Regional Cabled Array Instrument Integration Planning Form
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1. Instrument Overview

Date:

Instrument Name:	
PI Name(s):	
Employer/Affiliation:	
Phone Number:	
Email Address:	
Planned Proposal Date:	
Instrument Vendor (or developer):	
Instrument Model (if commercial):	
Proposed Location(s):	
Deployment Depth (m):	
# Instruments Requested:	
Expected Deployed/Operational Life:	
Maturity of Instrument (e.g. commercial, prototype, concept):	
Estimated Deployment Readiness Date:	

Brief Description of Instrument/Platform Objectives:

2. Electrical

2.1 Instrument Power Requirements

Input Voltage Range (V)	
Peak Operating Current (A)	
Power-on Inrush Current (A)	
Power-on Inrush Duration (ms)	

Describe any known sensitivity to power supply noise:

2.2 Electrical Isolation

☐ Instrument is electrically isolated from seawater

If not, Explain:

2.3 Communication Protocol(s) (select supported):

☐ RS-232; ☐ CTS/RTS required? ☐ RS-422

☐ RS-485 (half duplex) ☐ RS-485 (full duplex)

☐ Ethernet: 10Base-T ☐ Ethernet: 100Base-T

☐ Other:

2.4 Timing (select all that apply):

☐ Instrument has an internal real-time clock

☐ Instrument uses 1 PPS signal input

☐ Instrument connects to an external NTP server

☐ Instrument connects to a PTP server

☐ Instrument clock can be set via software command

Describe Expected Method for timestamping data:

Other electrical information (e.g. on-board processor type/limitations):

3. Mechanical

3.1 Dimensions

Length (inches)		(cm)	
Width (inches)		(cm)	
Height (inches)		(cm)	

3.2 Weight

Dry Weight (lb)		(kg)	
In water weight (lb)		(kg)	

3.3 Depth Rating

Maximum Depth Rating (m)	

3.4 Materials

List Materials in contact with seawater:

3.5 Connector

Connector Model and Pinout (may be attached as a separate sheet):

3.6 Photos/Drawings

Please provide drawings, photos, or solid models attached as a separate sheet.

Other mechanical information:

4. Deployment, Recovery and Handling

4.1 Deployment

☐ Instrument will be mounted directly on existing cabled platform

☐ Instrument has it's own platform or frame

Describe deployment operations (e.g. free fall to seafloor, use of ship's wire, ROV handling), including any special preparation required (may be attached as a separate sheet):

4.2 Recovery

Describe recovery operations, including any special post-recovery procedures (may be attached as a separate sheet):

4.3 Special Sampling/Calibration/Verification Requirements

Describe any special reference measurements or samples that must be taken during deployment and/or recovery of the instruments, or considered for placement on the cabled array (e.g. must be near CTD, gas tight fluid sample needed, etc.):

4.4 Special Handling

Describe any special handling considerations (e.g. instrument must be kept in temperature-controlled environment):

Other deployment, recovery, or handling information:

5. Output Data & Command/Control

5.1 Output Data (select all that apply)

☐ Data will be streamed in real (or near-real) time

☐ Data will be recovered from instrument after deployment (e.g. sample analysis)

List measured scientific parameters (may be attached as a separate sheet):

Sampling Frequency (Hz)	
Data Output Frequency (Hz)	
Estimated daily data output (MB)	

Describe the output data and provide an example data record (may be attached as a separate sheet):

5.2 Command and Control (select all that apply)

☐ Instrument requires remote command interface to operate

☐ Top-side GUI-based software is available for operations

☐ Instrument can be operated through a command line interface

Describe instrument command protocol (may be attached as separate sheet):

Other output data and command/control information:

6. Environmental

Select all that Apply

☐ While Deployed, instrument will be in contact with the seafloor

If checked, describe the interface with the seafloor (e.g. on tripod, within frame, buried in caisson, etc.):

☐ Instrument outputs acoustic signals

If checked, provide frequency (including out-of-band emissions), source level and interval of acoustic output:

☐ Instrument outputs optical signals

If checked, provide wavelength, power level and interval of optical output:

☐ Instrument exhausts chemicals into surrounding water

If checked, list exhausted chemicals, concentrations, volume and output interval:

☐ Instrument is sensitive to environmental outputs from other deployed equipment

If checked, describe sensitivity to other equipment:

☐ Instrument should be deployed be adjacent to or near another instrument or platform

If checked, how close and to which instrument/platform (e.g. within 20m of installed pressure sensor)

Other environmental information:

This section to be filled out by MIO Instrument Integration Group

7. Marine Implementing Organization Review

Suggested Node(s) & Port(s):

Port Modifications Needed:

Platform Modifications or Mounting Equipment Needed:

Recommended Cabling Configuration (connectors, cable type, length):

Data Diversion

Each new instrument is subject to review by the Navy or their representatives to determine if it is subject to data diversion. Examples of instruments subject to data diversion are: seismometers sampling above 4 Hz, low frequency and broadband hydrophones.

Overall Instrument Readiness

- ◯ CABLE READY - Instrument is fully developed; interfaces are known and understood
- ◯ Minor modifications are needed to make this instrument cable ready
- ◯ More development is needed to make instrument cable ready (this may include selection and implementation of communications protocols, conversion from battery power, etc.)