Vectorising Network Records

Version 1
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cyclomedia

As we continue to move into a period where there is an increased expectation and need for utilities to adapt their processes to support enhanced regulatory reporting and global citizenship/ environmental sustainability initiatives; the requirement and need for accurate and accessible network records is becoming even more essential than ever before. Utilities are progressing with implementing innovative hardware to the network such as smart meters which are resulting in a sharp increase in data available. To gain maximum benefit from these technologies, it is essential that the GIS data and connectivity model is a Digital Twin.

Customers are also becoming more digitally capable and are expecting real-time updates, active engagement and immediate response to outages. As a response to these increasing demands on data, industry data models are becoming standardised across sectors and the time to adopt these has been brought forward. The use of Cyclomedia's high resolution imagery and LiDAR data is increasing the ability for utilities to accurately and efficiently vectorise/digitise network records. This data enables identifying above ground physical markers (both network assets and other markers) and supports utilities to have sub-1cm accuracy within their GIS.

15% Time Saving

Improved Accuracy

Reduced CML Time

Vectorisation Process Using Cyclomedia Data

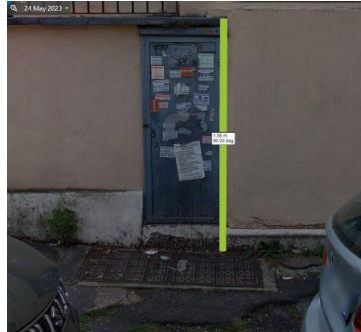*Figure 1: Verify location of Manhole*
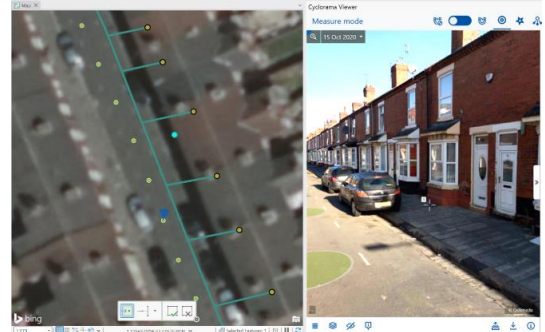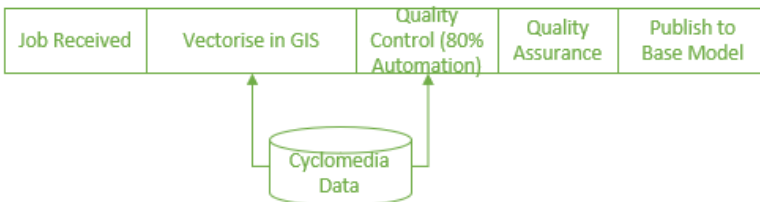

Figure 2: 3D Measurements

Figure 3: Overlay in GIS

While each utility will have unique processes and systems for vectorising records, below is an example, high level workflow showing where Cyclomedia can support.

Existing Process

Job Received	Vectorise in GIS	Quality Control (20% Automation)	Quality Assurance	Publish to Base Model

Using Cyclomedia Data

Job Received	Vectorise in GIS	Quality Control (80% Automation)	Quality Assurance	Publish to Base Model

Cyclomedia Data

Utility Asset Owner/Maintainer Example

Due to a change in legislation which required this utility to keep up to date digital representations of both their overhead and underground networks, they began a digitalization programme in 2015.

They had a repository of historic drawings which needed to be vectorized. Through combining the drawings and Cyclomedia's imagery, they were successful in meeting regulatory requirements and digitized 3.4 million house connections (1.5m Gas, 1.9m Electricity) and 1.2 million Public Lighting connections.

This consolidation exercise has allowed the Utility Asset Owner/Maintainer to provide a consistent set of records to third party organizations, improve the accuracy and completeness of critical infrastructure data and reduce internal process cost and time.

Tangible Benefits

Accuracy

With sub 1cm accuracy, Cyclomedia data enables achieving regulatory requirements. Digitizers can easily identify key points of interest within diagrams and associate these to real world makers within the Cyclomedia Imagery.
This increases data quality and reduces time spent digitizing.

Automated QC

A central and often time consuming component during the vectorisation process is Quality Control. Cyclomedia's extracted features enables automated Quality Control tools to be implemented. It is possible to cross-validate that where an asset has been digitized, it aligns with the features extracted from the imagery.

System Conflicts

As utilities have adapted to new technology, the need for a single source of truth has become essential. This reduces the risk of missed maintenance regimes and improves predictive maintenance capabilities. Cyclomedia data enables and supports utilities to consolidate and validate multiple system records and create a single source of truth.

CML

With improved Accuracy, Automated QC and a Single Source of Truth, Utilities can create an accurate Digital Twin. Having a Digital Twin will help to reduce Customer Minutes Lost as Utilities will be quicker to identify customers impacted and location of faults along with better plan resources required to repair the fault.

Visualize a better world.