

SIAM Review Comments, by Kent Headley

who:
re:
comment:

who: backes
re: licensing
comment: any puck licensing hurdles would be a disincentive for instrument oems to adopt the puck

who: headley
re: puck download speed
comment: 9600 baud is too slow for large payloads

who: johnson
re: instrument interfaces
comment: what about non-RS232 instruments

who: maffei
re: UUID
comment: why 16 bytes? what about IPV6, others?
* need getID command in puck interface
ID is most attractive part of header

who: chaves
re: puck header
comment: extend header to include organization & more -- metadata history

[There were quite a few comments about the puck contents...we need to communicate clearly that this is a platform dependent convention, not an architectural element of the puck
]

who: maffei
re: puck
comment: can you terminal directly to a puck?

who: various
re: puck, metadata
comment: what is justification for close binding? why not put metadata on host?
mclean: on atlantic system, host supplies metadata for 'addresses' on platform via lookup table
burch: close binding has been a 'big win' because people make mistakes
chaves: binding is critical; why separate? better to incorporate into new instruments.
puck is needed for legacy instruments.
backes: keep puck firmware very low level (like a file system) leave contents and formatting to a higher level.

who: chaves
re: eth vs serial
comment: ethernet instruments will be needed for other platforms; look carefully at the implications of eth vs serial

who: raybould et al
re: metadata
comment: how do metadata changes stay in sync (e.g., if someone uses setProperty(), (when) does the change get reflected in the puck?)

[I think that synchronization of metadata changes is a critical issue for CIMT]

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chayes: e.g., for adaptive sampling, for sampling rate change, metadata should reflect WHY the sample rate changed

maffei: spec should allow for different modes to allow changes w/o power cycling the puck.

who: burch

re: puck erasing

comment: why bulk erase? seems useful to be able to have finer control of contents [more like a file system]

who: massion

re: language dependence

comment: how much difference does language make

[we need to drive home the point that the puck contents and structure are completely

a platform dependent convention; even maffei's written comments suggest that this is not yet entirely clear. Mike's demo idea might do this]

who: maffei

re: puck timeout

comment: it might be a good idea for the puck to have a timeout, after which time it would switch to instrument mode [yeah! that is a good idea]

who: backes

re: puck command format

comment: good idea to use (e.g.) puck_cmd format for puck commands to reduce namespace collisions with instrument command sets

who: burch

re: standards development

comment: keep physical spec separate from policy and software specs. Take an incremental, layered approach that makes it easy for vendors to comply at lowest level (shoot for 100% compliance at lowest level).

who: burch

re:puck

comment:

how about a read-only implementation?

what about puck primitives to write specific areas?

Agilent using XML to pass argument arrays

who: burch

re: tool chain

comment: Eclipse, TogetherSoft, JUnit good tools. UML has been a success for them

who: mcclean

re: device discovery

comment: have we looked at Juxta?

who: burch

re: JMS, pub-sub vs cli-svr

comment: pub-sub has been successful and has advantages over cli-svr in their application

they use a 'lite' version of a JMS mechanism

who:?

re:scheduling

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comment: can we support absolute start point, and relative sample schedule

who: chayes
 re: metadata standards
 comment: FGDC has well established protocols for metadata;
 we (SSDS) will need to deal with it.

who: burch
 re: metadata
 comment: how to deal with floating point numbers in ASCII (XML)

who: burch
 re: RMI, bandwidth
 comment: very concerned about using RMI over low bandwidth links;
 what about an 'everything' proxy on shore?

who: godin
 re: scheduler gui, code development
 comment: Hobilabs has DASHost and scriptwizard (download from hobiLabs)

who: burch
 re: thread management
 comment: look out for deadlocks, race conditions; ordering of locks is important.
 different programmers may use different call chains for locking, unlocking.
 consider using a watchdog process to detect deadlock.
 using global mutex is effective, but defeats multi-threading.

who:?
 re: ethernet on twisted pair
 comment: can 10baseT run 1 km?

who: roman
 re: networking
 comment: keep DHCP leases alive each time node contacts shore. If lease expires,
 it is safe to assume that node is off line.

who: all
 re: summary comments
 comment:

mcclean: is complex for fully operational system; may be difficult for scientists to
 use instruments routinely. Think about ethernet instruments. Where should
 the
 smarts for the system be?

chayes: need to look soon at issues re cabled vs non-cabled architectures and what
 are the needs of the cabled observatory community.

chave: Java might be insurmountable hurdle for scientists. (C might be better)

burch: weak link for moored system: RF link; need will always expand to fill
 capacity