

Virtual Solar Observatory

VSO provides a unified view of data from diverse solar sources

<http://virtuelsolar.org>

- **started with 4 providers, now 12 providers, over 40 instruments**
- **Search Capabilities**
 - By data source and facility/instrument
 - By physical observable
 - By wavelength/frequency
 - By nicknames: commonly used names for specific data types
 - Any combinations of above search methods
- **Data delivery**
 - Method determined by the provider(s): either tarball or http/ftp links
 - Actual delivery of data bypasses a VSO server
 - ✓ Lightweight server: no temporary storage is needed

VSO Features

➤ **GUI**

- Sort and rearrange columns
- Shopping cart
- Thumbnails where available

➤ **Catalog/event and search**

- SOHO/LASCO CME catalog
- GOES X-Ray catalog
- RHESSI flare list
- Joined search with VSO

➤ **Published API in WSDL**

VSO Data Model

- **Defines a single world view out of many possible ways to describe a dataset**
- **Translation to and from the VSO data model is handled at the data provider**
- **Primarily designed to describe Level 0-1 image and spectral data**
- **Limitations**
 - ❑ Lacks descriptions appropriate to higher level or more complex data products such as helioseismic data
 - ❑ No summary/overview type of information
 - ❑ Lacks useful mechanisms for dealing with dataset-specific information.
 - ❑ Other information such as data format and data processing information

VSO Registry

➤ What datasets a provider has

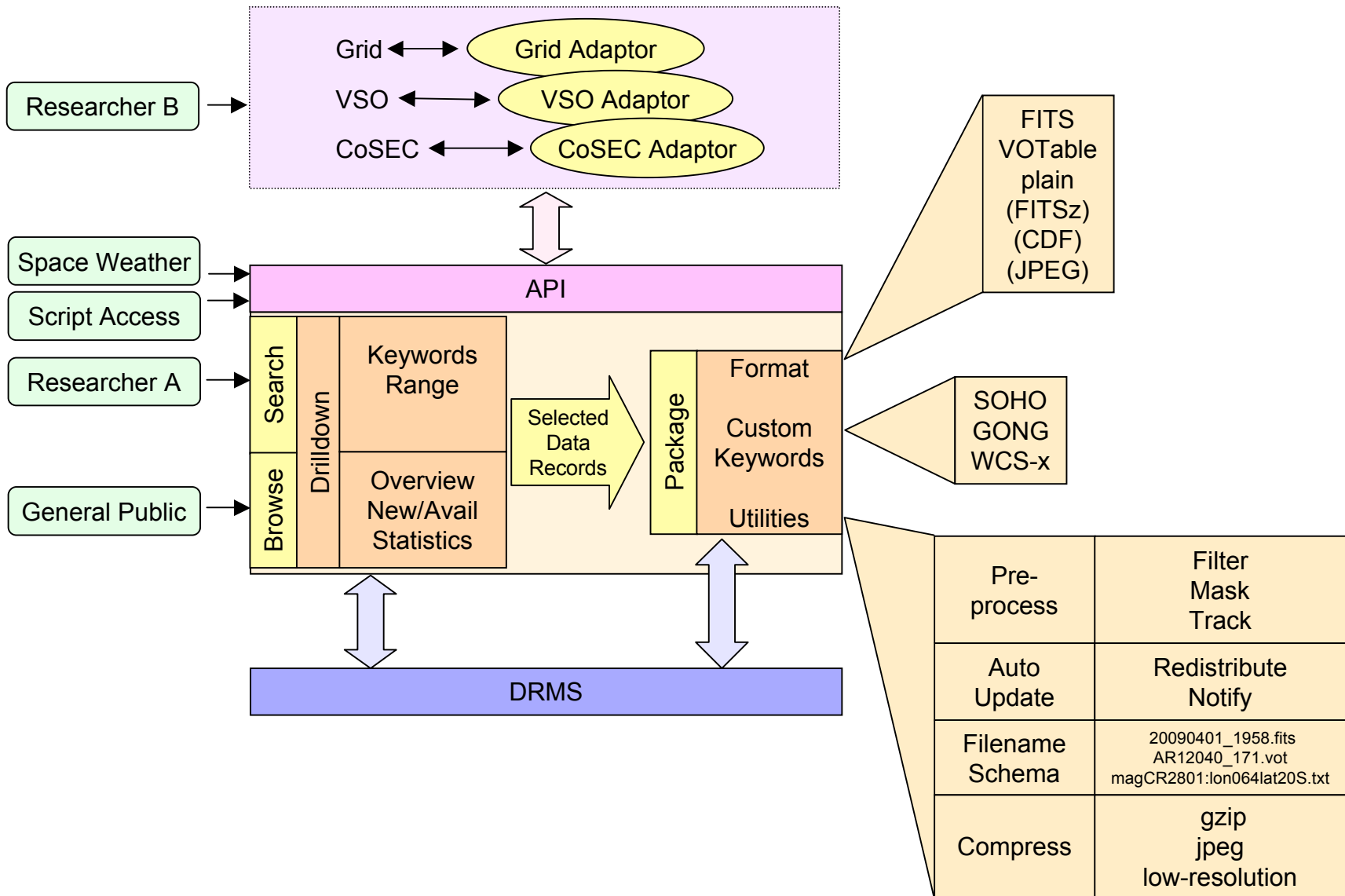
```
<dataset>
  <source>SOHO</source>
  <instrument>MDI</instrument>
  <physobs>LOS_velocity</physobs>
  <wave>
    <wavemin>6768</wavemin>
    <wavemax>6768</wavemax>
    <waveunit>Angstrom</waveunit>
  </wave>
  <extent>
    <type>HIGHRES</type>
  </extent>
  <time>
    <start>19960303</start>
  </time>
  <datatype>image</datatype>
</dataset>
```

VSO Registry

- How to query and export a provider's datasets

```
<uri>http://vso.stanford.edu/VSO/SHAi</uri>  
<proxy>http://vso.stanford.edu/cgi-bin/VSO/shai10.cgi</proxy>  
<getdata_method>  
  <default>STAGING-TAR_GZ</default>  
  <method>STAGING-TAR_GZ</method>  
</getdata_method>
```

JSOC Data Export System



Ground Test Data

- **Complete header information and more in database (DRMS)**

- **Query selectors**
 - ❑ Practically everything in the DB.
 - ❑ Currently support:
 - ✓ Time
 - ✓ STOL procedure
 - ✓ Observing sequence
 - ✓ Frame sequence number

- **GUI**
 - ❑ Looks of VSO but simpler
 - ❑ Sort columns
 - ❑ Search results in CVS and VOTable formats

- **Data delivery**
 - ❑ Temporary MDI data archiving system until SUMS stabilizes