

## **Integrated Solution for Utility Detection and Mapping**

Alberto Bicci / Katherine Broder



#### Individual data collected in underground utility asset detection and mapping

**Cable Locator surveys** 



**Asset and cartography survey** 



**3D reality** reconstruction





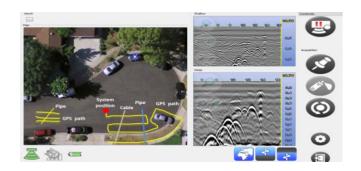


restitution

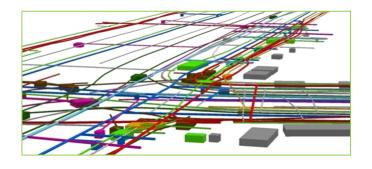
**GPR** surveys

# Clear need for accurate highly reliable up to date information usable immediately

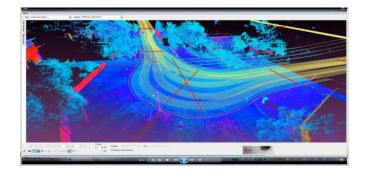
#### Three main applications of underground utility reality capture



- Utility detection
  - On site direct detection of particular services, typically marked with spraypaint on the ground



- Utility mapping
  - Reconstruction of all the underground utilities in more or less extended areas – relatively positioned



- Complete asset reconstruction
  - Fully Georeferenced 3D reconstruction of above- and underground assets



#### **High Quality Precision Sensors**

#### **Detection**

#### **Positioning**



#### **Software and Data Analytics**









### **Unique Value Proposition in the Market**







Streamlined process from field to office and back covering the entire workflow



#### Fully integrated Hexagon solutions for utility detection and mapping

- when it has to be **right** 

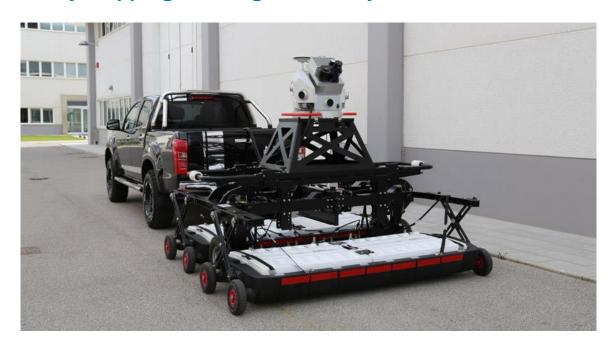




#### Fully integrated Hexagon solutions for utility detection and mapping

#### Streamlined process from field to office covering the entire workflow

#### **Utility Mapping with Big Data Analytics**







#### Fully integrated Hexagon solutions for utility detection and mapping

Streamlined process from field to office covering the entire workflow



#### **Smart Data Analytics (post processing) tailored to customer needs**

#### Capture accurate data and convert it into actionable information immediately





#### **Snapshot of vision for visualization**

#### Facilitate end user in data interpretation of the buried utilities

**Real time tomography** of the underground utility network.



**Camera** for visual information of recorded soil objects \*



**Augmented Reality** to visualize underground objects in augmented reality\*





Hexagon complete portfolio for utility detection and mapping

GIS & Data Collection





ROAD

MAPPING



**Positioning** 

FULL 3D MAPPING





**Machine Control** 

