Annex

to the Understanding for the cooperation in the frame of the

Sentinel Collaborative Ground Segment between the European Space Agency and the Canadian Space Agency, acting in its capacity of Canada's National Point of Contact

(hereinafter "Letter of Understanding")

This Annex to the Understanding for the cooperation in the frame of the Sentinel Collaborative Ground Segment between ESA and Canadian Space Agency, acting in its capacity of Canada's National Point of Contact, describes the technical details and specific provisions of Sentinel Collaborative Ground Segment initiatives conducted under the said Understanding.

1. Collaborative Archiving and Dissemination Centres (CAC), National mirror site

Entity conducting the initiative	The Canada Centre for Mapping and Earth Observation (CCMEO)
Activity	Import Sentinel 1 data acquired over the Canadian Area of Interest from the Collaborative Data Hub (CollDH) as soon as they are made available (hereinafter, the "Initiative"). The data will be provided to authorized users through the CCMEO's data management system (currently the "National Earth Observation Data Framework (NEODF)" to be replaced in the future with the "Earth Observation Data Management System (EODMS)"). Initial access to the NEODF and associated archive will be provided to primary Canadian users as a testbed implementation to determine if Canadian requirements can be met. If Canadian requirements cannot be met as a result of the initial testbed assessment, CCMEO will provide details of what requirements cannot be met to ESA, with an objective of addressing the deficiencies. Evolution and further evaluation of the testbed may be required as requirements deficiencies are resolved.
ESA support	a) Access to Collaborative Data Hub
	ESA grants CCMEO access to the 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. 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 CCMEO with a username and password to access the CollDH. This username and password may be used only by CCMEO (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.

CCMEO will use the CollDH access only for the purpose of its activity in the Initiative. Through registration at the CollDH, accessing and\or downloading available content, CCMEO shall not misuse or interfere with the service of the CollDH portal. In particular, CCMEO aims at building up an own mirror archive of Sentinel data and hence will not repeat the download of identical 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, as set out in the Letter of Understanding and the "General Clauses" and Conditions for the Sentinel Collaborative Ground Segment cooperation with GMES Space Component Participating States" (hereinafter "General Clauses"). 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 CCMEO will be enabled later taking into account other users' requests.

b) Data transfer

ESA will provide appropriate interfaces, to transfer Sentinel data to CCMEO via Internet. In case of non-performance issues with the internet connection, ESA would assess alternative solutions (e.g. via Geant network) to meet CCMEO needs.

Time schedule

The ESA support will start once Sentinel-1A data will become available in accordance with ESA data provision plan (e.g. after launch, commensurate with the ramp-up plan for data provision). Further data from Sentinel-2, Sentinel-3 and Sentinel-5 Precursor will be included as soon as available in accordance with the related ESA data provision plans.

The National Mirror Site implementation activities will be initiated after signature of the Collaborative Ground Segment Understanding.

Reporting

In line with section 5 of the Understanding, the NPC will keep ESA informed about the course and success of any Sentinel Collaborative Ground Segment initiative.

The regular reports regarding the national 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 of 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 national activities.
More specifically, as concerns National Mirror Site usage statistics, the following minimum set of information shall be provided to ESA 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 user account

• Data volume per user account

Sentinel data governance

Sentinel data made available via the CollDH is governed by the provisions of section 6 of the Understanding.