

SGS Overall Status and next Steps

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on behalf of EC SGS

Agenda

- Regression reprocessing (RR2)
- Data Release 1 perimeter and status
- Schedule

Regression Reprocessing 2

RR2 was aimed to check the Processing Function capabilities before the Data Release 1 processing and provide a consistent set of data.

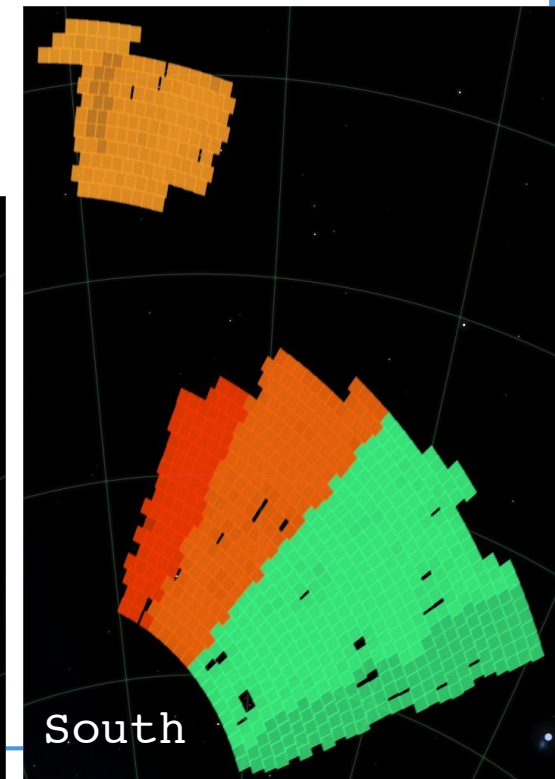
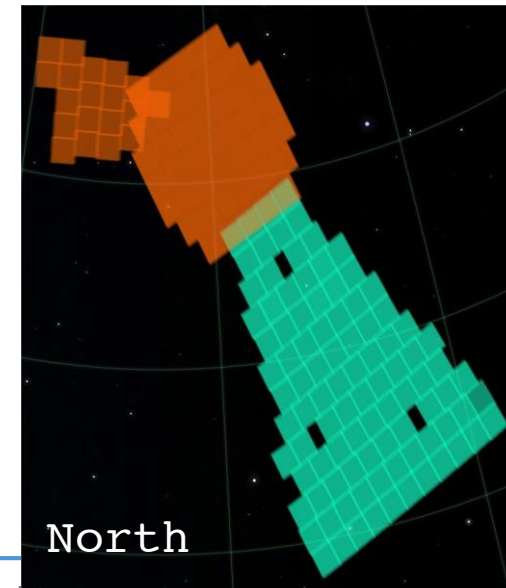
Run started on February and end on April 2025

Reprocessing of 500 deg² using the latest validated SGS pipeline:
Wide

- 85 deg² in the North, without EXT/PHZ/SHE
- 410 deg² in the South, fully processed

Deep

- COSMOS
- EDFN



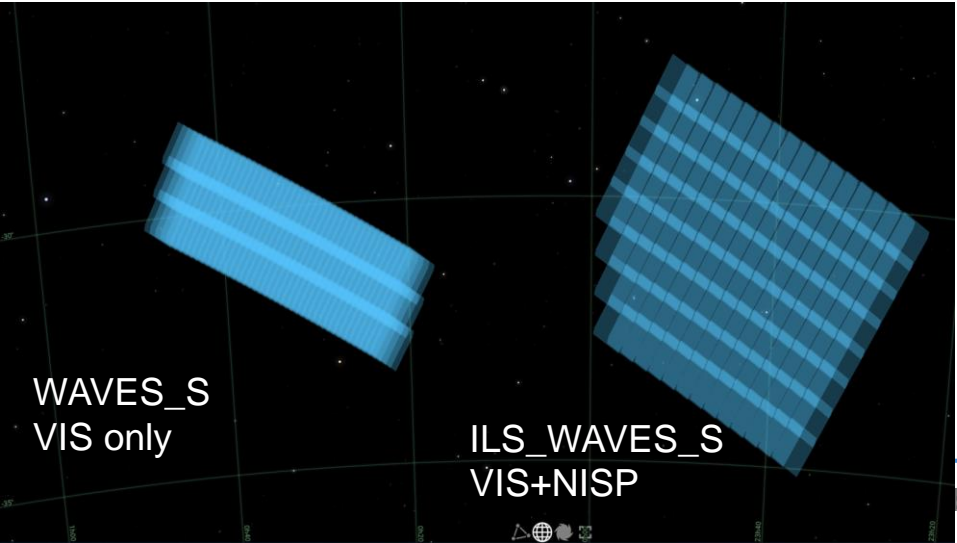
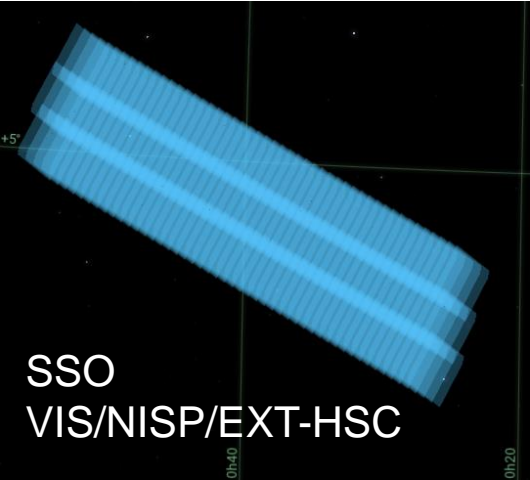
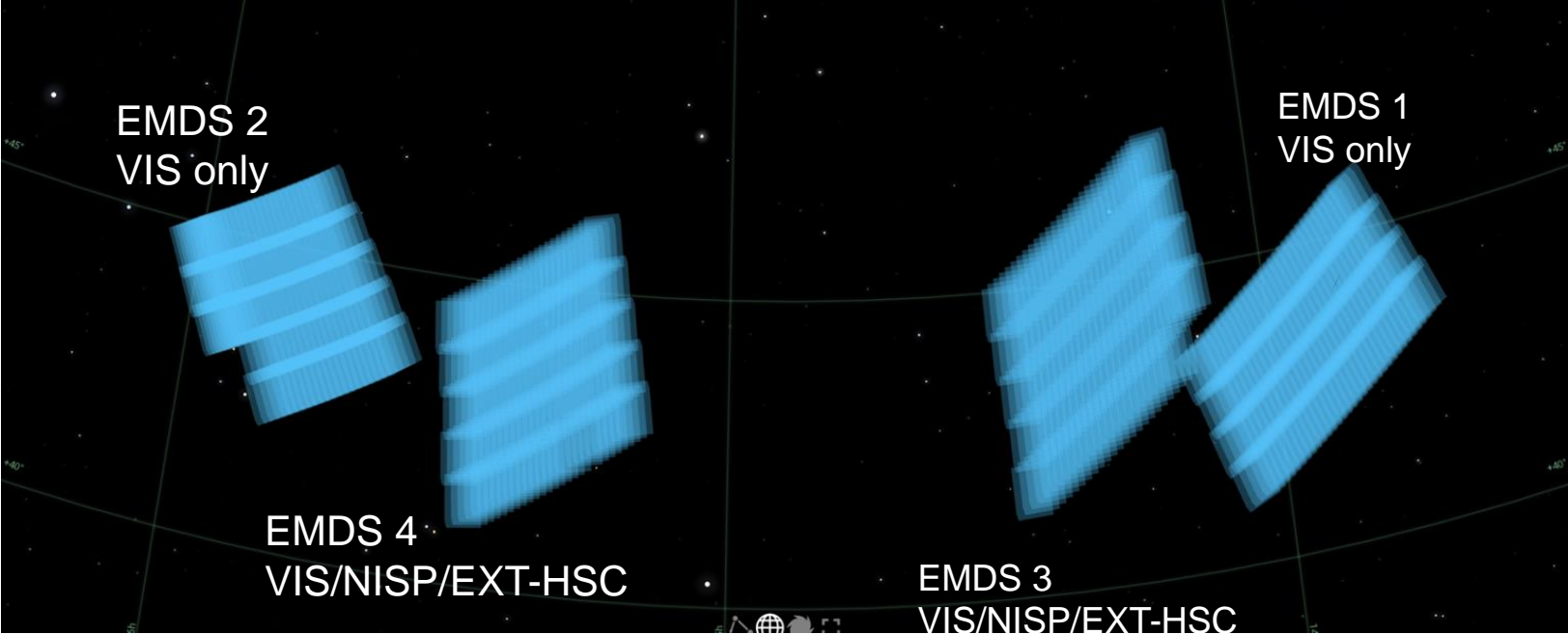
Regression Reprocessing 2

- Some problems encountered with EXT
 - late delivery of the ground based data
 - Data quality issues in the Northern sky coadded frames (Euclid pipeline), preventing us to use those in RR2
- Processing using the LE2 pipeline performed during March 2025
- Main points:
 - VIS/NIR/MER/PHZ PFs in very good shape;
 - Weak lensing: issues encountered to go down to LE3 due to the lack of SHE calibration (requires simulations). Tests has been done outside the SGS
 - Spectro: bug in SPE required a second processing. Results has been analysed showing better results compared to Q1 and indicating possibility to further improvements both in SIR and SPE.
- SAS publication was an issue:
 - SAS was not able to publish DEEP fields processing results.
 - MER/PHZ catalogues are only now distributed by SAS, while being validated since more than three months.

DR1 fields (EUCL-EST-ME-8-020)

- DR1 SGS processing will be performed on :
 - DEEP/WIDE Euclid survey (only data with EXT/VIS/NIR)
- Thermal stabilization fields (EMDS)
- Calibration fields
- Data down to May 21st 2025 (last selfcal visit), excluding observations in between March 14 2024 and June 8 2024
- Calibration fields:
 - SelfCal : VIS/NIR/MER/SIR/SPE on each visit individually, including the 4 visits from PV Phase
 - COSMOS & CDFS : VIS/NIR/MER/PHZ/SIR/SPE on each field at full depth only
 - PSF monitoring fields : VIS data reduction of each visit
 - Planetary Nebula used for spectro calibration : VIS/NIR/MER/SIR/SPE
 - AEGIS : VIS/NIR/MER at full depth, no EXT coverage
 - Ultra Deep field: outside of the SGS, based on the SGS processing of the EDFN and selfcal visits, an ultra deep field processing will be performed
 - COSMOS visit from PV Phase and F-014 data asked by several OU/SWG to be added in a DR1 Change Request

Thermal stabilization fields EMDS

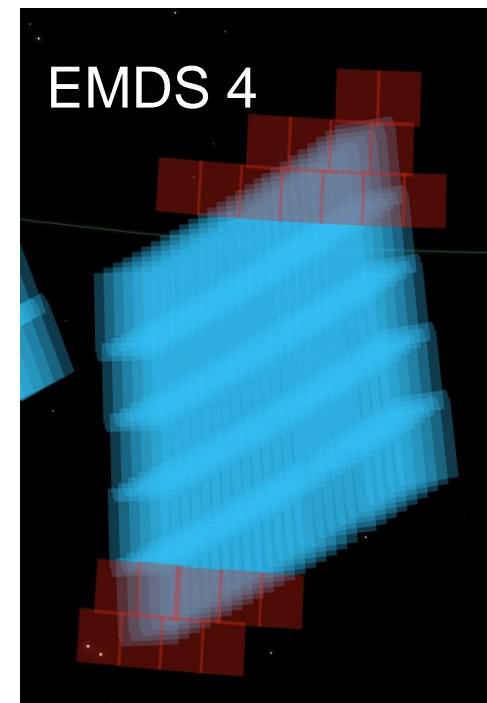
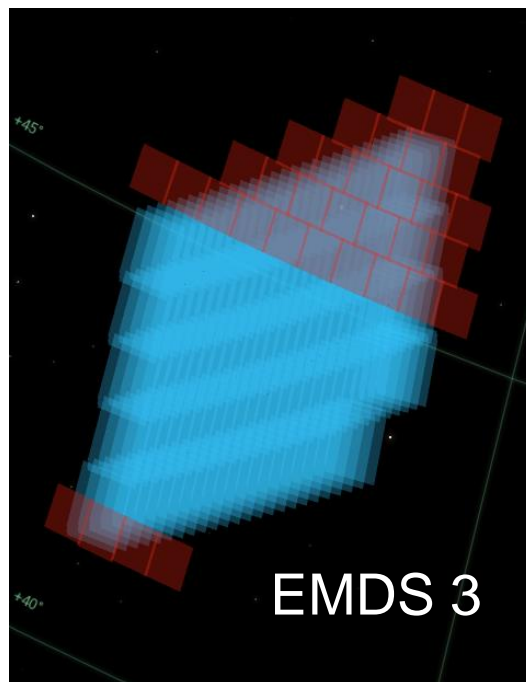
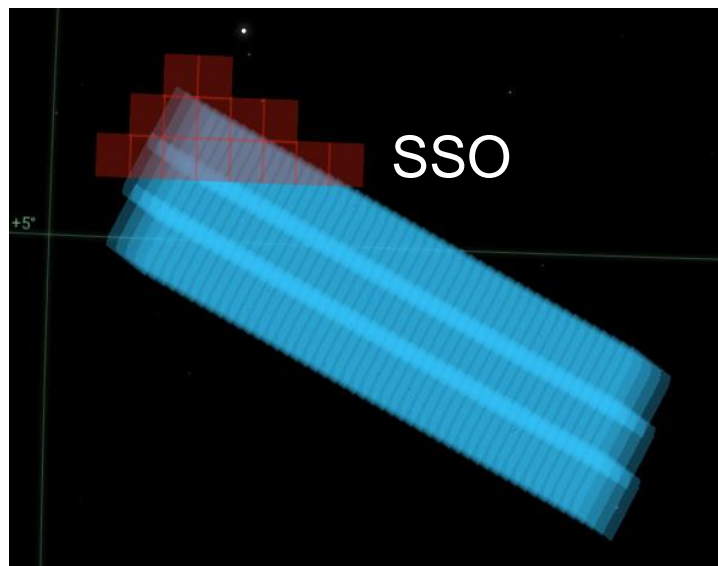


Field ID	Processing Functions
PDC2_ILS_WAVES_S_BLOC1	VIS/NIR/MER/SIR/SPE; MER will be based on VIS and NIR only.
PDC3_EMDS_WAVES_S	VIS
PDC4_SSO_ECLIPTIC	VIS/NIR/MER/PHZ-DEEP/SIR/SPE/LE3-ID
PDC5_EMDS_HSC_HIGHLAT_1	VIS
PDC6_EMDS_HSC_HIGHLAT_2	VIS
PDC7_EMDS_HSC_HIGHLAT_3	VIS/NIR/MER/PHZ-DEEP/SIR/SPE/LE3-ID
PDC8_EMDS_HSC_HIGHLAT_4	VIS/NIR/MER/PHZ-DEEP/SIR/SPE/LE3-ID

Thermal stabilization fields

EXT

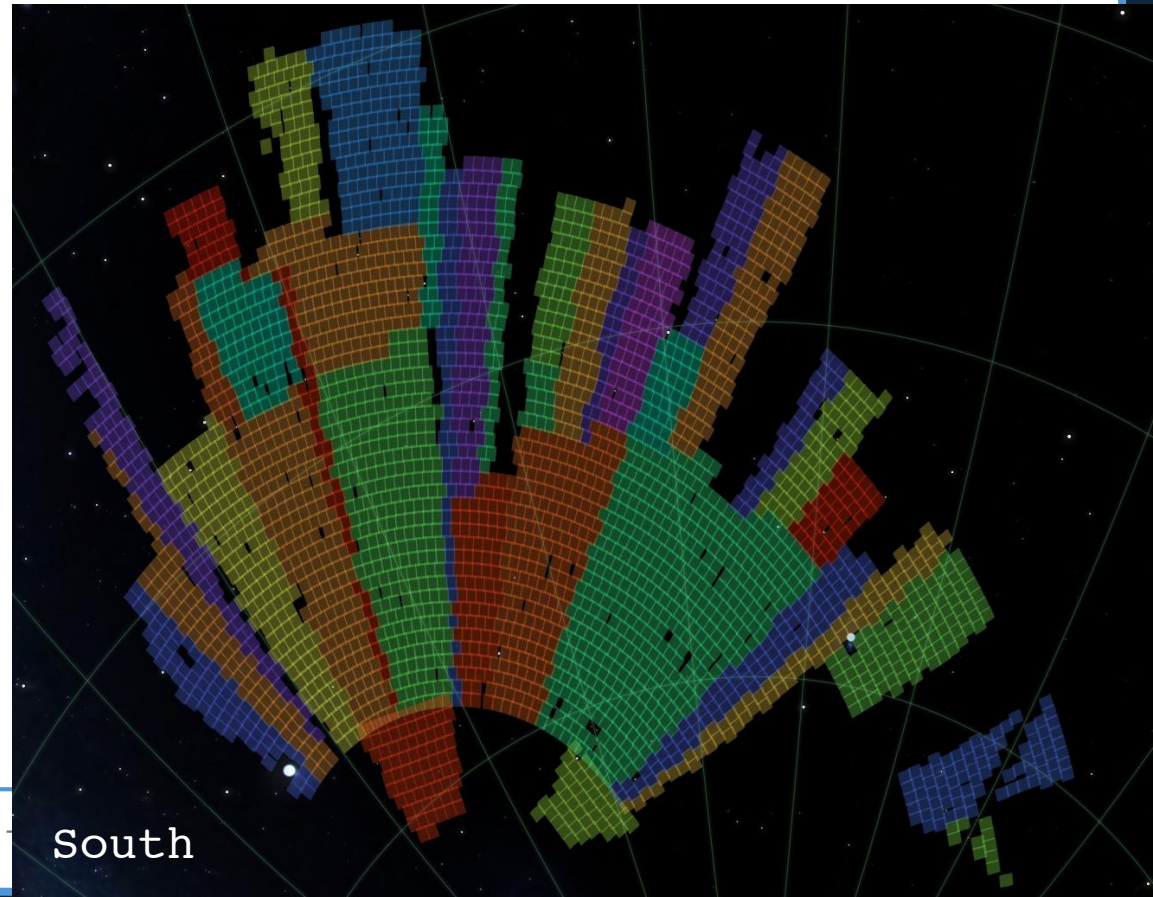
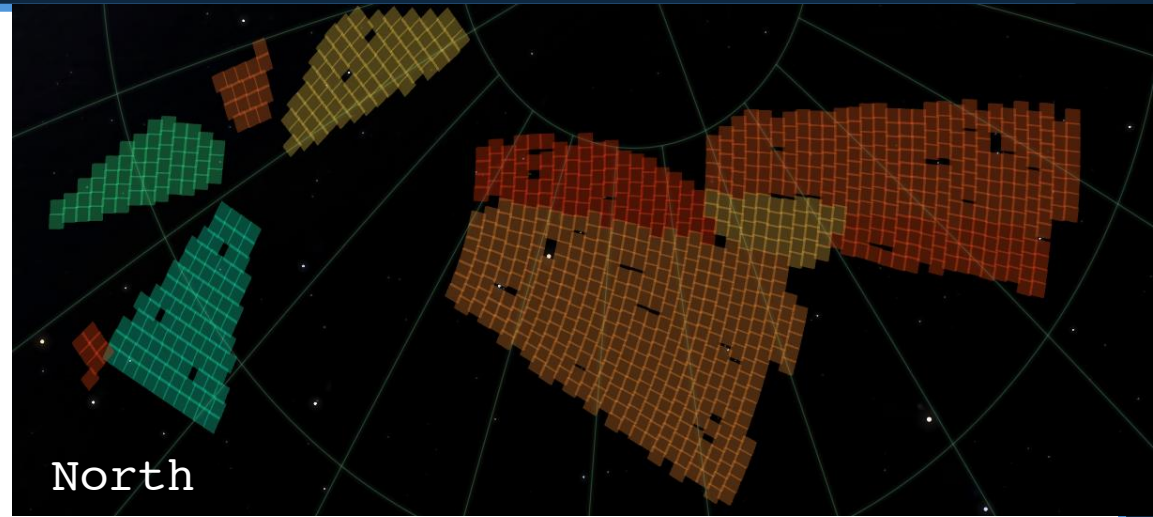
- Partial HSC coverage over SSO and EMDS fields
 - MER will be executed ONLY in the area covered by EXT
- Red: uncovered MER tiles



- VIS already executed on all EMDS and validated.
- NIR has been executed, high background has been detected, analysis ongoing

DR1 WIDE/DEEP

- WIDE Survey will include complete observations with EXT coverage
 - No DES coverage below -66° and near the galactic plane
 - Complete coverage in the North
 - SGS pipeline not ready to process obs crossing RA=0h
- DEEP fields
 - 11 EDF-North visits (8 using the red grisms and 3 using the blue grism)
 - 10 EDF-South visits, all using red grisms
 - 2 EDF-FORNAX visits
 - Both WIDE like and full stack data reduction, without SHE



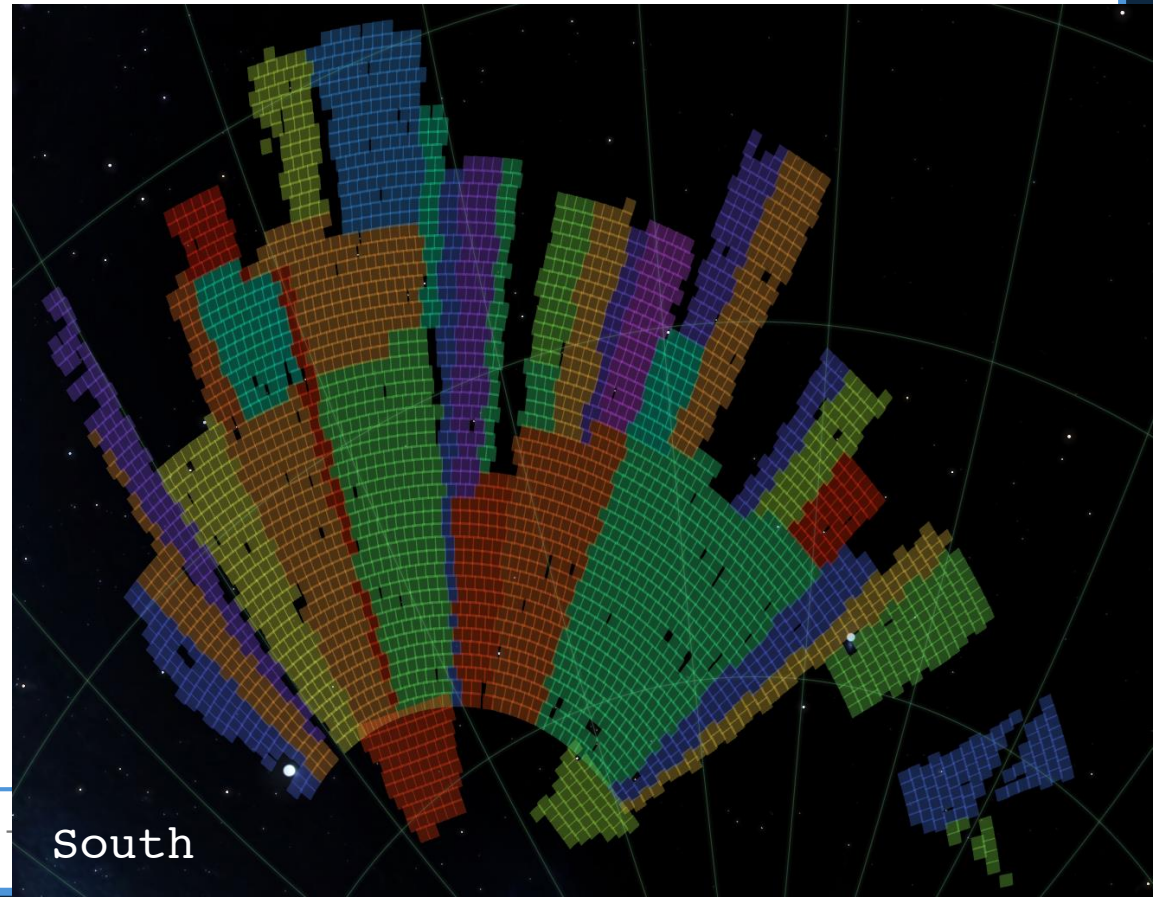
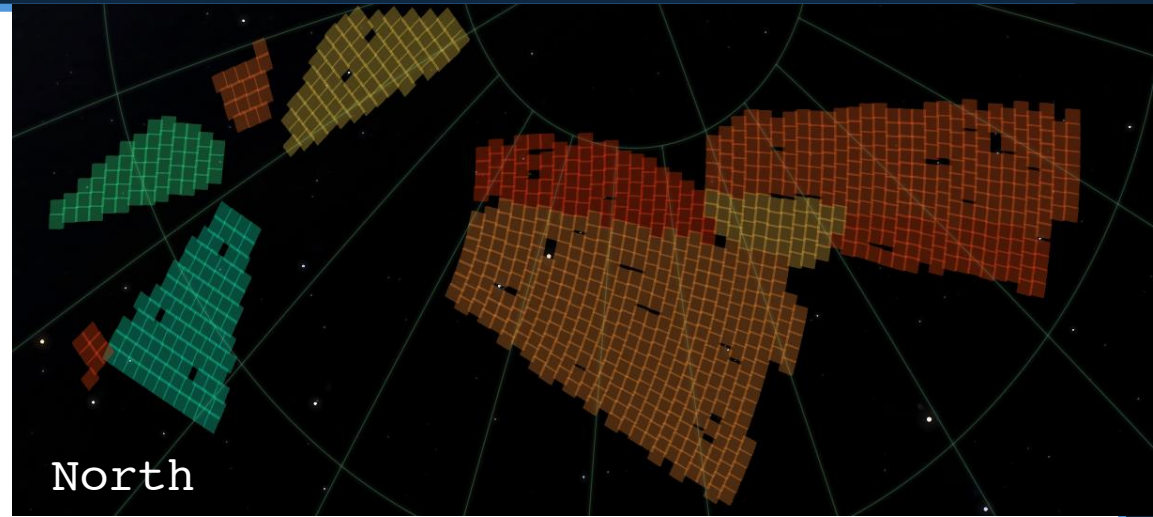
DR1 STATUS

WIDE (all calibration done)

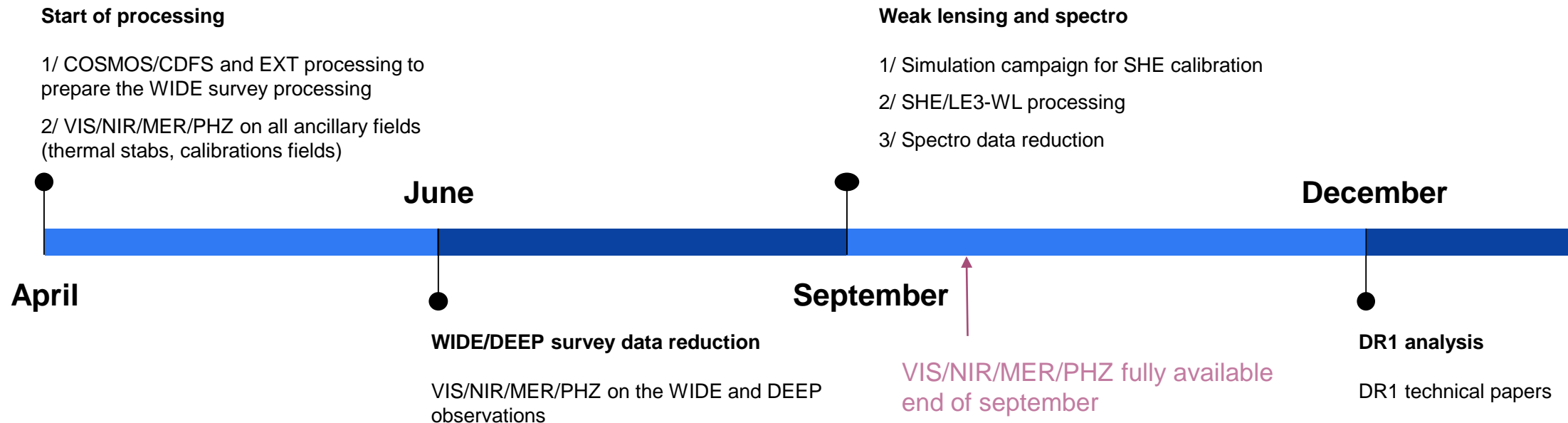
- EXT
 - CFIS/WHIGS/WISHES completed
 - PS in progress (some tiles to finalize)
 - DES done
- VIS done and validated
- NIR done to be validated
- MER will start as soon VIS/NIR are validated

DEEP (all calibration done)

- EXT
 - EDFN and EDFS done
 - EDFF done
- VIS → done and validated
- NIR → done and validated
- MER just started.



SGS DR1 timeline



OU validation will be performed continuously
data will appear on iDR1 SAS instance starting from July

DR1 PF Status

- VIS / NIR / MER DR1 version is frozen, now on validation and already working on DR2
- SIR / SPE
 - Delivery of the PFs is expected in July (7th for calibration, 22nd for DR1); lot of test ongoing aimed to increase the performance (spurious sources flag, persistence, continuum, etc ...)
 - PFs candidate will be tested on RR2 sky area (500 deg²) unblinded + EDFN during the summer, rest of DR1 should start in September after evaluation.
- GC PF to be tested as soon SIR/SPE are ready, PF to be released.
- PHZ working on its calibration, PF is ready
- Weak Lensing
 - Final delivery is expected in July, it will be executed on 100 deg² (TBC) or the RR2 area and check the results.
 - DR1 processing expected from September
- Simulations
 - New VIS PSF has just been included, test ongoing to understand performance and verify the results
 - EXT, VIS and NIR are near to be ready
 - SIR simulation are still suffering of lack of power. Problem has not yet been identified, analysis is still ongoing not clear when it will be corrected.

IDR1 VIS/NIR/MER/PHZ October 2025

IDR1 (full) December 2025 – DR1 products frozen March 2026 – DR1 Public release October 2026

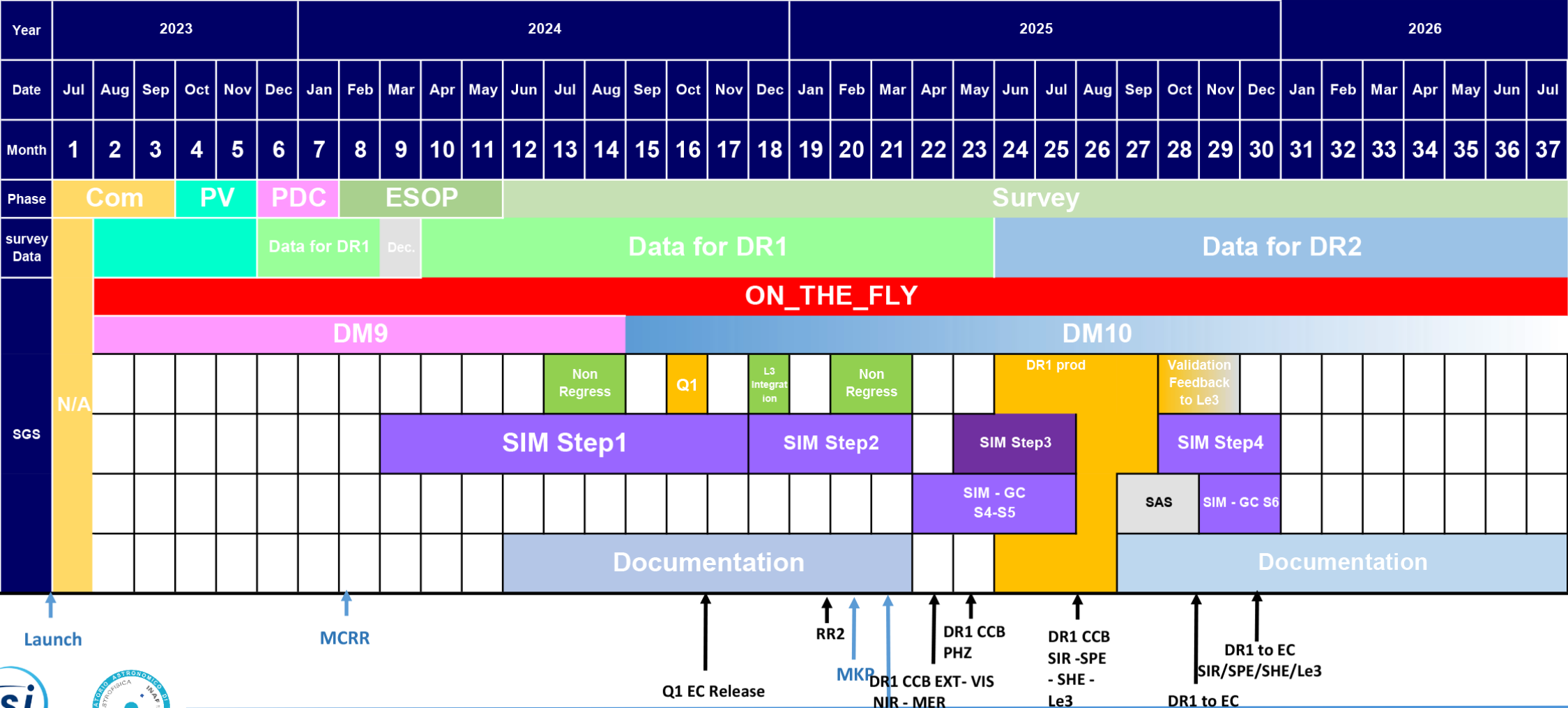
SGS Schedule

Data collection until end of May 2025.

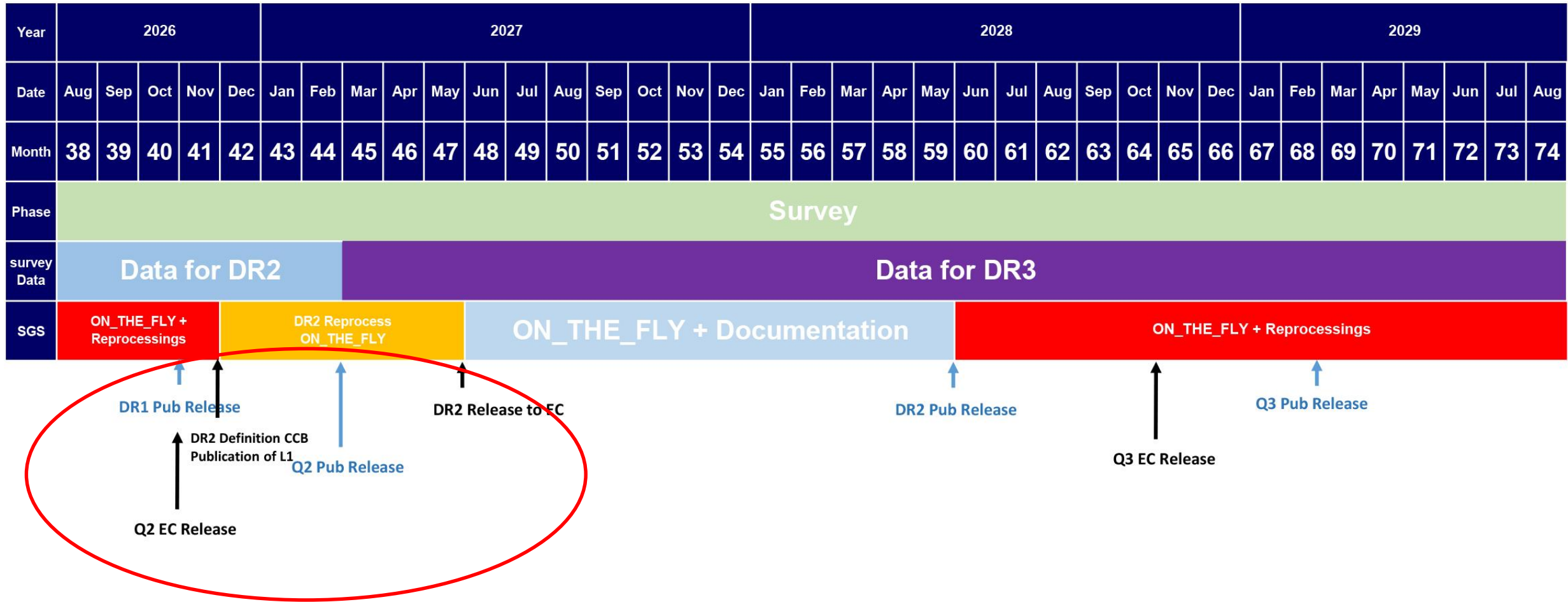
DR1 (VIS/NIR/MER/PHZ) internal Release end of October 2025,

DR1 (SIR/SPE/SHE/Le3) internal release middle December 2025

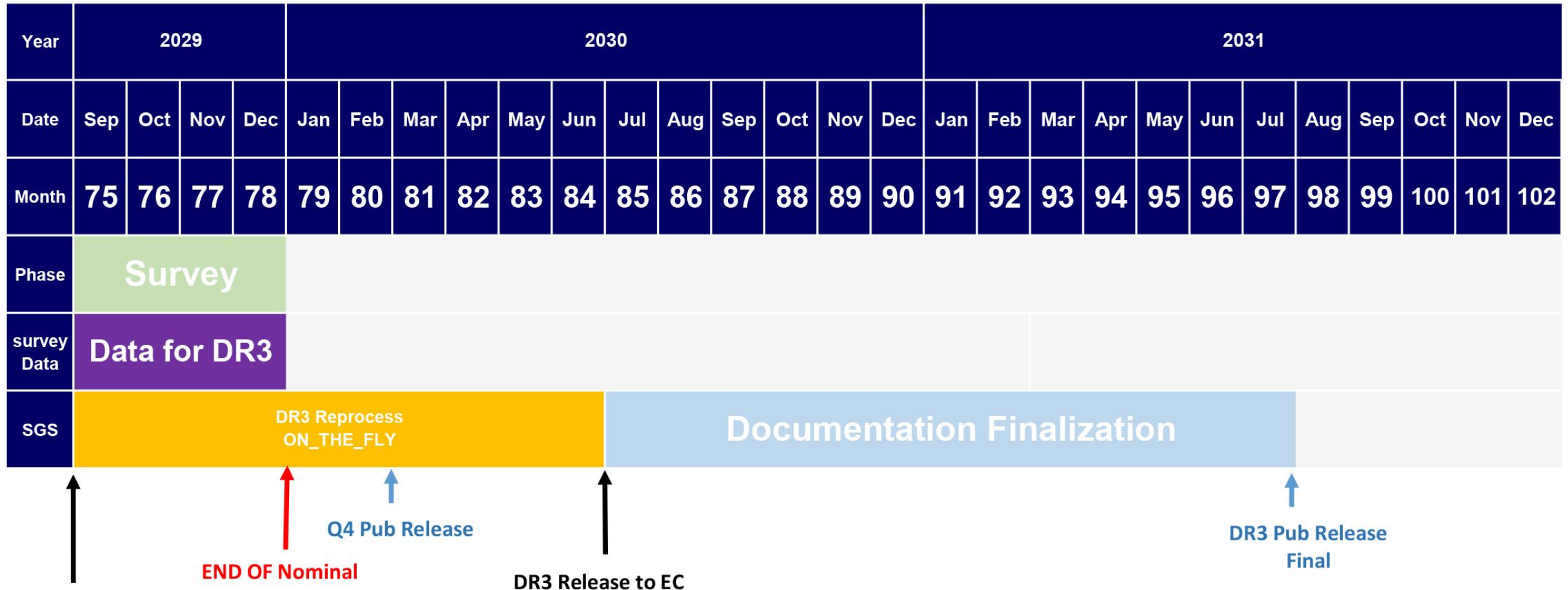
Public Release end of October 2026



SGS Schedule



SGS Schedule



Release Scheduling

Based on the SMP (Science management Plan) data release should be:

NOMINAL MISSION – 6 years – ends 31/12/2029

POST-OPS – 2 years

iQ1	Q1	iDR1	DR1	iQ2	Q2	iDR2	DR2	iQ3	Q3	iQ4	Q4	iDR3	DR3
NOV 2024	MAR 2025	OCT 2025	OCT 2026	NOV 2026	MAR 2027	JUN 2027	JUN 2028	NOV 2028	MAR 2029	NOV 2029	MAR 2030	JUN 2030	JUN 2031

4 data releases
in 9 months!

other periods with very
close data releases

CONCLUSIONS

- IDR1 (VIS/NIR/MER/PHZ) will be released on October 2025. Note that data will be available on SAS as soon validated.
- IDR1 full will be released before December 2025.
- Le3 (GC / WL) still to be check in larger sky area.
- SAS should made available VIS/NIR data starting from second week of July (SAS new version should be installed this week).
- MKP-delta to take place in Jan 2026. It will be based on presentations and on the already agreed TN. Procedure is exepected in July.
- Schedule after DR1 is a problem (this was noted also at the MKP).
 - No time to OU / SDC / SWG to implement new algorithms and provied feedback
 - Q# release may require special processing from SGS (see Bulge) something that should be avoided. It seems that ESA will open a call to identify *target* to be observed and released at Q#.
 - We are discussing with ESA different scenario on shifting DR2 and DR3 and identify best position for the Q#. Such Proposal will be first discussed at the EST in July then at the Steering and finally, if needed, at SPC has it should have an effect on the Science Management Plan (SMP).

