

Charter of the International Heliophysics Data Environment Alliance

Version 0.9
March 05, 2019

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1. Mission Statement

The International Heliophysics Data Environment Alliance (IHDEA) is a collaborative organization whose goal is to guide the development of a data environment in which the international heliophysics and space weather research community can seamlessly find, access, and use all electronically accessible, heliophysics-relevant data sets.

The specific mission of the IHDEA is to facilitate global access to, and exchange of, high quality scientific data products managed across international boundaries. This will be achieved by adhering to, and promote the use of, a set of governing data standards, data exchange protocols, visualization and data analysis tools.

The role of the IHDEA is to serve as the focal point to engage the heliophysics data centres and the scientific community, foster communication, and identify the standards and services that will best serve the heliophysics and space weather science needs.

2. Scope

Heliophysics space missions date back to the beginning of the space age while heliophysics ground based measurements can be up to several centuries old. It has always been a challenge in the heliophysics community to guarantee the long-term availability, accessibility and usability of these data that are defined and captured using different data models and dictionaries. Nowadays challenges in the heliophysics community are three-fold

- 1) How can simple, but efficient heliophysics data exchange and access be enabled for the diverse data products obtained from space missions flown by different space agencies and ground-based experiments around the world?
- 2) How to coordinate the development of standards for heliophysics data format and interoperability at international level?

3) How to promote and assist in the adoption of standards for heliophysics data format and interoperability, and ensure long-term data availability, accessibility and usability across national agency and international boundaries?

It is the belief of the IHDEA partners that these challenges can be overcome by a worldwide alliance focused on achieving interoperability, primarily by agreeing on common data standards and data models, data interoperability protocols and metadata dictionaries. As a consequence, distributed archival systems can be developed and maintained by the individual partners in a coordinated manner.

The efforts towards standardization and interoperability will not be restricted to heliophysics space and ground based missions data sets only, but will also include data generated by numerical models. Their use for solar system data sets in general will be encouraged, whenever possible.

IHDEA shall pursue interoperability as appropriate with analogous organization in planetary (IPDA; <https://planetarydata.org/>), astrophysics (IVOA; <http://www.ivoa.net/>) and earth (e.g., IEDA; <https://www.iedadata.org/>) sciences.

3. Objectives

The main objective of IHDEA is to enable sharing of data and effective data discovery, so as to enhance the scientific return of all the available heliophysics data assets. The IHDEA shall discuss, propose, and adopt further standards for heliophysics data, exchange and access with the following objectives:

- Active involvement of international heliophysics and space weather data providers
- Standards-based data systems with interoperability
- Coordinated, user-friendly data access and analysis tools to serve diverse community
- Uniform and well-defined terminology.
- Adequate documentation of data products and sources
- Flexible, interoperable, and interconnected data archives, modeling centers, and virtual observatories
- Effective communication among data providers, national and international partners, and data users

4. Membership

The IHDEA shall be comprised of space agencies, scientific research institutes, universities and other public or private organizations that endorse and participate fully in the IHDEA activities and provide the commensurate levels of support for defining and implementing the IHDEA standards.

The IHDEA will conduct regular meetings to discuss and drive toward consensus on standards for the IHDE. These meetings will be open to all and the IHDEA welcomes participation by the international heliophysics and space weather community to work toward our common goal.

5. Intellectual Property

The IHDEA promotes an open access working environment. Whenever possible, standards, software, protocols or any other results from IHDEA working groups shall be made unencumbered by intellectual property claims. The IHDEA recommends the application of FAIR principles: Findability, Accessibility, Interoperability, and Reusability.

6. Governance

Details TBD