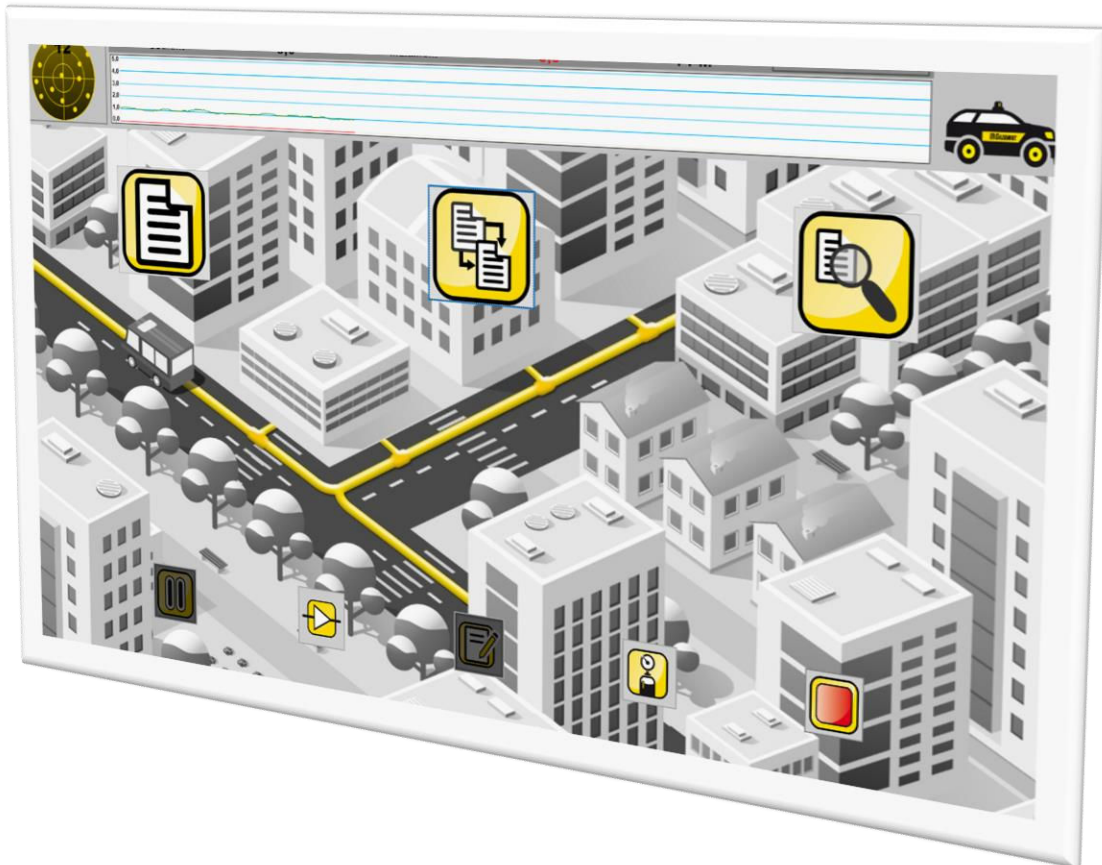


## Leak Survey of Natural Gas and Biogas Networks



# GAZOCONSOLE™

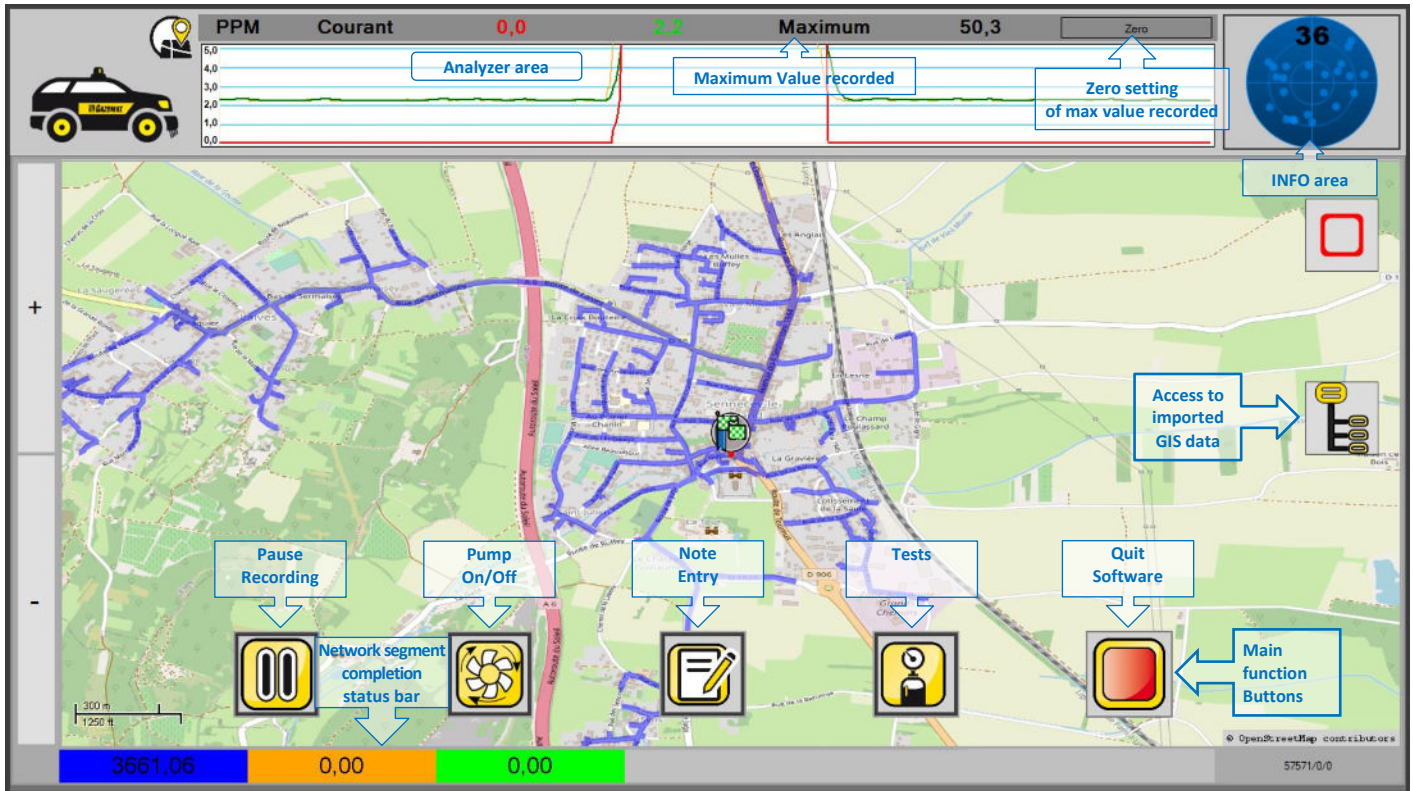
Gas Network Survey Software  
For VSR MK3 Network Survey Vehicle

- Optimised inspection coverage of pipeline network
- Universal mapping solution
- Extended GIS import capacities
- Easy field data collection and transmission
- Interface with enterprise data management system

**GAZOCONSOLE™**, the new monitoring software developed by **GAZOMAT™**, is designed to increase efficiency of gas leak detection along buried natural gas and biogas pipelines. Innovative functions ensure optimal inspection coverage of the network, supporting gas utilities in their maintenance and safety policy.

Survey data displayed on full screen maps showing roads, buildings and gas network specifics make it easy for field operators to view the vehicle's progress along the survey route, performing conditions and leak tracking activity in real time.

**GAZOCONSOLE** is unique in its capacity to provide instantly the information needed to identify and pinpoint leaks efficiently as well as to communicate key data fast, saving time and costs in securing the gas network.






### A readily accessible mapping solution

- GAZOCONSOLE™ operates with mapping platforms in WGS84 format ensuring users free on-line access to map images and automated updates
- With extended geographical coverage, detailed country maps are readily available
- Map caching available for off-line use

### Extended GIS data importing capacities

- Ability to import network specific GIS and pipeline data in SHAPE format:
  - Gas pipelines, valves, branch connections... can be displayed on the map interface on screen
  - Based on the pipeline identification code, the operator can easily consult the history of past inspections
- Compatibility with GAZOCONSOLE software requires proprietary GIS data to be converted to SHAPE format
- The software interfaces with multiple navigation systems using the GAZONAV™(1) receiver for live geolocation of survey vehicle and of any gas leak indication detected

### Enhanced user interface – intuitive and modular

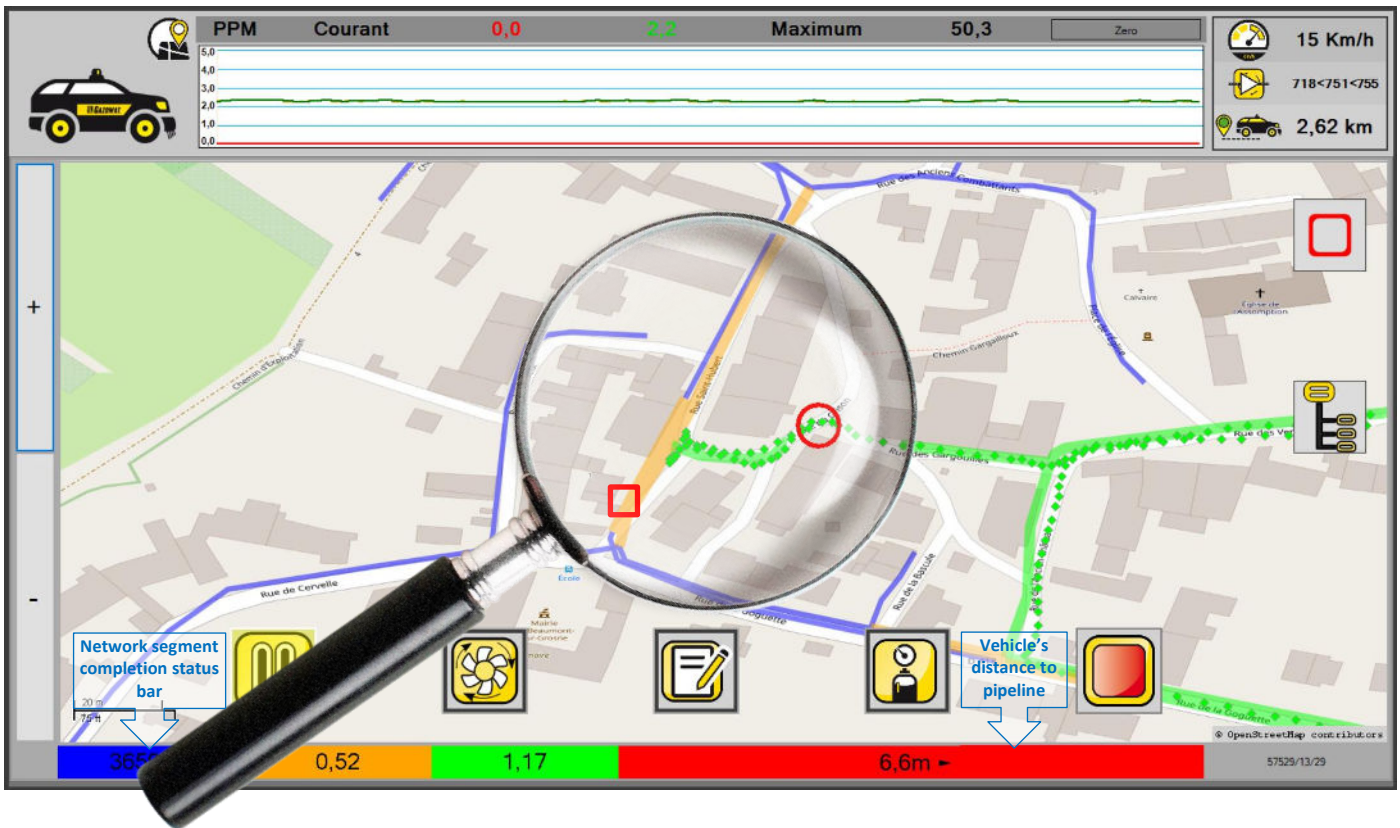
- Map in full screen display with zoom in/zoom out and vehicle centering/decentering functionalities
- Real-time view of the vehicle's progress along the survey route with the use of colour codes
- Easy access to any imported piping and network data layers for display or no-display on screen 
- Easy access to main functions using the touchscreen buttons 
- Interactive pop up windows for data and note entry
- Large display area of the analyser data at the top of the screen showing live PPM readings, peak levels and maximum concentration value recorded
- Key data easy to track on screen in INFO area: GAZONAV™ receiver status, local coordinates, date and time, vehicle speed, survey distance covered, pipeline's position to vehicle 
- Intuitive, innovative interface requiring no computer expertise for a quick command of the software tool.

(1) The GAZONAV™ receiver utilizes multiple navigation satellite systems, such as GPS, GNSS or GALILEO

The GAZOCONSOLE™ survey software is designed for use with field computer devices powered by Microsoft® Windows. The software drives the gas concentration measurement instrumentation, the leak survey data processing, recording and exporting as well as the geolocation system and mapping functions.

It offers a user-friendly interface suitable for combined vehicle survey and pedestrian leak confirmation using portable detectors such as the INSPECTRA® or the GAZOSCAN™.

Data sharing with field operators, emergency services via a web-based data management platform, such as the NGMesh Enterprise solution, facilitates team coordination with full traceability of operations.



**Key support functions for 100% survey reliability**

GAZOCONSOLE™ software offers as option one major innovation to support the survey process.

It uniquely integrates two key variables that have a direct impact on final inspection results:

- Vehicle detection distance to pipeline and
- Pipeline position to vehicle (left or right)

This new function upgrades significantly survey performance, ensuring maximum coverage of the pipeline network while clearly identifying the segments that could not be inspected, leaving no “missed” section.

**Dynamic network segment selection function**

Based on the vehicle’s geolocation position, the system’s detection range around the vehicle and its response time, the software continuously calculates whether the vehicle keeps within detection distance from the pipeline.

- The survey circuit is tagged as uncompleted in the records until all pipeline sections are properly surveyed and/or commented upon. A real guarantee of performance for utilities.

- On screen, a three-color code signals in real time the pipeline segment survey completion status.
  - Circuit segments not yet surveyed (blue) **7,65**
  - Partially done (orange) **0,55**
  - Completed and validated (green) **1,17**
- It is still possible to “manually” validate a pipeline segment on screen, in situations where road configuration changes. In such instances, the operator can manually validate the network segments flagged by the software as too distant from the vehicle. Notes may be added to comment on the validation or de-validation decision
- The software displays on screen the vehicle’s distance to the pipeline (red = out of detection range). It also indicates the pipeline’s position to the vehicle (pipeline to the left or to the right of the vehicle)
- Survey results are in real time. Data recording is automatic.


**Easy reporting and data transmission**

- Key data translates to survey reports in PDF format including leak indications in PPM plus local coordinates, verification tests, comments, pictures, street name...
- Reports can be sent by email, uploaded to a cloud, or any other solution, depending on procedures in place.

**A fully interconnected system – How it works**

**GazoConsole - Software for Laptops/Tablets**


*Vehicle Network Survey*



**INSPECTRA® Measuring System on board Network Survey Vehicle**

- Survey along scheduled pipeline routes
- Survey data collection and recording
- Report generation in PDF format
- Report transmission
- Leak alerts to Emergency Cell

**Utilities' GIS**  
*(not part of NGMesh)*



**Pipeline Network data**

- Load data
- Export data
- Edit data

**GazoSurvey - Mobile App for Smartphones**


*Pedestrian Network Survey and New Mobility Solutions*



**INSPECTRA® and GAZOSCAN methane detectors connected to walking survey Mobile App**

- On-foot leak confirmation in combination with vehicle survey
- On-foot leak detection and confirmation
- Readings recording with GPS coordinates
- Leak alerts to Emergency Cell
- Receipt of leak confirmation orders from administrator

**NGMesh Web App**



**Web Platform**

- Survey data centralisation: receipt, transfer, storage
- Remote monitoring of vehicle and walking survey progress
- Analysis and diagnosis of leak survey data
- Field survey assignments via GazoSurvey

Via SHAPE files

- Pipeline network specifics

Via Web API

- CH4 readings
- Notes and pictures
- Other data as needed

**GAZOCONSOLE™ – TECHNICAL SPECIFICATIONS**

- Compatible with Microsoft® Windows 10 platform for use with rugged and semi-rugged laptops and tablets of the makes recommended by GAZOMAT™
- Compatible with free on-line mapping interfaces (OpenStreetMap...) providing free automated updates.
- Imports data in SHAPE format from a proprietary GIS, where available
- Connects to GAZONAV™ geolocation system (WGS84 format)
- Generates reports in PDF format
- Output data compatible with Excel and other formats for processing and analysis
- Survey data transmission to a web platform via NGMesh web software (optional)
- Subscription contract available in three different configurations:
  - Basic: Includes software updates, on-line helpdesk, and on-line country map updates
  - Level 1: includes basic contract terms + Dynamic pipeline segment selection function
  - Level 2: includes LV1 terms + interfacing with NGMesh web platform and connection to GAZOSURVEY™ Application

Pictures not binding on GAZOMAT™ - Specifications are subject to change without notice -Ref 47\_BRO\_GAZOCONSOLE\_EN\_WW\_V02\_2022-12\_VA