

MOOS Mooring Sensor Installation and Maintenance

The MOOS mooring will support “plug and work” which has been defined as

In response to a user-initiated command, a MOOS node shall be capable of determining which devices are currently present on all sensor ports, and the node shall automatically carry out any necessary configuration actions. In cases where an appropriate device is installed on the port's sensor, the node shall be capable of reading device ID and other associated data from the device itself, by-passing the need for manually-generated configuration information on the node. It shall also be possible to override this automatic device identification process for a specific port, through manual "pre-configuration" of the node.

The following are use cases of how a sensor may be added, removed or swapped to a deployed node.

Sensor Installation and Maintenance Use Cases

Case #1 Adding a sensor to an empty sensor port.

The user plugs a new sensor into an unused port on the node. After the sensor is plugged in a port scan is initiated for the port the sensor was plugged into or the entire node. The port scan discovers the new sensor retrieves the puck information and starts the service for that sensor.

Case #2 Removing a sensor from a mooring.

- a) Sensor removal using the uninstall utility.

The user runs the uninstall utility for a given node port. After the service has been stopped and the port has been powered down the sensor may be safely removed by the user.

- b) Sensor removal without using the uninstall utility.

The user removes a sensor without using the uninstall utility. At the next sample time the node receives no response from the sensor and takes the appropriate action (i.e. stop the service, report an error to shore, etc.)

Case #3 Replacing a sensor with another sensor (of same or different type).

- a) Sensor swapping using the uninstall and port scan utilities.

The user runs the uninstall utility for a given node port. After the service has been stopped and the port has been powered down the sensor is swapped. A port scan is initiated for the port the sensor was plugged into or the entire node. The port scan discovers the new sensor retrieves the puck information and starts the service for that sensor.

- b) Sensor swapping without using the uninstall and port scan utilities.

- i) Swapping a sensor that is never powered by the platform.

The user swaps a sensor with a new sensor. At the next sample time the node powers up the puck and checks its ID against the ID that was initially loaded. When the ID does not match the stored ID the node takes the appropriate action. *

- ii) Swapping a sensor that is always powered by the platform.

The user swaps a sensor with a new sensor. Since the port is always powered the sensor puck switches into puck mode when it is plugged in. At the next sample time the node does not get a correct response from the sensor because the puck has never been put into sensor mode. After receiving no response or an incorrect response the node takes appropriate action. *

- iii) Swapping a sensor that is powered by the platform during sampling.

The user swaps a sensor out with a new sensor. At the next sample time the node powers up the sensor. Upon power up the puck switches into puck mode. The node checks its ID against the ID that was initially loaded. When the ID does not match the stored ID the node takes the appropriate action. *

* Question: What should the appropriate action of the node be?