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MEMO

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From:	R. Laureijs and V. Pettorino	Visa:	
To:	Public		
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Subject: Q1 fields definition

This memo provides the list of SGS Q1 data fields and products based on the recommendations by the Euclid Science Team (EST). The Q1 scope and content are given in EST memo [AD1]. The EST was guided by the instruction in the Euclid Science Management Plan [AD2] that "Level Q data represent products suitable for most purposes in astronomy, except for the core cosmology objectives of the mission." The list of agreed SGS data products is provided in EST memo [AD3].

This memo is issued by ESA and extends the content of the two previous EST memos [AD1], [AD3], and defines the specific fields and data products which are part of Q1.

List of Q1 fields

- A single visit over the Euclid Deep Fields (EDFs): 20 deg^2 of the EDF North, 10 deg^2 of EDF Fornax, and 23 deg^2 of the EDF South, as per [AD1].
  The 3 Euclid Deep Fields (EDFs) are specified as follows, in Equatorial (celestial) coordinates (RA/Dec.):
  EDFN (North) - 17:58:55.9 +66:01:03.7;
  EDFS (South) - 04:04:57.84 -48:25:22.8;
  EDFF (Fornax) - 03:31:43.6 -28:05:18.6;
  (see also Euclid Survey - Euclid - Cosmos (esa.int) for more details on the deep fields).

Since several visits were scheduled before Q1 release, it was decided that the Euclid Science Ground Segment (SGS) would recommend the EDFs release observations to the EST, based on the SGS validation procedures. The Q1 products should reflect typical wide survey observations. External data (EXT) data are selected such that the EXT depth matches the depth of a wide survey field. The release products do not include blue grism measurements taken with the NISP instrument.

- Observations of Lynds Dark Nebula LDN1641: 6 Reference Observation Sequence (ROS) of this field centred on RA = 85.74 and Dec = -8.39 were obtained as part of the commissioning of the Fine Guidance Sensor on 24 and 26 September 2023. Due to the setting during the early operations, the LE1 NISP headers must be edited for standard SGS processing. No EXT data are provided.

A suggestion to include one partial area pass over the Cosmos field in Q1 was rejected by the EST; the full area Cosmos field will be released for DR1.

List of Q1 products given in the Euclid science archive

We list the Science Archive mnemonics as provided in [RD2]. Detailed descriptions of the LE2 products can be found in [RD1].

LE1 data:

- DpdVisRawFrame
- DpdNispRawFrame

LE2 data:

1. VIS data products:
   - DpdVisCalibratedFrame (calibrated frame, weight map, background map)
   - DpdVisCalibratedFrameCatalog
2. NIR data products:
   - DpdNirCalibratedFrame (calibrated frame, background)
   - DpdNirCalibratedFrameCatalog
3. SIR data products
   - DpdSirScienceFrame (science frame)
   - DpdSirCombinedSpectra (1 D spectra)
4. MER data products
   - DpdMerBksMosaic (background subtracted mosaic, background model, PSF, flag, rms)
   - DpdMerSegmentationMap
   - DpdMerFinalCatalog
     MER data include Euclidized EXT-bands mosaics and associated auxiliary files. This consists in 4 bands (GRIZ) in the South and 5 in the North with the additional U-band.

5. PHZ
   - DpdPhzPfOutputForL3
6. SPE
   - DpdSpePfOutputCatalog

LE3 data:

Visibility masks

- DpdHealpixBitMaskVMPZ
- DpdHealpixFootprintMaskVMPZ
- DpdHealpixCoverageVMPZ
- DpdHealpixDepthMapVMPZ
- DpdHealpixInfoMapVMPZ (Information Maps - no FITS file)

The characteristics of the Healpix masks are the following:

NSIDE = 16384, order = 14, resolution : 12.88 arcsec.

References

[AD1] EUCL-EST-ME-8-007: Q1: Euclid's first public data release - scope and content (06/02/2022, EST memo).

[AD2] ESA/SPC(2012)19: Euclid Science Management Plan version 2.4 (24/05/2013).

[AD3] EUCL-EST-ME-8-014: Q1 product definition

[RD1] EUCL-EC-ICD-8-001: Euclid Data Product Definition Document

[RD2] EUCL-ESAC-RP-8-017: Data products in the Euclid science archive and volume budget