NASA Heliophysics Division Interface Control Document Template

**Interface Control Document**

1. Template Instructions
   1. For missions submitting data to the Solar Data Analysis Center (SDAC), the Interface Control Document (ICD) details the interface agreement between the mission Science Operations Center (SOC) and the SDAC as well as their respective responsibilities for data delivery and availability.
   2. The ICD shall be developed and available according to the same timeline for the Project Data Management Plan (PDMP), or at the discretion of the SDAC Project Scientist. Typically, the ICD will be available in draft form at the time of Mission Definition Review/System Requirements Review (MDR/SRR) for the mission and signed at the time of the Preliminary Design Review. The ICD may be revised at the Flight Readiness Review/Mission Readiness Review as well as the next Senior Review or at the discretion of the Program Scientist (as captured in Section 4).
   3. This template contains representative tables and example content in BLUE text.
2. Interface Control Document Title Page
3. Signature Page

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| --- | --- |
| [*Project Name*]-to-SDAC Interface Control Document | |
| Prepared by: <name>, Science Operations Center Lead  Approved by: | |
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| <name>, Ground Segment Lead | Date |
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| <name>, SDAC Project Scientist | Date |
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| <name>, <mission> Project Manager | Date |
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| <name>, Principal Investigator | Date |
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| <name>, <mission> Safety & Mission Assurance Manager | Date |
|  |  |
| **Copy to:** NASA HQ Program Executive, NASA HQ Program Scientist | |

1. Change History Log

|  |  |  |
| --- | --- | --- |
| Revision | Effective Date | Description of Changes |
| Baseline | mm/dd/yyyy | Original |
| Revision 1 | mm/dd/yyyy | <<Include brief overview of any changes made from ‘Original version’ to this version by section.>> |

1. Interface Control Document Content

**[Mission/Project Name] Interface Control Document**

**Table of Contents**

[1. Introduction 4](#_Toc162008507)

[1.1 Purpose 4](#_Toc162008508)

[1.2 Scope 4](#_Toc162008509)

[1.3 Applicable Documents 4](#_Toc162008510)

[2. Data Representation 4](#_Toc162008511)

[2.1 Datasets 4](#_Toc162008512)

[2.2 Supported Datasets 5](#_Toc162008513)

[2.3 Ancillary Products 5](#_Toc162008514)

[2.4 Metadata and Technical Documents 5](#_Toc162008515)

[3. Delivery Process and Interface 6](#_Toc162008516)

[3.1 Staging of [Project Name] Data and Ingestion Process 6](#_Toc162008517)

[3.2 Delivery Timing, Frequency, Latency and Version Control 6](#_Toc162008518)

[3.3 Reviews and Reports 7](#_Toc162008519)

[4. Configuration Policy 7](#_Toc162008520)

[4.1 Agreement Duration 7](#_Toc162008521)

[4.2 Agreement Change Control 7](#_Toc162008522)

[4.3 Change Control 7](#_Toc162008523)

# Introduction

## Purpose

This document defines the [Mission/Project Name] mission’s interface and associated performance requirements between the [Mission/Project’s SOC] and the NASA Solar Data Analysis Center (SDAC).

## Scope

This Interface Control Document (ICD) between [Mission/Project Name] and the SDAC describes the details of the interface agreement between the two entities and their respective responsibilities for data delivery of the relevant datasets and webpages from the [Mission/Project Name] Mission/Project. This ICD lists the datasets and products that [Mission] will deliver to SDAC.

## Applicable Documents

*This section contains a list of applicable documents (e.g., Heliophysics Data Policy, Science Data Management Plan) used to inform this document.*

# Data Representation

The following sections identify the dataset and information that the SOC will deliver for distribution by the SDAC. These datasets come with no distribution restrictions other than those imposed specifically by the provider.

## Datasets

[Mission/Project Name] shall deliver the following datasets, which are detailed in the Project Data Management Plan.

*The datasets are organized by the level of data (see example below):*

|  |  |  |
| --- | --- | --- |
| **Mission Data Product** | **Data Level** | **Brief Description** |
| Named Mission Data Product 1 | L0 | Reconstructed, unprocessed instrument data at full resolution; any and all communications artifacts, e.g., synchronization frames, communications headers, duplicate data removed. |
| Named Mission Data Product 2 | L1 | Re-gridded and co-added sensor images |
| Named Mission Data Product 3 | L2A | Absolute rotational temperature maps in geographic coordinates |
| Named Mission Data Product 4 | L2B | OH band radiance maps in geographic coordinates |
| Named Mission Data Product 5 | L3A | Temperature swaths taken over an orbit in geographic coordinates |
| Named Mission Data Product 6 | L3B | OH band radiance swaths over an orbit in geographic coordinates |

*Any of the named Mission Data Products should also be in the PDMP. Include requirements on specific data and metadata standards used as well as how the data shall be organized per the mission’s PDMP.*

## Supported Datasets

*This section defines the primary and, if necessary, secondary repository and distributor of the Mission/Project-supplied datasets and how they are made available to the community.*

## Ancillary Products

Ancillary products typically contain telemetry, housekeeping, processing tables and processing software typically archived by SDAC for NASA mission datasets.

*This section defines which ancillary data products* ***shall*** *be supplied by the Mission/Project and the standards (data format) these data products will be using. For any science data processing software used for these data products, this section will define where this software will be hosted and how the community will have access to this software.*

## Metadata and Technical Documents

*This section describes the metadata practices and standards used by the SOC:*

The SOC **shall** furnish descriptions of dataset and per-file metadata and all necessary technical documentation required for effective dataset archival, distribution, and usage.

The SOC **shall** support Solar Physics Archive Search and Extract (SPASE) Data Model to ensure data format is compliant with HDRL standards and the development of required dataset-level metadata.

Per-file level metadata **shall** be contained in each data file and adhere to the [data format] standards.

Filenames **shall** contain meaningful identification information including data type, date of acquisition, and source spacecraft.

[Project/Mission name] **shall** supply a User Guide document.

# Delivery Process and Interface

*This section defines how the SDAC obtains data from the Project/Mission SOC and how often.*

*This section also defines which party is responsible for anomaly (e.g., missing data or observed data issues) identification and resolution.*

The SDAC **shall** notify the SOC of any irregularities such as missing data or observed data issues. The SOC will make every effort to remedy the situation in a timely manner and post updated data as necessary.

## Staging of [Project Name] Data and Ingestion Process

*This section lays out the requirements specifying how the data will be ingested from the SOC to the SDAC. Details include which party initiates the delivery and how (e.g., push or pull), any utilities used, and whether any parameters or keys are required to secure and authenticate the data transfer. Requirements governing maintenance of dataset copies and parameter change notification should also be captured.*

## Delivery Timing, Frequency, Latency and Version Control

*This section defines the estimated and maximum latency for each level of data products (see example below) and their availability via the Virtual Solar Observatory (VSO). It also defines the requirements for notification of any data reprocessing and which versions of products will be made available.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Mission Data Product** | **Budgeted (L3 Req.) max latency** | **Est. Latency** | **Availability via the VSO** |
| Named Mission Product 1 | 1 d | 4 h | Optional |
| Named Mission Product 2 | 3 d | 6 h | Required |
| Named Mission Product 3 | 7 d | 1 d | Required |
| Named Mission Product 4 | 14 d | 5 d | Optional |
| Named Mission Product 5 | 4 d | 1 d | Required |
| Named Mission Product 6 | 14 d | 5 d | Required |

## Reviews and Reports

*This section summarizes the SDAC’s responsibilities for providing guidance and recommendations to the Mission/Project SOC on data formats, standards, and recommendations. It also details the expectations for regular SDAC reporting on dataset usage metrics and analytics.*

# Configuration Policy

## Agreement Duration

*This section details how long the ICD shall remain active.*

## Agreement Change Control

*This section details when the agreement comes into effect and how either party may request a change.*

## Change Control

*This section details how the SOC will proceed when making changes to the ICD, data formats, and/or internal file structures.*