

ESA ref. : OPS-G/2021-01

Darmstadt, 17<sup>th</sup> May 2021

**Letter of Agreement**

**between the**

**European Space Agency**

-hereafter ESA

**and the Instituto Tecnológico de Costa Rica**

-hereafter ITCR

**1. Purpose**

The purpose of this Letter is to define the terms and modalities of cooperation between ESA and ITCR - either of which may also hereinafter be referred to as a “Partner” - relevant to measurement data exchange and hosting of GNSS equipment.

**2. Responsibilities**

- 2.1 ESA will provide, export and transport to ITCR one (1) GNSS receiver and one (1) GNSS antenna including all necessary cables (hereinafter referred to as the “ESA Equipment”).
- 2.2 ITCR will identify the GNSS station operated under its authority that can be made available for hosting the ESA Equipment and to conduct data transfer and exchange. The GNSS station made available by ITCR is identified in Appendix I, which may be updated in writing by the Points of Contact identified in Section 5.
- 2.3 ITCR will use the GNSS Sensor Station Hosting Requirements (DHSO-SYS-SS-0001-HSO-GN) as a guideline for installation, operations support and maintenance of the ESA Equipment during the entire hosting period, with the objective of allowing for a (near) real-time exchange of GNSS raw measurements. To this end, ITCR will provide access by NTRIP, FTP and HTTP to ESA's receiver.
- 2.4 ESA will:
  - a) retrieve, process and archive DATA (as defined in Section 3) originating from the ESA Equipment;
  - b) make DATA available to ITCR in accordance with Section 3;
  - c) ensure a continuous and uninterrupted operation of the ESA Equipment. In case of necessary changes to the ESA Equipment and configuration, due notice shall be given to ITCR prior to a change.



2.5 ITCR will, upon ESA's request, export and transport any of the ESA Equipment provided under this Letter back to ESA/ESOC within one (1) month of the request.

### **3. Use of DATA**

The following terms of use will be applied to the GNSS sensor station data (collectively referred to as "DATA") made available by ESA to ITCR under this Letter:

- 3.1 ESA grants ITCR the right to make use of the DATA for scientific research and non-commercial purposes. Any use beyond this scope will have to be agreed in writing by ESA.
- 3.2 DATA will not be made available by ITCR to any third parties, except for the entities identified in Appendix II ("Related Entities"), the list of which may be updated by the Points of Contacts nominated in Section 5 below. ITCR will ensure that the terms of use set forth in this present Section will be applied also in case it makes DATA available to the Related Entities.
- 3.3 Publications based on the DATA will be coordinated in advance between ESA and ITCR. When issuing such a publication, ITCR will ensure that it gives proper credit to ESA's contribution.
- 3.4 ESA does not guarantee the quality and accuracy of its DATA nor its suitability for any purpose.

### **4. Schedule**

ESA and ITCR will work towards an installation of the ESA Equipment and beginning of DATA exchange by August 2021.

### **5. Points of Contact**

- 5.1 ESA and ITCR designate the following persons as points of contact for the purposes of implementing this Letter. ESA and ITCR may change their respective point of contact by written notice.



## 5.2 Points of Contact

### Management

**ITCR:**  
Miguel Angel Hernández Rivera  
Director  
Electronic Engineering School  
Costa Rica Institute of Technology  
K1-building, Central Campus, 30101  
Street 15, Avenue 14, Cartago, Costa Rica  
Tel: +506 2550 2545  
E-mail : mhernandez@itcr.ac.cr;

**ESA:**  
Werner Enderle  
Head of Navigation Office (HSO-GN)  
ESOC/ESA  
Robert Bosch Strasse 5  
64293 Darmstadt, Germany  
Tel: +49 6151 90 2272  
Fax: +49 6151 90 3431  
E-mail : werner.enderle@esa.int

### Technical

**ITCR:**  
Ronald Soto Fallas  
Technical Support  
Electronic Engineering School  
Costa Rica Institute of Technology  
K1-building, Central Campus, 30101  
Street 15, Avenue 14, Cartago, Costa Rica  
Tel: +506 2550 9246  
E-mail : rsoto@itcr.ac.cr;

**ESA:**  
Rene Zandbergen  
Navigation Office (HSO-GN)  
ESOC/ESA  
Robert Bosch Strasse 5  
64293 Darmstadt, Germany  
Tel: +49 6151 90 2236  
Fax: +49 6151 90 3412  
E-mail : rene.zandbergen@esa.int

### Operational

**ITCR:**  
Johan Carvajal Godinez  
Space Systems Laboratory  
Electronic Engineering School  
Costa Rica Institute of Technology  
K1-building, Central Campus, 30101  
Street 15, Avenue 14, Cartago, Costa Rica  
Tel: +506 2550 2687  
E-mail : johcarvajal@itcr.ac.cr;

**ESA:**  
Mark van Kints (VisionSpace contractor)  
Navigation Office (HSO-GN)  
ESOC/ESA  
Robert Bosch Strasse 5  
64293 Darmstadt, Germany  
Tel: +49 6151 90 4069  
Fax: +49 6151 90 3431  
E-mail : mark.van.kints@esa.int



## **6. Financial Aspects**

ESA and ITCR will each bear the costs of discharging their respective responsibilities under this Letter, including the costs of travel and subsistence of its own personnel as well as exportation and transportation, including tax and custom fee and transport insurance, and information for which each Partner is responsible. This implies that no exchange of funds will take place under this Letter. Should either Partner encounter budgetary problems that may affect the activities to be carried out under this Letter, the Partner encountering the problems will notify and consult with the other Partner as soon as possible.

## **7. Public Information**

- 7.1 ESA and ITCR will each retain the right to release public information regarding their own activities under this Letter, but will coordinate with each other in advance concerning releasing to the public information that relates to the other Partner's responsibilities or activities under this Letter.
- 7.2 When releasing public information regarding results generated in implementation of this Letter, ESA and ITCR will acknowledge in the publication that such results have been obtained pursuant to joint ITCR and ESA efforts under this Letter.

## **8. Miscellaneous**

- 8.1 Each Partner may request, when providing information under this Letter to the other Partner, not to disclose such information to any third party without prior approval. The information concerned will be properly marked as “proprietary information” or with an equivalent designation.
- 8.2 With regard to the activities undertaken under this Letter, neither Partner will make any claim against the other with respect to damages or loss of any kind except in the case that such a damage or loss arises through gross negligence or wilful misconduct of the other Partner.
- 8.3 Any issue in the interpretation or implementation of this Letter that is not resolved by the Points of Contacts in Section 5 will be submitted to the ITCR Director and to the ESA Director General, or their designees, for an amicable resolution. Should ESA and ITCR fail to resolve the issue through consultations, the dispute will be resolved in a manner to be agreed by the ITCR Director and the ESA Director General.

## **9. Period of applicability, Amendment and Termination**

- 9.1 This Letter will become applicable upon the date of ITCR's affirmative reply and will remain applicable until 31 December 2022. Unless ITCR or ESA indicate their intention to terminate this Letter in writing at least 3 months prior to the expiration of its initial or extended period of applicability, the period of applicability of this Letter will be automatically extended for



further periods of one year each, starting from the end of the initial or any extended term, under the same conditions. The Letter may be amended at any time, executed in writing by authorised representatives of ITCR and ESA.

9.2 Either Partner may also terminate this Letter:

- at any time upon written notice to the other Partner three (3) months prior to the expected termination date; or
- at any time upon written notice to the other Partner, if any of the governmental permits or approvals necessary for the activities related to or under the Letter has not been obtained or has lapsed.

9.3 Sections 3, 6, 7 and 8 of this Letter concerning, respectively, Use of DATA, Financial Aspects, Public Information, Intellectual Property, and Miscellaneous (non-disclosure, liability, consultation) shall continue to apply after the termination of the Letter.

**Signature & Date**

**Signature & Date**

Eng. Luis Paulino Méndez Badilla  
Rector  
Intituto Tecnológico de Costa Rica

Mr. Nicolas Bobrinsky  
Head of Ground Systems Engineering and  
Innovation Department.  
European Space Agency



## Appendix I: List of stations for which data is exchanged

In accordance with Section 2, the station that is made available by ITCR to ESA for hosting the ESA Equipment and for transfer and exchange of data is identified here below.

Table: List of Stations Provided by ITCR

Station Name	Identification hosting site	Mount Point of NTRIP	Approximate Position in Latitude and Longitude (degrees)
Cartago	TBD	TBD	9.855° N 83.907° W



## Appendix II: List of Related Entities

In accordance with Section 3, the table below lists the Related Entities to which ITCR may provide DATA under conditions set forth in this Letter.

Table: List of the Related Entities

Sender	Entities	Point of Contact	Purpose or Note	Start Date - Usage of Data	End Date – Usage of Data
ITCR	TBD	TBD	TBD	2021-TBD	2022-12-31