



Agenzia Spaziale Italiana



SGS (Science Ground Segment) Status

A. Zacchei

on behalf of Ec SGS
Collaboration

Outline

- Presentations organization

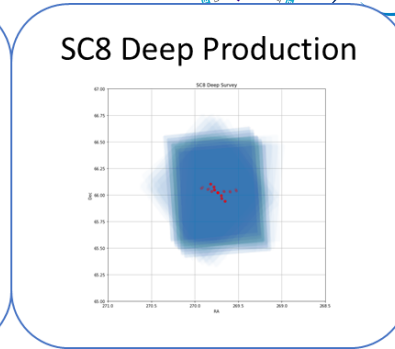
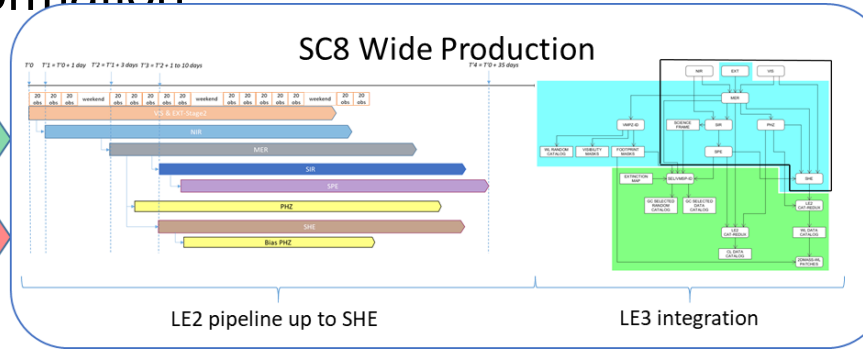
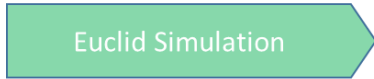
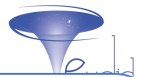
OU-MER (already Done – Focus)	Nonino/Merlin/Romelli	50 min
SGS Overview	A. Zacchei	10 min
IOT and Tools	A. Gregorio/Romelli/Riccio	10 min
SDC-It Status	M. Frailis	10 min
ALTEC - SDC-IT-PROD: Architettura e attività del centro verso la fase operative	R. Messineo	10 min
OU-NIR Status	G. Polenta	10 min
OU-SIR Status	M. Scodeggio	10 min
OU-PhZ	M. Bolzonella	10 min
OU-Le3 - Tomorrow	E. Branchini et al.	20 min

- SCh8

- Schedule



SC8 global information



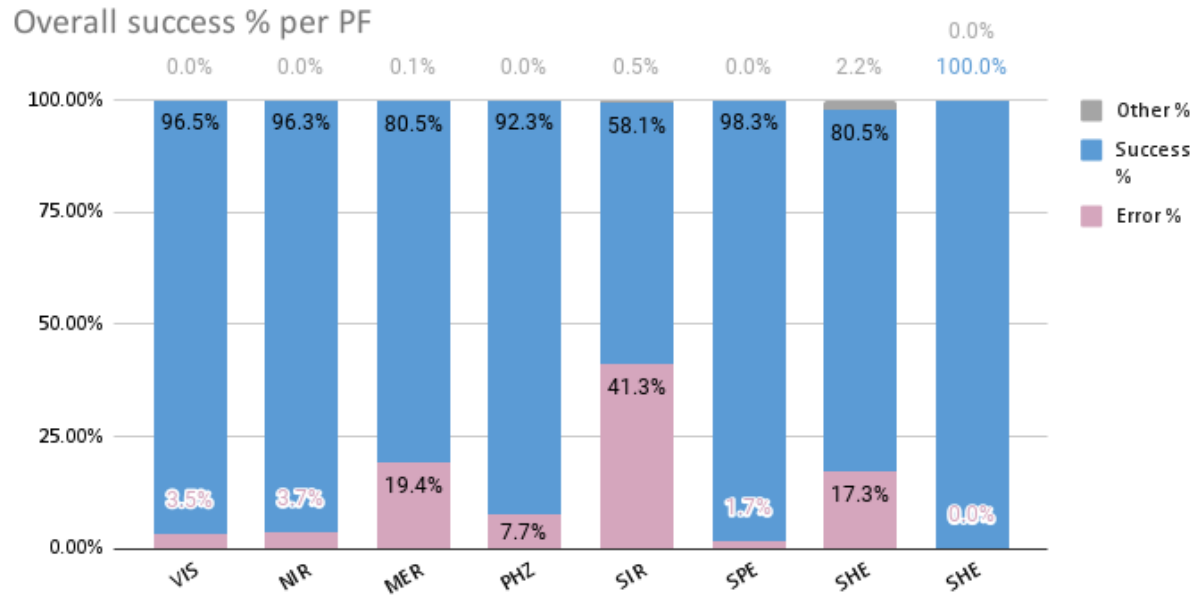
SC8
Operational
Rehearsal

- ❑ SC8 Production phase was handled by the System team and SDC-Prod with minimal intervention of OUs and SDC-DEV to not distract resources from the PF upgrade.
- ❑ SC8 Wide has been performed from May (SIM) to June - July 2021 (about 150 Sq Deg)
 - Processing shared among all SDC
 - Rate of 20 observations per day for the first step of the pipeline
 - Adapt workload to each SDC capabilities up to SHE
- ❑ SC8 Wide has been carried out on several stages
 - 1st stage – prerequisites : Euclid and EXT Simulations
 - 2nd stage : Ext Processing
 - 3rd stage : LE2 Pipeline processing up to SHE. Process data during 5 weeks.
 - 4th stage : LE3 integration almost finished but still ongoing
- ❑ SC8 Deep has been processed during July-Aug 2021
- ❑ SC8 Operational Rehearsal took place from 4-20 October 2021



SC8 Wide global information – Processing Functions

Processing Function success ratio over PPO submission :

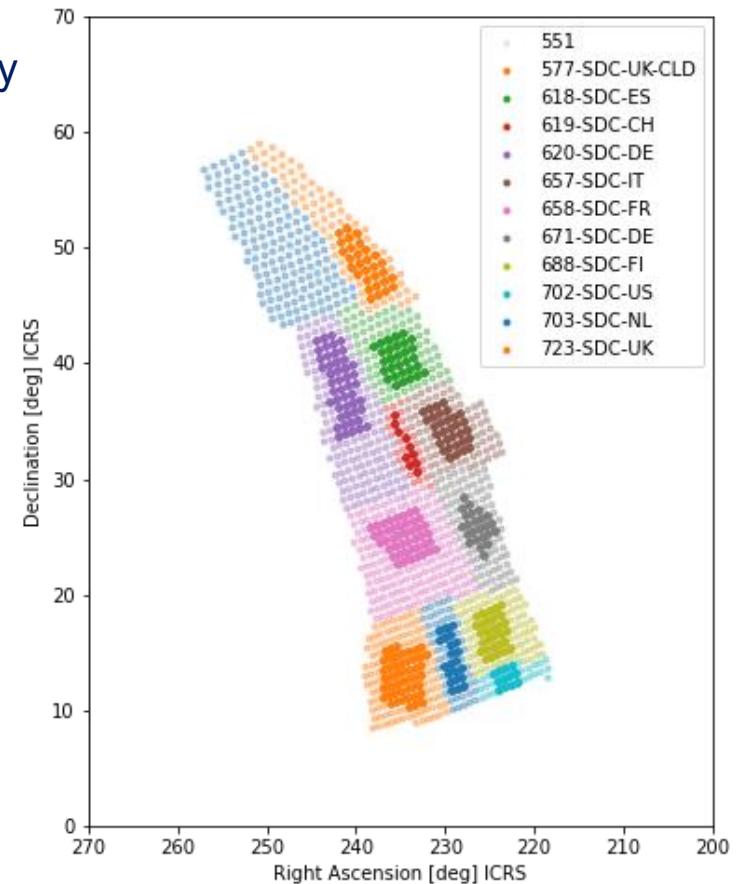


This is a raw indicator only based on PPO status after submission :

- Some errors are due to infra or PF issue
- Some errors are due to human operation errors

SC8 - LE3 integration/test

- Before starting the Le3 test we re-process all the Sc8 from scratch to emulate SGS “operational” day and including in the PF optimization identified during the first run.
- We then started the integration and Le3 test using the output passed through all SGS steps.
- Known limitations :
 - L2 catalogs with ‘holes’
 - Very sparsed data
 - Only some sqDeg available
- Most of Le3 F has been integrated and tested in the Euclid SGS environment.



What after the SC8 ?

SC8 was the first exercise to check the entire SGS data Flow aimed principally to check all the interfaces.

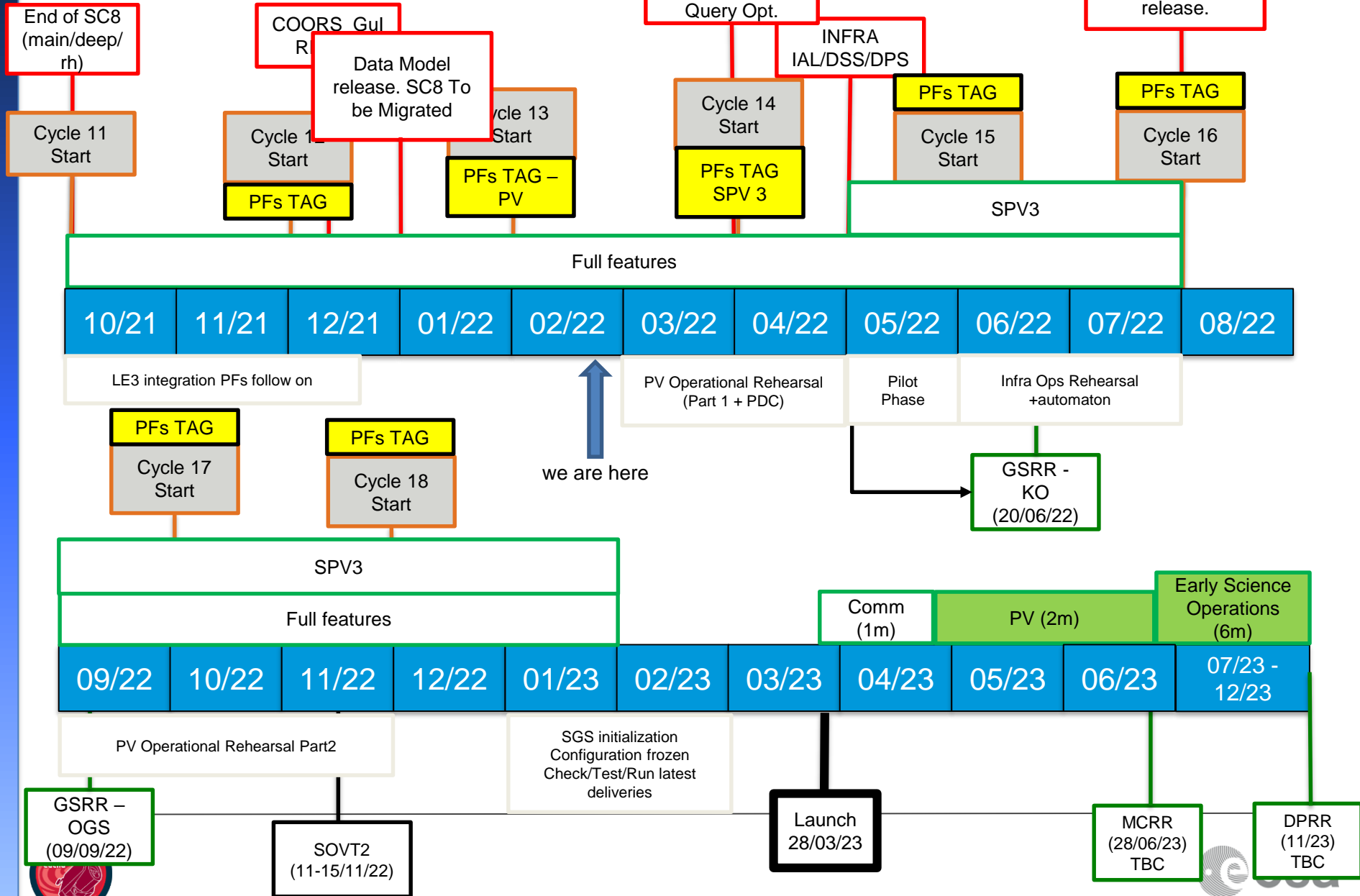
We adopt some simplification (due to not availability of certain model or not complete PF).

It was also based on “*nominal*” operation and with limited science scope due to the small (~150 sq deg) amount of sky simulated.

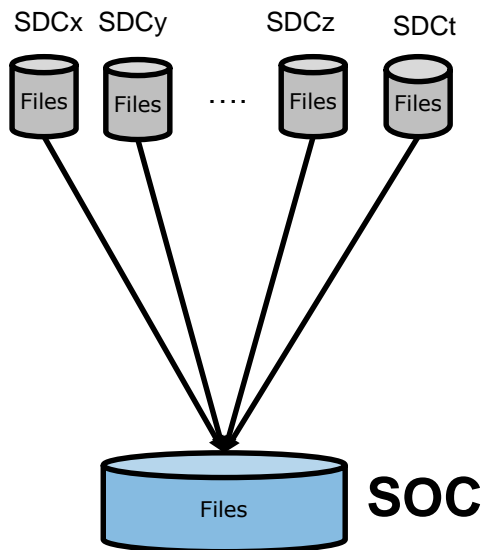
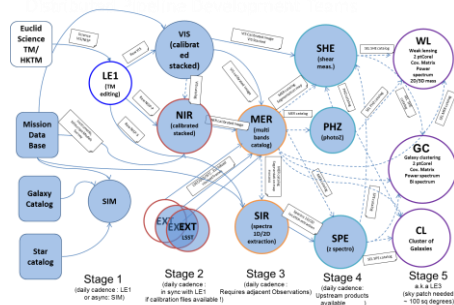
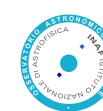
Based on such point we plan the incoming test:

- Full features test: aimed to develop a most accurate and realistic PF. This test is based on step wise procedure (two month cycle). Simulation (small area → one to few Tiles and defined On/Off effects) are organized/created to check the PF updates. Monthly teleconf is scheduled to follow the advancement.
- SGS during PV: aimed to check SGS support to the PV Phase from a functional point of view. We are creating simulation dedicated to each CalBlock and checking the capability of PF to analyse such data. This test is going to be an input of GSRR.
- Infrastructure RH. Aimed to check the Infrastructure update and automation capability.
- SPV3 needed to demonstrate our capability to deal with large amount of data. Aim will be more in the scientific part than on the technical side.

Timeline based on March 2022



From SOC to SWG



Euclid Archive DPS

DataProducts

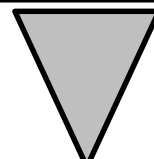
- Quality Check Flags
- Technical Validation Status against GDPRD reqs
- Results of automatic/manual inspection of products



OU_s & SDC_s

Data products Filtering on Quality Check criteria to set 'To be published' flag for each product

Frequency of publication in line with :
Quick Release
Intermediate Release
Public Data Release
 Requirements



Euclid Science Archive System esa

WELCOME TO THE EUCLID SCIENCE ARCHIVE SYSTEM

SAS

- Discover the origin of the Universe's accelerating expansion
- Discover the nature of 95% of the Universe: dark energy and dark matter
- Measure shapes of galaxies distorted by gravitational deflection due to dark matter
- Measure non-random distribution of galaxies resulting from the action of gravity



SWG_s



Conclusions

Infrastructure:

- SC8 was a very good exercise to check SGS Software and Hardware infrastructure.
- Team in charge of running PPO was exercised.
- We moved the main archive from SDC-NL to ESAC (Operational place).
- L2 products are already available on SAS and we are pushing Le3 products on the SAS to SWG start having a look on it.

PFs:

- Some problems has been identified in the PF solved or with a clear plan.
- Operation Rehearsal test was used to re-run SC8 PPO with improved PFs. Le3 integration and test was very important, we validate all Le3 P1 and P2 interfaces.
- In parallel we are working to have an assessed MDB to be used for the Full features exercise based on the latest PLM/SVM/instrument Models. Critical !!!
- PV needs (special parameters to be check) are in discussion in a monthly base.

IOT

- PV needs (special parameters to be check) are in discussion in a monthly base.
- SOVT1 has been performed and interfaces between IOT/SOC/MOC checked.

Reviews

- The GSIR-2nd step was passed (june/july) 2021
- Participation not expected at the MKP
- Preparation for the GSRR (end of June 2022)