VO for education: the VESPA web application

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Introduction

- What is VESPA?
- VO Educational Service Publisher and Archive
- Web application that allows creation and publishing of educational VO services

Why VESPA?

- Telescopes dedicated to education are increasing throughout the world
- Educational data needs to be published to the Virtual Observatory
- Students and teachers need an easy way to do this
- VESPA tries to solve this problem

VESPA's solution

- Easy to use web-based graphical user interface
- Users can enumerate their own telescopes and instruments and create new VO services on top of them

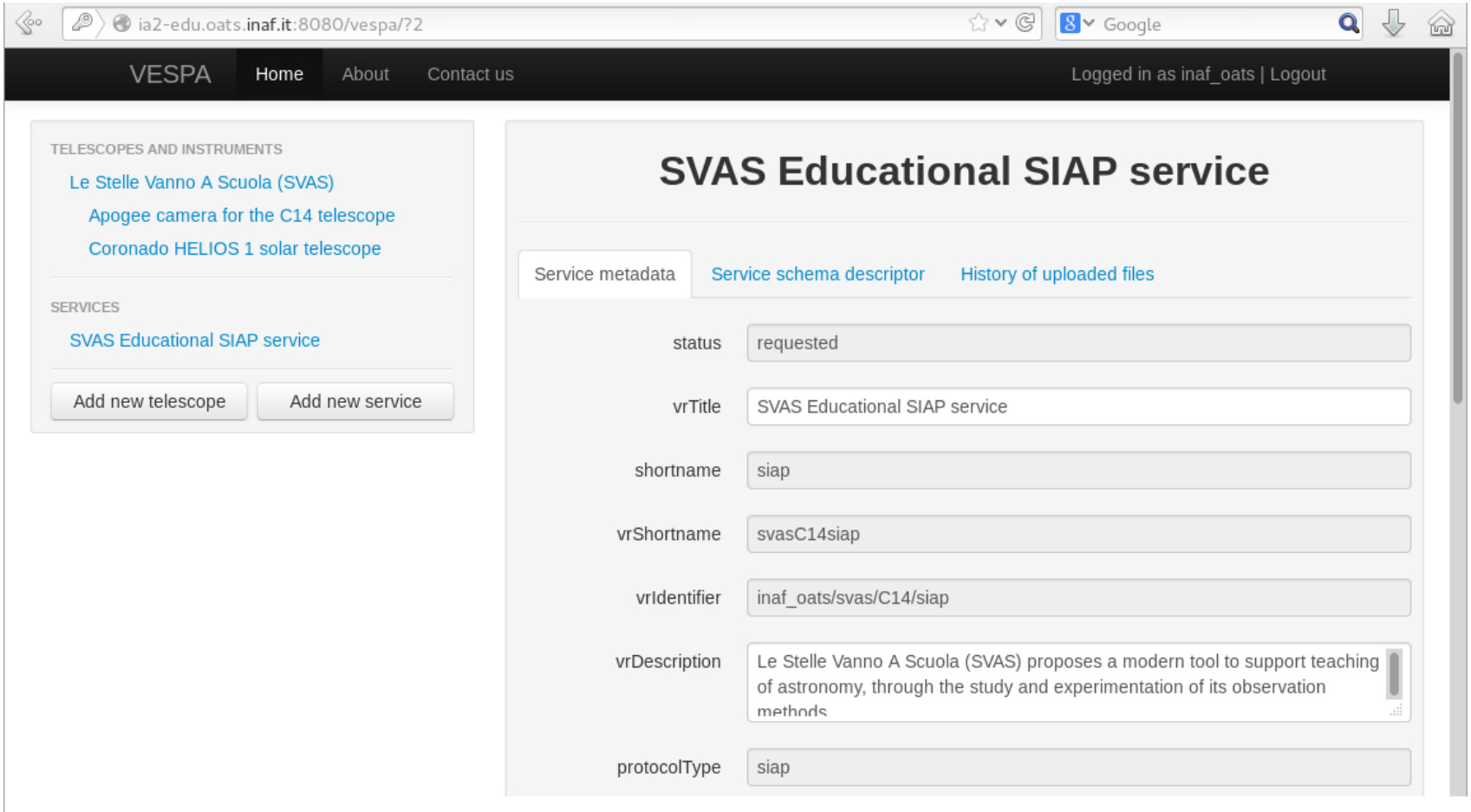
VESPA user registration

- To use VESPA, users must sign up first
- Users must provide:
- Name of the organization they belong to
- A username and password
- An e-mail address
- Optionally, their organization address and telephone number

VESPA user registration

- After signing up, the user needs to wait for approval on our part before being able to log onto VESPA
- This is done manually by our operators
- The user will be notified by e-mail when his sign up request is approved
- At this point the user can start using VESPA

VESPA's user interface



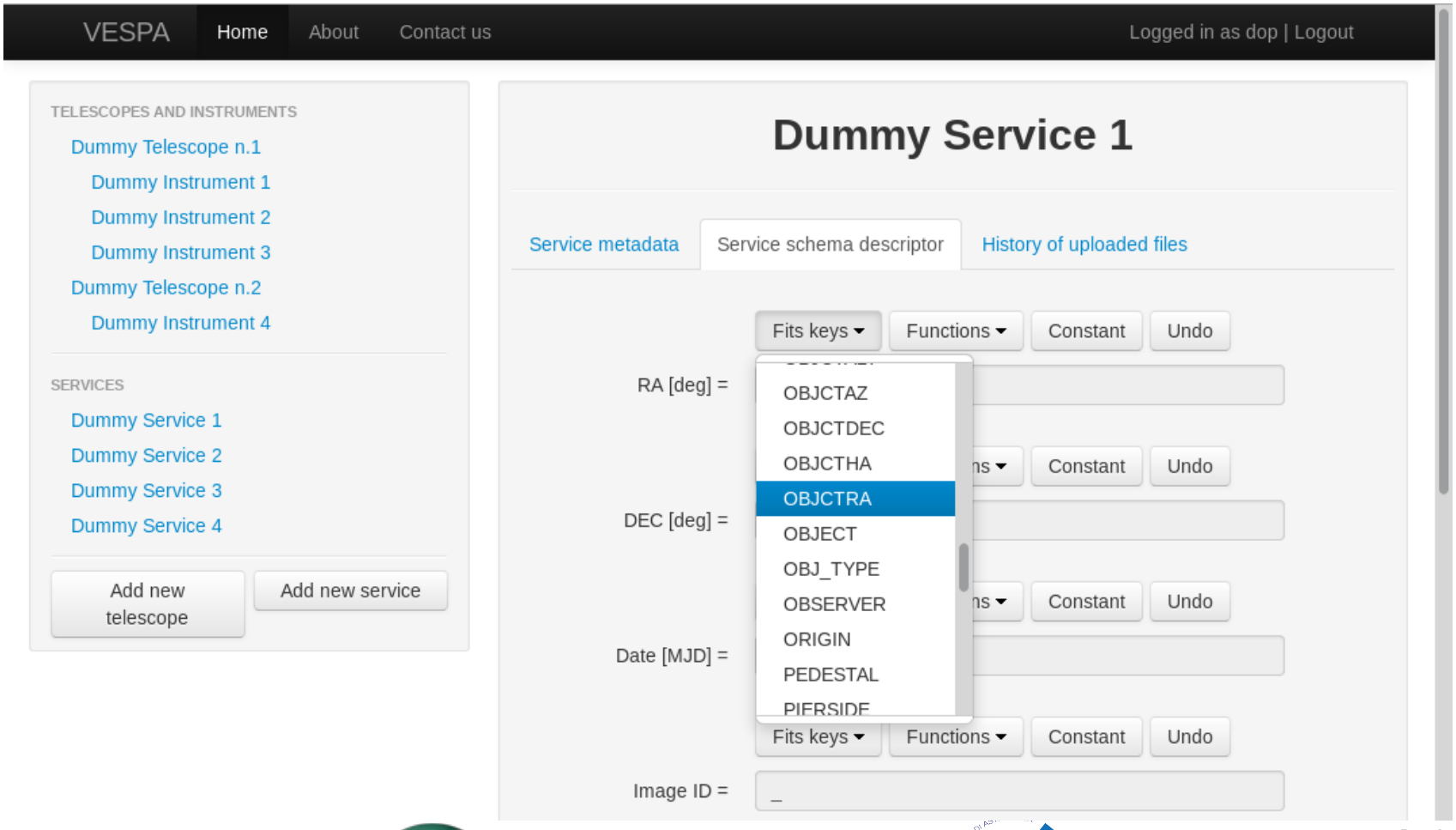
Telescope and instrument creation

- The user only needs to fill in three fields
- A name
- A shortname
- A description
- The telescope/instrument is then created automatically without any need of approval on our part

Service creation

- After defining telescopes and instruments, the user can start creating new services
- As a first step, the user needs to fill in the service creation form with the needed metadata
- Then, the user needs to load an example FITS file and provide a mapping between the FITS keys and the fields required by the protocol type

FITS keys to protocol fields mapping interface



Service creation

- The service is then set into a requested state
- At this stage we need to intervene manually to effectively enable the service
- Manual communication with NADIR (New Archiving Distributed InfrastructuRe project) for data ingestion setup
- Manual service publishing through VO-Dance
- When the service is activated the user is notified and he can start uploading new data

Service data upload

- Uploaded FITS files need to be conformant to VESPA's requirements
- FITS files must include TELESCOP, INSTRUME, PURPOSE, OBJ_TYPE, OBSERVER, INSTITUT keys
- TELESCOP and INSTRUME must match the names assigned to the respective entities in VESPA
- PURPOSE must be edu (as we only handle educational data)
- OBJ_TYPE must be either astro, solar or sun (this depends on the supported protocol types)

VESPA's current status

- VESPA is already deployed and publicly accessible at http://ia2-edu.oats.inaf.it:8080/vespa
- Currently in beta testing phase
- At the moment only the SIA protocol is supported
- Succesfully used internally for publishing data of our educational telescope "Le Stelle Vanno a Scuola" (SVAS)
- The SVAS service has been registered at Euro-VO and accessible through the standard VO tools

Future plans

- Extend support to additional protocol types (notably SSAP)
- Improve labels and provide tooltips to the user
- Allow fixing of nonconformant FITS files inside VESPA
- Appropriate interface for administrators
- Automating much of the work we currently need to do manually
  - Data ingestion setup
  - Service publishing and activation

Underlying technologies

- Java EE 6 as programming language
- Apache Wicket 6.12 as development framework
- Twitter Bootstrap 2.3 for styling
- JPA 2.1 with EclipseLink 2.5 for persistence
- nom.tam.fits 1.11 for FITS parsing
- Log4j 2.0 for logging

Thank you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