

## Subsurface Telemetry Unit (STU)

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### □ Key words

Communications - Data management - Sensors / instrumentation / electronics

### □ Description

As opposed to the AOB, the **STU is a bottom moored acoustic recording unit**. It was originally designed to serve as an underwater communication gateway node between an underwater network and a terrestrial network to which it is connected via a fibre optic bottom cable for real time data link and power supply. It can be equipped with a transmit modem for full underwater network integration. This configuration was used in two sea trials one in Italy and another in Norway in 2010 and 2011, respectively. It can also be used suspended from a surface platform (like a ship) serving as relay for data exchange and supply. In those configurations the system can be operated for long periods of time. Alternatively the STU could be used as a standalone self-recording system in which case it should have surface expression for data link and battery exchange. In that regard the STU is one of the most versatile systems for ocean exploration and networking.



## Technical specifications

Model	STU
Type	Acoustic VLA
Aperture (m)	30/60
No. sections	1/2
No. channels	8/16
Hydrophone depths (m)	2/4 spacing
Frequency band (kHz)	0.1-30
Sampling frequency (kHz)	60 (GPS synchro)
AD conversion (bits)	24, Sigma-Delta
Time synchro	NTP and 1 PPS
No. thermistors	8/16, @hyd depths, Fs=1 Hz
Autonomy (h)	infinite
Communications to shore	100MBps Ethernet via optic cable with power driver
Underwater network	RS2323 and power to acoustic modem

### □ Applicability of Technology to Maritime SMES

