

New electronically gimballed geophone

SEND, of Hamburg, Germany, has developed a geophone that is electronically gimballed without an external tilt sensor. The geophone has a low natural frequency of 4.5 Hz, which, they say, benefits the comparison of S waves to P waves in multicomponent studies relative to normal geophones. The "Full Tilt" geophone operates in any orientation without distortion. A position sensor keeps the coil in its centre position through a feedback arrangement. A fraction of the feedback current, proportional to the tilt, is added to the seismic signal. In this way, the Z-component of a 3-axis arrangement can be automatically determined by vector rotation in a first processing step. The electronically gimballed geophone is based on a modified standard sized geophone. The electronics add only 10 mm to its standard length, which is negligible compared to mechanical gimbal arrangements.

According to SEND, the absence of gimbal mechanics, low power consumption and compact size of the new geophone makes it particularly suitable for OBC, OBS and single node seabed seismic systems. The company says that it can also overcome orientation problems in multicomponent seismic acquisition systems deployed in remote environments such as boreholes or deep water. SEND specialises in the development and manufacturing of electronics for deepwater data acquisition. SEND also provides complete self-landing and ascending 4C Ocean Bottom Systems (SLA-OBS). To see a presentation of their new geophone, visit booth 482.