

'SAMP'ling your browser for the Semantic Web

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SAMP

International Virtual Observatory Alliance

IVOA Documents



SAMP — Simple Application Messaging Protocol Version 1.11

IVOA Recommendation 21 April 2009

Interest/Working Group:

<http://www.ivoa.net/twiki/bin/view/IVOA/IvoaApplications>

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SAMP

- Exchanging messages between applications
- Uses XML-RPC
 - messages are formatted in XML
 - does not depend on the OS nor programming language
- A SAMP hub runs on your machine
- Applications register to the hub
- Hub
 - receives messages from client applications
 - broadcasts messages to callable applications

SAMP

- A message contains:
 - **samp.mtype** (string: semantics of message)
 - **samp.params** (map of parameters names/values)
- Example:
 - tell other applications to load a FITS image
 - `samp.mtype= "image.load.fits"`
 - `samp.params`
 - `URL="http://myserver.org/data/image.fits"`
 - wrap it in XML, send it to the hub

Applications talking SAMP



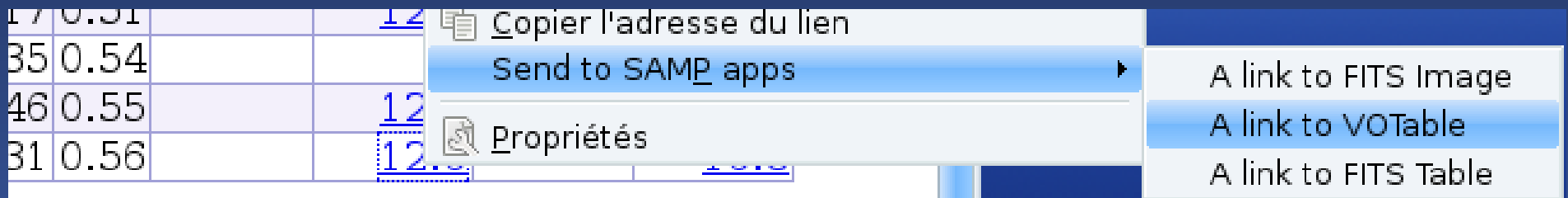
- What about your Web Browser ?

Browser use case

- In a web document, there is a link to a data file (FITS, VOTable...)
- **How to load the linked document into other applications?**
- Usual way:
 - browser: right-click -> Save Target as (or copy target link)
 - application: File > Load... browse to directory (paste link)
- With SAMP: `image.load.fits(URL)`

Firefox extension

- Written in JS + XUL
- Adds SAMP capabilities to Context menu
- Detects SAMP hub, XML-RPC endpoint
- Registers browser to the hub
- Sends SAMP message with parameters
- Unregisters from the hub



In the Semantic Web

- Semantic annotations can be embedded in Web documents: microformats, RDFa
- Already used for some specific purposes

```
<p class="contactinfo" about="http://example.org/staff/jo">  
  <span property="contact:fn">Jo Smith</span>.  
  <span property="contact:title">Web hacker</span>  
  at  
  <a rel="contact:org" href="http://example.org">  
    Example.org  
  </a>.  
  You can contact me  
  <a rel="contact:email" href="mailto:jo@example.org">  
    via email  
  </a>.  
</p>
```


Semantic browser extension

- Parse web document and search for semantic tags. For recognized tags:
 - Add elements (change DOM)
 - Change behaviour (add actions)
- Combine it with SAMP messaging
- **Astronomy-aware messaging browser**
 - interprets some astronomical parameters
 - sends information to other applications

Use case: **point there !**

<u>1</u>	02 40 01.1-01 36 45	<u>a</u>	<u>A370 Field 2</u>
<u>2</u>	14 49 28.2+26 07 57	<u>b</u>	<u>C1 1447+23</u>
<u>3</u>	00 26 35.6+17 09 43	<u>c</u>	<u>C1 0024+16</u>
<u>4</u>	09 43 02.6+46 58 57	<u>d</u>	<u>C1 0939+47</u>
<u>5</u>	09 43 02.5+46 56 07	<u>e</u>	<u>C1 0939+47 F2</u>
<u>6</u>	03 06 15.9+17 19 17	<u>f</u>	<u>C1 0303+17</u>

- samp.MType : coord.pointAt.sky
- samp.params :
 - ra=decimal degrees
 - dec=decimal degrees

Use case: point there !

- Add semantic annotations to "02 40 01.1-01 36 45"

```
<td   xmlns:ivoa="http://ivoa.net/samp/1.11/"
      about="http://ivoa.net/samp/"
      property="ivoa:pos"
      content="coord.pointAt.sky">

      <span property="ivoa:pos.eq.ra"
            content="040.0046">
          02 40 01.1
      </span>
      <span property="ivoa:pos.eq.dec"
            content="-1.6125">
          -01 36 45
      </span>
</td>
```

Use case: **point there** !

- Detect semantic tags
 - add icon next to coordinates
 - add EventListener
 - coord.pointAt.sky SAMP message

1	✚ 02 40 01.1-01 36 45	a	A370 Field 2
2	✚ 14 49 28.2+26 07 57	b	Cl 1447+23
3	✚ 00 26 35.6+17 09 43	c	Cl 0024+16
4	✚ 09 43 02.6+46 58 57	d	Cl 0939+47
5	✚ 09 43 02.5+46 56 07	e	Cl 0939+47 F2
6	✚ 03 06 15.9+17 19 17	f	Cl 0303+17

Perspectives

- Current status : proof-of-concept
- Semantic tags : IVOA semantic group
 - which tags are useful?
 - how to write them?
- Firefox extension
 - experts in JS, XML-RPC to test with 2.x, 3.x...
- Other browsers
 - other extension mechanisms