

Apps 1: SAMP

IVOA Interop, Baltimore

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SAMP Cribsheet

- SAMP = Simple Applications Messaging Protocol
- Provides data/control exchange between applications
- Similar to previous non-IVOA standard PLASTIC

Outline

- Current status
 - Implementation overview
 - Defined MTypes
 - Proposed/agreed changes to the 1.0 WD
- Software presentations/demos
 - Aladin (Thomas Boch)
 - SAMPy (Luigi Paioro)
 - JSAMP (Mark Taylor)
 - TOPCAT (Mark Taylor)
- Future plans and discussions
 - Document progress towards REC
 - PLASTIC—SAMP migration/coexistence
 - Implementation plans
 - MType list
 - AOB?

Implementation Status

- SAMP Standard:

- 1.0 WD published 25 June 2008

- Infrastructure: 😊 😊

- Python hub/toolkit [SAMPy](#) (Luigi Paoro, INAF) *Tested!*
- Java hub/toolkit [JSAMP](#) (Mark Taylor, AstroGrid) *Tested!*
- Perl hub/toolkit [Perl SAMP](#) (Alasdair Allan, eStar)

- Applications: 😊

- Aladin (experimental)
- TOPCAT (experimental)

- Implementation experience: 😊 😊

- fully tested hubs mean standard is both implementable and comprehensible
- no serious interoperability problems between different languages and authors
- not many changes/second thoughts about 1.0 WD standard

MTypes in Use

- Administrative MTypes

- Defined in SAMP doc

- ▷ `samp.hub.event.{shutdown, register, unregister, metadata, subscriptions}`
- ▷ `samp.hub.disconnect?`
- ▷ `samp.app.{ping, status, progress, event.shutdown}`

- Application MTypes

- Defined as required by applications (TOPCAT and Aladin so far)

- ▷ Mostly 1:1 correspondence with existing PLASTIC messages

- Listed on wiki page [SampMTypes](#)

- ▷ `table.{load.votable, load.fits, select.rowList, highlight.row}`
- ▷ `image.load.fits`
- ▷ `coord.pointAt.sky`

- More to come

- ▷ Missing at least `spectrum.*`

- Private/ad-hoc MTypes

- as required (for testing etc)

Changes to 1.0 WD

Agreed protocol changes:

- Change permitted characters in `string`
 - ▷ was `0x01–0x7f`; but most characters `<0x20` cannot be transmitted in XML
 - ▷ redefine legal `string` characters as `0x09, 0x0a, 0x0d, 0x20–0x7f` (XML- and ASCII-friendly)
 - ▷ UTF-8 instead was suggested; decided rarely used, better to keep it simple
 - ▷ in future may want to address binary/non-ASCII data (SAMP 2.0?)
- Change return values for `callAll()` and `notifyAll()`
 - ▷ Useful to know recipient list for broadcast messages
 - ▷ `callAll()` returns a `recipient-id` → `msg-id` map
 - ▷ `notifyAll()` returns a `recipient-id` list
 - ▷ In both cases, recipients are subscribed clients, not necessarily successful sends (hence fast to determine)
- Add `samp.hub.disconnect` MType for forcible (e.g. timeout) disconnection
 - ▷ . . . or should it be `samp.hub.event.disconnect`?

Suggested protocol changes:

- Multi-instance/configurable location hubs? (Luigi Paoro)

Changes to 1.0 WD

Document improvements:

- Remove Appendix [SAMP/PLASTIC Interoperability](#) (empty)
- Add Appendix [Change History](#)
- Brush up Section [Document Status](#) (as per IVOA Document Standards)
- Clarify that `hub-id` but not `self-id` returned by `getRegisteredClients()`
- Clarify that `samp.status=samp.error` is for Clients responding to Messages, not hub reporting failed API calls
- Some other minor rewording/clarification

Software/Demos

Contributions:

- Aladin (Thomas Boch)
- SAMPy (Luigi Paoro)
- JSAMP (Mark Taylor)
- TOPCAT (Mark Taylor)

Future Plans and Discussions

Issues

- Document progress towards REC
- PLASTIC—SAMP migration/coexistence
- Implementation plans
- MType list
- AOB?

Progress towards IVOA Recommendation

- Version with minor changes posted after this meeting
- Discussion on list if required? (not expecting much)
- Updates to software (not much work from 1.0)
- 1.1 PR November 2008?
- RFC → REC late 2008/early 2009?

PLASTIC—SAMP Migration/Coexistence

- Don't want existing PLASTIC interoperability to break as applications move to SAMP
- Strategies:
 - Do nothing
 - ▷ wait until everybody talks SAMP
 - Dual-mode applications
 - ▷ Select SAMP or PLASTIC mode on startup (Aladin, TOPCAT)
 - ▷ Select SAMP or PLASTIC mode when hub first detected?
 - ▷ Talk both simultaneously?
 - Translation middleware
 - ▷ bilingual hub?
 - ▷ SAMP→PLASTIC or PLASTIC→SAMP adapter?
- Is dual-mode/do nothing approach adequate?
 - probably yes, if move to SAMP is quite rapid

Future Implementations

- New implementation work:
 - Public release of existing SAMP apps
 - ▷ TOPCAT, Aladin
 - SAMPification of existing PLASTIC applications
 - ▷ MBT: SPLAT, GAIA?
 - ▷ . . . more?
 - SAMPification of non-PLASTIC applications:
 - ▷ DS9??
 - ▷ . . . more?
- Important to keep momentum

Let me hear you say “Yeah!”

Encouraging Take-up

How to make SAMP adoption easy/attractive for authors?

- More infrastructure required?
 - ▷ PLASTIC/SAMP interoperability middleware?
 - ▷ More or improved libraries and toolkits?
- Improved web presence?
 - ▷ Currently only [standard document](#) and [SampProgress](#) wiki page
 - ▷ URLs neither memorable nor Googleable
 - ▷ Would be nice to have an easy-to-find one-stop shop:
 - pointer to standard
 - pointers to libraries, toolkits, applications
 - pointer to MTypes
 - introduction/motivation for new users, FAQ?
 - ▷ Precedents: PLASTIC, but not(?) IVOA
 - ▷ Could just improve wiki? but . . . wiki pages are ugly, hard to find
 - ▷ What URL?
 - ▷ Any volunteers?
- Other suggestions?

List of public MTypes

- Currently list is on wiki: [SampMTypes](#)
- Current plan is to publish IVOA Note
- Do we need to do this now/soon?

AOB?