

**Copernicus Space Component
Technical Collaborative Arrangement**

between

ESA

and

Enterprise Estonia

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1 INTRODUCTION

Copernicus is the European Union Earth Observation and Monitoring programme, providing Earth Observation information for environmental monitoring and civil security. The dedicated Sentinels missions are being developed to meet the operational needs of the programme.

The Copernicus programme has been established as a European Union (EU) programme pursuant to Regulation (EU) No 377/2014 (the Copernicus Regulation). Article 13 and 23 of the Regulation provide for the fostering and promotion of distribution of Copernicus data and lays down the principles governing the Copernicus data and information policy.

In line with this Regulation, the European Union has concluded Agreements with the European Space Agency (ESA) and the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT) on the implementation of the space component of Copernicus.

According to Article 16 of the Agreement between the European Union and ESA, the principles for data access and data dissemination are those established by the Copernicus Regulation, Regulation (EU) 1159/2013 and the ESA Copernicus Sentinel Data Policy adopted by the States participating in the ESA GMES Space Component (GSC) Programme.

On this basis, the European Commission has invited ESA to establish relevant technical collaborative arrangements with interested Copernicus Participating States primarily focusing on the Sentinels operated by ESA and EUMETSAT and addressing issues such as technical data interface specifications.

ESA will be responsible for the implementation of the technical collaborative arrangements, in coordination and subject to the prior agreement by the European Commission.

1.1 Purpose and objectives

Estonia participates to the Copernicus programme.

Typically, ESA facilitates cooperation activities with its Member States (plus Canada) participating to the ESA GSC programme established by the Declaration on the GSC Programme [ESA/PB-EO/CXI/Dec. 1, rev.10 (Final)] for direct and efficient access to Sentinel data in the frame of the Sentinels Collaborative Ground Segment.

The present technical collaborative arrangement is required to allow for a specific Sentinel data access solution for Estonia, as Estonia is not participating to the ESA GSC programme.

Based on this, ESA and Enterprise Estonia cooperate on a voluntary basis for enabling Sentinel data access to Estonia, without any exchange of funds. In the event that either ESA or Enterprise Estonia is unable to continue one or several of the activities described in these Technical Collaborative Arrangements, each may have the option of terminating the participation in the activity, after consultation with the other and after giving reasonable advance notice.

1.2 Scope

This document describes the technical collaborative arrangements (e.g. cooperative initiatives description, operational interfaces, ESA required support) between ESA and Enterprise Estonia. This Technical Collaborative Arrangement does not constitute a legally binding agreement or commitment between ESA and Enterprise Estonia to the exception of the provisions of the Disclaimer found under section 6.

In case, other entities (e.g. Universities, Institutes) are involved in the arrangement on Estonia's side, Enterprise Estonia acts as an interface and contact point between ESA and the other entity. To this end Enterprise Estonia is nominated as National Point of Contact.

1.3 References

An overview of the overall Copernicus dedicated Sentinel missions is available in the Sentinel Online portal at sentinels.copernicus.eu. In particular the portal contains up to date information on:

- Mission description, including space and ground segment aspects, and operational news
- Products definition, including contents and format specifications
- Detailed mission user handbook
- Link to data access hubs, including registration, user manuals, operational news

The following documents are referenced in this Technical Collaborative Arrangement and provide further detailed information.

[RD-1] CSC Operations Concept document, GMES-GSEG-EOPG-PD-12-0056, Issue 1.1

[RD-2] “Legal notice on the use of Copernicus Sentinel Data and Service Information”, https://sentinel.esa.int/documents/247904/690755/Sentinel_Data_Legal_Notice

2 ARRANGEMENT TECHNICAL INTERFACES

In the frame of Copernicus, Sentinel data access cooperation aims, among others, at providing:

- a supplementary access to Sentinel Missions data, i.e. through specific data acquisition services, specific data products, mirror sites, etc, thus further valorising the Sentinel missions exploitation.

2.1 Technical Arrangement types

The technical collaborative arrangement provides a frame for specialised solutions in five main areas:

1. Data acquisition and Quasi Real Time production (Local passive listen-in Stations)
2. Complementary collaborative data products and algorithms definition
3. Core data product dissemination and access (e.g. mirror sites)
4. Development of innovative tools and applications
5. Complementary external validation support activities

The following sections define the technical arrangements for each specific area of cooperation.

In the frame of this technical arrangement:

- additional areas of technical cooperation may be included in the future if relevant and prior endorsed by the European Commission.

3 COLLABORATIVE ARCHIVING AND DISSEMINATION CENTRES (CAC), NATIONAL MIRROR SITE

3.1 Entities conducting the initiative

In addition to Enterprise Estonia, the Estonian Land Board (http://www.maaamet.ee/index.php?lang_id=2) will be designated as the operator of the national mirror site.

3.2 Enterprise Estonia's Activity

It is envisaged to establish a national subset mirror site (both long-term geographically limited archive and a rolling archive) and specific intermediate product processing facility for Sentinel satellite data. The geographical extent for the

archive will be at first confined to Estonian territory (and close surroundings), gulf of Finland and expanded upon further identified requirements.

The data shall be made available to several public authorities, services using Copernicus data (both in the public and private sector), research organisations and enterprises with required registration of users.

3.3 ESA support

3.3.1 Access to the Collaborative Data Hub

ESA grants the Estonian Land Board access to the Collaborative Data Hub (CollDH), a rolling archive, providing bulk dissemination capabilities for Sentinel data products. The CollDH will continuously store Sentinel data acquired during the last month(s) at the processing levels agreed as part of the Sentinel core data product list and the associated timeliness as defined in the CSC Operations Concept Document, [RD-1]. It enables searching, browsing, previewing and downloading the Sentinel data. The time interval covered by the CollDH rolling archive will be scalable and include at least the last month of data.

Access to the CollDH is allowed via a web authentication module. ESA will provide the Estonian Land Board with a username and password to access the CollDH. This username and password may be used only by the Estonian Land Board (including its representatives, employees and contractors involved in the initiative) for the purpose of the initiative and will not be shared with other natural or legal persons.

The Estonian Land Board will use the CollDH access only for the purpose of its activity in the initiative described above. Through registration at the CollDH, accessing and/or downloading available content, the Estonian Land Board will not misuse or interfere with the service of the CollDH portal. In particular, the Estonian Land Board aims at building up an own mirror archive of Sentinel data and hence will not repeat the download of identic datasets from the CollDH, but store downloaded Sentinel data for re-use and re-dissemination.

All functionalities and contents offered by the CollDH are provided by ESA on a best efforts-basis (see also section 6). The transmission of content from the CollDH may be interrupted or delayed by ESA in the event of technical constraints, such as the internet bandwidth. In such case, the download requested by the Estonian Land Board will be enabled later taking into account other users' requests.

3.3.2 Data Transfer

ESA will provide appropriate interfaces, to facilitate the transfer of Sentinel data from the CollDH to the Estonian Land Board via internet.

3.4 Time Schedule

The CollDH will be available from the sentinels.copernicus.eu portal. ESA will provide Sentinel data sets as they become available in accordance with ESA data provision plan (e.g. after launch, commensurate with the ramp-up plan for data provision).

3.5 Reporting

Enterprise Estonia and the Estonian Land Board will keep ESA and the European Commission informed about the course and success of any collaborative initiative.

The regular reports regarding the Sentinel data mirror site shall have at least annual frequency, and shall as a minimum contain information regarding:

- Sentinel data use and applications;
- Onward-dissemination of Sentinel data, including user statistics on the use of the Sentinel data on the national mirror site;
- Any changes to the pre-agreed set up of activities that will have an impact on ESA's support to the partner's activities.

More specifically, as concerns National Mirror Site usage statistics, the following minimum set of information shall be provided to ESA and the European Commission as part of the annual reports.

User account statistics, including:

- Utilisation domain (i.e. research, commercial, education, other)
- Usage field (i.e. atmosphere, emergency, marine, land, security, climate, other)
- Country of the account user

Note: the above fields should be requested as part of the user account registration.

Data dissemination statistics, including:

- Data delivered per utilisation domain and usage field
- Data volume per utilisation domain and usage field
- Total number of distinct users
- Total volume of data distributed
- Total volume of data distributed by product
- Statistics on the core product delivered

3.6 Sentinel data governance and communication

Sentinel data made available via the CollDH is governed by the Legal notice on the use of Copernicus Sentinel Data and Service Information [RD-2].

The document specifies in particular:

“Where the user communicates to the public or distributes Copernicus Sentinel Data and Service Information, he/she shall inform the recipients of the source of that Data and Information by using the following notice:
(1) 'Copernicus Sentinel data [Year]' for Sentinel data; and/or
(2) 'Copernicus Service information [Year]' for Copernicus Service Information.

Where the Copernicus Sentinel Data and Service Information have been adapted or modified, the user shall provide the following notice:
(1) 'Contains modified Copernicus Sentinel data [Year]' for Sentinel data; and/or
(2) 'Contains modified Copernicus Service information [Year]' for Copernicus Service Information.

The users' rights on their personal data are protected under European law. Such data will only be used by the European Commission and the providers of the said Data and Information for providing services to the user and for statistical as well as evaluation purposes.”

In the event that in the future specific Sentinel data will be assessed by the EU to be “sensitive”, the access to such Sentinel data through the CollDH and its use and distribution may be subject to different licensing conditions. This also applies for Sentinel data already received by Enterprise Estonia and/or the Estonian Land Board through the CollDH, in the event Sentinel data will be assessed to be “sensitive” after the time of data download.

4 NATIONAL COMPLEMENTARY EXTERNAL VALIDATION SUPPORT

4.1 Activities in Estonia and involved Entities

By developing and validating regional products Estonian Research Institutes, Universities and enterprises would be contributing to Sentinel data validation activities. Such projects are communicated and agreed-upon on a case-by-case basis. Enterprise Estonia will act as an interface between ESA and the other entities.

4.2 ESA support

4.2.1 ESA technical support to complementary validation activity

ESA will provide sample data sets of the Sentinel core products (e.g. L0, L1, L2) as they become available.

4.3 Time Schedule

Time schedule for validation activities will be defined individually on a case by case basis.

4.4 Reporting

Enterprise Estonia will keep ESA and the European Commission informed about the course and success of the activity.

The regular reports regarding the complementary external validation activity shall have at least annual frequency, and shall as a minimum contain information regarding:

- Summary of complementary validation results
- Sentinel data use and application;
- Onward-dissemination of Sentinel data (if relevant), including user statistics
- Any changes to the pre-agreed set up of activities that will have an impact on ESA's support to the partner's activities.

More specifically, as concerns Sentinel data use statistics, the following minimum set of information shall be provided to ESA as part of the annual reports. Note: *reporting on Sentinel data distribution will be required only, if the initiative comprises systematically onwards distribution of Sentinel data. Distribution on a case-by-case basis will not be subject to reporting.*

User account statistics, including:

- Utilisation domain (i.e. research, commercial, education, other)
- Usage field (i.e. atmosphere, emergency, marine, land, security, climate, other)
- Country of the account user

Note: the above fields should be requested as part of the user account registration

Data dissemination statistics (if relevant), including:

- Data delivered per utilisation domain and usage field
- Data volume per utilisation domain and usage field
- Statistics on the products delivered

4.5 Sentinel data governance and communication

Sentinel data used by the complementary validation activity is governed by the “Legal notice on the use of Copernicus Sentinel Data and Service Information” [RD-2].

The document specifies in particular:

“Where the user communicates to the public or distributes Copernicus Sentinel Data and Service Information, he/she shall inform the recipients of the source of that Data and Information by using the following notice:
(1) 'Copernicus Sentinel data [Year]' for Sentinel data; and/or
(2) 'Copernicus Service information [Year]' for Copernicus Service Information.

Where the Copernicus Sentinel Data and Service Information have been adapted or modified, the user shall provide the following notice:
(1) 'Contains modified Copernicus Sentinel data [Year]' for Sentinel data; and/or
(2) 'Contains modified Copernicus Service information [Year]' for Copernicus Service Information.

The users' rights on their personal data are protected under European law. Such data will only be used by the European Commission and the providers of the said Data and Information for providing services to the user and for statistical as well as evaluation purposes."

5 DISCLAIMER

ESA disclaims all warranties of any kind (whether express or implied) including, but not limited to what concerns the functionalities of the Collaborative Data Hub and the data transferred. This disclaimer includes the warranties regarding availability, continuity, accuracy, integrity, reliability, compatibility with a particular purpose or meeting the users' requirements.

ESA shall not be held liable for any damage that may result from the support activities provided under this Technical Arrangement, including in particular the functionalities of the Collaborative Data Hub, the data transfer, and advice and communication by ESA personnel.

ESA may at any time review, modify, suspend or terminate the support activities under this Technical Collaborative Arrangement, including but not limited to the occurrence of the following events:

- lack of sufficient funding for sustaining Sentinel missions, and associated facilities and activities,
- satellite or ground system failure,
- suspension or cancellation planned activities of related Sentinel systems and facilities are suspended or cancelled in order for ESA to carry out activities considered of a higher priority.

The operating entity, i.e. ESA, may modify the Sentinels' operations plans at any time, should it consider such corrective action necessary for ensuring the missions safety and success.

Done at Paris on 13 September 2016 in two originals.

For ESA



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Director of Earth Observation
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For Enterprise Estonia



Madis Vääras
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