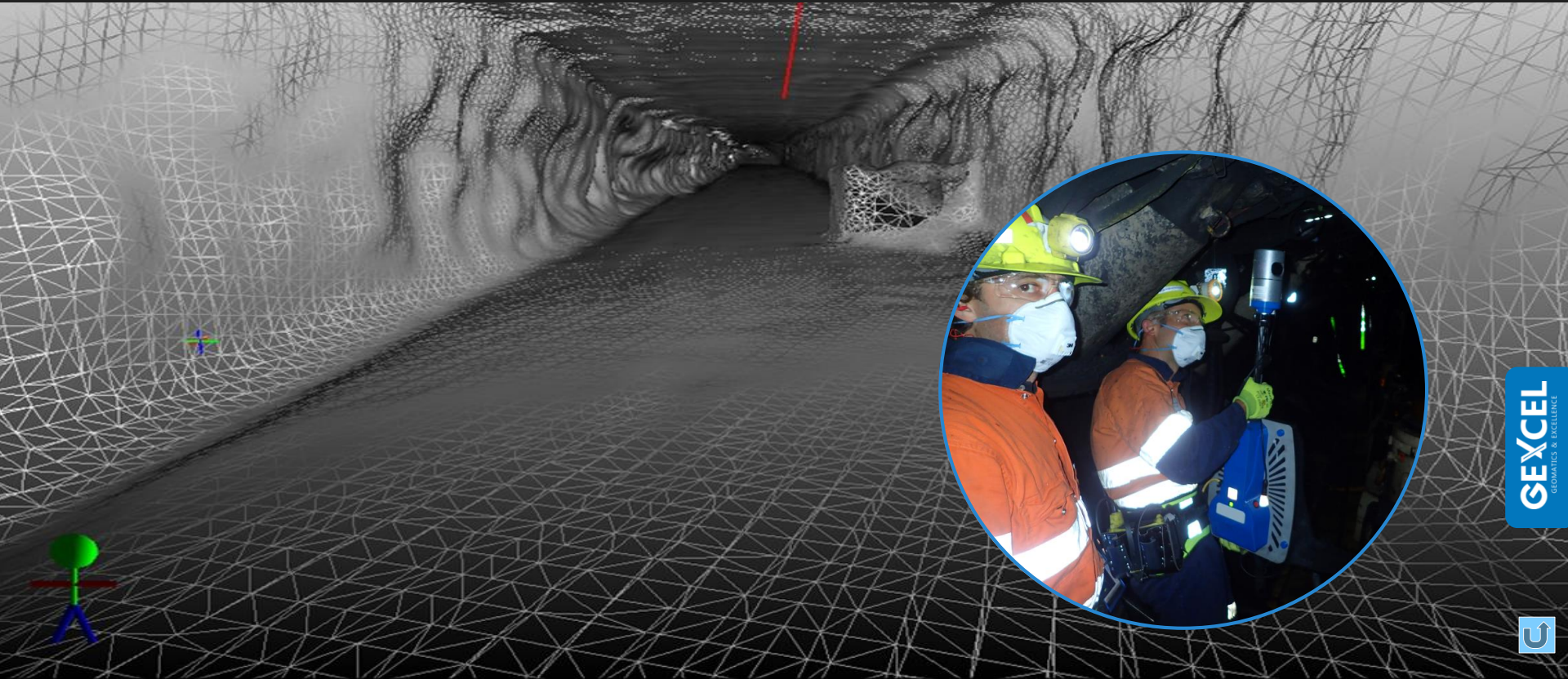
Walking mode – Forest surveying



Forestry application

FINAL RESULT: 3D MAP GENERATION

Underground mine



3D and 360° images

Underground mine



Camera Images Visualizer

Number of Images in this Cloud: 1

2017-03-30-13.36.00.654

Fit View

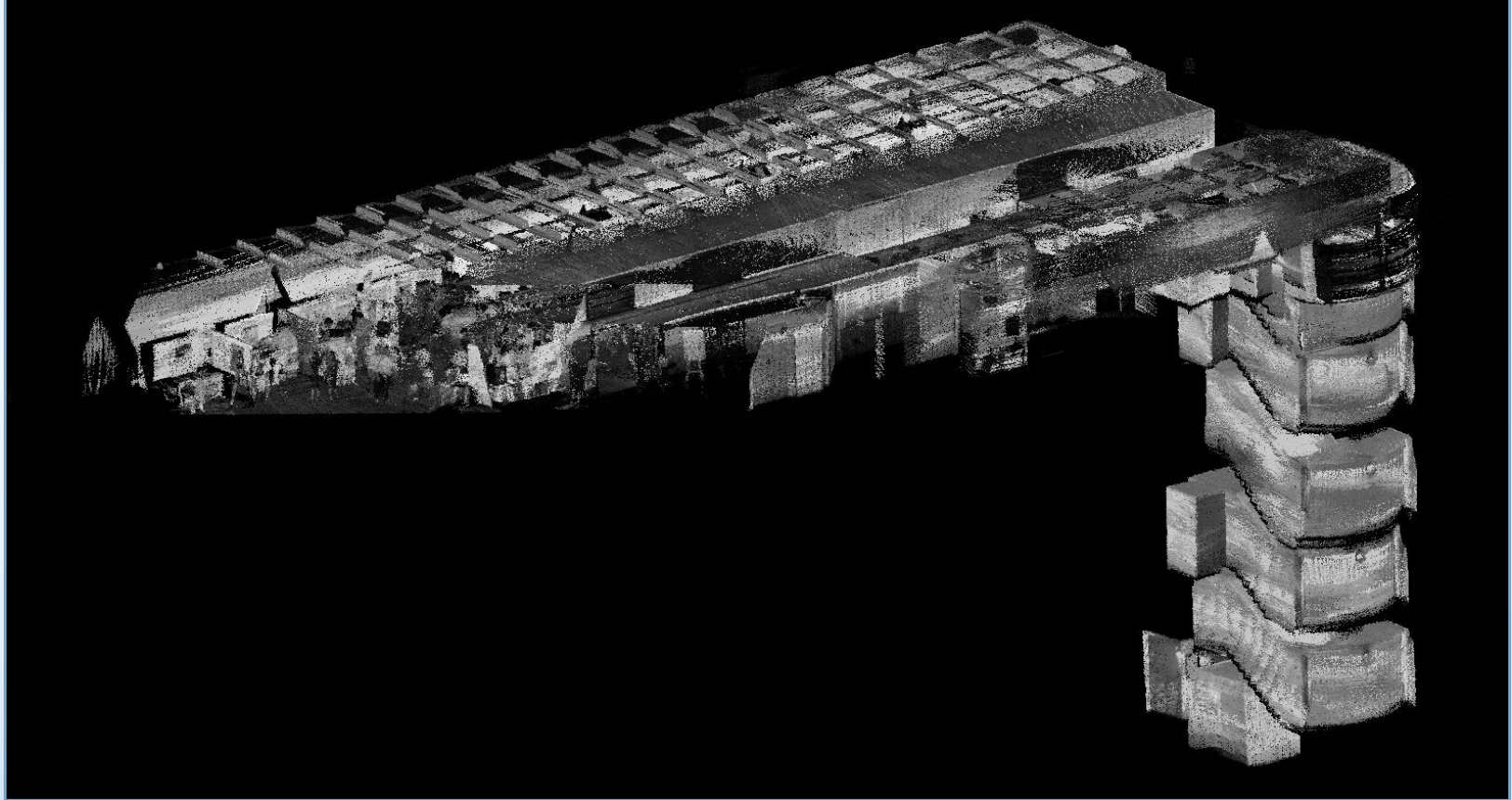
Zoom:



49.3281%



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Linear Measure Mode

Click to pick the measure starting and end point

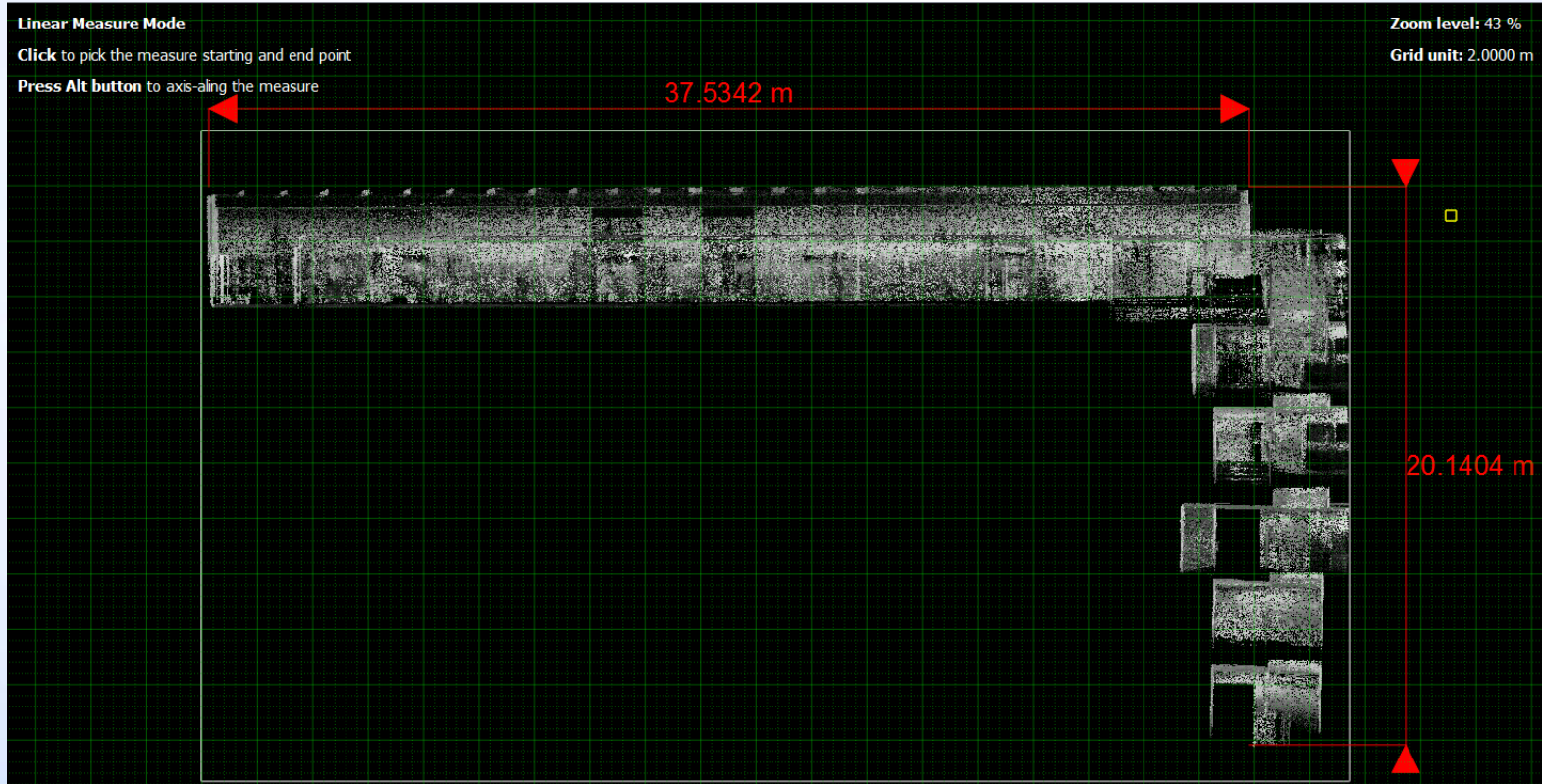
Press **Alt** button to axis-align the measure

Zoom level: 84 %

Grid unit: 1.0000 m



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THANK YOU!

For more information

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