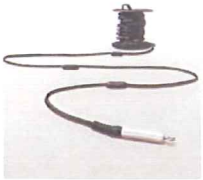


GEOTOMOGRAPHIE

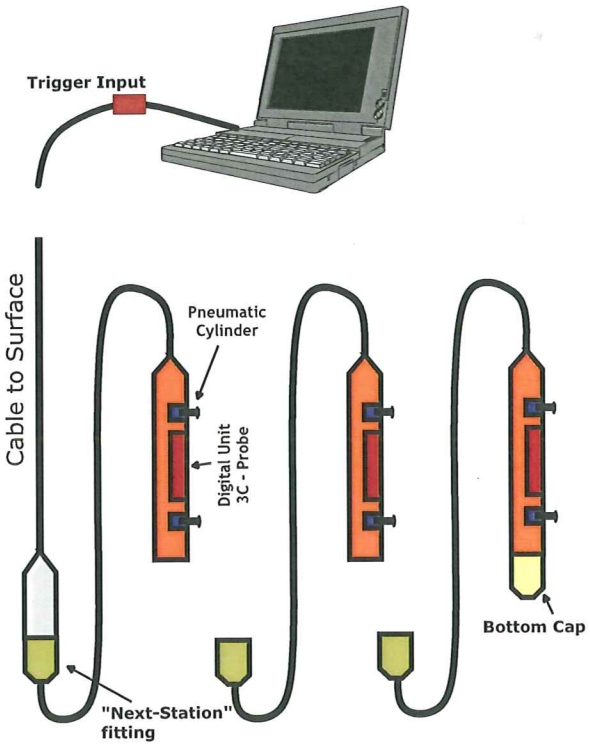
Multistation Borehole Acquisition System - Fully Digital

High-resolution P-wave tomographic investigations between boreholes are routinely applied for the exploration of development sites considered for larger building projects, e.g., power stations, dams and high-rise buildings. However, the geotechnical benefits of P-wave tomography are rather limited and information about S-wave velocity distribution is additionally required to derive geotechnically relevant parameters, such as dynamic soil parameters. Up to now, only little efforts have been made to develop equipment enabling the competitive acquisition of S-wave crosshole tomographic data.

TECHNICAL DATA of the MBAS Units:

Weight:	~ 3 kg p. station
Voltage:	3.3 V (PC USB interface)
Geophones:	SM11 (30Hz)
Seismic Channels:	3 Geophones per station
A/D CONVERSION:	24 bit @128 Hz
Sample rate:	89 kHz per Channel (continuous mode)
Frequenz:	256, 512, 1024, 2048, 4096, 8192, 16384, 32768 Hz
Stacking:	plus/minus option on every stack
Dynamikbereich:	142 dB
CROSS-TALK:	non-existent (digital transmission)
MAX CHANNEL:	255
TRIGGER:	TTL
PRE-TRIGGER:	up to 1 s
Noise Monitor:	continuous

The Multistation Borehole Acquisition System (MBAS) is designed for efficient recording of S-waves in boreholes at different levels. The system is digital and no longer needs a seismograph. Each station is equipped with a 3C sensor arrangement and is pneumatically coupled to the borehole wall by two pressure cylinders. All X and Y components are aligned to each other. To orient the MBAS to an optimal recording position a rotational hose is used. The hose is flexible to be coiled on a drum but it is stiff if one tries to rotate it. In this way one easily can turn the whole MBAS to any desired direction. Trigger can be plugged into a surface USB interface which leads directly to the laptop. New 3C stations can be added by simply connecting them to the bottom last station.



Design of MBAS(3 x 3C system)