



## MULTIPARAMETER GEOPHYSICAL STATION

Long Term Deployment with  
shuttles for data recovery

The Geophysical Station has been developed for the French research laboratory GEOAZUR with the support of European Community

### APPLICATIONS

- Oceanographic Research
- Broadband Seismology
- Environmental Monitoring
- Underwater Acoustics

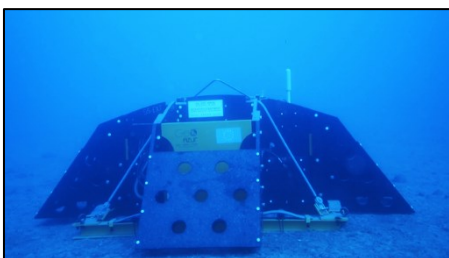
### FEATURES

- Up to 4 years Autonomy
- Up to 6000m Depth
- Multi geophysical sensors
- Optimal seismometer coupling
- Up to 6 Shuttles for data recovery
- Station and Shuttles released by mechanical acoustic releases
- Digital Inductive communication Station / Shuttles
- Station localization by GPS location transmission via proprietary VHF link and Strobe light
- Non corrosive material housing



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## TECHNICAL SPECIFICATIONS



Dimension (LxWxH):	3.3m x 3.3m x 1.4m
Weight in Air:	1500kg (3307 lb), with 360kg steel anchor
Maximum Operating depth:	6000m (19,685 ft)
Material:	PE, syntactic foam, Titanium and Glass
Autonomy acquisition / recovery:	Up to 4 Years / 5 Years
Station recovery:	By acoustic mechanical release and dynamic leaf spring
Shuttle recovery:	By acoustic mechanical release
Shuttle localization:	By GNSS location transmission via proprietary VHF link and Strobe light.
Station localization:	By GNSS location transmission via proprietary VHF link and Iridium SBD for unexpected release. Strobe light.
State-of-health parameters:	By acoustic communication
Data Management:	4 Years of continuous recording on $\mu$ -SD card
Data Download:	Use of USB 2.0 link after recovery
Data format:	RAW-WAV/MiniSEED/SAC
Data recovery Shuttles:	Up to 6 by acoustic release
Data transfer to Shuttles:	Digital Inductive communication
System Configuration:	By Web Server, Ethernet via cable or Wi-Fi
Time Management:	Accurate Clock, Drift 2.10 <sup>-8</sup> / Year <i>Option: CSAC Atomic Clock, Drift 1.10<sup>-9</sup> / Year</i>
Time Drift measurement:	Automatic VS GNSS when surfacing (Shuttle and station).
SEISMOMETER:	3-axis TRILLIUM Compact OBS
Sensibility:	750V.s/m
Bandwidth:	120s to 100Hz
Resolution/ Sample rate:	32bits / 125, 250, 500, 1000 Sps
Self Noise:	< NLNM @ F < 1Hz
Internal sensor:	Accelerometer 2 axis and Magnetometer
Sensor release:	By acoustic Burn Wire release
Sensor coupling:	The seismometer is uncoupled from the main structure and directly in contact with the ground, enclosed in a well in the center of the station which protects it from the convection current.
ACCELEROMETER:	3-axis ASC 5521-002
Measurement range:	$\pm 2g$
Accuracy:	0.5% Full Scale
Bandwidth:	40Hz
Resolution/ Sample rate:	32bits / 125, 250, 500, 1000 Sps
ABSOLUTE PRESSURE:	Paroscientific Digiquartz® 4000 series
Measurement range:	0 - 10,000 psia (68.9 MPa)
Repeatability & Hysteresis:	$\leq \pm 0.01$ % Full scale
Integration period:	1s, 10s or 100s
Resolution @6000m depth:	50mm, 5mm, 0,5mm
DIFFERENTIAL PRESSURE:	DPG Scripps
Accuracy / FS:	1%FS / $\pm 2,5kPa$
Bandwidth:	40Hz
Resolution/ Sample rate:	32bits / 125, 250, 500, 1000 Sps
ACOUSTICS:	1 Broadband hydrophone
Hydrophone ref.:	HTI-90-U ( <i>Option: HTI-04/ULF</i> )
Sensitivity:	-186dB ref.1V/ $\mu Pa$
Gain setting:	12,7dB
Self Noise:	-134 dBVrms/ $\sqrt{Hz}$ @10Hz
Maximum Level:	163 dB ref.1 $\mu Pa$
Bandwidth:	0.4Hz to Fs/2.5 (max 400Hz)
Resolution/ Sample rate:	32bits / 125, 250, 500, 1000 Sps
OPTIONS:	Extra sensors CTD, AOA, Others...