

MEMO

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From:	Pierre Ferruit	Visa:	
To:	Euclid		
Copy:			

Subject: Euclid SAS - policy for the publication of LE1 data

Executive summary

After consultation with the Euclid Consortium (EC) lead and the ESA Euclid Project Scientist (PS), the following policy for the publication of the level-1 (LE1) Euclid data products in the Euclid Science Archive System (SAS) has been adopted.

By default, the LE1 data products of Euclid observations will only be published in the SAS (and therefore become visible to all EC members) at the beginning of the reprocessing period of the data release to which they belong.

This rule does not apply for the LE1 data products associated to the limited pool of Euclid observations included used for regression testing of the SGS software versions. These will become available as soon as they are generated.

Privileged early access to LE1 data by specific scientific projects beyond what is planned in the policy will only be possible on an exceptional basis and after approval by the EC lead, the ESA Euclid PS and the mission manager.

This policy will be reviewed approximately 6 months after the start of the nominal Euclid survey.

Notes:

- The LE1 data products will be provided as-is, without any support beyond the information on their data model available in the Euclid data product description document.
- The LE1 data products associated to a given data release will be released publicly together with the higher level data products.

Memorandum

As observations are carried out by Euclid and as the associated data is transmitted to the ground and ultimately to ESAC, the Science Operation Centre (SOC) at ESAC, which will generate the Euclid LE1 data products. These data products correspond to Euclid raw data without any processing or removal of instrument signature applied beyond those performed autonomously on board. As such, they are usually not directly suitable for scientific exploitation.

Once generated (typically within 48h of their acquisition), the LE1 data products are copied into the Euclid Science Archive System (SAS) storage areas. At this stage, they are still not visible to the Euclid Consortium (EC) members through the SAS interface. To become visible, they need to be registered into the SAS database, they need to be “published”.

Due to the raw nature of the LE1 data products, questions were raised about the associated publication policy. Various scenarios were explored from publishing them as soon as they become available in the SAS storage areas to delaying their publication to the latest possible moment, i.e., to the time of the internal data releases. A balance had to be found between the risks of distributing to the EC members early raw data very difficult to interpret and for which no user support will be available and the usefulness of this data especially for performing quality checks on higher-level data products. It was also necessary to consider that only very simple publication triggers are implemented in the SAS and that conditional publication schemes linking different data products are not available at this stage.

After consultation with Yannick Mellier (EC lead) and the René Laureijs (ESA Euclid PS), the following publication policy was agreed:

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- (1) By default, the LE1 data products of Euclid observations will only be published in the SAS (and therefore become visible to all EC members) at the beginning of the reprocessing period of the data release to which they belong. For Data Release 1 (DR1), the current schedule places the begin of the reprocessing period 2 months before the DR1 internal release i.e., in Q4 2024.

- (2) To facilitate quality checks involving comparisons between the LE1 and LE2 (VIS/NIR/SIR) by EC members beyond the SGS members with access to the Data Processing System (DPS), this rule does not apply for the LE1 data products associated to the limited pool of observations used for regression testing of the SGS software versions. They will become available as soon as they are generated. This pool of observations for regression testing and checks will grow progressively reaching 1000 observations (~500 square degrees) before DR1 and 4000 observations (~2000 square degrees) after DR2. The selection of the observations to be included has not yet been performed.
- (3) Privileged access to LE1 data products beyond the access conditions listed in (1) and (2) will only be possible on an exceptional basis and for requests presented by the science working groups and approved by the EC lead and the ESA project scientist. This access would have to be provided outside of the SAS (publication in the SAS does not allow to differentiate between different categories of EC members) and this will likely require additional efforts and / or resources. Therefore, final approval by the mission manager will be required. Requests from individual EC members will not be considered.
- (4) This policy will be reviewed 6 months after the start of the nominal survey, i.e., roughly mid-2024.
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It is important to highlight that:

- The processing of the LE1 data products into data products with the instrumental signature removed requires access to additional metadata and data / calibration products. For the core cosmological science objectives, the Science Ground Segment (SGS) is taking care of that through the generation of the LE2 data products. EC members must be aware that no user support will be provided on the published LE1 data products beyond the LE1 data model made available in the Data Product Description Document (DPDD).
- This memorandum is dealing with the policy for the publication of the LE1 data products in the SAS for access by the EC members. With respect to the Euclid public releases (DRs and Qs; as defined in the Euclid Science Management Plan), the LE1 data products will be released publicly together with the associated higher-level data products.