Geospatial for Telecommunications

Use of geospatial solutions for all phases in the lifecycle of a telco project

Presented by:

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GWF 2023 booth 01

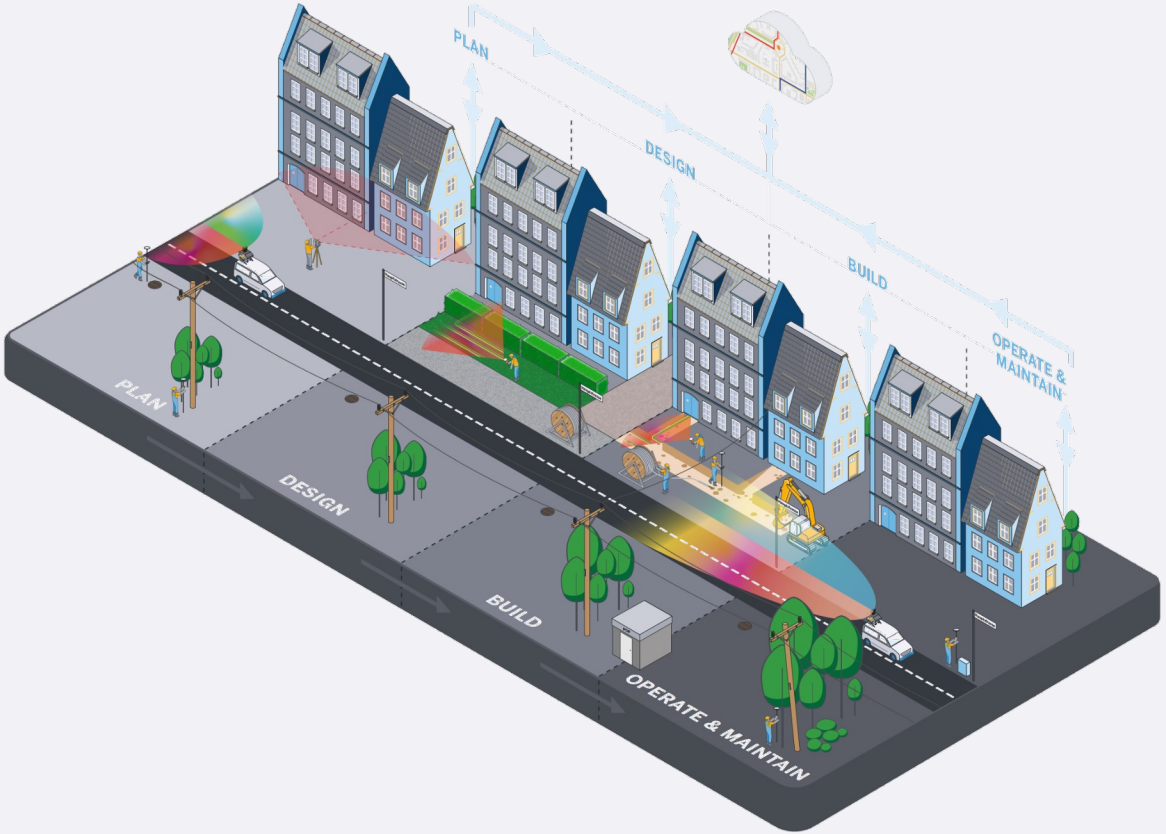
Europe's Digital Decade: digital targets for 2030

2020 - 2030

- **EU Infrastructure goals for 2030**
  - **All** EU households and businesses should have **gigabit connectivity**
    - For Fiber-to-the-Home (FTTH) still **102 million** households left to do (EU+UK)
      - 62 million in Germany, UK and Italy
  - **All** populated areas should be covered by **5G**
- Very significant investment gap to reach the EU digital targets for 2030

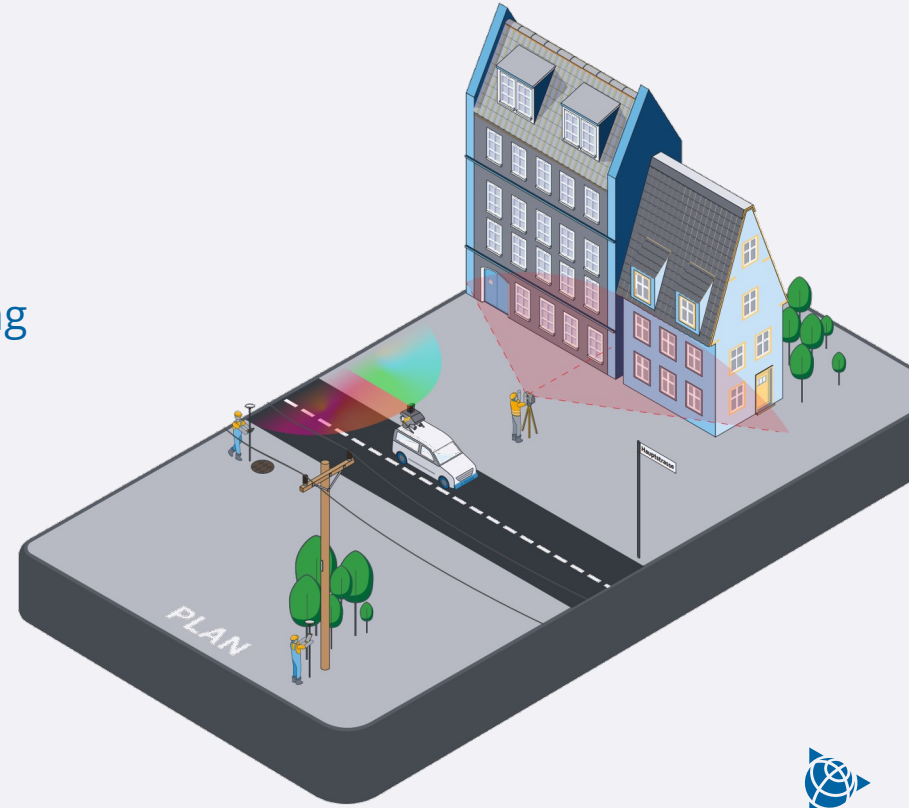
European Commission

Fiber-to-the-Home lifecycle



Planning

- Determine nature and extent of work required
- Pre-survey of the area
  - Demand needs, house and building counts, households
  - Surface characteristics
  - Property rights
  - Location, accessibility and conditions of utilities and services
- Documentation for liability



Pre-survey

Mobile Mapping the preferred choice of technology

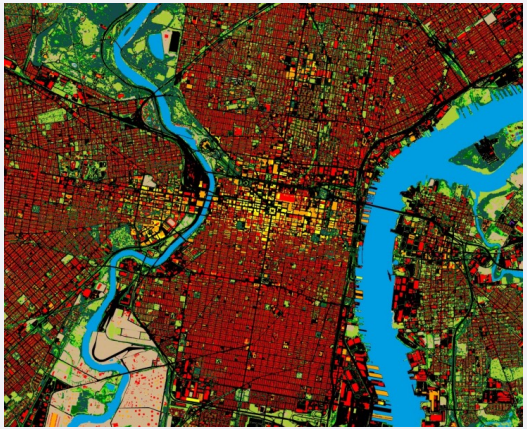
- Fast reality capture of the complete project area
  - Collect precise and dense **point** clouds for a full digital representation of reality
  - Immersive **imagery**
  - Enable planners/designers to get a much better view of the real-life situation in the field **avoiding costly field visits**.
  - Enables centimeter levels **accurate** measurements remotely

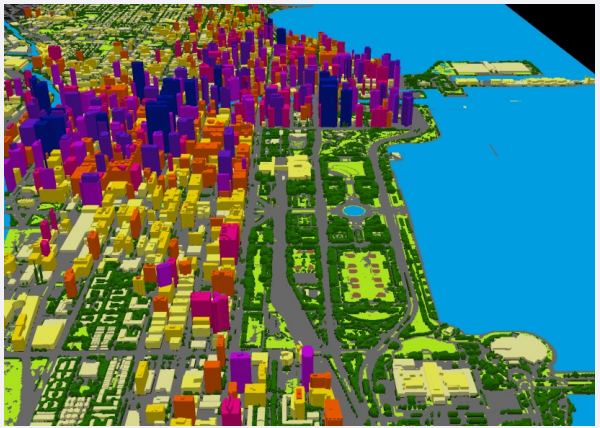
Trimble MX Publisher with live data connection to Geostruct FTTH software

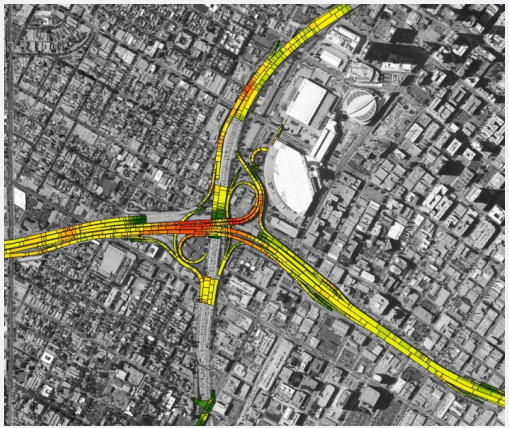
5G RF planning and engineering

Roll-out of 5G requires proper geospatial data

- Clutter classifications
- 3D multi-tiered building vectors
- 4D bridges







Credit: Land Info Worldwide Mapping, LLC

Design

- Field Survey Verification
- Road surface conditions
- Planned infrastructure locations and status
- Obstruction locations

- Walk out of the preliminary design for QC

Augmented Reality

Visualize

- Underground infrastructure
  - See the **hidden**
- Above ground structures
  - See the **future**
- In-ground line work
  - See the **boundaries**

Build

- Identify existing (underground) utilities before digging into the ground
    - Augmented Reality(AR)
- Capture precise as-built
- Inspect and record modification
- Register new network in national (underground) utilities databases

As-built recording

GNSS

- Integration of standard survey tools such as GNSS into industry specific workflow solutions
  - Capture at cm level
  - Update underground utility registers
    - In the UK
      ± 7 accidents every hour, every day
    - Economic cost of accidents
      £2.4b per year

Operate & Maintain

- Precise As-Built
  - Update and Manage Changes
- Infrastructure Inspection
- Vegetation Management

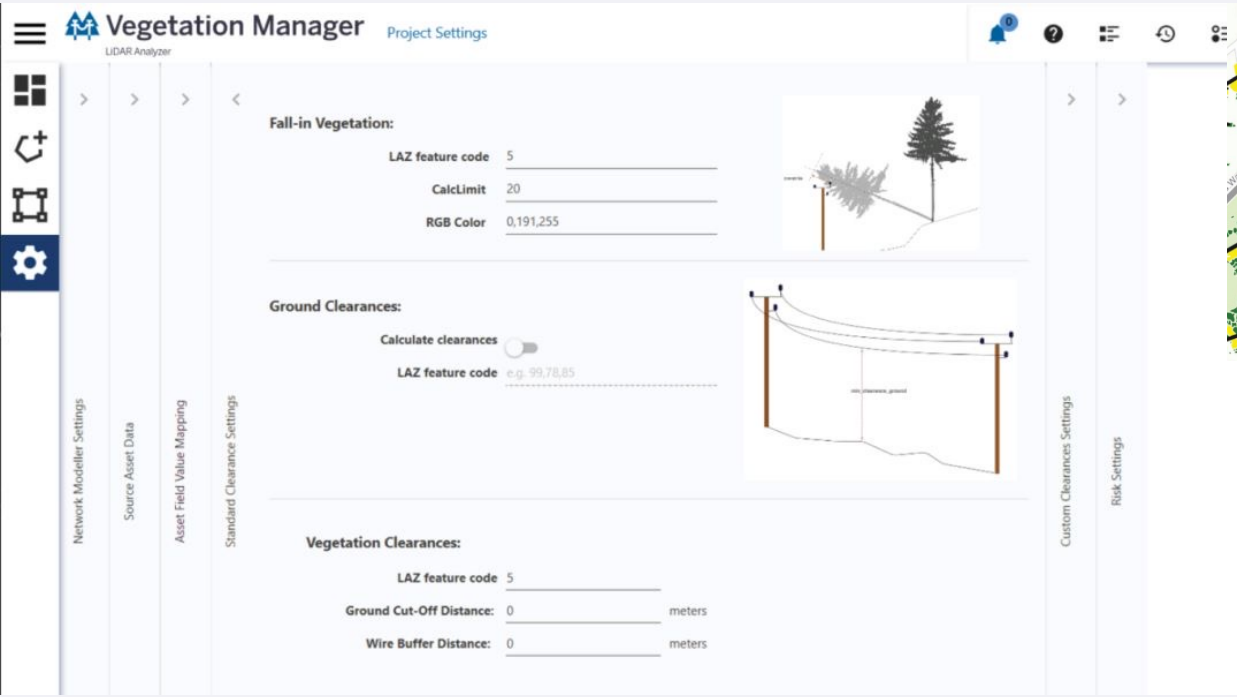
Tower maintenance

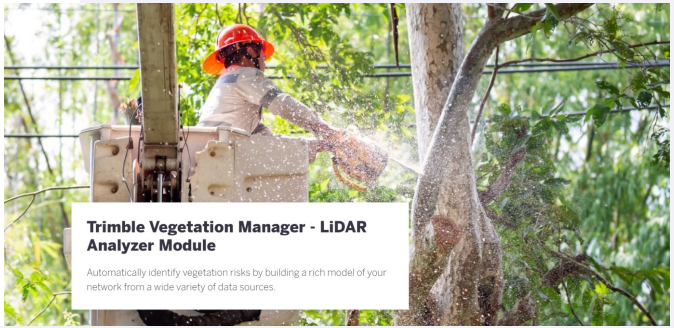
Inspection using 3D laser scanners

- Fast and easy data collection
- Large amount of rich data
  - Even data which is not directly required for the project at hand is obtained and can be retrieved down the line without another trip to the site.
- The client can perform condition assessments of the tower structure and adjacent assets to aid their plans for maintenance and improvements

GBM Group d.o.o., Sarajevo, Bosnia and Herzegovina

Vegetation management





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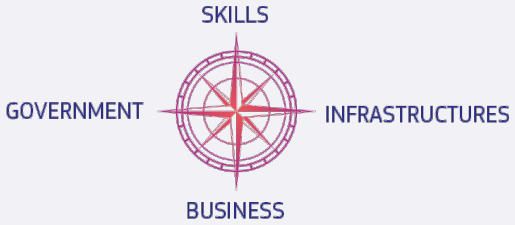

Thank you

For Questions
or Feedback
please contact:

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