# 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 PowerRequirements*

| | |
|---|---|
| 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 time-stamping 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 platform

☐ Instrument has its 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 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:

| |
|---|
| |

*5.3Data Embargo*

☐ A one-year data embargo is requested and will be included in the Data Management Plan

Describe data embargo considerations (may be attached as separate sheet):

# 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.):

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

☐ Instrument outputs acoustic signals

☐ Instrument outputs optical signals

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

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

☐ Instrument exhausts chemicals into surrounding water

☐ Instrument is sensitive to environmental outputs from other deployed equipment

If checked, describe sensitivity to other equipment:

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

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

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 Configuration (connectors, type, length):**

**Overall Instrument Readiness**

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