FiberPlanIT

BY COMSOF

orbit

GEOSPATIAL TECHNOLOGIES

Network Automation & Mobile Mapping

Webinar

January 24, 2018

Presenters

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Marketing Manager, Comsof

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CSO - Sales & Marketing Executive,
Orbit GT

Welcome

Introduction

- FiberPlanIT by Comsof
- Orbit Geospatial Technologies

What is mobile mapping?

FTTx project workflow

Q&A

Webinar details

Duration: 45 minutes

Ask questions via GoToWebinar Q&A window

- Questions will be treated at the end.

After the webinar, a short survey

Look out for our email later this week with a link to the recording of this session

FiberPlanIT by Comsof

Comsof

- Ghent, Belgium
- Toronto, Canada

FiberPlanIT since 2008

- FTTx network planning and design
- Software & services
- 200 projects
- 40 countries

Orbit GT

Orbit GT since 1962

- Lokeren, Belgium

Global market since 2008

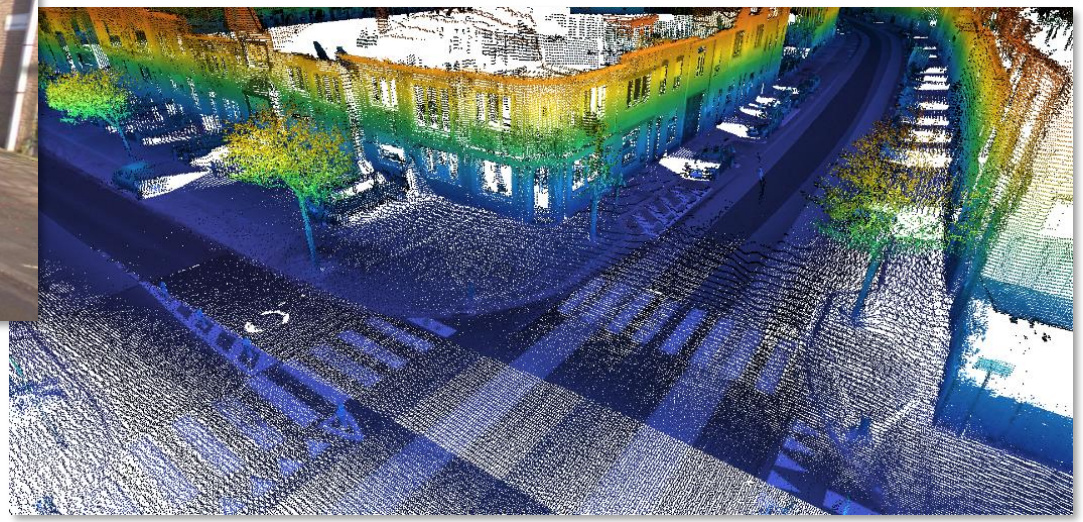
- 3D Mapping Software
- 58 resellers
- Worldwide coverage for mobile mapping

What is Mobile Mapping?

Mobile Mapping brings the full representation of 3D reality onto the desktop, using sensors mounted on a mobile vehicle (car, train, boat, bike, uav, even a person).

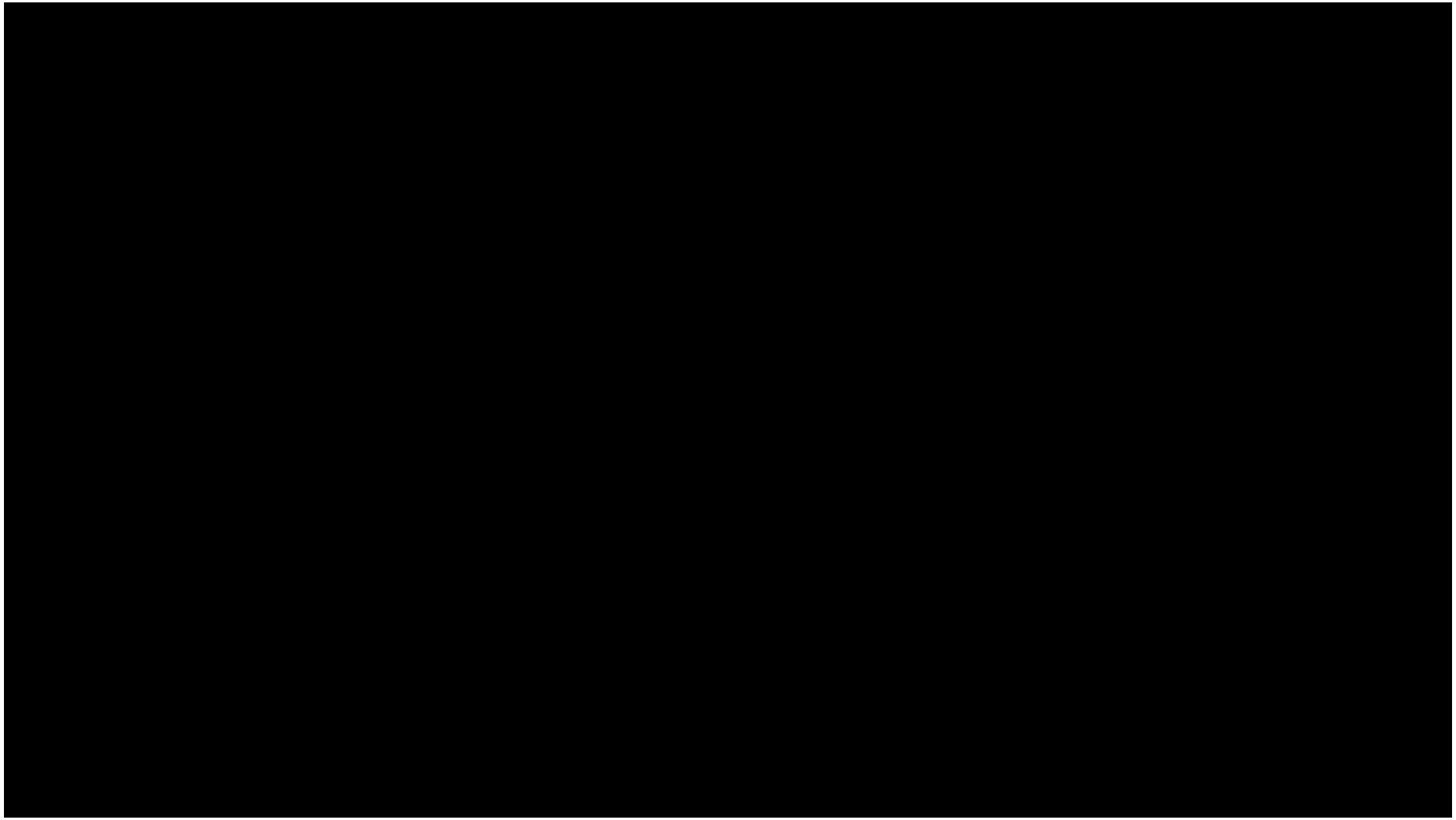
What is the result of Mobile Mapping?

Result : Full 3D View in 360° imagery and LiDAR



with exact positioning and measurement capabilities

What can we do with it?



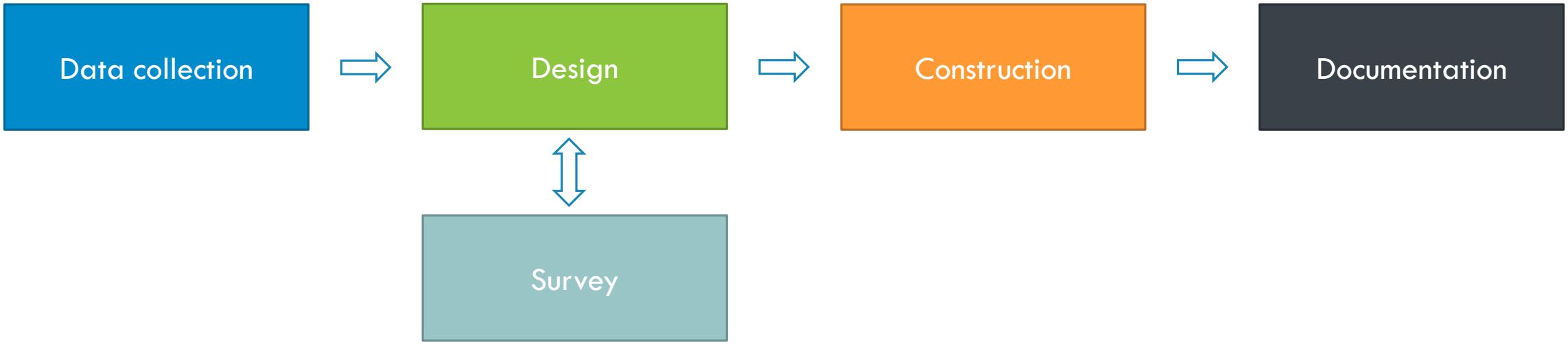
What can we do with it?

- Reduces field trips
- Extraction of road infrastructure
- Inventory of assets
- Visuals checking and judgement
- Placement checks
- Evaluate trenching options (ground works)
- 3D Analysis (Line of Sight)
- Customer support
- And much more

Mobile Mapping & Orbit GT

- These days Mobile Mapping projects are covering countries, states, and cities all over the world.
  - Big projects going on in Europe (e.g. Belgium, Sweden, Spain, Germany, Austria, Lithuania, Portugal, Italy, Turkey), United States, Asia (Singapore, Malaysia, Thailand, Korea, China, India), MENA (Saoudi Arabia, Morocco, United Emirates), …
- Importance of a strong industry support:
  - Hundreds of different mobile mapping systems are used by thousands of data collection companies.
- Orbit GT is the worldwide leading company in offering standardized Mobile Mapping software products for a complete 3D mapping workflow.

FTTx project workflow



Gather GIS data needed for the design

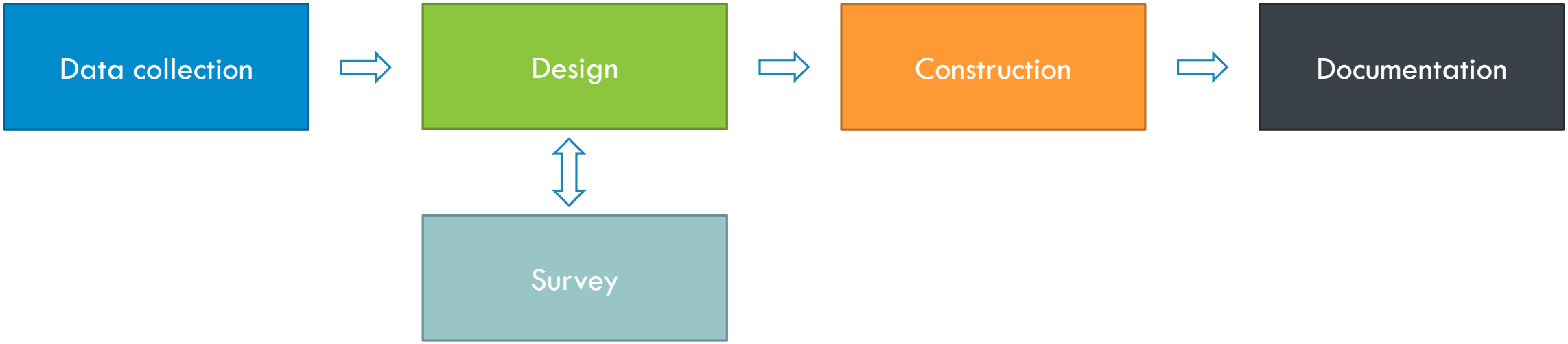
Create High Level Design based on network architecture

Survey to verify design

Create the to-build plans for the field crews and build the network

Document the as-built network

FTTx project workflow



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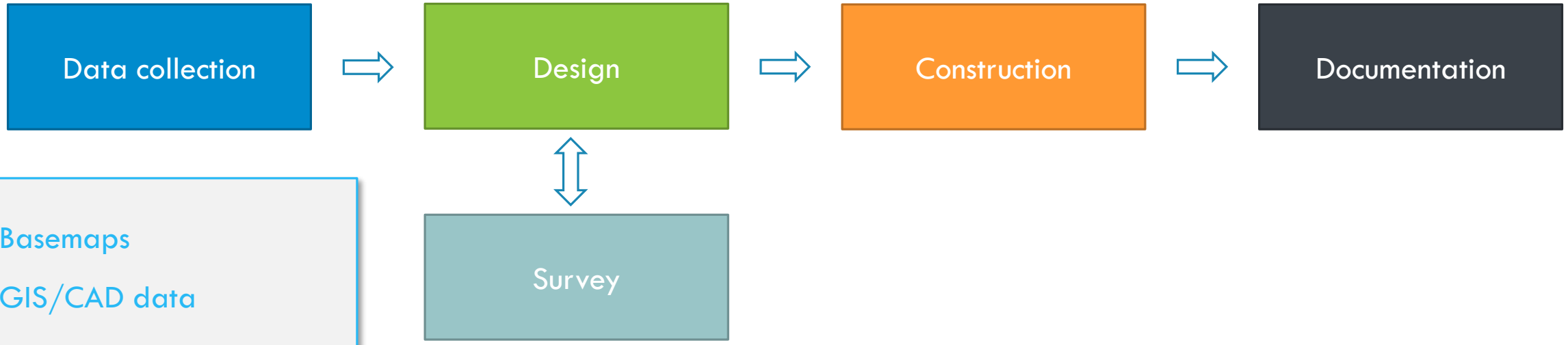

- Basemaps
- GIS/CAD data
- Address locations
- Existing network data
- Field survey
- **MOBILE MAPPING DATA**

Create High Level Design based on network architecture

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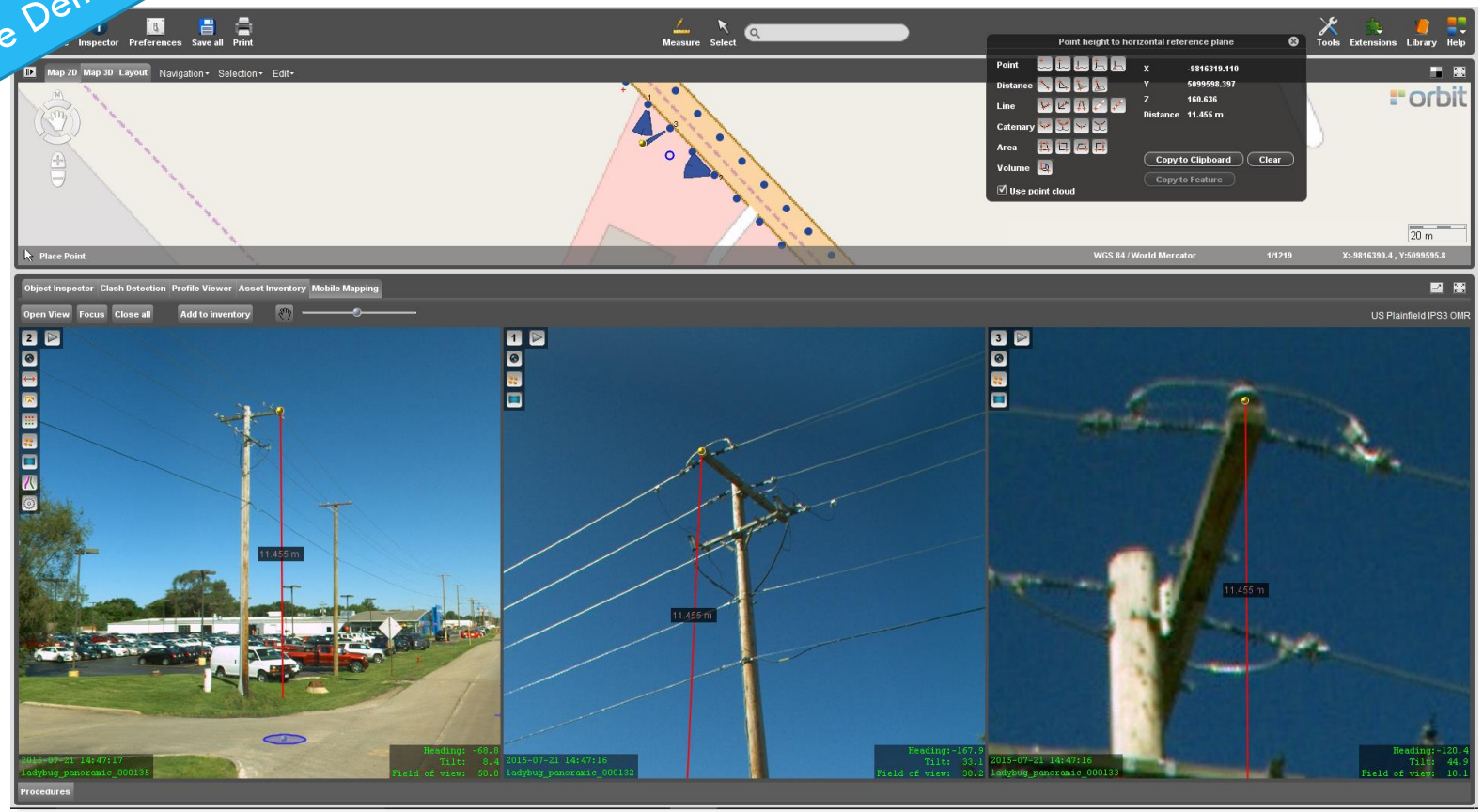
Data collection

Live Demo

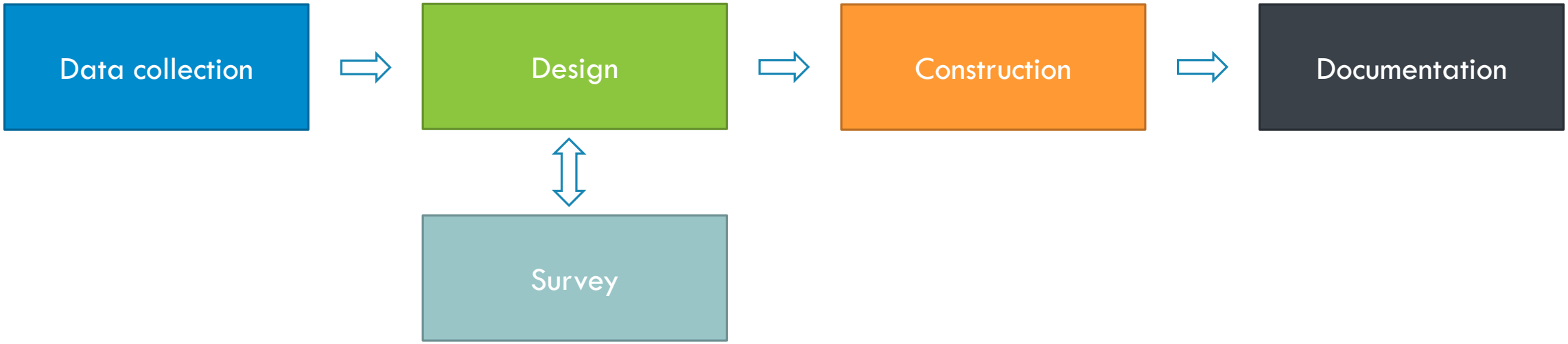


Create new or additional GIS data

Example:

- Missing buildings
- Streets need correction
- Cabinet should be moved
- Addresses are not up-to-date
- Estimation of number of people per household
- Insight in size of a building, pole, street distance, etc
- …

FTTx project workflow



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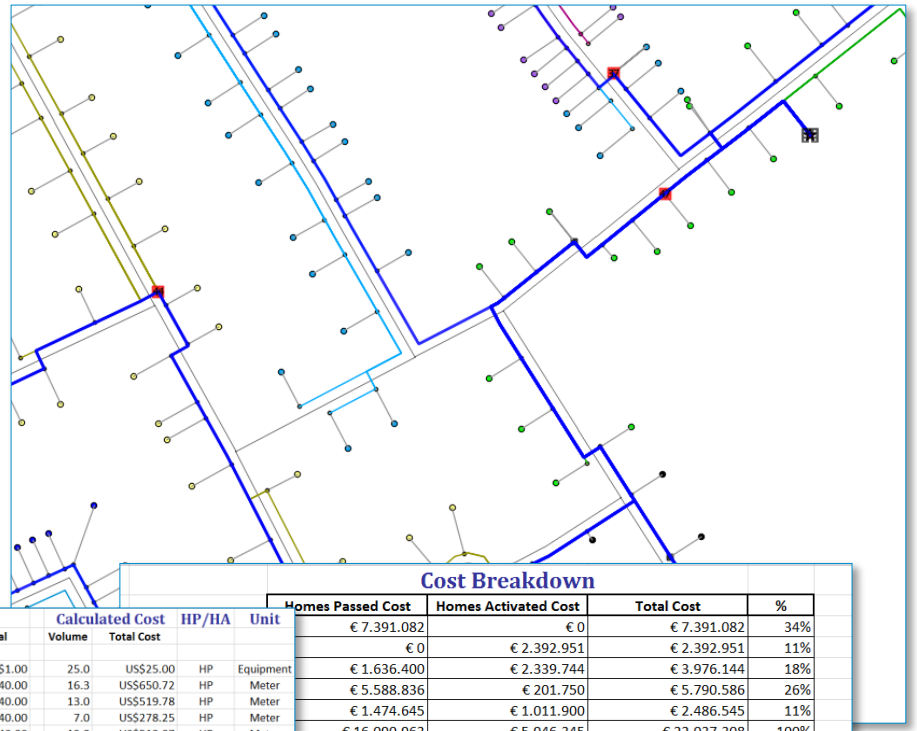
Design

Create high level design

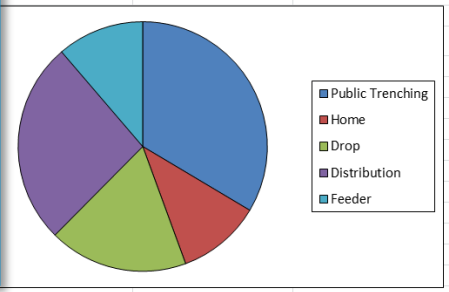
- Cost-optimised design based on network architecture
  - Trenching, ducting, cabling, equipment placement, …
- Bill of Material



		Unit Costs			Calculated Cost		HP/HA	Unit
		Material Cost	Labour Cost	Total	Volume	Total Cost		
Public Trenching								
	Pole (Existing)	US$0.00	US$1.00	US$1.00	25.0	US$25.00	HP	Equipment
	Transition (Variable): Access Chamber to Existing Pipe Transition	US$0.00	US$40.00	US$40.00	16.3	US$650.72	HP	Meter
	Transition (Variable): Access Chamber to Trench Transition	US$0.00	US$40.00	US$40.00	13.0	US$519.78	HP	Meter
	Transition (Variable): Existing Pipe to Trench Transition	US$0.00	US$40.00	US$40.00	7.0	US$278.25	HP	Meter
	Transition (Variable): Pole to Trench Transition	US$0.00	US$40.00	US$40.00	12.8	US$513.07	HP	Meter
	Trench: BURIED	US$0.00	US$40.00	US$40.00	5880.2	US$235,208.07	HP	Meter
	Trench: BURIED (Crossing)	US$0.00	US$50.00	US$50.00	333.9	US$16,693.00	HP	Meter
	Trench: Central Office Lead-In	US$0.00	US$40.00	US$40.00	18.2	US$726.79	HP	Meter
	Use of: EXISTINGPIPE	US$0.00	US$0.10	US$0.10	1742.7	US$174.27	HP	Meter
	Use of: PoleToPole (m)	US$0.00	US$0.10	US$0.10	645.2	US$64.52	HP	Meter
	Use of: PoleToPole (m) (Crossing)	US$0.00	US$0.20	US$0.20	76.8	US$15.36	HP	Meter
Home								
	CPE_P2P	US$20.00	US$50.00	US$70.00	912.0	US$63,840.00	HA	Equipment
	Extra activation cost per Building (1 to 3 homes)	US$0.00	US$50.00	US$50.00	813.0	US$40,650.00	HA	Equipment
	Extra activation cost per Building (3 to ∞ homes)	US$0.00	US$100.00	US$100.00	12.0	US$1,200.00	HA	Equipment
	Extra activation cost per Home (1 to 3 homes)	US$30.00	US$100.00	US$130.00	814.0	US$105,820.00	HA	Equipment
	Extra activation cost per Home (3 to ∞ homes)	US$10.00	US$50.00	US$60.00	98.0	US$5,880.00	HA	Equipment
Drop								
	Aerial Cable 2F	US$0.93	US$2.00	US$2.93	1840.3	US$5,387.86	HA	Meter
	Aerial Cable 4F	US$1.06	US$2.00	US$3.06	87.8	US$268.25	HA	Meter
	Aerial_DropBox	US$100.00	US$100.00	US$200.00	22.0	US$4,400.00	HP	Equipment
	Cable 2F	US$0.46	US$1.00	US$1.46	6636.6	US$9,715.28	HA	Meter
	Cable 4F	US$0.53	US$1.00	US$1.53	256.6	US$392.02	HA	Meter

Cost Breakdown

Homes Passed Cost	Homes Activated Cost	Total Cost	%
€ 7.391.082	€ 0	€ 7.391.082	34%
€ 0	€ 2.392.951	€ 2.392.951	11%
€ 1.636.400	€ 2.339.744	€ 3.976.144	18%
€ 5.588.836	€ 201.750	€ 5.790.586	26%
€ 1.474.645	€ 1.011.900	€ 2.486.545	11%
€ 16.090.963	€ 5.946.345	€ 22.037.308	100%

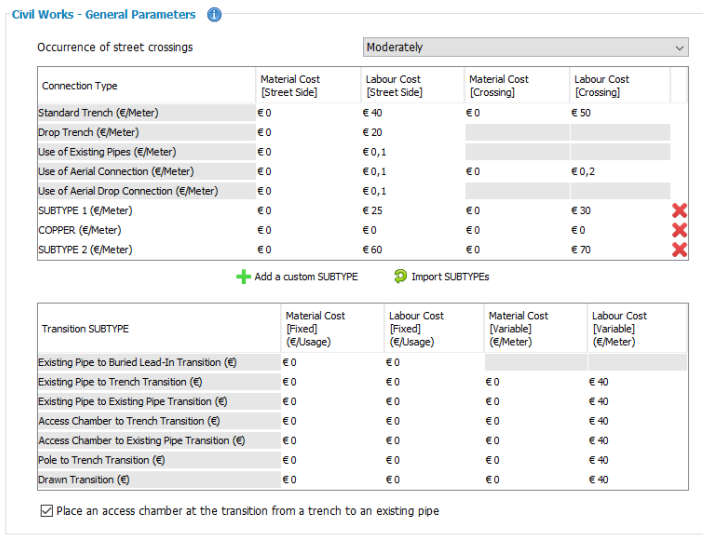


Design: initial design

Load GIS data

Configure rules

Automatic Design



Civil Works - General Parameters

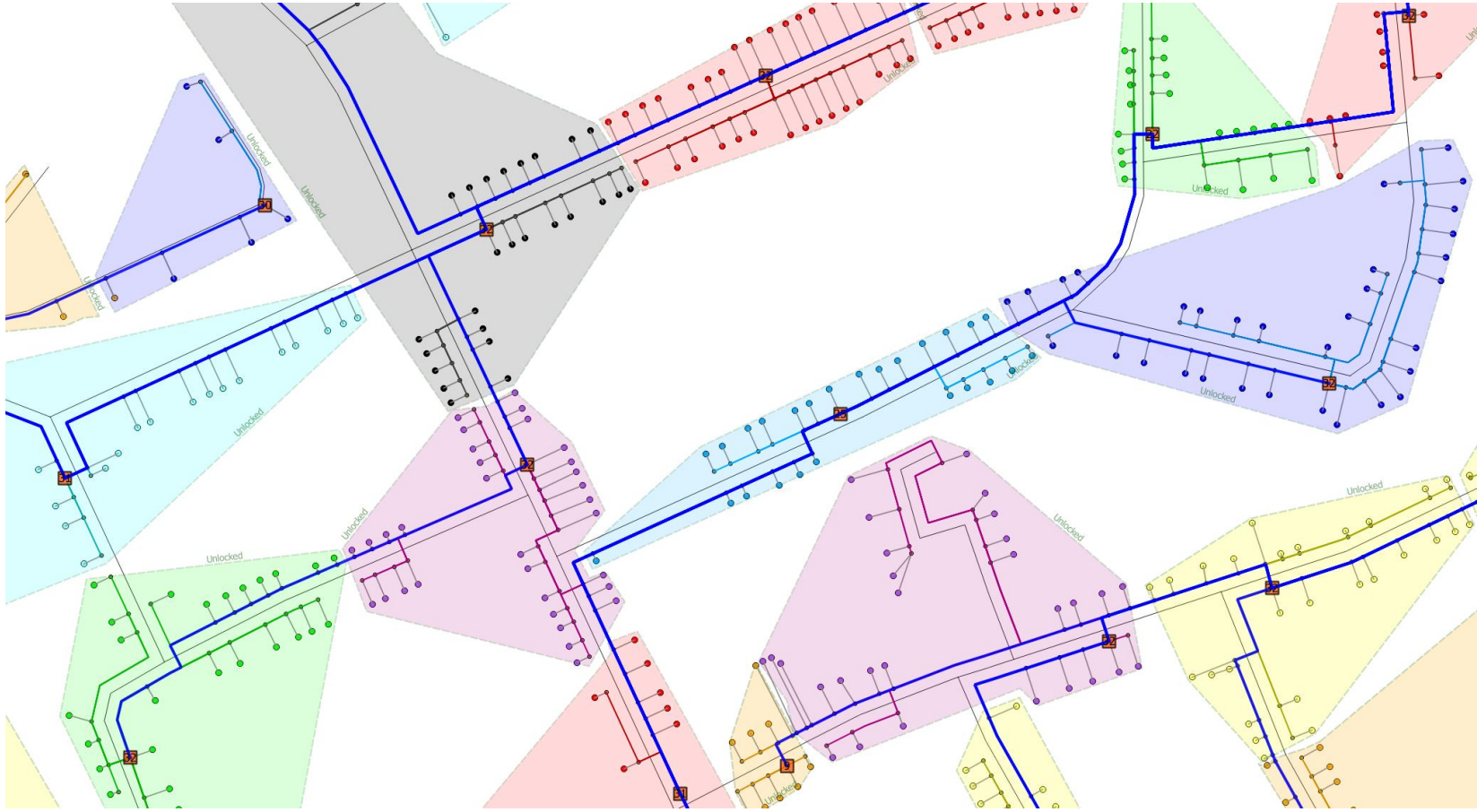
Occurrence of street crossings: Moderately

Connection Type	Material Cost [Street Side]	Labour Cost [Street Side]	Material Cost [Crossing]	Labour Cost [Crossing]
Standard Trench (€/Meter)	€ 0	€ 40	€ 0	€ 50
Drop Trench (€/Meter)	€ 0	€ 20		
Use of Existing Pipes (€/Meter)	€ 0	€ 0,1		
Use of Aerial Connection (€/Meter)	€ 0	€ 0,1	€ 0	€ 0,2
Use of Aerial Drop Connection (€/Meter)	€ 0	€ 0,1		
SUBTYPE 1 (€/Meter)	€ 0	€ 25	€ 0	€ 30
COPPER (€/Meter)	€ 0	€ 0	€ 0	€ 0
SUBTYPE 2 (€/Meter)	€ 0	€ 60	€ 0	€ 70

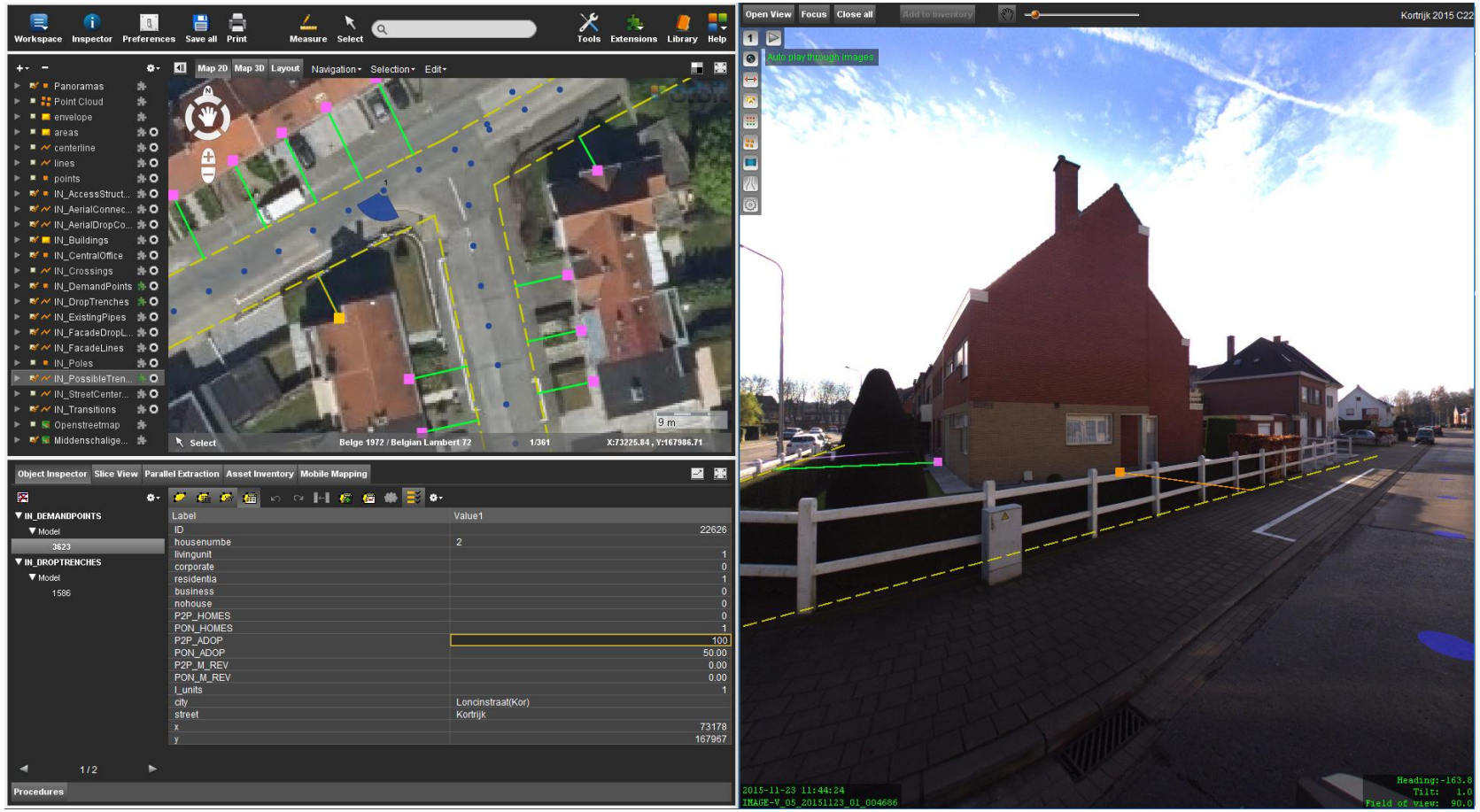
Add a custom SUBTYPE Import SUBTYPEs

Transition SUBTYPE	Material Cost [Fixed] (€/Usage)	Labour Cost [Fixed] (€/Usage)	Material Cost [Variable] (€/Meter)	Labour Cost [Variable] (€/Meter)
Existing Pipe to Buried Lead-In Transition (€)	€ 0	€ 0		
Existing Pipe to Trench Transition (€)	€ 0	€ 0	€ 0	€ 40
Existing Pipe to Existing Pipe Transition (€)	€ 0	€ 0	€ 0	€ 40
Access Chamber to Trench Transition (€)	€ 0	€ 0	€ 0	€ 40
Access Chamber to Existing Pipe Transition (€)	€ 0	€ 0	€ 0	€ 40
Pole to Trench Transition (€)	€ 0	€ 0	€ 0	€ 40
Drawn Transition (€)	€ 0	€ 0	€ 0	€ 40

☑ Place an access chamber at the transition from a trench to an existing pipe



Survey



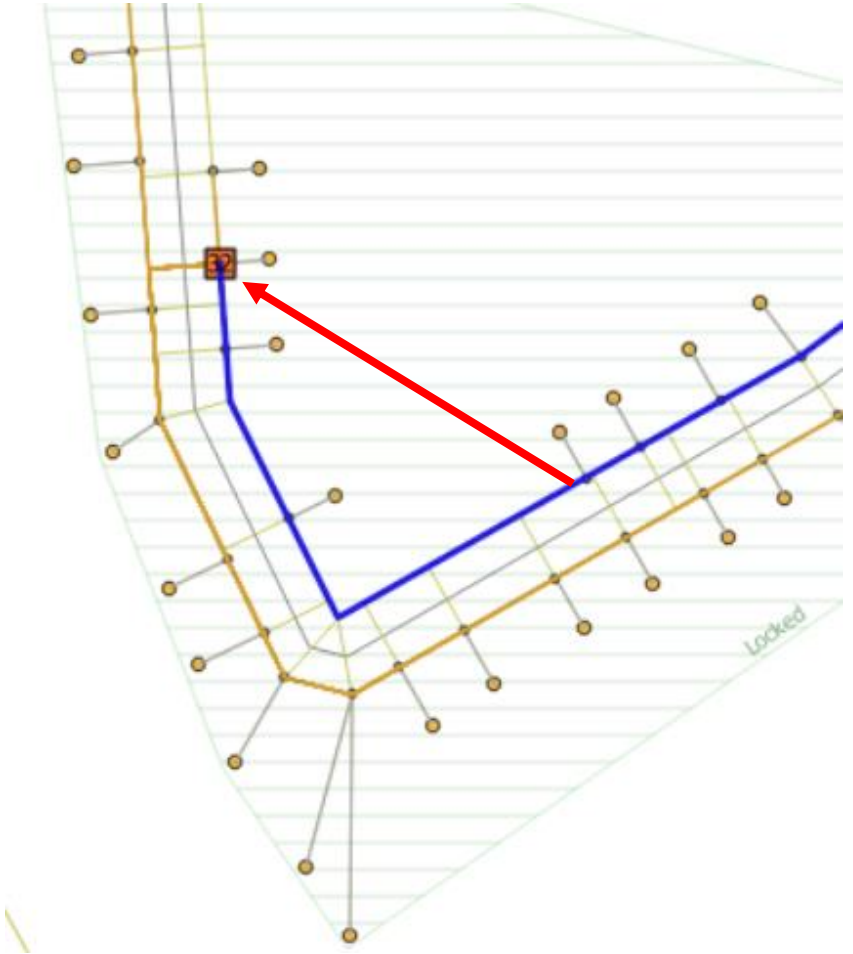
Fine tuning of the design in the office

- Assistance when doing redlining in the field
- More precise than Augmented Reality
- Example: building lead-in correction

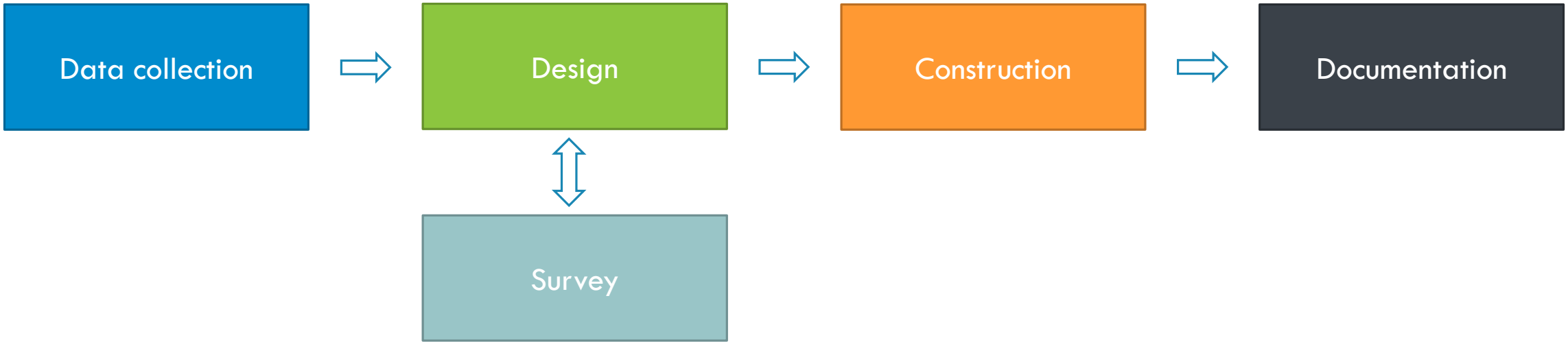
Design: fine-tune design

Design iteration based on survey input

- Force design constraints
  - Cabinet locations
  - Home assignment
  - Right of way constraints
- Design and BOM updated automatically



FTTx project workflow



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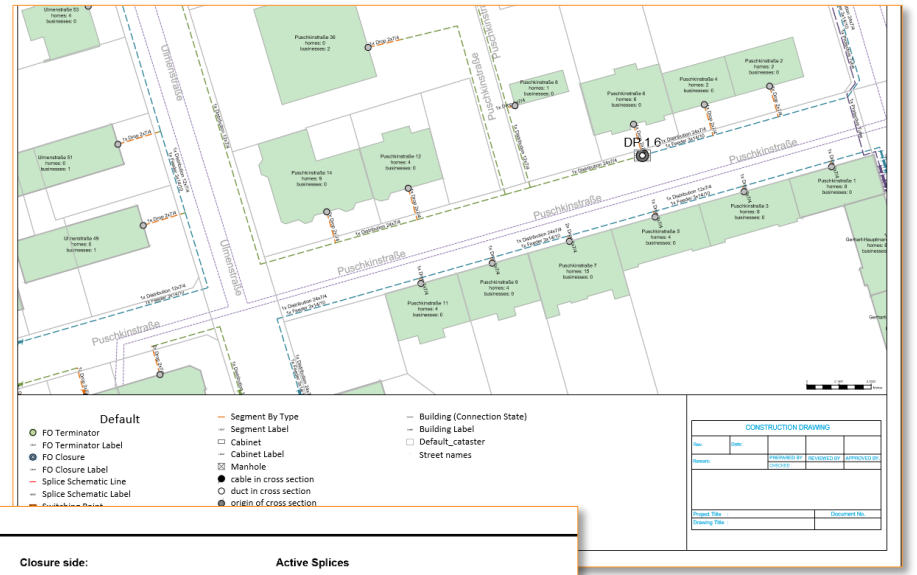
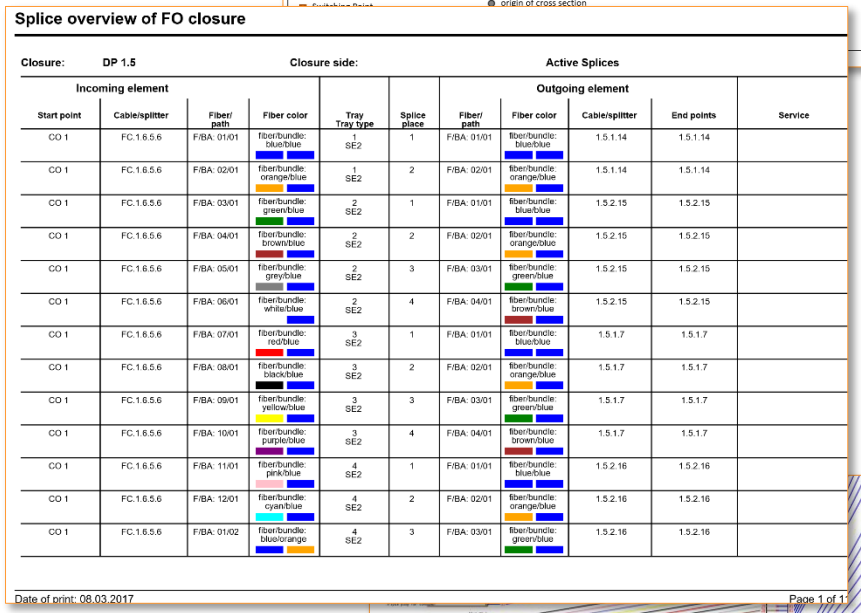
Construction

Create to-build plans

- Unique and consistent labelling of equipment
- Splice rules
- Consistent construction plans
  - Splice reports
  - Construction plans
  - Permit plans
  - …





Splice overview of FO closure

Closure: DP 1.5 **Closure side:** **Active Splices**

Incoming element						Outgoing element				
Start point	Cable/splitter	Fiber/ path	Fiber color	Tray Tray type	Splice place	Fiber/ path	Fiber color	Cable/splitter	End points	Service
CO 1	FC.1.6.5.6	F/BA: 01/01	fiber/bundle: blue/blue	1 SE2	1	F/BA: 01/01	fiber/bundle: blue/blue	1.5.1.14	1.5.1.14	
CO 1	FC.1.6.5.6	F/BA: 02/01	fiber/bundle: orange/blue	1 SE2	2	F/BA: 02/01	fiber/bundle: orange/blue	1.5.1.14	1.5.1.14	
CO 1	FC.1.6.5.6	F/BA: 03/01	fiber/bundle: green/blue	2 SE2	1	F/BA: 01/01	fiber/bundle: blue/blue	1.5.2.15	1.5.2.15	
CO 1	FC.1.6.5.6	F/BA: 04/01	fiber/bundle: brown/blue	2 SE2	2	F/BA: 02/01	fiber/bundle: orange/blue	1.5.2.15	1.5.2.15	
CO 1	FC.1.6.5.6	F/BA: 05/01	fiber/bundle: grey/blue	2 SE2	3	F/BA: 03/01	fiber/bundle: green/blue	1.5.2.15	1.5.2.15	
CO 1	FC.1.6.5.6	F/BA: 06/01	fiber/bundle: white/blue	2 SE2	4	F/BA: 04/01	fiber/bundle: brown/blue	1.5.2.15	1.5.2.15	
CO 1	FC.1.6.5.6	F/BA: 07/01	fiber/bundle: red/blue	3 SE2	1	F/BA: 01/01	fiber/bundle: blue/blue	1.5.1.7	1.5.1.7	
CO 1	FC.1.6.5.6	F/BA: 08/01	fiber/bundle: black/blue	3 SE2	2	F/BA: 02/01	fiber/bundle: orange/blue	1.5.1.7	1.5.1.7	
CO 1	FC.1.6.5.6	F/BA: 09/01	fiber/bundle: yellow/blue	3 SE2	3	F/BA: 03/01	fiber/bundle: green/blue	1.5.1.7	1.5.1.7	
CO 1	FC.1.6.5.6	F/BA: 10/01	fiber/bundle: purple/blue	3 SE2	4	F/BA: 04/01	fiber/bundle: brown/blue	1.5.1.7	1.5.1.7	
CO 1	FC.1.6.5.6	F/BA: 11/01	fiber/bundle: pink/blue	4 SE2	1	F/BA: 01/01	fiber/bundle: blue/blue	1.5.2.16	1.5.2.16	
CO 1	FC.1.6.5.6	F/BA: 12/01	fiber/bundle: cyan/blue	4 SE2	2	F/BA: 02/01	fiber/bundle: orange/blue	1.5.2.16	1.5.2.16	
CO 1	FC.1.6.5.6	F/BA: 01/02	fiber/bundle: blue/orange	4 SE2	3	F/BA: 03/01	fiber/bundle: green/blue	1.5.2.16	1.5.2.16	

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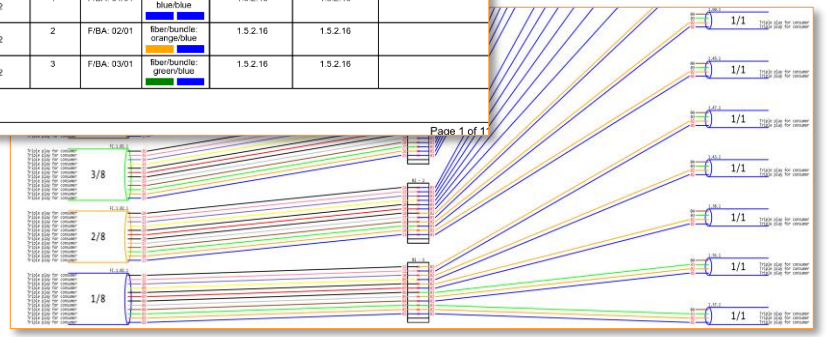
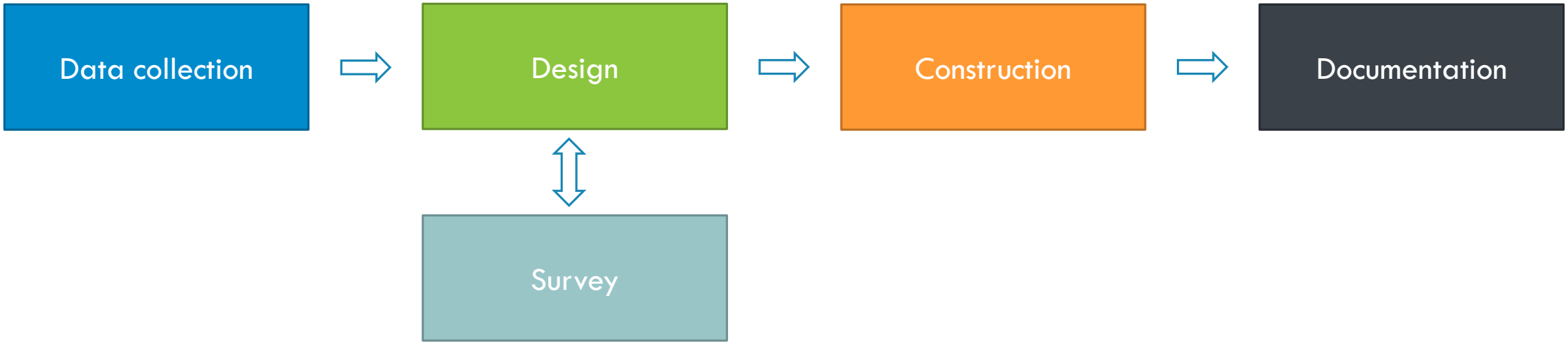


Construction: Façade/ UG deployment

FTTx project workflow



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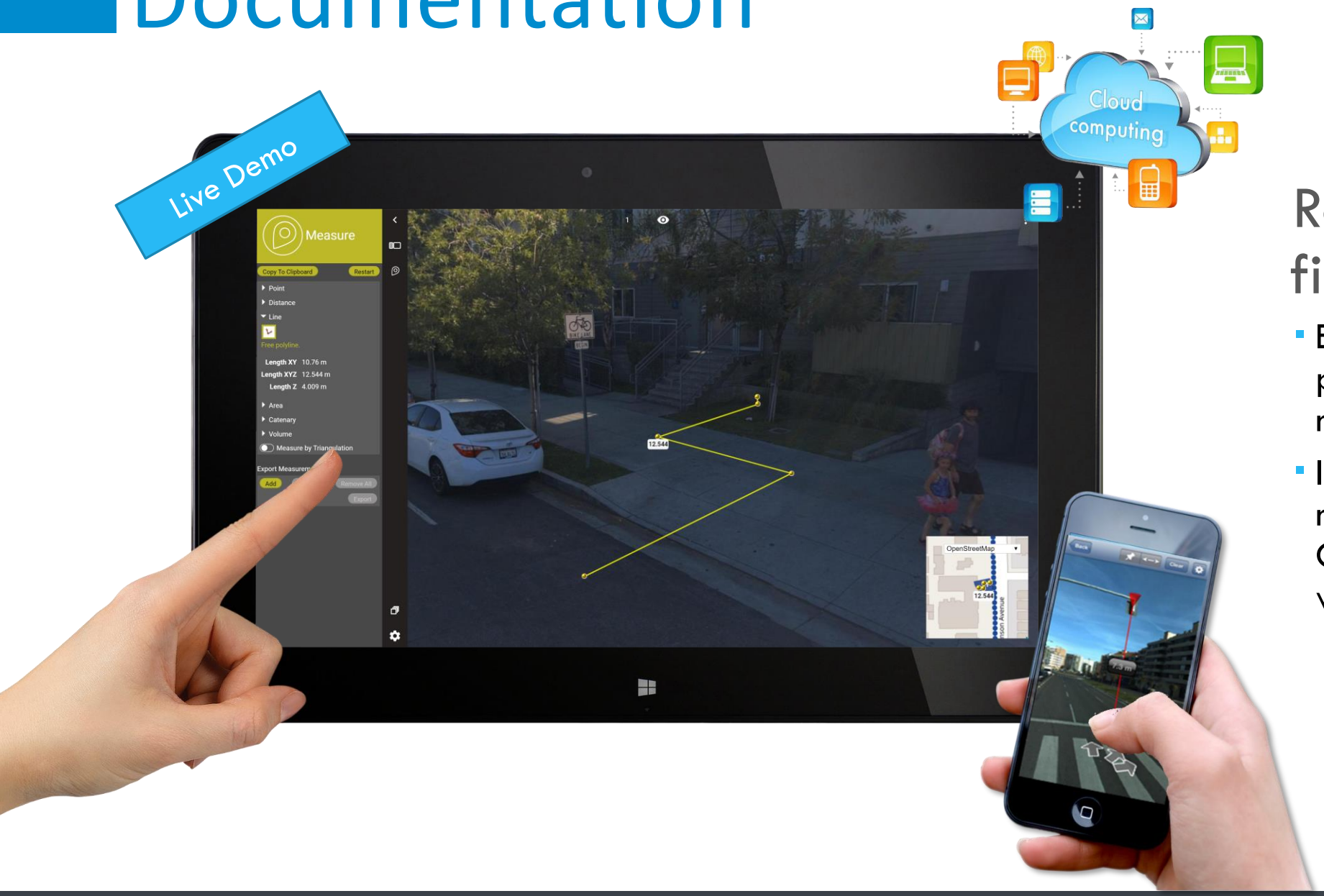
Documentation



Redlining on the field

- Easy documentation with precise, one-click measurement.
- Integrate redlining on mobile mapping data via Orbit API in the on-the-field workflow

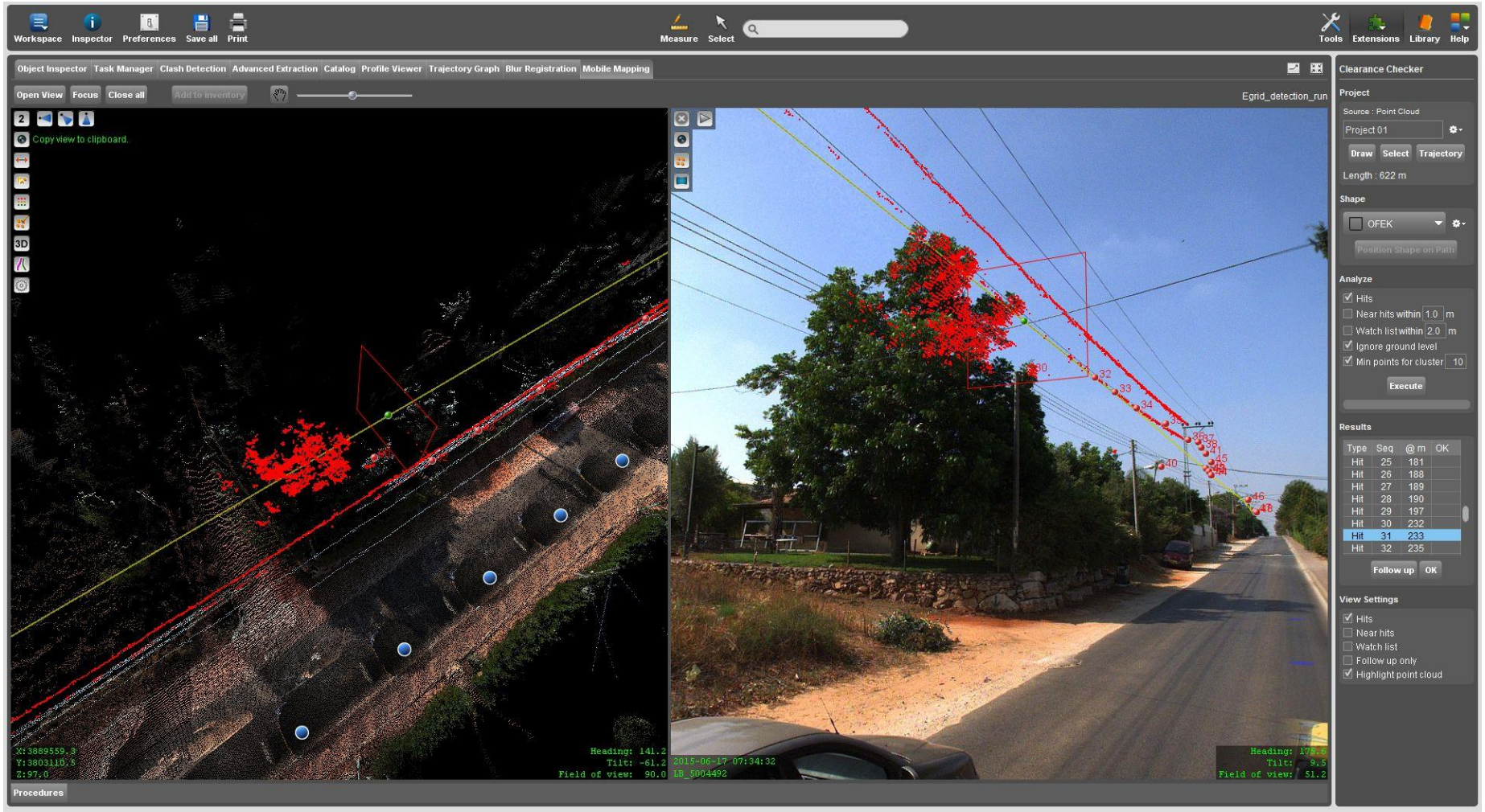
Documentation: analysis

Interventions: cable break, network fault, public works

Analysis: vegetation

Mobile network planning: cell locations, indoor wi-fi

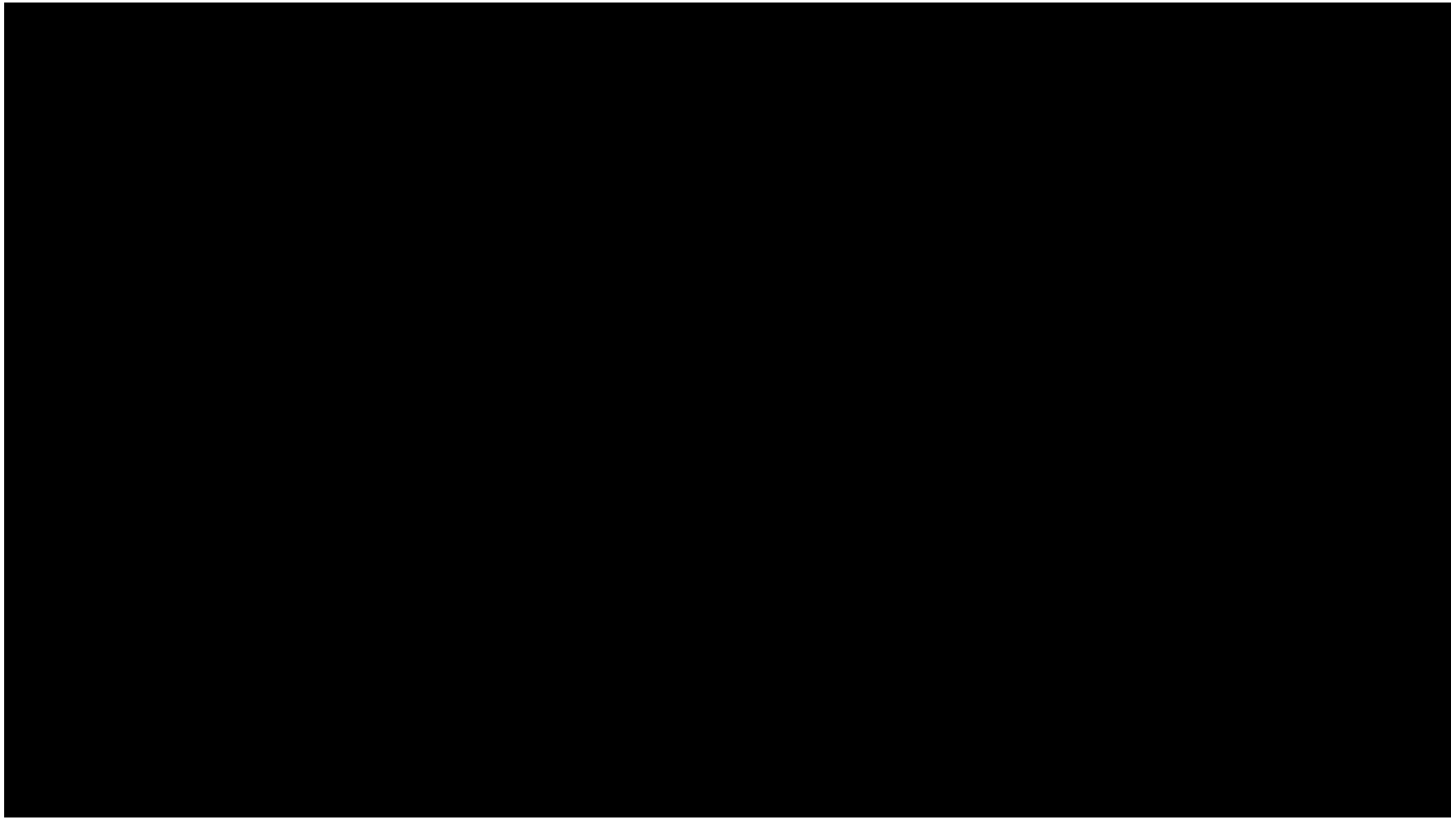
Documentation: analysis



3D vegetation analysis on cables

via
Orbit 3DM Clash Detection tool

Documentation: analysis



3D analysis on point cloud

via
Orbit 3DM Line of Sight, Feature Extraction, …

Conclusion

Save time

- Reduced field visits

Avoid mistakes

- Centralize the decisions

Cost and time savings of automatic planning

- Quality input data from Mobile Mapping

Completeness of documentation

FiberPlanIT – Orbit GT products

orbit GEOSPATIAL TECHNOLOGIES

FiberPlanIT BY COMSOF

Simulator → Designer → Engineer

Questions

Ask questions via GoToWebinar Q&A window

Contact us:

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