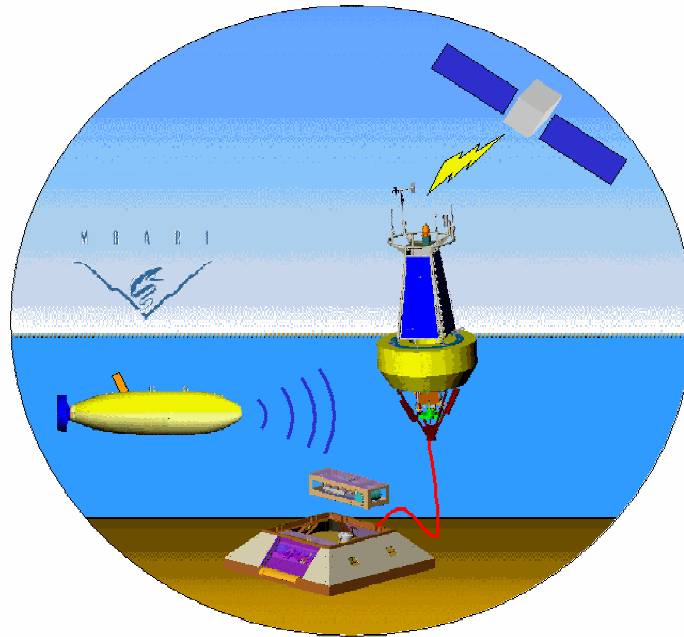


Plug-and-work prototype

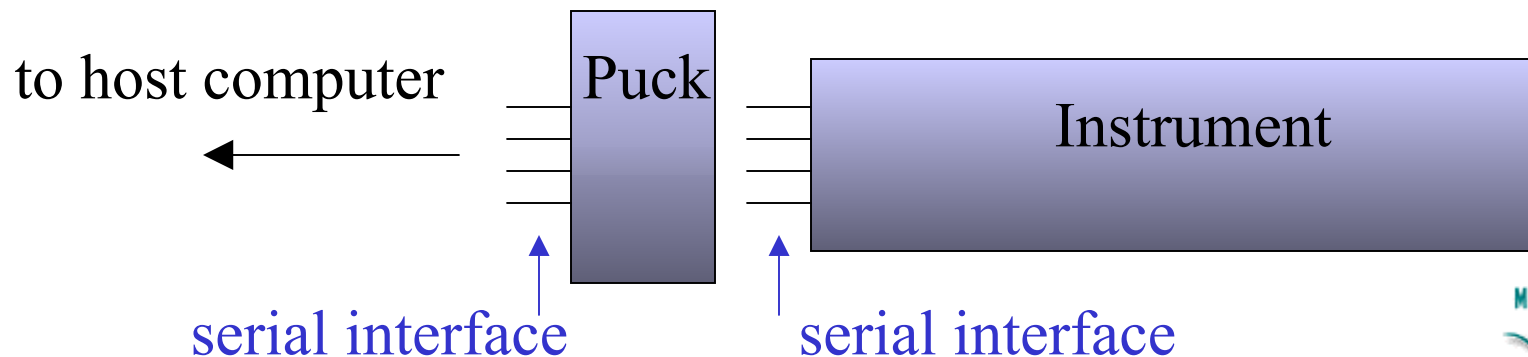


SIAM Team
April 25, 2003



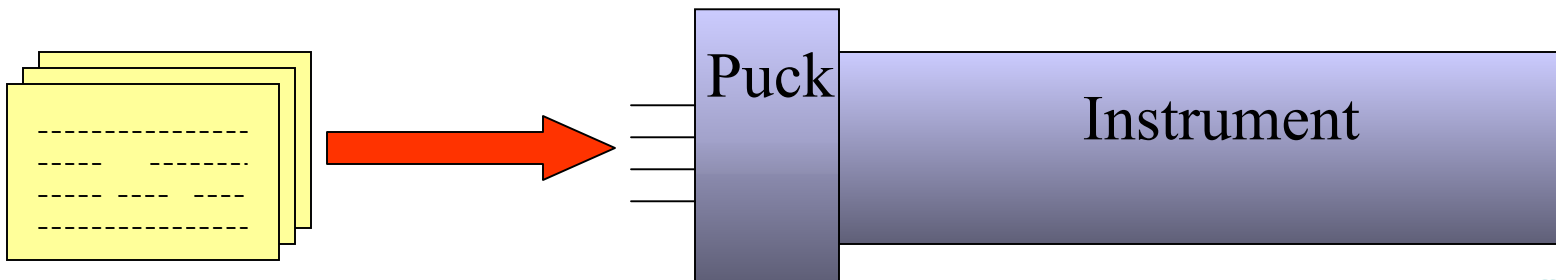
Instrument puck concept

- A puck is closely coupled to specific instrument, always travels with its instrument
- Puck contains instrument service code, metadata
- Host retrieves information from puck when the instrument/puck is plugged in



Instrument configuration

- Attach a puck to instrument
- Describe instrument and service with metadata and property files
- Get instrument service's Java code
- Bundle everything in *Jar file* and write to puck



Instrument *Jar file* contents

- Instrument service code (Java classes)
- Service properties file (ASCII text)
 - Unique ID #
 - Mnemonic name
 - Power and communication policy
 - Sampling schedule
- Instrument metadata
 - XML; for use by shore-side data system

Instrument swap use case

Network

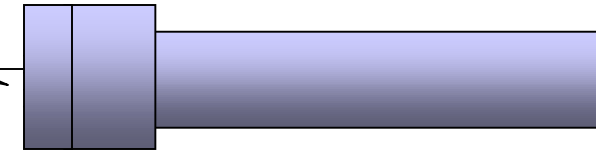
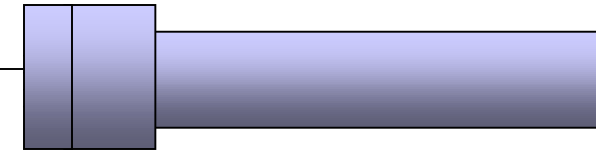
Node

Instrument
service

Scheduler

Port
manager

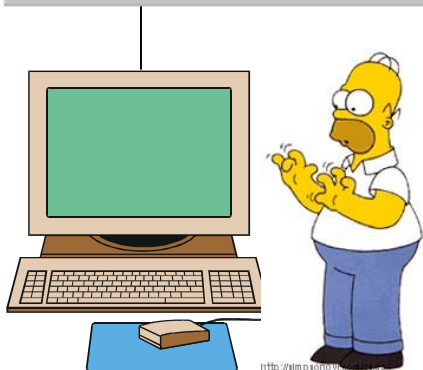
Instrument
service



Port manager disconnects
port power, shuts down service

Safe to unplug instrument

Operator runs
shutdownPort:



Network

Node

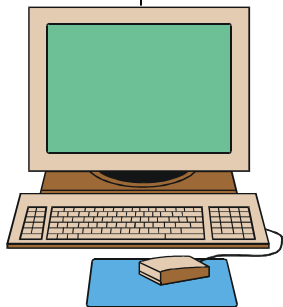
Scheduler

Port
manager

Instrument
service

Instrument
service

Plug in new sensor



Network

Node

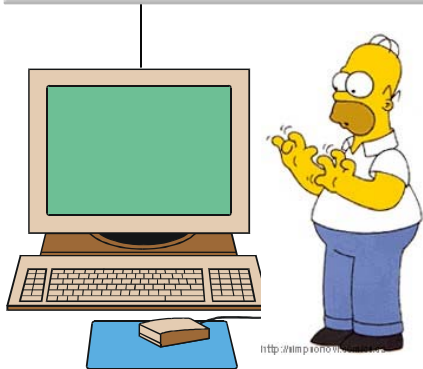
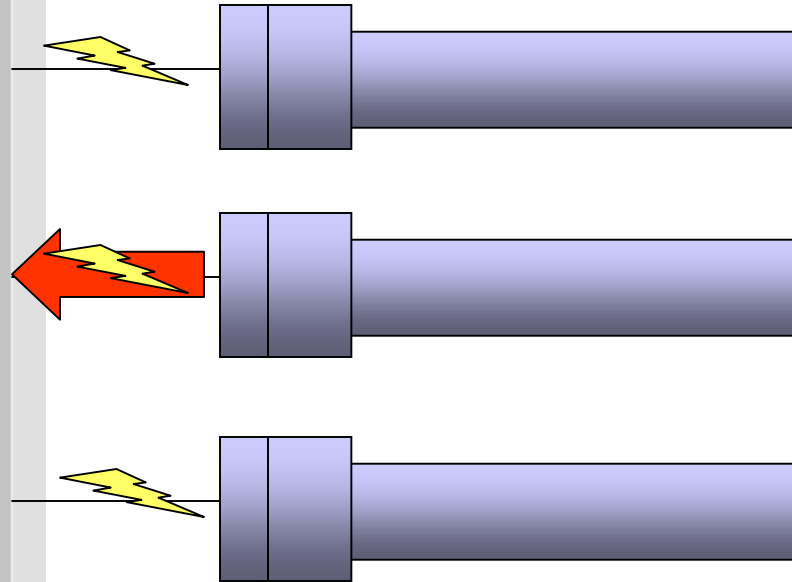
Scheduler

Port
manager

Instrument
service

Instrument
service
code

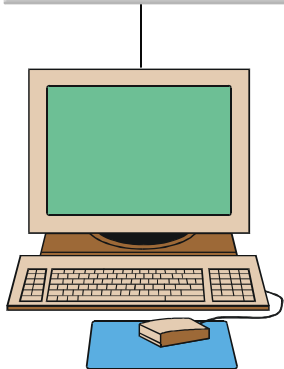
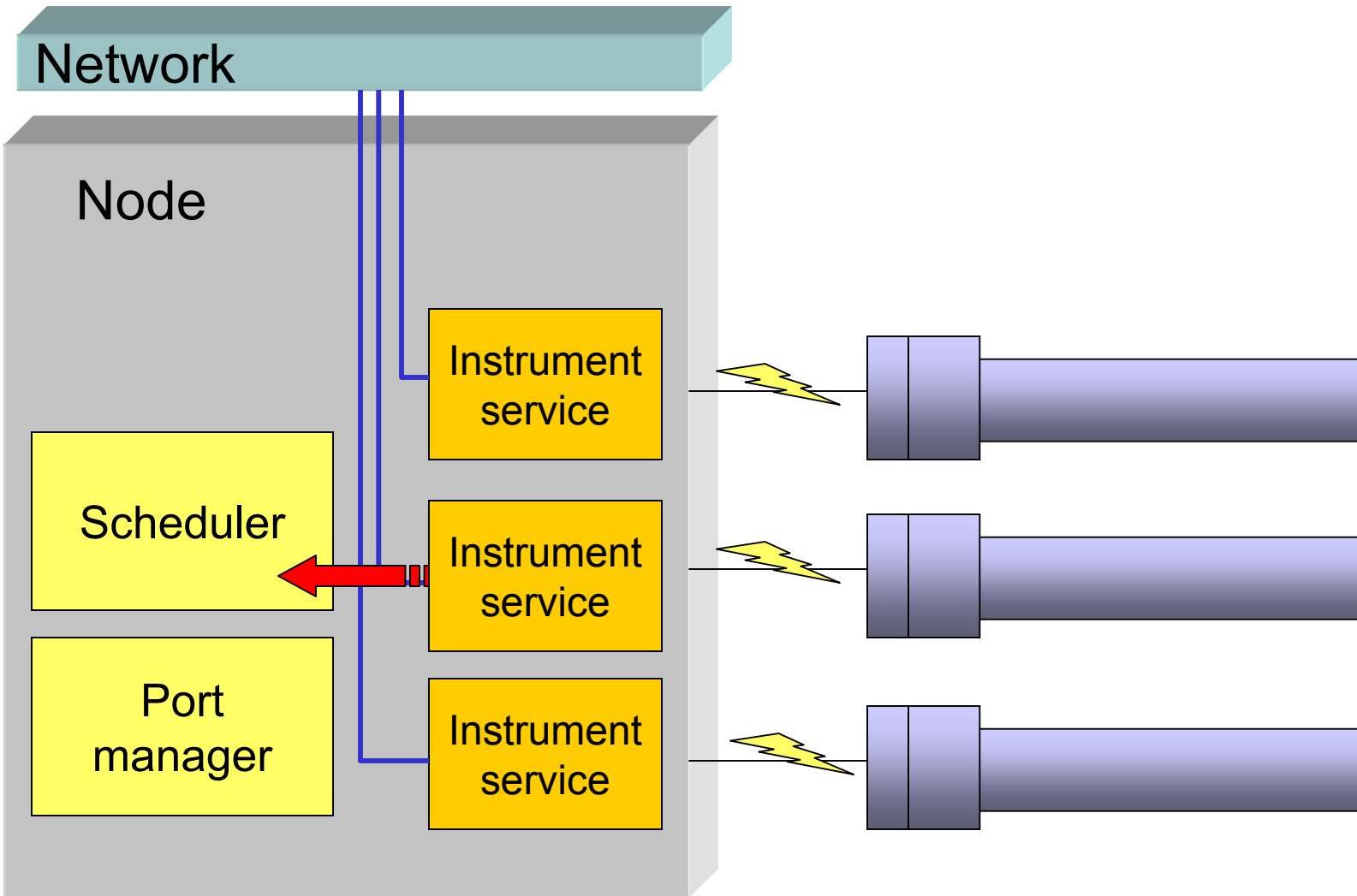
Instrument
service



Operator runs
scanPort

Port manager applies power to port
Port manager extracts service code,
properties, etc from puck





Port manager starts instrument service

Service joins network

Instrument sampling schedule
passed to scheduler



Possible stories for next release

1. Sidearm puts itself in “sleep” mode, then gets “woken up” by MSP430 processor.
2. Portal implementation
3. Implement instrument service for Seabird inductive modem string
4. Implement pump service
5. Short-haul RF communication scheduler
6. GUI to display status of services, ports, and schedules

