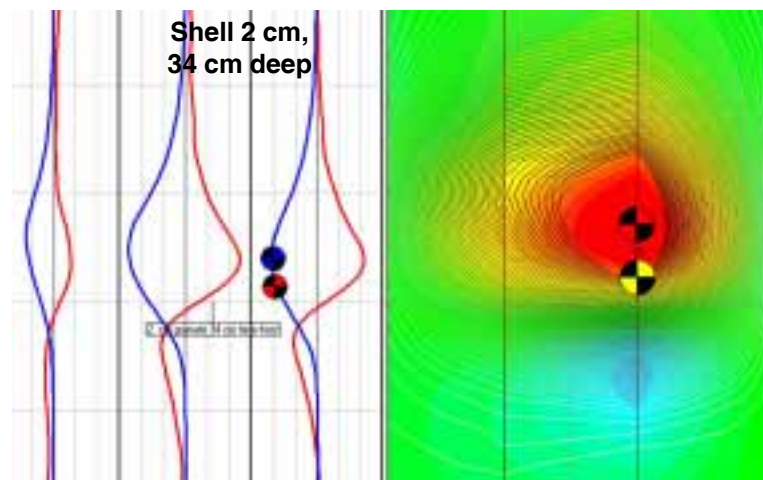
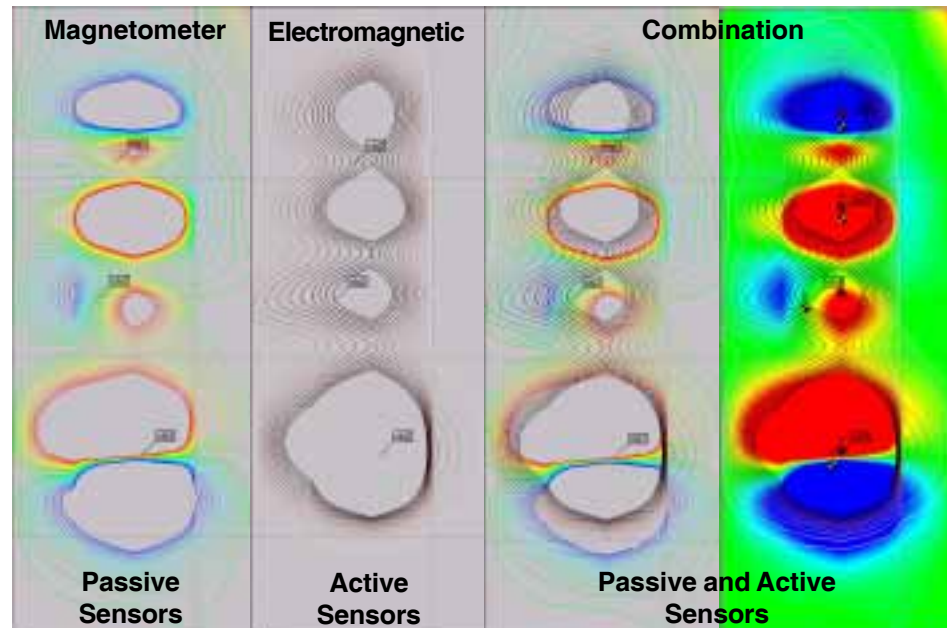


### Vallon EVA2000®2.X

The new software Vallon EVA2000®2.X does not only allow to record the survey data of multi-sensors but to display and evaluate these data correspondingly. The survey data can be displayed as colour map whereby each sensor type is indicated semi-transparently in a different way (e.g. colour or iso lines).

For a better evaluation the field maps can be positioned one overlaying the other (please refer to the example). A corresponding evaluation algorithm calculates the location, depth, size and position of the anomalies. This applies also for the active sensors if the detection system has two sensor levels. The evaluation can be automatic or manually.

This brochure shows some examples of multisensor systems which have been designed according to user specifications. Also in the future we will offer not only standard systems but try to find individual solutions in cooperation with the end-users and design the platforms correspondingly. Please feel free to contact us.



The technical data and information describe proposals but are no promised properties in the legal sense. All technical data and information are subject to change without prior notice. Issue 02/05

# MULTISENSOR SYSTEMS

for Ground Survey of Large Flat Areas to Detect Bombs and UXOs in the Ground Surface and in the Water



- Simple and sturdy
- Ease of operation
- Proven sensors
- VFC1-4 or PC as data logger
- GPS-output with navigation
- Customized solutions

### General

Multisensor solutions allow the time-saving examination of large areas on land or in the water to detect unexploded ordnances and other metallic residual waste.

Since 1977 Vallon supplies multisensor solutions designed to user speci-



fications with magnetometers and since 1992 even multisensor solutions with active metal detectors.



Combinations of active metal detectors and difference magnetometers are available from Vallon since 1999.

### Passive Sensors

Several difference magnetometers are arranged in one array across the walking direction on a metalfree frame. The sensors detect interferences of the normally homogenous magnetic field of the earth. Steel objects in the ground or in the water affect the surrounding magnetic field of the earth.

Difference magnetometers offer the advantage that magnetical interferences in larger distances respectively fluctuations of the magnetic earth field do not affect the measurements at site.

### Technical Solution

The presently available multisensor solution is consisting of several sensor tubes type EL1303, a Vallon-Field-Computer VFC1 and a carrying frame or a lightweight vehicle with



power supply and positioning system.



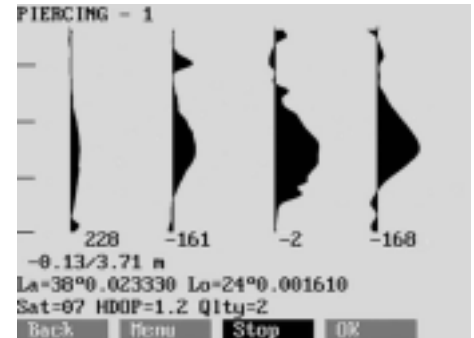
The complete system can be set up and operated by one person without special tools. It can be transported in each standard estate car as it is dismountable.



The Field Computer VFC1 is very compact and can be used under all weather conditions. Up to 4 detectors and a positioning system can be connected.

A graphic liquid crystal display with menus in clear text facilitate the detection work considerably.

During the data survey the curves of the measuring signals are displayed in real-time. Thus you can con-



tinuously check the survey quality of all sensors.

At the end of each track the covered



distance is displayed and serves for navigation.

The quality of the measuring data is an essential feature of the data survey and data evaluation. A high quality of survey data can be achieved only if enough measuring values per period or survey track are recorded and if the measuring values can be related as exactly as possible to the measuring position.

Therefore, it is highly recommended to use position measuring systems.

### Position Measuring Systems

As position measuring system or navigation system you can use SEPOS® (Sensor-Positioning-System - a Vallon-Patent), wheels with external signals or a satellite navigation system (GPS).

### SEPOS®

The SEPOS®-detector detects the SEPOS®-markers which are arranged

on a SEPOS®-rope in distances of 1 meter. The SEPOS®-rope is positioned and marks the survey track. After each track has been surveyed in both directions, the SEPOS®-rope must be shifted by the double width of the vehicle. SEPOS® supplies precise position data under all weather conditions and can be used even in locations where the satellite information is disturbed or not available.

### Global Positioning System

The satellite navigation system allows a really free data survey with a multisensor platform independent from the survey direction.

Pre-condition is the reception of enough satellites in the respective survey area. The modern systems offer an accuracy of 1-10 cm. The position values achieved by this method allow the integration of a magnetic map into a topographic map as well as listing of all calculated objects with global coordinates. Thus the objects can subsequently be relocated and disposed.

### Active Sensors

The active sensors of Vallon use the EMI-principle (Electro Magnetic Impulse). EM-impulses are transmitted and produce an information if they meet metallic objects. In practice these sensors are consisting of round or oval search heads which are arranged side by side and/or one on top of the other. Active sensors are well suited for the detection of metallic objects close to the ground surface or large objects up to 1.8 meters depth.

Instead of using a Field Computer VFC1 the data recording can be made directly



The central electronics unit is connected to the Laptop with software Vallon EVA2000®2.X and stays in the car.

The screen displays the data survey in real-time as well as the covered distance in real-time for navigation (see overleaf).

The survey data can be displayed in various ways e.g. as measuring curves, bars (see overleaf) or colour map.

The navigation window displays all surveyed tracks. The actual track is

by connecting the sensor electronics to a Laptop (MS Windows 2000 or XP) and Software Vallon EVA 2000®2.X. This software allows to record



simultaneously the data of 4 different sensor types in 4 independent arrangements. Per each arrangement (array) up to 16 sensors are possible. During the data survey the measuring values are displayed in real-time and the covered distance is displayed in real-time for navigation.

### Combination Active-Passive

Multichannel metal detectors are particularly well suited for the detection and recording of metallic residual waste (explosive remnants of war) positioned close to the ground surface (depth up to 1.8 m).

The combination with magnetometers allows to make a better statement concerning the contamination of an area with explosive ordnances than with active sensors only.

A non-metallic carrying system which is either mounted in front of the vehicle or behind the vehicle as trailer, is used for transportation. The system comprises e.g. 1 x 4 magnetometers and 2 x 4 metal detector search heads in two different heights as well as a GPS-system. The sensors and the GPS-system are connected to the central electronics unit.

marked in yellow (see illustration on the next page on the top right). You can fade in a background map. Moreover, the field can even partially be evaluated so that the objects are displayed as well.

