The Svom mission

- A French–Chinese space mission dedicated to GRB studies
- Launch likely in 2016
- Scientific requirements:
  - Permit the detection of all known types of GRBs, with a special care on high-z
  - GRB and low-z sub–luminous GRB
  - Quickly provide (sub–)arcsec positions of detected afterglows
  - Quickly provide redshift indicators of detected GRB

The French Science Center

The spacecraft communicates with the French Science Center via a network of 40 VHF receivers located around the Earth inside a ±10° strip.

The FSC is located at Saclay near Paris (France).

The first recipient of the messages is the robotic Ground Follow-up Telescope located at San Pedro Martir Observatory in Baja California.

Eventually messages are broadcast to large telescopes, e.g. VLT in Chile.

ToolBox

- Application written in Java 1.6
- VOEvent versions 1.11 and 2.0 XML packets parsed using jaxb 2.2
- XMP server Openfire (www.igniterealtime.org)
- Server plugins base on the Openfire API
- XMP clients based on the Smack API (www.igniterealtime.org)
- About 9000 lines of code written at this point
- 15 different small client programs available to test the system
- Standard toolbox: svn, ant, checkstyle, findbugs, testing, hudson
- Download from: ftp://svomtest.svom.fr/pub/goodies/

First Conclusions

- No major difficulties in XMPP programming
- Our architecture is validated and complies with the scientific requirements
- The Openfire server works fine and is easily configurable
- However the source code of Openfire and Smack has to be patched
- Performance requirements will be met without hassles

More Information at: http://svomtest.svom.fr/
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Distribution of Svom VOEvents using the XMPP protocol

SvomNet architecture

- France-China symmetry
- Gateway between Svom and the rest of the world
- Brokers are in charge of the message distribution
- Some agents publish messages,
- Other agents get and read them

Svom will join the future VOEvent network

- It will need to be informed in real-time of what is detected by other telescopes
- It will have to broadcast broadly as fast as possible alert messages issued by its onboard instruments
- It intends to be an active participant to the Virtual Observatory community

A galaxy of services dedicated to the observation of our transient Universe is expected to grow in the years to come

SvomNet in a future VOEvent infrastructure

- Svom is a PI–led mission
- Access to data is defined by the PI
- Different levels will be managed:
  - Burst advocates, PI, instrument PI
  - Members of the Svom collaboration
  - Associates to the Svom collaboration
  - Scientific community
  - Everyone

The transport layer is implemented using the XMPP protocol with the PubSub extension

- Svom products are available on specific pubsub nodes
- Subscriptions to the nodes are controlled via affiliations
- These affiliations implement the Svom access policy

Present Implementation

A bunch of satellites observes the sky and reports what happens

Good old GCN notices are translated into VOEvent packets in the US

Messages are transmitted to a ten of clients in France and China

Adass XX November 2010, Boston, Massachusetts, USA