

## Synopsis

This document is intended to index practical procedures for setting up and configuring MOOS Mooring Controller (MMC) hardware and software. The procedures are organized in terms of mooring lifecycle, with sections covering

- basic system setup
- pre-deployment integration and test
- deployment operations
- maintenance

The hardware and software span a number of projects, each maintained under revision control in separate CVS repositories:

<b><i>Project</i></b>	<b><i>Description</i></b>	<b><i>Principles</i></b>	<b><i>Project Documentation</i></b>
moosmc	SideARM Medusa RFIO	Wayne Radochonski (Tim Meese)	<a href="http://moonjelly.shore.mbari.org/cgi-bin/cvsweb.cgi/moosmc">http://moonjelly.shore.mbari.org/cgi-bin/cvsweb.cgi/moosmc</a>
siam	Software Infrastructure and Applications for MOOS	Tom O'Reilly Kent Headley (Mike Risi) (Bob Herlien)	<a href="http://moonjelly.shore.mbari.org/cgi-bin/cvsweb.cgi/siam">http://moonjelly.shore.mbari.org/cgi-bin/cvsweb.cgi/siam</a>
dpa	Dual Port Adapter (DPA)	Scott Jensen	
puck	PUCK	Tom O'Reilly Kent Headley (Mike Risi) (Bob Herlien)	<a href="http://moonjelly.shore.mbari.org/cgi-bin/cvsweb.cgi/puck">http://moonjelly.shore.mbari.org/cgi-bin/cvsweb.cgi/puck</a>
puckxml	XML for PUCKs	Kevin Gomes John Graybeal	<a href="http://moonjelly.shore.mbari.org/cgi-bin/cvsweb.cgi/puckxml">http://moonjelly.shore.mbari.org/cgi-bin/cvsweb.cgi/puckxml</a>
ssds	Shore Side Data System	Kevin Gomes John Graybeal	<a href="http://moonjelly.shore.mbari.org/cgi-bin/cvsweb.cgi/ssds">http://moonjelly.shore.mbari.org/cgi-bin/cvsweb.cgi/ssds</a>
ace	ACE PUCK programming tool	Andrew Chase	<a href="http://moonjelly.shore.mbari.org/cgi-bin/cvsweb.cgi/ace">http://moonjelly.shore.mbari.org/cgi-bin/cvsweb.cgi/ace</a>

The code and documentation in the CVS repositories can be accessed using a web browser; the CVS index page may be found at

<http://moonjelly.shore.mbari.org/cgi-bin/cvsweb.cgi>

The CVS web interface allows the repository contents to be downloaded and viewed (i.e., is read-only). If you need to be able to check out and modify a repository, it is necessary to request access from the CVS administrator (Karen Salamy).

## **Basic system setup**

### ***Install MMC MSP430 firmware***

Preparation:

- The MMC MSP430 firmware binary (.rx) must be obtained. This is maintained in the moosmc CVS repository under envp\_v22q/archive. The versions before and including Feb24\_2004 are known to incorrectly initialize some registers for the RFIO card.
- The referenced document contains a list of other required software, cables, hardware, etc.

The installation procedure is described in  
(SIAM docs/mmc/MMC-MSP430ProgrammingProcedure.doc)

### ***Install RFIO MSP430 firmware***

Preparation:

- The RFIO MSP430 firmware binary (.rx) must be obtained. This is maintained in the moosmc CVS repository under rfio/archive. The versions before and including Feb24\_2004 are known to incorrectly initialize some registers/outputs.
- The referenced document contains a list of other required software, cables, hardware, etc.

The installation procedure is described in  
(SIAM docs/mmc/MMC-MSP430ProgrammingProcedure.doc)

### ***Install MMC CPLD firmware***

Preparation:

- The MMC CPLD firmware binary (.jed) must be obtained. This is maintained in the moosmc CVS repository under cpld/.
- The referenced document contains a list of other required software, cables, hardware, etc.

The installation procedure is described in  
(SIAM docs/mmc/MMC-CPLDProgramming.pdf)

### ***Install MMC kernel and root file system image***

Preparation:

- The Linux kernel (zImage) and root file system image (aka "golden bits", i.e., root.jffs2) binaries must be obtained. These are served by tftp on moonjelly.shore.mbari.org; you must know the directory in which the targeted version is maintained.
- The referenced document contains a list of other required software, cables, hardware, etc.

The installation procedure is described in  
(MOOSMC doc/pdf/sidearm-flash-image-guide.pdf)

### ***Prepare MMC compact flash disk***

The preparation procedure is described in  
(SIAM docs/mmc/CompactFlashPrepProcedure.pdf)

### ***Set ARM system clock***

As root, use the Linux date command:

```
date -s "mm/dd/yyyy hh:mm"
```

### ***Set Ricoh RTC***

As root use ricohRTC utility

```
/root/ricohRTC -t
```

### ***(Setup SIAM build environment)***

### ***(Generate device SSDS I.D.s for new instruments)***

### ***(Make SIAM distribution)***

Using the CVS command line or GUI, export the CVS tagged SIAM release

Modify environment variables as needed

Create class and ports directories

```
mkdir $SIAM_HOME/classes  
mkdir $SIAM_HOME/ports
```

The SIAM classes are compiled using the make utility

```
make / make --win32
```

PUCK JAR files for the various deployments are generated using targets defined in the SIAM makefile.

```
make <puckTarget>
```

The distribution ipkg (siam.ipk) may then be made using

```
make distribution
```

### ***Install SIAM distribution***

Preparation:

- The SIAM distribution binary (siam.ipk) must be obtained. This is maintained in the siam CVS repository under releases/.

Put the node on the local network

Login as root

Use scp to transfer siam.ipk the compact flash drive on the MMC node

```
scp user@machine:someplace/some-siam.ipk /mnt/hda/siam.ipk
```

Install the SIAM distribution

```
ipkg install siam.ipk
```

Install the links web browser ipkg if it is not installed. If

```
which links
```

does not find the links command, then as root

```
cd /root/
```

```
ipkg install elinks.ipk
```

## ***Configure SIAM***

The SIAM configuration tool (configTool) is operated via a web browser. It is typically done locally (on the node being configured) using the links text-based web browser, though it may also be done remotely using other browsers (e.g., IE explorer). The configTool servlet must be run as root.

To run configTool from the local console, run (as root)

```
configt
```

to start the configTool servlet and the links browser.

Documentation for configuring SIAM using configTool may be found in (SIAM docs/configtool/ConfigTool.html)

If you do not stop the configTool servlet by using the button on the configTool interface, you should kill the configTool servlet process manually after exiting.

## **Pre-deployment integration and test**

### ***Install puck firmware***

(SIAM/docs/puck/PUCKFirmwareProgrammingProcedure.pdf)

## **Deployment operations**

## **Maintenance**