TECHNICAL SHEET

IMAGING	ULTRASONIC	ABI

Generalities

Principle
ABI (BoreHole TeleViewer) uses a fixed acoustic transducer and a rotating mirror to scan the borehole walls with a focused ultrasound beam. The amplitude and travel time of the reflected acoustic signal are recorded as separate image logs.

Result
Features such as fractures reduce the reflected amplitude and appear as dark sinusoidal traces on the log. Directional information is also recorded and used to orient the images in real time.

Interest
Fracture identification and orientation, stratigraphic studies, core orientation…

Options
Magnetometric trajectometry, natural gamma sensor, high resolution acoustic caliper...

Constraints / borehole

filling up	: ☒ water	☒ mud	☐ dry
casing	: ☐ PVC	☐ steel	☒ open
borehole	: ☒ cored	☒ destructive	

max. depth	: 1500 m
effective diameter	: 70 mm – 180 mm
temperature	: 0°C – 70°C (*)
max. pressure	: 200 bars

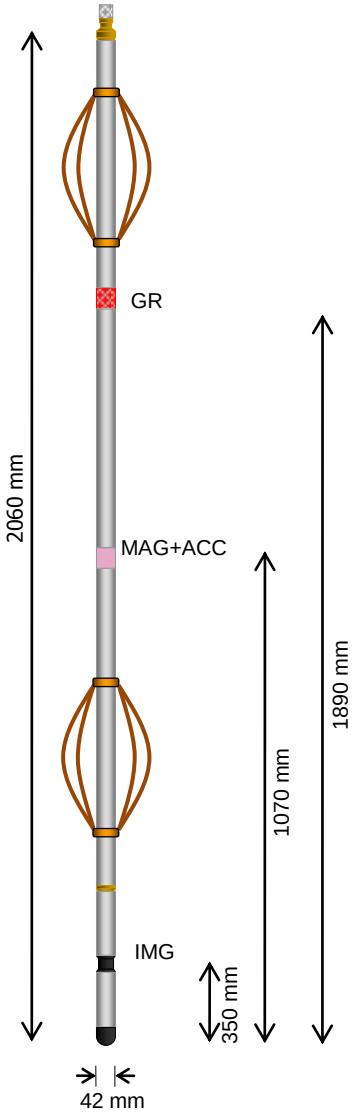
Technical specifications

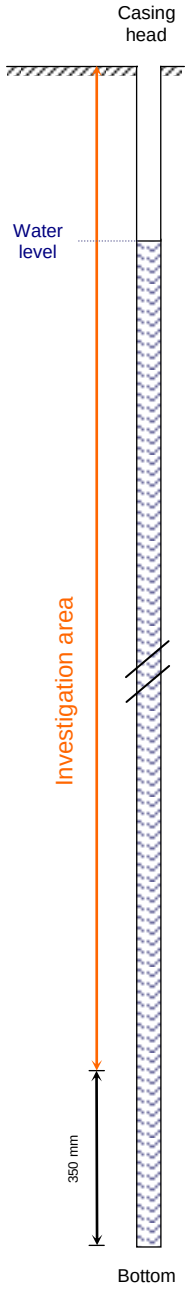
Dimensions

- length : 2060 mm
- diameter : 42 mm
- weight : 10 kg

Elements

- 1 acoustic T-R head (1.5 MHz) : IMG
- 1 magnetometer 3 axis (x,y,z) : MAG
- 1 accelerometer 2 axis : ACC
- 1 natural gamma sensor : GR





Records / Measures

Records

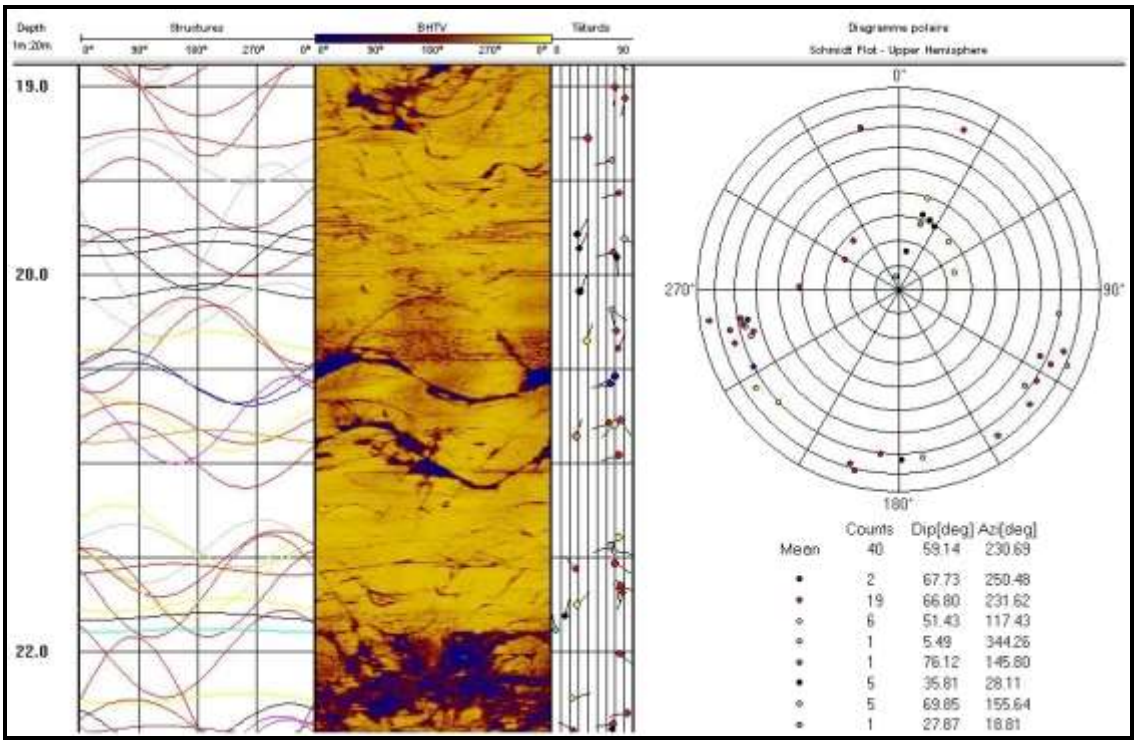
- Tool : ☒ centered ☐ off-centered
- Measure : ☒ down ☒ up
- Rec. speed : depends on communication speed

Measures

- Horiz resolution : 90, 120, 180 or 360 pixels / 360°
- Vert. resolution : depends on acquisition speed
- Azim. accuracy : ± 1.2°
- Incl. Accuracy : ± 0.4 °

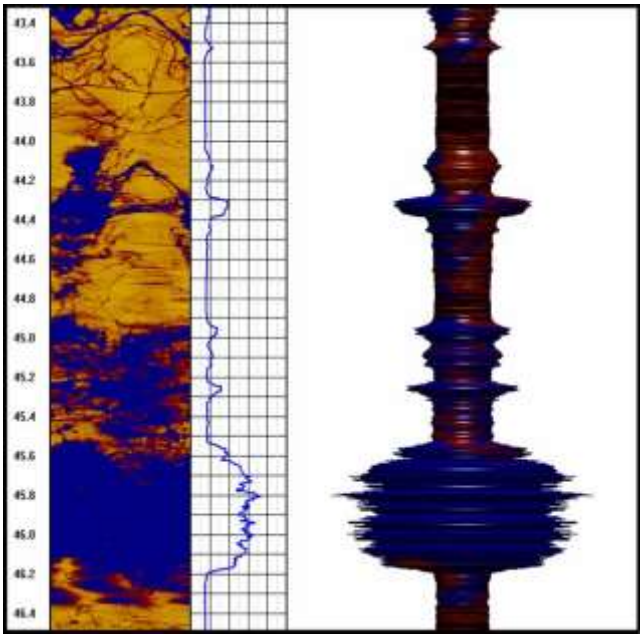
(*) Available in high temperature version (until 125°C) and low temperature version (until -5°C)

Examples



Structural interpretation

The picked structures appear in left column (1). The interpretation's results are represented through two formats: tadpole shape structures representation (2), structures representation thanks to a Wulff or Schmidt canvas (3).



3D Representation

The amplitude of the reflected wave is color-coded, while the traveling time is distance-code in order to obtain a 3D colored representation of the borehole walls.