

SSHADE infrastructure

Development state and plans

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Technical choices



- high-level, general-purpose, interpreted programming language
- a lot of useful modules: Astropy, FITS file parser, VOTable



- customizable
- easy to use
- actively developed

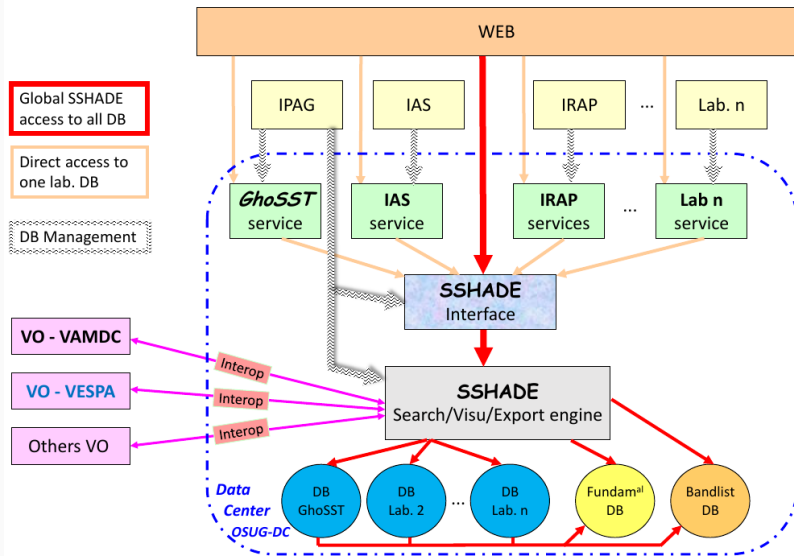


- used by some parts of EPN2020 sub-projects (VESPA, ...)
- multiple schemas ('sub-database') in one database
- advanced features

SQLAlchemy

- the most popular ORM for Python projects
- easy to use
- advanced features

SSHADE architecture



Different types of data

- 'shared' data: species, natural object, publication, bandlist...
- 'private' data: experiment, spectrum, sample...

Issues

- some 'private' data can be used by another 'database'

First idea

- use one schema for 'shared' data
- use one schema per 'database' for 'private' data

Pros

- a schema is a virtual database: all 'private' data are isolated

Cons

- a 'private' data can't be shared with other schemas
- an external 'private' data needs to be imported and duplicated

Second idea (implemented)

- use one global schema for all data
- add a keyword ('database_uid') on 'private' data

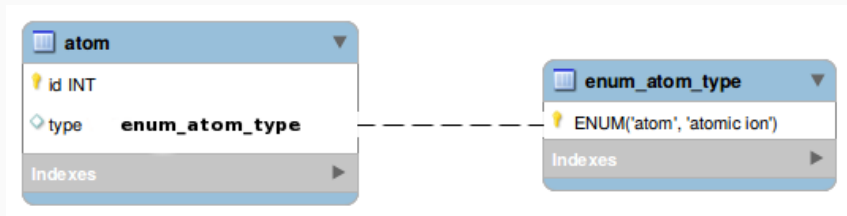
Pros

- the 'private' data can be linked together

Cons

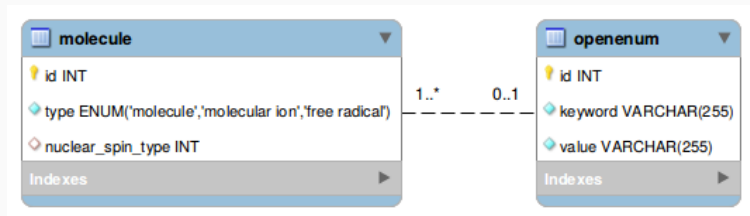
- all data are mixed into a unique schema
- needs to add a filter on 'database_uid' for all queries

Enum



- simple values
- fixed list

OpenEnum



- simple or complex values (code + label)
- list updatable by database manager

Current development state

Datamodel refactoring

- crystal sites
- experimentalists
- laboratories

XML files

- minimizes the changes on XML files of GhoSST / Pre-SSHADE

Mandatory keywords

- different levels: absolute mandatory, mandatory, non-mandatory
- evaluates conditional mandatory by checking value or existence of other elements
- raises an error if a needed value is missing (with line number)

Import mode

- first import
- correction
- ignore, no change, use existing

Simulation mode

- simulates the import but doesn't insert data into database
- useful for debug

Ignore missing resources

- doesn't raise an error if a file (PDF, image, ...) is missing
- useful for corrections

Import

- upload file
- report errors

Search

- search forms for data producers
- some fields are currently not functional...

Data

- displays mostly all fields for imported data
- some fields or related data are currently not visible...

Next steps before the first deliverable

Experimentalist

- previous laboratory (LPG / IPAG)
- merge with 'user'

Experiment and spectrum parameters

- merge blocks 'instrument parameters' and 'instrument'
- fix evaluation of optional mandatory

Spectrum

- how to save a new version
- how to list older versions

Import

- save the import history for all data
- enhancements on graphical interface

Export

- XML
- ASCII

For data producer

- debug queries
- enhancements on graphical interface
- auto-completion

For final user

- implements a Google-like search form using Elasticsearch
- auto-completion

Datamodel

- merge 'user' with 'experimentalist'
- link to database

Graphical interface

- subscribe, login and logout
- database selection

Following steps

Database

- database creation
- user management
- data management

User account

- preferences
- email alerts
- password recovery

Export

- VOTable
- FITS
- ...

Virtual observatory

- VESPA-VO, VAMDC-VO
- EPN-TAP, SAMP
- ...

DOI

- per experiment
- automatically generated

Enhancements

- design
- accessibility

'Static' pages

- provides a content management system (CMS)
- pages interactively customizable by user

Publication converter

- integrates the “SSHADE Publication Tool” into SSHADE
- uses database queries to find UID

XML generator

- builds a XML skeleton for data import
- interactively customizable by user

Implementation

- datamodel
- import

Graphical interface

- displays bandlist data
- view on graph

Questions?