



OBSIP Instrument Functional Specifications

OBSIP Oversight Committee

March 15, 2016

1. Short Period OBS (Active source)

1.1. Science Targets

Active source experiments and studies of small events, gas hydrates.

1.2. Specification

Specification	Requirement	Justification/Notes
1. Fleet Size	a. 200+ instruments	a.
2. Shielding	a. None	a.
3. Trawl resistance	a. None	a.
4. Clock accuracy	a. Correctable accuracy to 0.1ms for the length of the deployment	a.
5. Clock operation duration	a. 3-4 months or greater	a.
6. Recovery	a. Acoustically commanded release b. Steel anchor left on seafloor is standard operating method c. 45 meters/minute rise rate d. 60 meters/minute rise rate preferable	a.

7. Recording duration	a. 2 months at 500 sps or higher	a.
8. Depth	a. Max 6000 meters standard	a.
9. Short period Seismometer	a. Required in all instruments b. Three-component seismometer, self gimbaling c. Passband: flat to 4.5 Hz natural frequency. d. Self-noise: below NLNM to 100 Hz. e. Bandwidth: ? f. Clip level: ?	a.
10. Strong Motion Sensor	a. None	a.
11. Absolute Pressure Sensor	a. None	a.
12. Differential Pressure Gauge	a. None	a.
13. Hydrophone	a. Required in all instruments b. High Tech HTI-90-U or better	a.
14. Datalogger	a. 4 channels minimum: i. 3 Channels: seismometer: vertical and horizontals ii. 1 Channel: Hydrophone b. Frequency response: ? c. Anti-aliasing FIR filter d. Sampling rates: 100, 200, 250, 500, 1000 sps e. 24 Bit A/D f. Sampling rates configurable by channel g. Datalogger dynamic range and noise floor do not limit	a.

	<p>sensor performance</p> <p>h. Acquisition modes: preprogrammed time windows, programmable/changeable sampling rates</p> <p>i. Extendable time synch to other dataloggers/systems</p>	
15. Data delivery requirement:	a. DMC: SEED for all experiments, SEG-Y for active source	i.