
Memorandum of Understanding

Between

THE NATIONAL INSTITUTE FOR SPACE RESEARCH, INPE

And

KOREA SPACE WEATHER CENTER, KSWC

About Space Weather Collaboration

PROTOCOL OF INTENTIONS CELEBRATED BY THE NATIONAL INSTITUTE FOR SPACE RESEARCH - INPE/BRAZIL AND THE KOREAN SPACE WEATHER CENTER-KSWC/REPUBLIC OF SOUTH KOREA

THE NATIONAL INSTITUTE FOR SPACE RESEARCH - INPE, a body of the Ministry of Science, Technology and Innovation - MCTI, registered with the CNPJ/MF under no. 01.263.896/000598, with headquarters at Av. Dos Astronautas no. 1758, Jardim da Granja, in city of São José dos Campos - SP, Postal Code 12227-010, classified as a Scientific, Technological and Innovation Institution (ICT), under the terms of Law no. 10.973/04, hereinafter INPE, in this act represented by its Director Dr. Clezio Marcos De Nardin, designated by Ordinance No. 3,782, of October 10, 2020, published in the DOU of October 2, 2020, holder of Identity Card No. 060.817.277- 7 - SSP / SP and CPF No. *** 545.830, Korea Space Weather Center, a body of Korea AeroSpace Administration of the Republic of Korea, with headquarters at 198-6, Gwideok-ro, Hallim-eup, Jeju-si, Jeju-do 695-922 Koreamain, in this act represented by its Director Dr. Hyon-Jun Na, considering:

a) That INPE aims to carry out scientific research, technological development, operational activities and training of human resources in the areas of Space and Atmospheric Sciences, Earth Observation, Weather Forecasting and Climate Studies, Engineering and Space Technology and areas of related knowledge, in accordance with the policy defined by the Ministry;

b) That, specifically, INPE executes the EMBRACE Program (Brazilian Space Weather Study and Monitoring Program) to monitor the variables of activity in the space environment that includes the magnetosphere, the upper atmosphere and the effects of induced currents in the ground to predict the impacts on the technological sectors of economic and social protection;

c) That, KSWC is the official source for delivering space weather forecasts and warnings in Korea, monitoring major space weather phenomena such as solar activity, geomagnetic fields, and ionospheric disturbances in real time;

d) KSWC also acts as the leading agency for space weather risk management. Under the Radio Waves Act, it is responsible for preparing for and responding to space weather risks caused by solar activities to mitigate socio-economic damage;

e) That KSWC aims to provide higher education for the training of professionals, researchers, university professors and technicians useful to society; as well as organizing and conducting research, particularly on national conditions and problems, and extending the benefits of culture as widely as possible;

f) INPE and KSWC, aims to develop, install and operate networks of measuring instruments and scientific research in South Korea, respectively, as well as carry out space weather monitoring, analysis and forecasting & warning systems, to provide specific and reliable information;

g) That all institutions (INPE and KSWC, referred to as "Parties") are interested in holding discussions to, in a coordinated and mutually agreed manner:



1. Promote a joint effort to foster research and cooperation between the Parties in the area of Space Weather, through the establishment of cooperation to improve the study and monitoring of Space Weather between our countries;
2. Seek recognition of partnership in activities dedicated to well-established international organizations and/or groups, which include, among others, the promotion, regulation and definition of Space Weather, such as the World Meteorological Organization (WMO) working group; the International Space Environment Services (ISES); Committee on Space Research (COSPAR); International Civil Aviation Organization (ICAO); and the Space Weather Expert Group of the Scientific and Technical Subcommittee of the United Nations Commission on the Peaceful Uses of Outer Space (UN COPUOS);
3. Facilitate the identification and implementation of specific areas of common interests, including, but not limited to, the exchange of personnel, including students, the deployment of research teams to and from all Parties, the creation or improvement of research infrastructure research across Parties and the organization of joint research programs in areas of common interest in space weather;
4. Promote a closer exchange of information between the Parties as necessary to ensure efficient cooperation in the areas of space weather;
5. Jointly organize and/or co-sponsor, as agreed by the Parties, events (e.g., seminars, workshops, exhibitions and displays) on subjects of mutual interest, including, but not limited to, space weather;
6. Carry out other activities related to promoting a harmonious relationship between the Parties and promoting the economic development and prosperity of all countries;
7. Share any documentation relevant to the implementation of activations carried out as a result of this Protocol of Intent, including those related to equipment, materials, components and parts;
8. Seek to facilitate, in accordance with their respective laws and regulations, on a fully reciprocal basis, the provision of appropriate documentation for nationals of the other Party to enter, exit or reside in its territory to carry out tasks under this "Protocol of Intent" and make every effort to resolve any issues experienced by the other Party and make every effort to resolve any issues experienced by the other Party.
9. That the need and importance of consolidating this Protocol of Intent is recognized, with a view to implementing the activities described above; decide to sign this Protocol of Intent, under the following conditions:
 - I - The Parties undertake to join forces with the aim of complementing their experiences in areas of common interest, without prejudice to their individual and independent actions;
 - II - For the future execution of projects and activities related to this "Protocol of Intent", participants will prepare Work Plans, which must be implemented through Agreements or other similar instruments for each project;
10. This Protocol of Intent will come into force on the date of its signature and will be valid for 48 (forty-eight) months, and may be terminated in advance, upon written notice,



30 (thirty) business days in advance, from one of the Parties and the others or by mutual agreement between all Parties.

11. By mutual agreement, all parties sign two copies of this Protocol of Intent in English versions of equal content and equal value.

In order to consolidate the technical elements of such possible collaboration, it is proposed to perform a joint technical definition phase including testing of the associated interfaces. The main objective of this initiative will be to agree the detailed scope of the various areas of cooperation, define the interfaces and procedures between the relevant facilities and teams, and perform a first testing campaign of the resulting data exchanges, in order to establish a future agreement.

The technical details and implementation will be iterated by our respective teams, combining efforts to complement their experiences in the areas of common interest, without prejudice to their individual and independent actions.

The focal point of all initiatives related to this Protocol of Intentions for INPE will be Joaquim Eduardo Rezende Costa and for KSWC will be Ki Chang Yoon.

This joint initiative will have an initial duration of 12 months, and it may be further extended or terminated in advance, through written notice or by mutual agreement. It will be supported by each Organisation on a best effort basis, each covering the effort of their respective activities.

If the above proposal is acceptable to INPE and KSWC, we propose that this letter, together with your written affirmative reply, constitute the basis for our respective teams to proceed with its execution.

We trust that this joint initiative will be mutually beneficial and will contribute to build up and strengthen cooperative relationship between our organizations.

The National Institute for Space Research,
INPE

July 17, 2024


Signature

Clezio Marcos De Nardin
Director of INPE

Korea Space Weather Center,
Korea AeroSpace Administration

July 17, 2024


Signature

Hyon-Jun Na
Director of KSWC