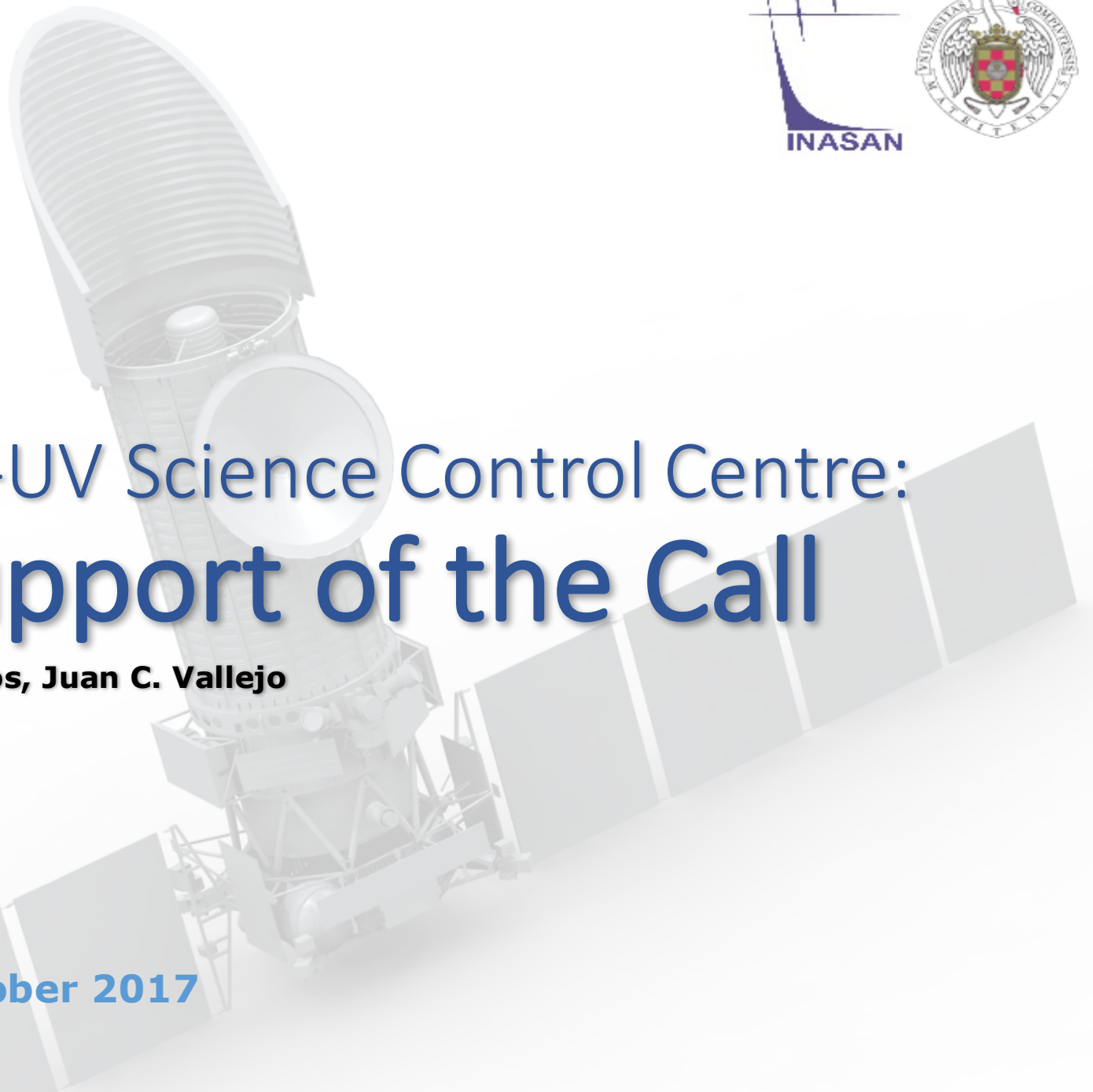

Building the WSO-UV Science Control Centre:

Tools in support of the Call

Pablo Marcos, Juan C. Vallejo

WSO-MNG-UCM-PRS-0002

JCUVA / AEGORA Group – 26th October 2017

Current Timeline

- WSO-UV considered **75% completed**.
- Current Launch date 2023.
- **Call for Core Program** Proposals foreseen in 3Q 2018.
  - Initial SOC to support this.
  - Minimum set of components should be ready at that time.

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Core Program Call

- It includes the key scientific projects **driving the development** of the WSO-UV mission.
- These projects lead to a **significant advance** in our understanding of an important area of astronomy.
- Details can be found in the WSO-UCM-RP-0001 document.

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WSO-UV GROUND SEGMENT:

REGULATIONS FOR THE WSO-UV CORE PROGRAM MANAGEMENT SPANISH PROPOSAL

WSO-MNG-UCM-RP-0001 Issue 1.0

Approved by	Date	Signature
Ana Inés Gómez de Castro		
Mikhail Sachkov		
Agreed by	**Date**	**Signature**

Joint Center for Ultraviolet Astronomy
Escuela Universitaria de Estadística – UCM
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Fax: 34-91-394-4059

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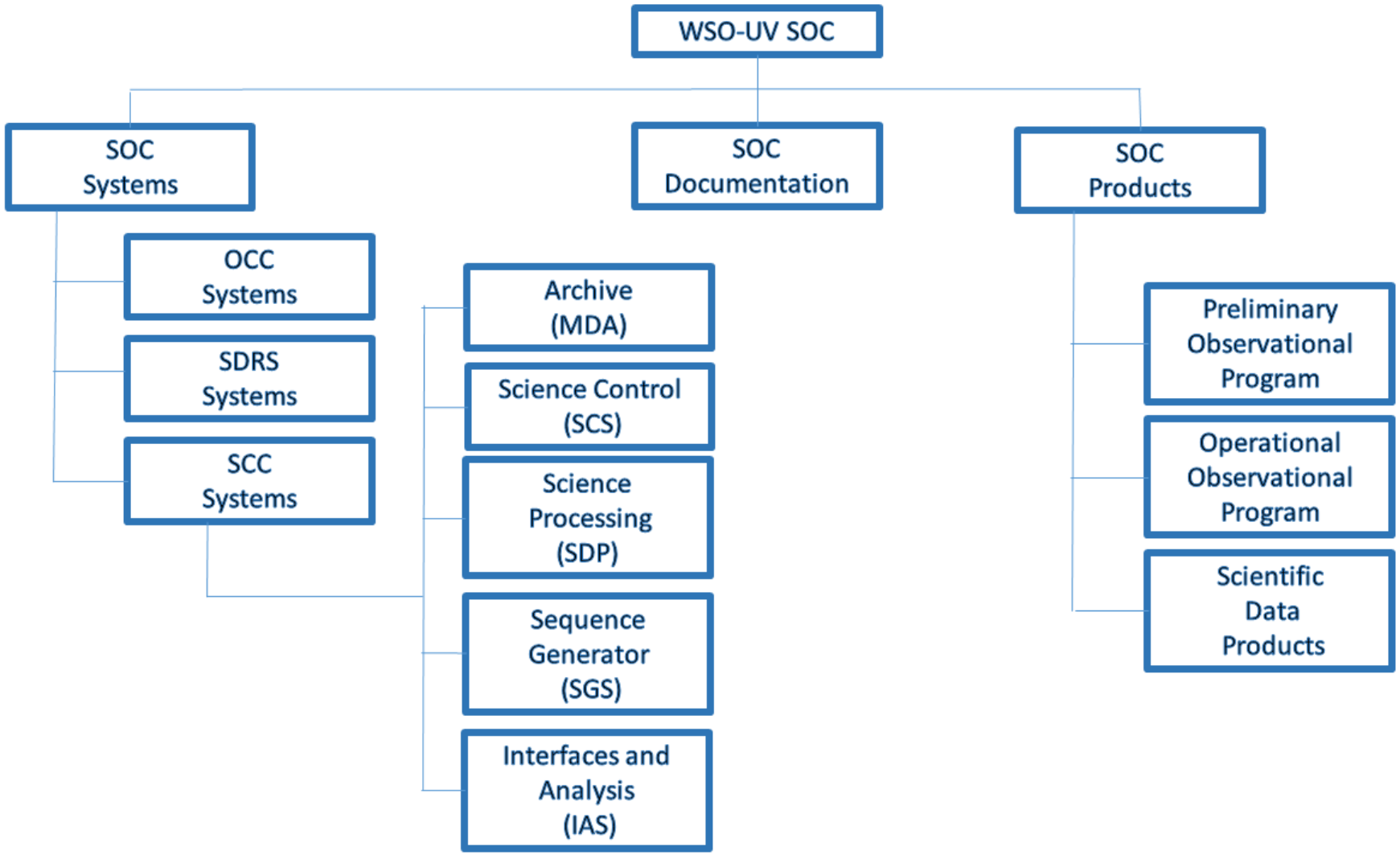
SOC Product Tree



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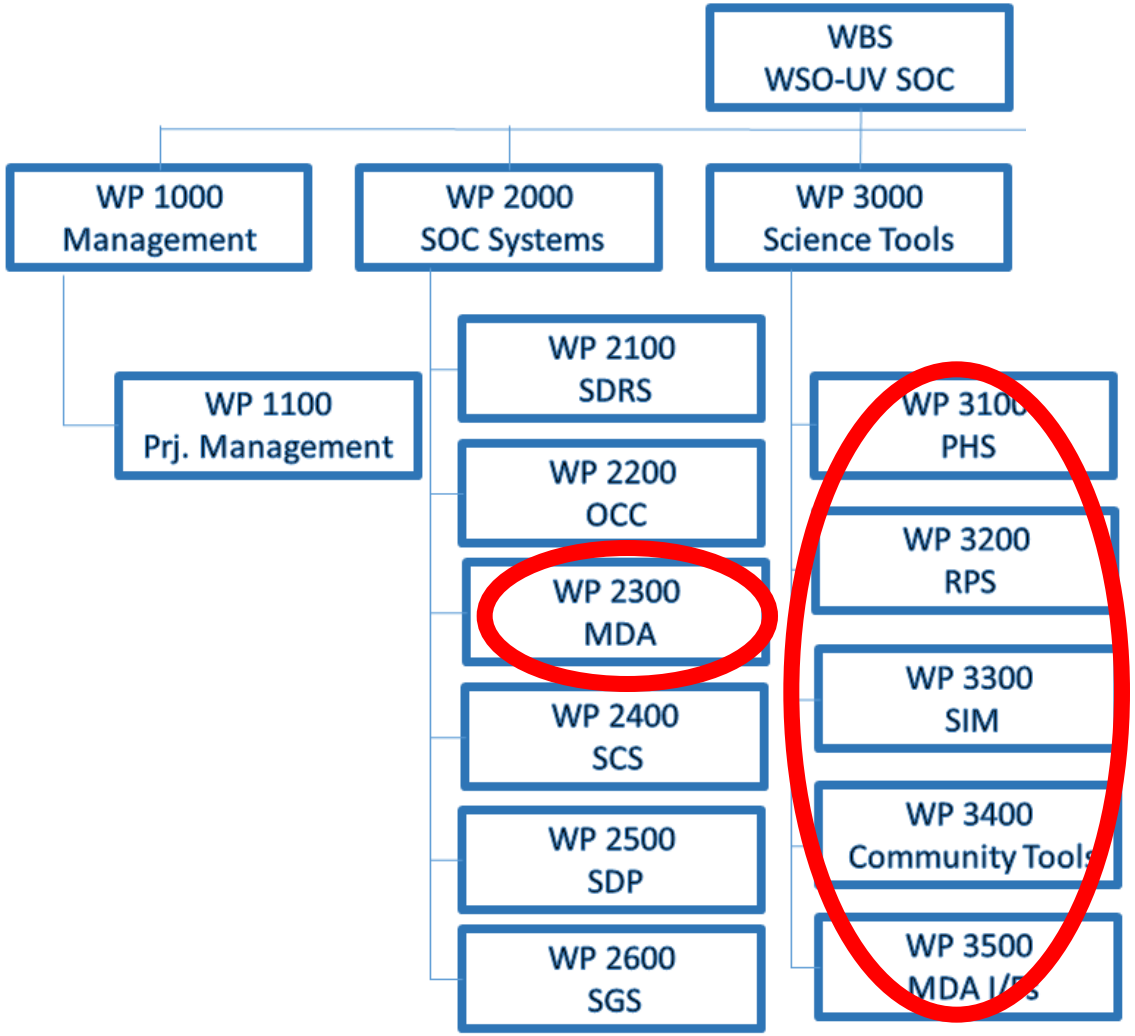
Tools required for the call



- Project Web Sites
- Proposal Database (MDA)
- Remote Proposal System
- MDA Access Tools: POE
- Scientific Evaluation Tools:
  - Master Catalogue
  - ETC
  - SIM
  - Visibility Checker

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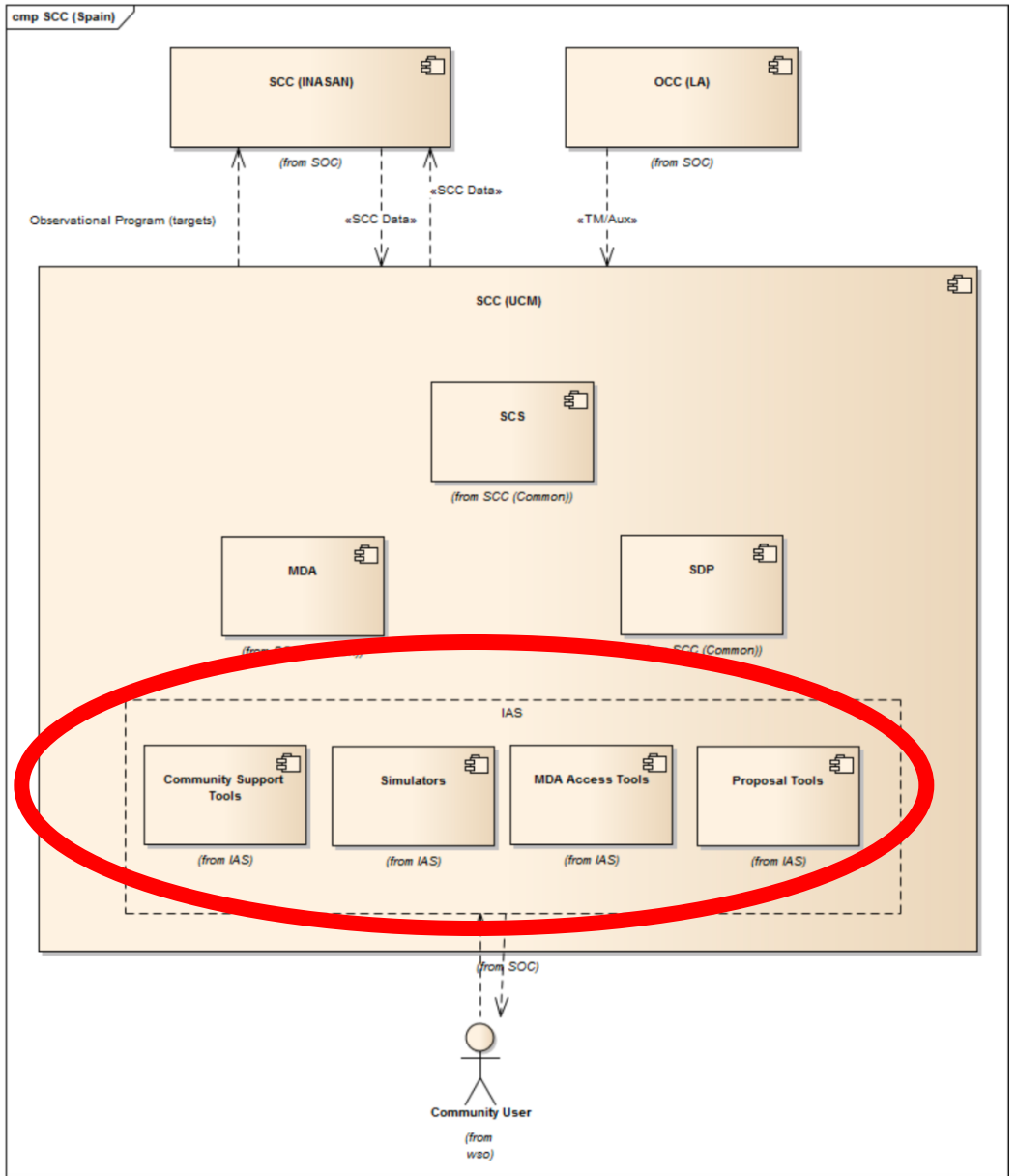
Interfaces and Analysis Systems

- The IAS is logical entity grouping a variety of tools.
- To be used by both the **external** and **SOC internal** users for WSO-UV data handling and processing.

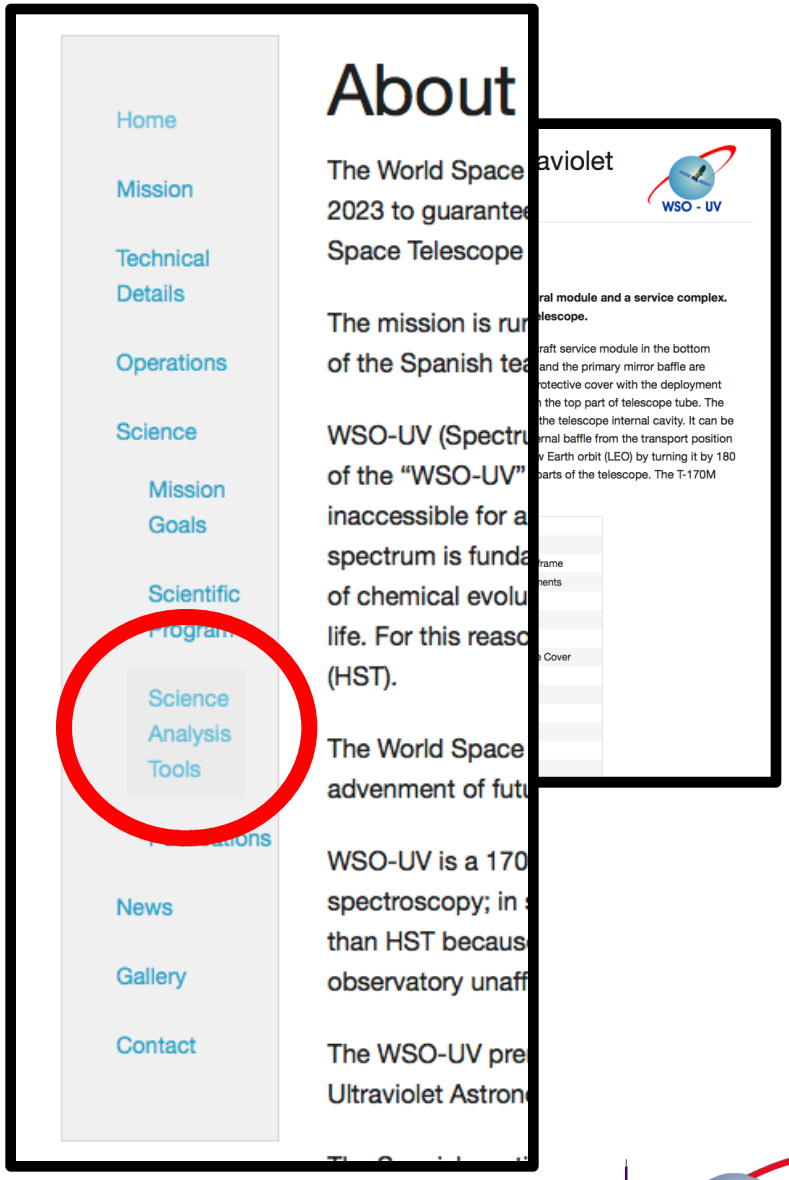


WSO - UV

WSO-UV Web Site

- It is the web starting point for accessing to some SCC functionalities

- It supports both the **external/internal** users:
  - OCC personnel.
  - SCC personnel.
  - World-wide astronomical community.
- It provides:
  - WSO-UV information.
  - Links to SOC tools, mainly IAS tools.



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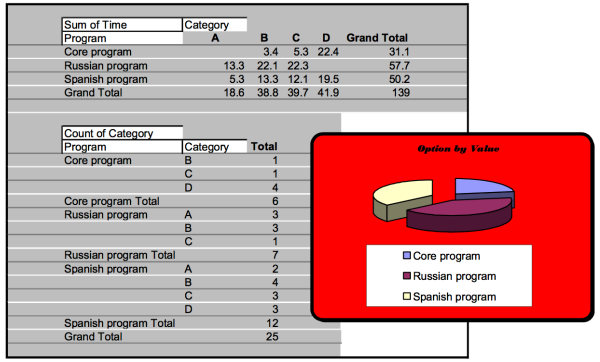
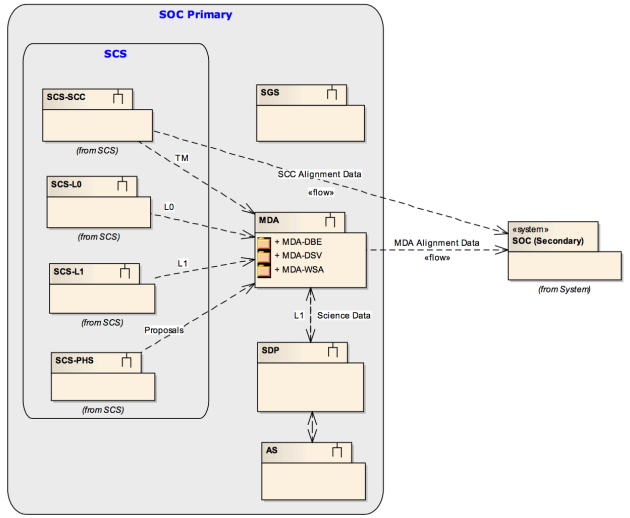
Mission Data Archive

- The WSO-UV Mission Data Archive (MDA) is the main **data repository** and index to the mission products.
- It is responsible for storing, maintaining, and distributing **all mission science data** (including pipeline products) to the final user community.
- It is also an **operational archive**, where most of the Science Control Center (SCC) subsystems store the information that requires to be shared among them, including those interfacing with the external community.



Sum of Time	Category				
Program	A	B	C	D	Grand Total
Core program		3.4	5.3	22.4	31.1
Russian program	13.3	22.1	22.3		57.7
Spanish program	5.3	13.3	12.1	19.5	50.2
Grand Total	18.6	38.8	39.7	41.9	139

Count of Category		
Program	Category	Total
Core program	B	1
	C	1
	D	4
Core program Total		6
Russian program	A	3
	B	3
	C	1
Russian program Total		7
Spanish program	A	2
	B	4
	C	3
	D	3
Spanish program Total		12
Grand Total		25



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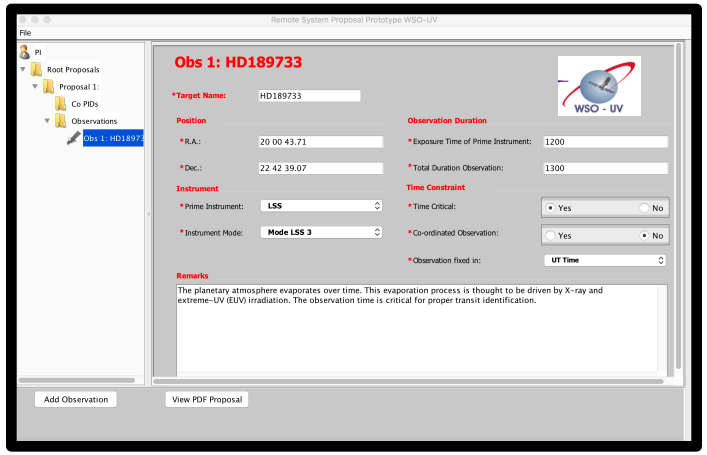
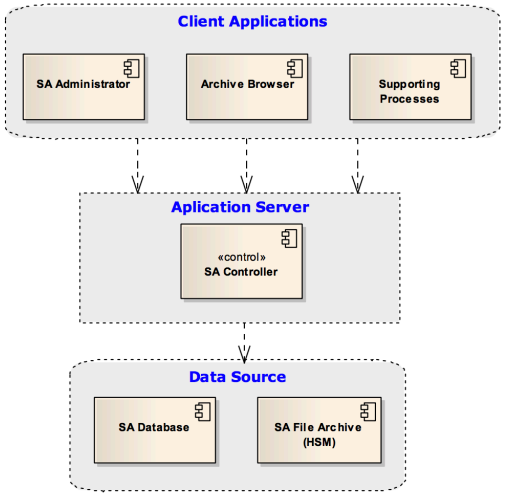
Remote Proposal System

- SOC software system in charge of **collecting the observing proposals** as submitted by the astronomical community.

- Proposals are created using a web interface that collects the data and runs a preliminary **validation**.

- It provides facilities for uploading proposal **justification files** and displaying the form data as document.





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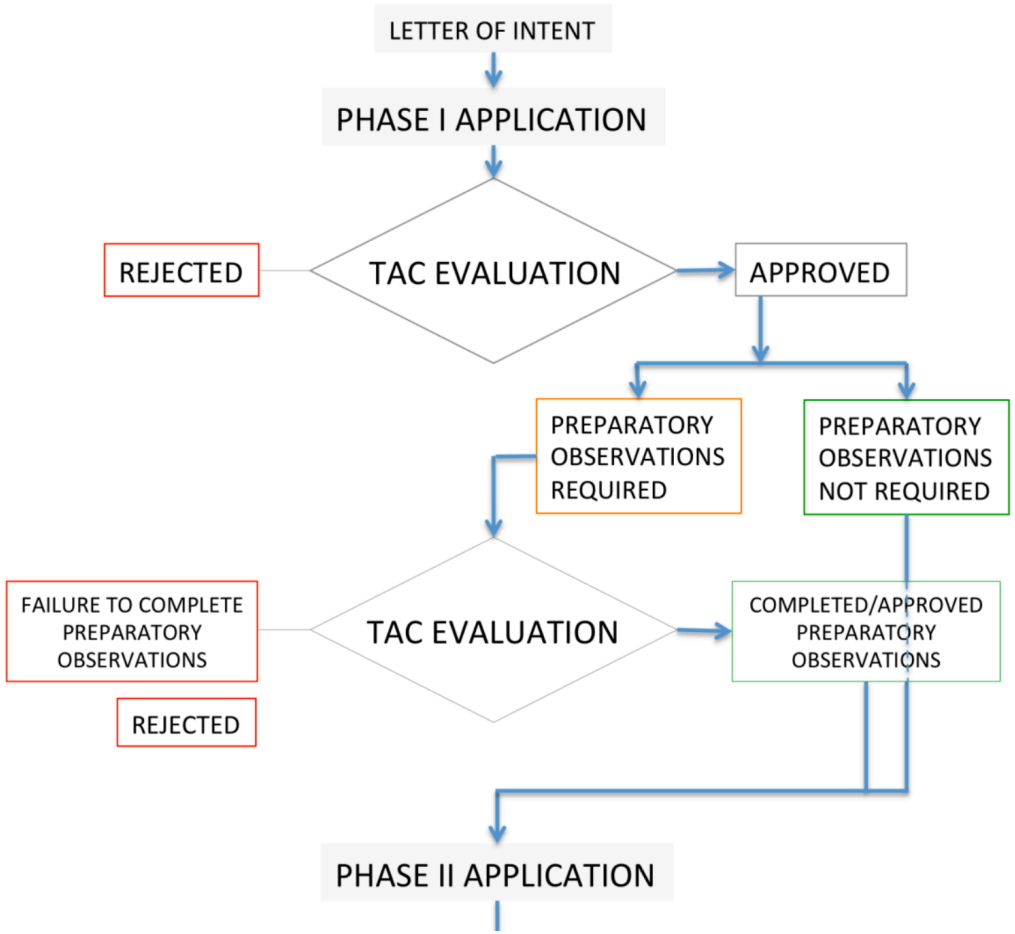
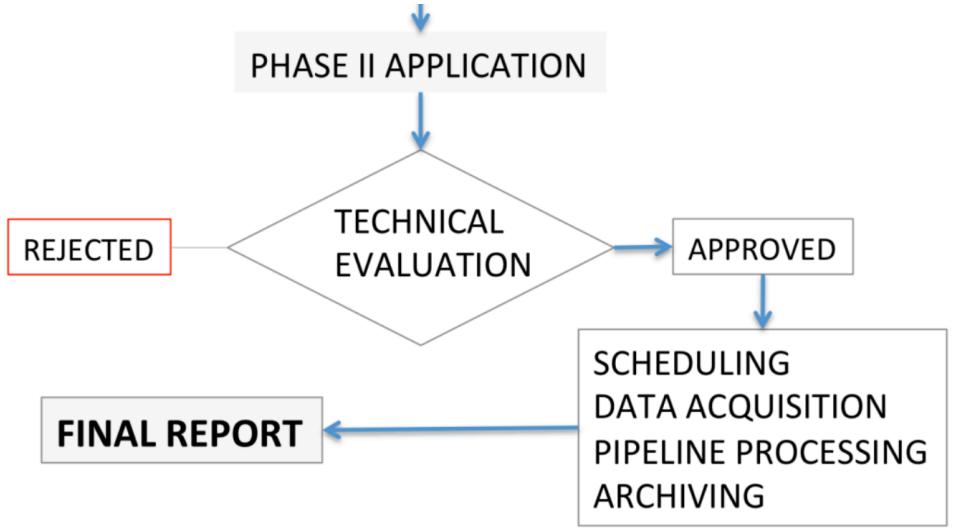
Proposal Life Cycle

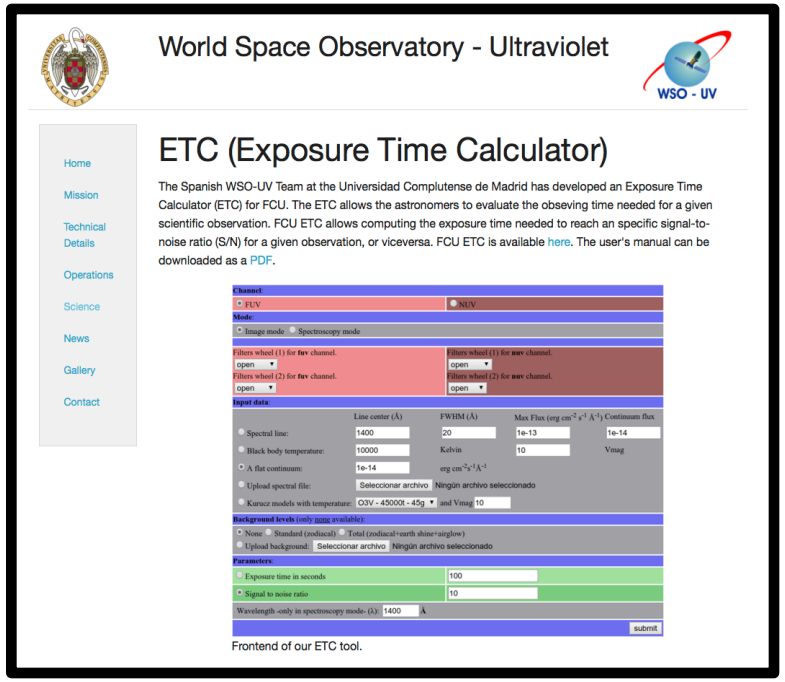




Exposure Time Calculator

- It calculates the **signal-to-noise ratio** expected for a **given exposure time**, or vice versa.

- ETCs available for WSO-UV Camera and Spectrograph.
  - Previous versions existing for ISSIS and WUVS to be migrated.



Frontend of our ETC tool.

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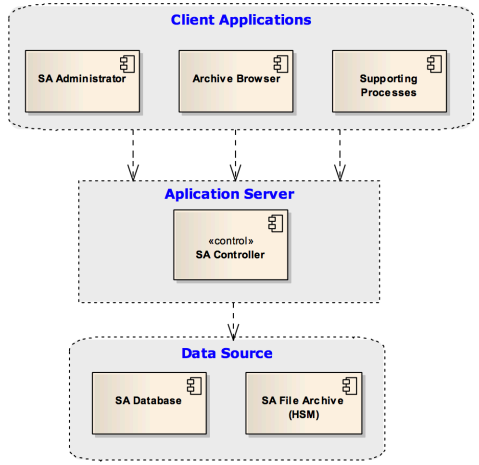
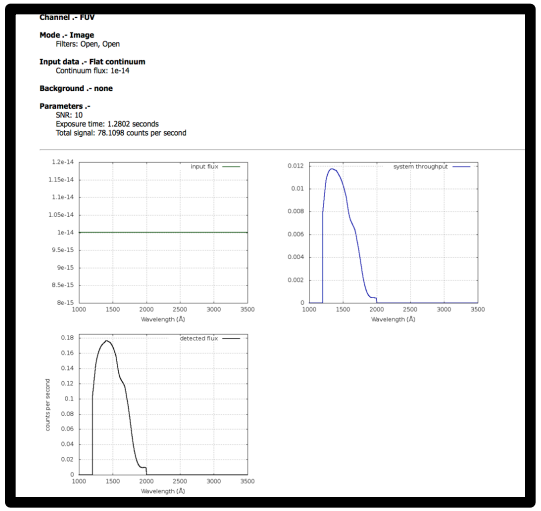
ETC architecture

- A web-based tool, available for the user **without installing any software locally**.
- The user always accesses the latest updated version of the ETC **without any local upgrade**.
- The ETC will be available through the page www.wso-uv.es





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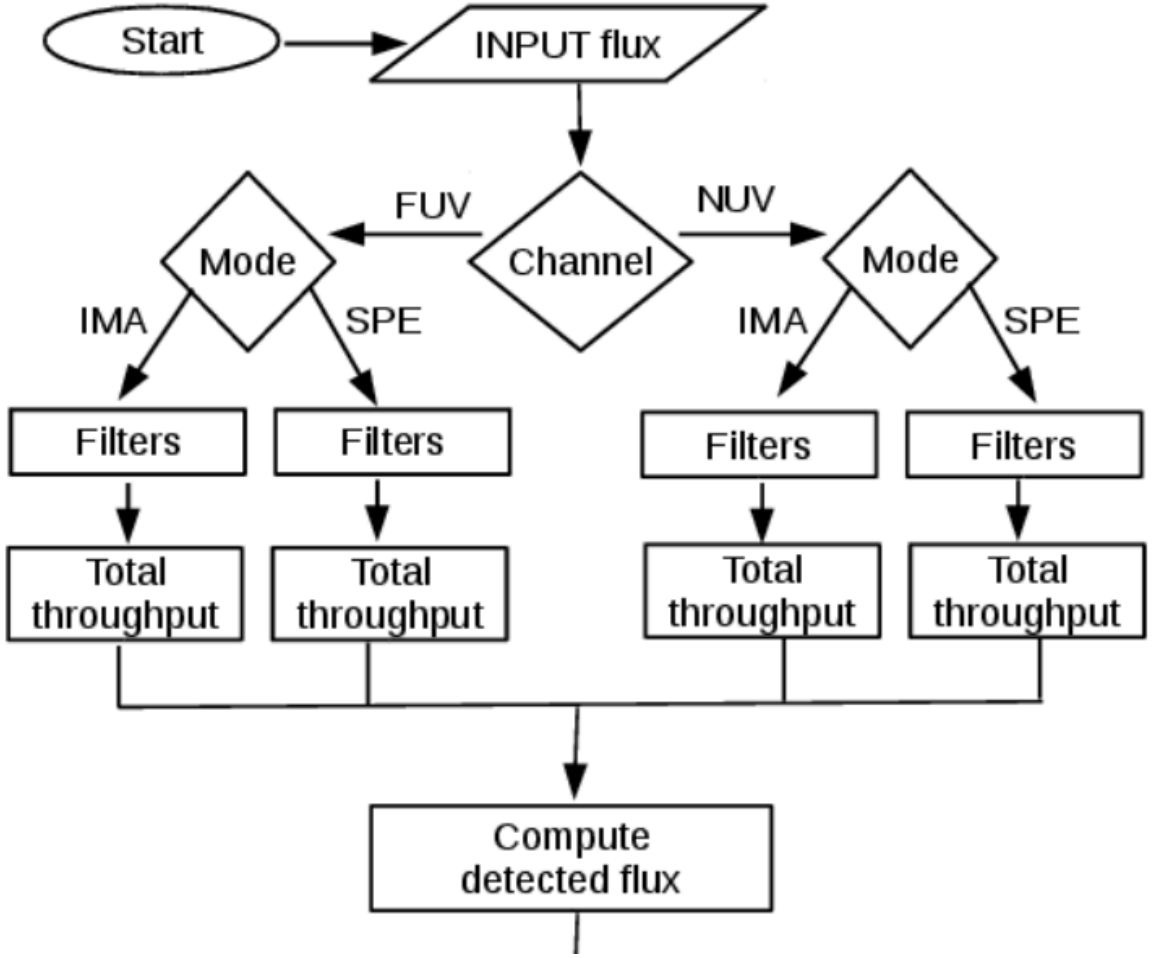
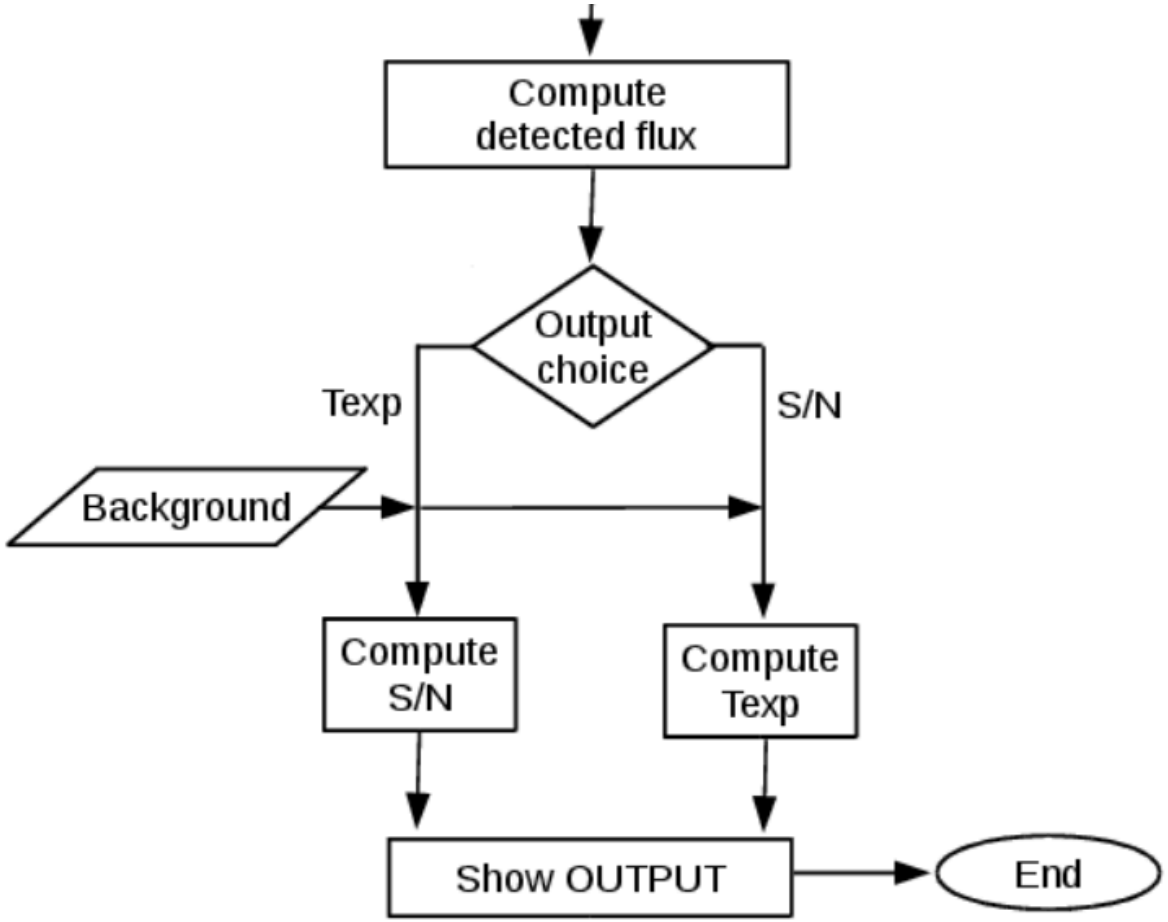
FCU ETC Input Data

- Input flux density as the source spectrum as it reaches the telescope.
  - Spectral Line.
  - Black Body.
  - Flat continuum.
  - Kurucz 2004 model.
  - User-provided spectrum.
- The light beam will lose a fraction of the total energy when transmitted or reflected by every optical element.



FCU ETC Output Data

- Received signal data.
  - Image mode: all photons are spread over the PSF, only those falling in the central pixels of PSF are signal.
  - Spectroscopy mode: photons are spread in the dispersion direction and in the spatial direction according to PSF.
  - Noise: dark currents, readout noise, UV sky background (Earthshine, geocoronal airglow, zodiacal light, …)



Thank you for your attention.