Utility Platform

For strengthening partnerships
of municipal utilities worldwide

SHARING EXPERIENCES WITH GIS SOLUTIONS FOR UTILITY MANAGEMENT

WOP - Lukanga Water and Sanitation Company and Gelsenwasser AG

Nicholas Mwape-LgWSC Christopher Galla–GW Uwe Raback-GW

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PRESENTERS

Nicholas Mwape (R. Eng.)
Technical Operations Manager
Lukanga Water & Sanitation Co. Ltd

Uwe Raback
Engineer Geodatamanagement
Gelsenwasser AG

Christopher Galla
Engineer Geodatamanagement
Gelsenwasser AG

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GIS SITUATION AT THE BEGINNING OF THE COOPERATION

- Desktop GIS „ArcGIS“ installed on **one** laptop
- No access to the GIS for the co-workers
- GIS visualization for the co-workers only available by means of PDF maps
- Only **one** person deals with GIS with limited time available for data maintenance

Organisational perspective

- Relevant feature classes, such as water pipes, hydrants, tanks, leakages, valves, customer connections etc. are only **partly** documented
- No focus on topological correctness of the pipes (over- and undershots)
- Spatial correctness of data is low
- No firm link between consumption data and consumption location in GIS

Data perspective

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BIGGEST CHALLENGES AROUND GIS

- Making georeferenced GIS data available on mobile devices and personal computers
- Importance and appreciation of GIS data management as a crucial prerequisite for asset management and planning should be recognised

  ->more manpower

  ->capacity building
- Increasing the deegree of completness of the GIS data
- Increasing the quality of the GIS data in terms of topology and attribute data

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CURRENT GIS SITUATION

Question:

How to make georeferenced GIS data available on mobile devices and personal computers,

taking into account:

➔ no or only little budget available for the purchase and maintenance of commercial software

➔ Operation of a GIS database, even though it is open source, such as PostgreSQL, is currently too challenging for LgWSC

➔ Operation of the focused solution should match with the level of competence of LgWSC

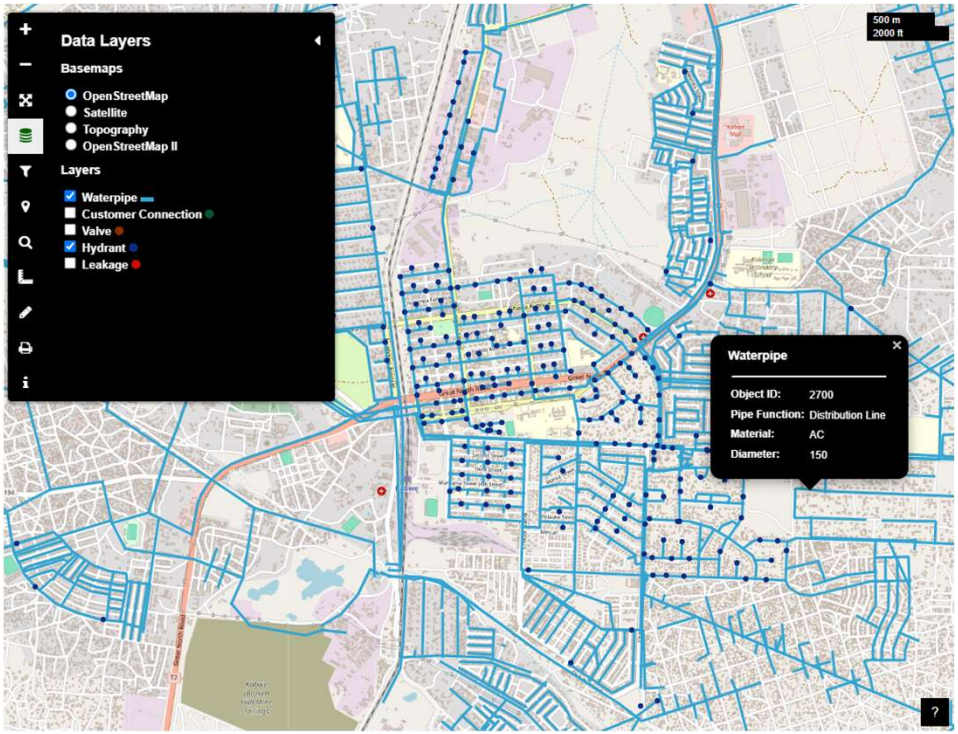
➔ GIS know how of Gelsenwasser is concentrated on Smallworld GIS (commercial software with challenging operation) and QGIS. ArcGIS is used only in a few departements.

Answer:

Developing a WebMap solution, based on the open source library Leaflet and free hosting of the WebMap on GitHub Pages.

CURRENT GIS SITUATION

Georeferenced GIS data is available on mobile devices and personal computers



CURRENT GIS SITUATION

Updating the WebMap on GitHub is a manual process. It can be done within a few minutes following a documented step by step guide.


GELSENWASSER

Lukanga Water Supply & Sanitation Company Ltd

Webmap Manual

GitHub Hosting

Updating

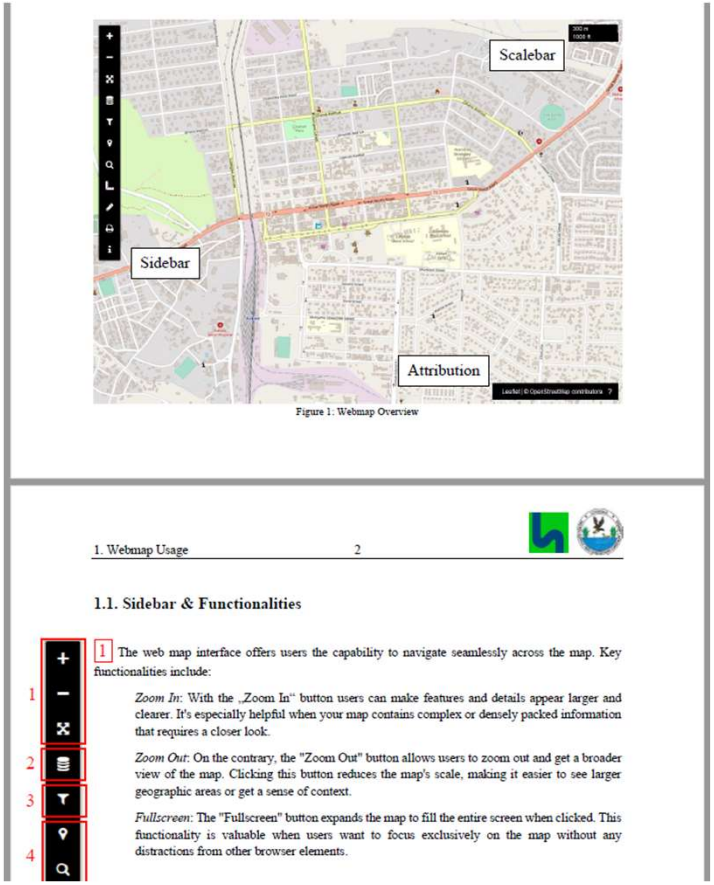


Figure 1: Webmap Overview

1. Webmap Usage 2

1.1. Sidebar & Functionalities

1 The web map interface offers users the capability to navigate seamlessly across the map. Key functionalities include:

Zoom In: With the „Zoom In" button users can make features and details appear larger and clearer. It's especially helpful when your map contains complex or densely packed information that requires a closer look.

Zoom Out: On the contrary, the "Zoom Out" button allows users to zoom out and get a broader view of the map. Clicking this button reduces the map's scale, making it easier to see larger geographic areas or get a sense of context.

Fullscreen: The "Fullscreen" button expands the map to fill the entire screen when clicked. This functionality is valuable when users want to focus exclusively on the map without any distractions from other browser elements.

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WORKS IN FOCUS AND OUTLOOK

The current focus is on increasing the degree of completeness and quality of the GIS data. This aims for

➔ making a **hydraulic modelling** possible, that allows simulations of operational incidents, such as a pump failure, and the measures to be taken in order to deal with the incident

➔ supporting the staff in the field, identifying and locating GIS objects, while repairing leakages or dealing with other **operational issues**

➔ providing reliable GIS data for **asset management** as a basis for decision making

WORKS IN FOCUS AND OUTLOOK

Question:

What are the short and mid term goals?

Answer:

→Keeping on increasing the deegree of completness of the GIS data and the quality of the GIS data in terms of topology and attribute data!

→Establishing a small GIS unit, consisting of at least 2 employees with GIS knowledge

→ Consumption points are mapped and link to commercial data is realised

→ Thoroughly understanding the update process for the WebMap and being able to independently carry out the documented steps


Thank you!