SeCuRi® SAT

NETWORK SURVEY WITHOUT A GUIDE

Author: <u>Lutz Hörnschemeyer</u>, Hermann Sewerin GmbH

Background

The SeCuRi® SAT stands for the perfect combination of a gas leak detector, geographic information software (GIS) and a GPS satellite receiver. It offers many benefits:

- Simple and intuitive operation of the gas leak detector from a tablet PC

- Pipe network inspection in accordance with regulations of local Gas Associations.

- Overview of the inspected routes in the route manager

- Digital fault sketches

- Complete documentation of date, time, coordinates and gas leak detector readings

SeCuRi® SAT is having been invented and patented by Hermann Sewerin GmbH over 10 years ago and continuously developed ever since, the new SeCuRi® SAT is now the standard in network surveying. The system allows the user to operate the gas leak detector conveniently and intuitively whilst examining and editing the digital plans. This considerably reduces both the work involved before and after network surveys for utility companies, as well as the costs as no guide is required. Furthermore, using the SeCuRi® SAT ensures complete documentation, from checking the sensitivity of the gas leak detector for daily use and listing uninspected house connections and faults in the pipe network, right through to project evaluation.

The optimisation of processes, increases in efficiency in day-to-day work and rigorous exploitation of major investments present a continuous challenge to gas industry enterprises.

Most gas supply companies have already invested large sums, especially in the digitisation of maps and plans. However, the resulting potential is often not exploited to best advantage. When checking gas pipe networks, enormous cost is incurred, for example, in copying and folding plans and in the employment of a guide. This cost does not apply when using digital site maps based on a Geographic Information System (GIS) and the patented SeCuRi® SAT method developed by Hermann Sewerin GmbH. This makes all network-related information available on site at any time and leads to improved procedures.

Aims / Methods / Results

The solution:

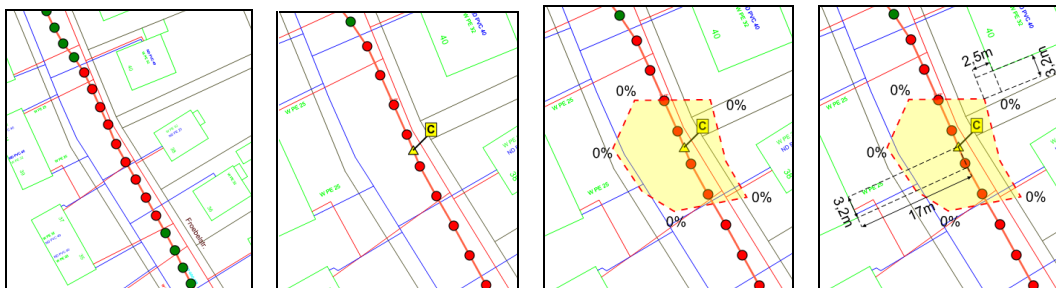**Satellites show the way - Gas detection without a guide**

The display of digital maps and plans on a field computer forms the basis for pipe network monitoring. The system is connected via an interface or wireless both to the gas detection device and to a satellite receiver. It is immaterial whether the vehicle-based or the personal SeCuRi® SAT solution is chosen. The position of the gas detection device is determined in real-time using DGPS (Differential Global Positioning System) techniques, thus enabling the current map/plan window to be displayed. The orientation of the displayed image can be adjusted to the direction of travel of the operator. All steps needed for the seamless documentation of the pipe network check are carried out simultaneously. Thus no guide is required.

One measurement per second

The gas detection device is connected to the mobile computer via an interface or wireless and is remotely controlled by this computer. The measurements from the gas detection device are stored once per second, with a time stamp and the current GPS position on the site map. Measurements in areas, where DGPS does not provide reliable position values (e.g. where the view to the satellites is obstructed) can be assigned interactively to a specific route covered by the gas detection device.

Seamless documentation

From the display of identified leak locations, by way of the listing of uninspected premises connections and pipe sections covered by buildings or vegetation, to the evaluation of work done, any discrepancies found between the pipe network and the maps and plans can be recorded and transmitted to the target system.

Designing a damage sketch.

Summary / Conclusions

The Advantages ... ... of SeCuRi® SAT are obvious:

- Economic use of existing GIS (vector or raster) data
- Reduced cost of preparation and evaluation for pipe network monitoring
- Seamless documentation for pipe network monitoring
- Quick and complete information on the condition of the entire pipe network
- Cost reduction through avoiding the need for a guide
- Automatic proof of the check on the sensitivity of the gas detection device

Screen shot of the SeCuRi® SAT software