

Photometry Server/Client implementation

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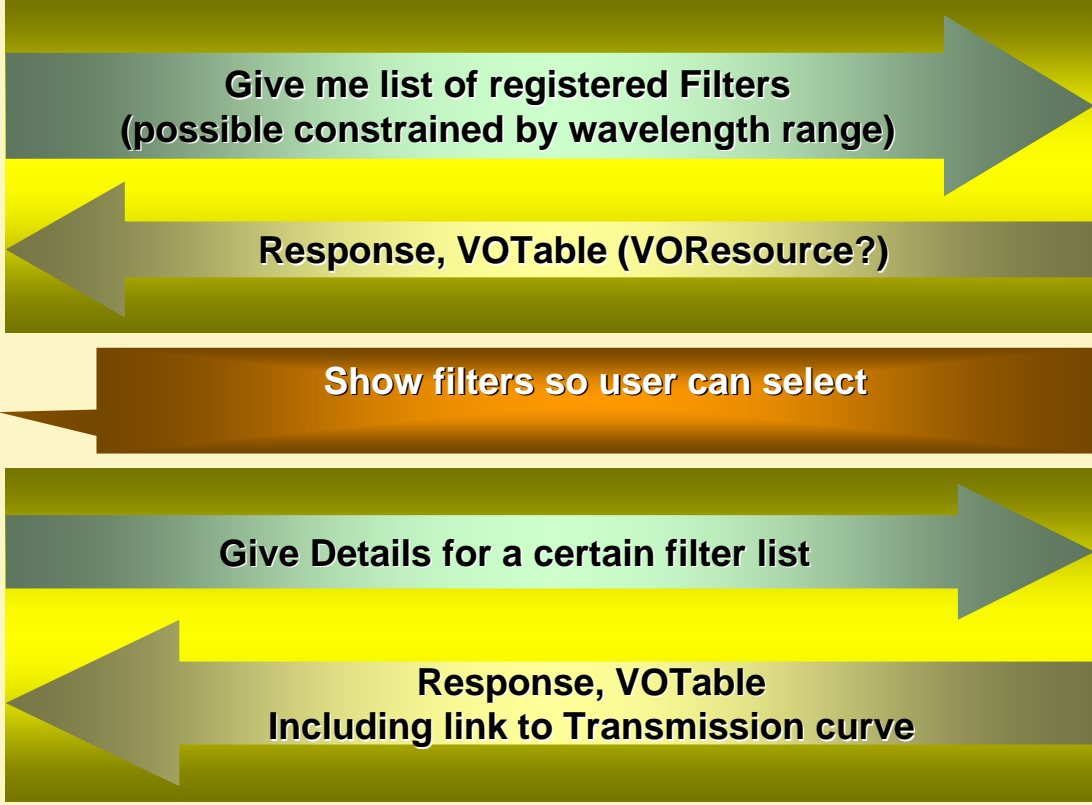
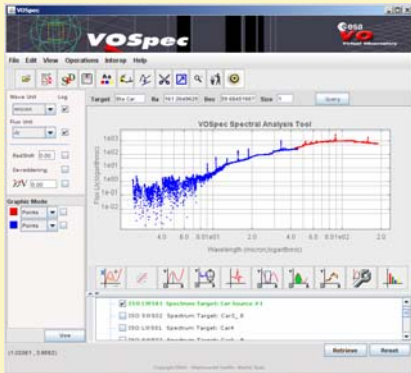
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- ❑ As part of the AIDA project WP7, several tasks were defined, included Task 6 that has as target facilitate the inclusion of photometry data in VO context
- ❑ This is an old and recurrent request of astrophysical community. One of the main topics raised during community workshops
- ❑ Photometry data have many related problems but we can include a lot of data by very simple work
- ❑ In theory, SSAP gives support to photometry data, but no services providing photometry data are created. Something is missing
 - Filter characterization
 - Format of the different ways to serialize photometry data
- ❑ Present effort will not cover ALL the possible photometry issues but many (most?) of them
- ❑ Presented/discussed in Trieste during last AIDA Technology Forum

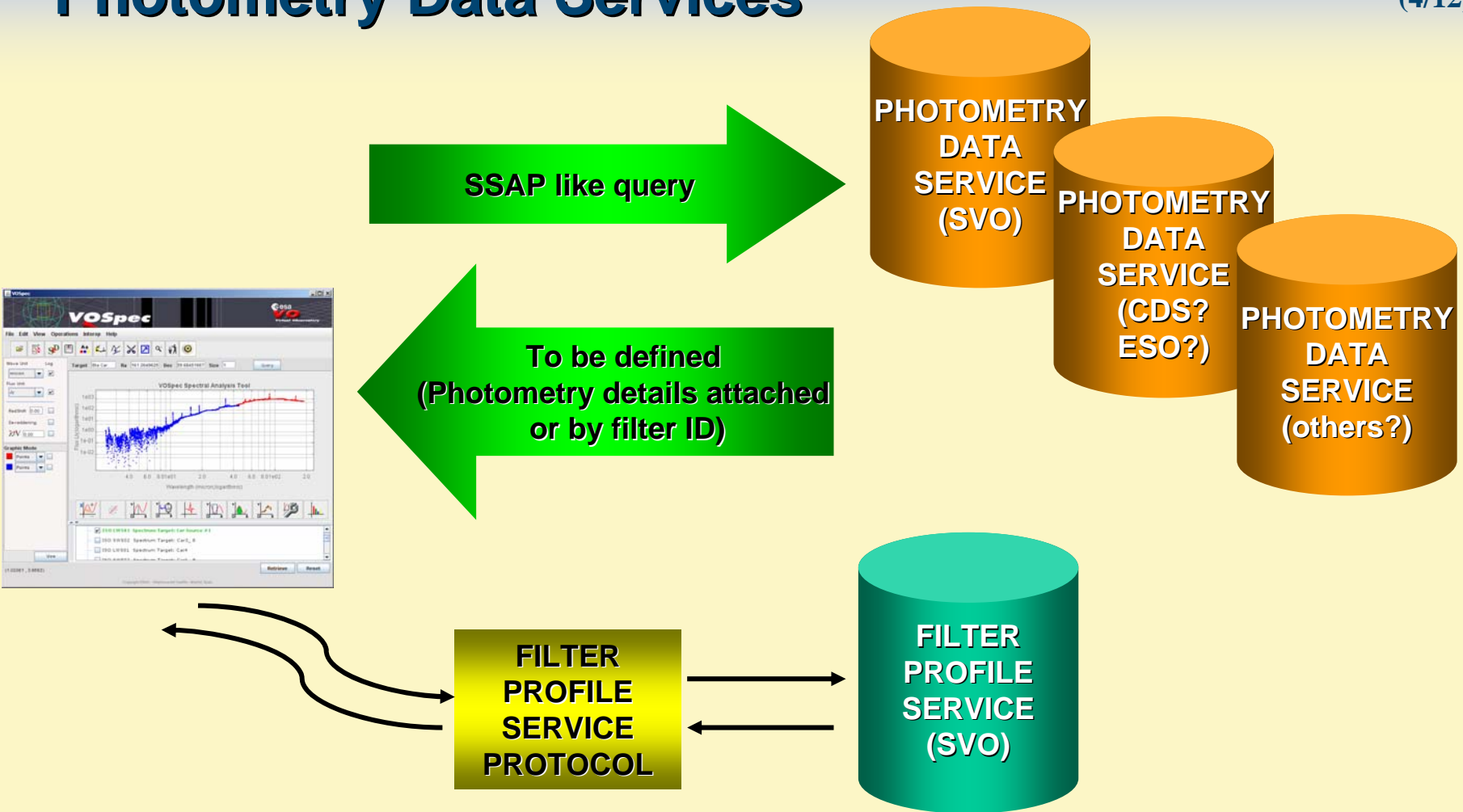
Photometry filter service

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Photometry use case II: Photometry Data Services

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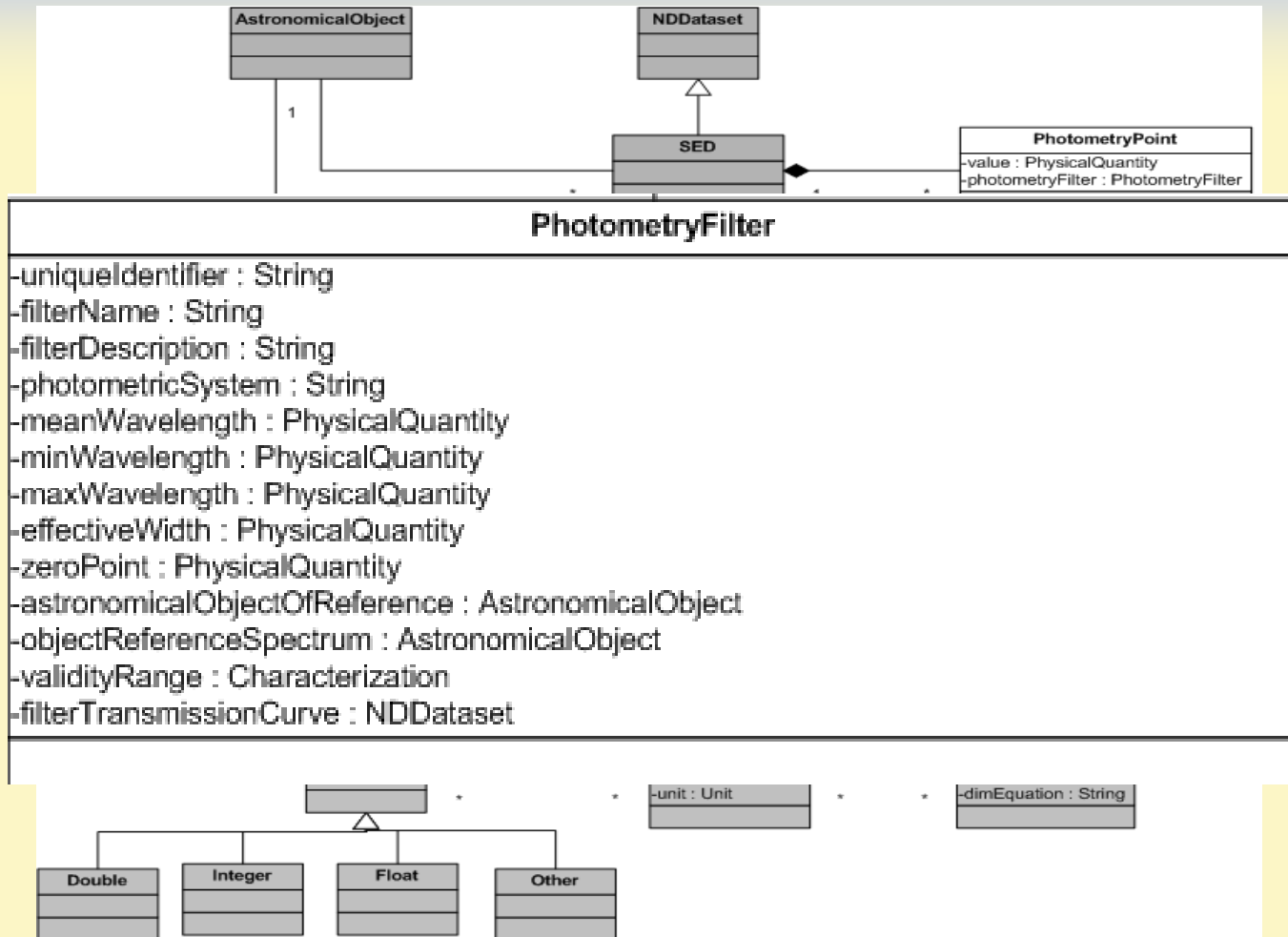
- ❑ **Definition of SSAP services for photometry data (ESAVO/SVO)**
 - Implementation of 5 SSAP new services following this definition (SVO)
 - 4 SSAP with photometric data for spectral models (aka TSAP)
COND, DUSTY, KURUCZ, NEWGEN and
 - 1 SSAP with observational data - IUE photometry
 - As far as we know, these are the first services of this type in VO context
 - Services registered in EuroVO registry (SVO)
 - Adaptation of VOSpec to consume these photometric SSAP services (ESAVO)

- ❑ **Definition of a Filter Profile service**
 - FPS server implemented by SVO
 - FPS client implemented by ESAVO and integrated in VOSpec

- ❑ **Photometry Filter DM updated** as per result of previous exercise

Photometry DM updated DM

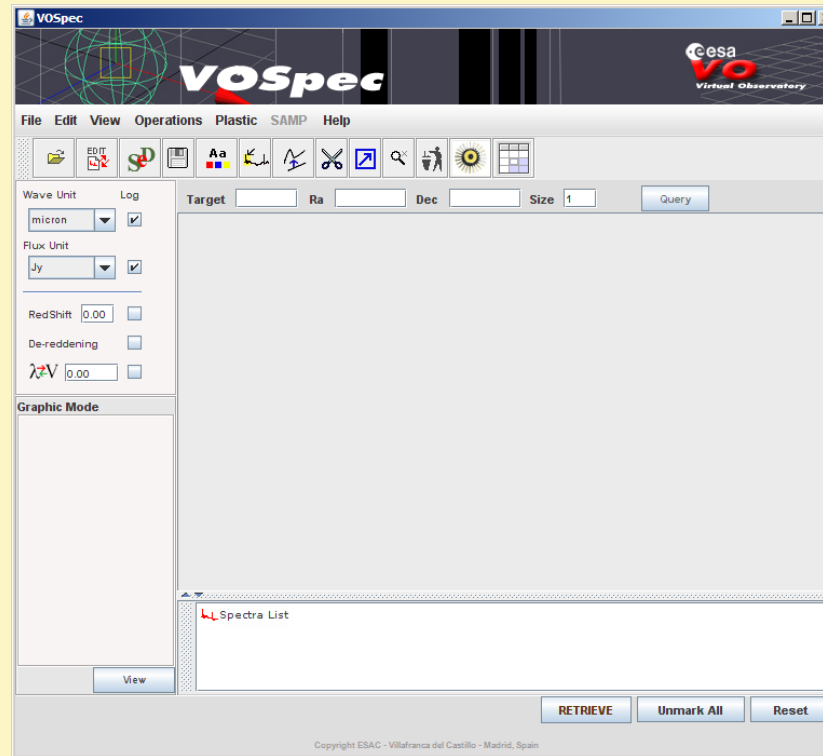
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Photometry TSAPs & VOSpec implementation

The screenshot displays the VOSpec web interface. On the left, the 'Server Selector' window shows a list of services, with 'Kurucz ODFNEW /NOVER models' and 'Synthetic photometry for Kurucz models' selected. The 'Query by params' window shows a query for 'Vega' with parameters: POS 279.234735, 38.78369194, SIZE 1, teff_min 9000, teff_max 10000, logg_min 3.50, logg_max 3.50, meta_min -0.50, meta_max -0.50, lambda_min, and lambda_max. The main VOSpec window shows a spectral plot of Vega with flux in erg/cm^2/Angstrom logarithmic on the y-axis (ranging from 1e-17 to 1e-09) and wavelength in Angstrom logarithmic on the x-axis (ranging from 2.0 to 2.0e5). The plot includes data points and a model fit. Below the plot is a 'Spectra List' showing several synthetic photometry models for Kurucz models with various parameters.

Synthetic Photometry generation



SSAP server for photometry data of a theoretical model

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- [SSAP \(TSAP\) response](#)
- [Photometry data file](#)

Filter profile service output

- Filter profile service output
- Filter description

- ❑ Photometry data is widely distributed in catalog way
- ❑ Access to these catalogs look more related to Cone Search Extension or, more probably, TAP access
- ❑ Similar approach done in ESAVO VOQuest application (ADQL search on catalogs and photometry data sent through Plastic/SAMP to SSAP client applications)
- ❑ Cone Search Approach
- ❑ Other possible and more accepted approach is the adaptation of catalogs with photometry data to SSAP
 - Response records, one per source
 - Links to photometry files
- ❑ This approach looks a little bit verbose, but it would be immediately integrated in SSAP client applications

- ❑ After last AIDA Technology forum, other AIDA members have showed their interest in evolution of this task
- ❑ “Classical/Common” photometric catalogs could be included in VO following this or similar approach (SSAP + Photometry Filter DM)
- ❑ Of course,... other IVOA members are welcome to the discussion!
- ❑ Scientists have recognized the interest of this task and they will also be active part in the next actions
- ❑ Next VOSpec public release will support to SSAP (both for observed and theoretical spectra) with photometry data and synthetic photometry. Current beta version already give support to it, although we are still working on it
- ❑ Notes to be sent to IVOA (Photometry DM and Filter Profile Service protocol) for open discussion