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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 43379-2023

**Space data and information transfer systems - Specification for
XML telemetric and command exchange**

空间数据与信息传输系统 基于XML的遥测遥控信息交换规范

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

This document has been modified to adopt ISO 18424:2013 "XML Telemetry and Remote Control Interaction (XTCE) for Space Data and Information Transmission Systems":

Compared with ISO 18424:2013, this document has many structural adjustments:
Comparison list of structure number changes between the two files See Appendix A:

Compared with ISO 18424:2013, this document has many technical differences: Vertical text is used in the outer margin of the clauses involved:

Single lines (|) are marked: A list of these technical differences and their causes is provided in Appendix B:

The following editorial changes have been made to this document:

---In order to coordinate with existing standards, the name of the standard is changed to "XML-based telemetry and remote control information for space data and information transmission systems" Exchange Specifications";

---Deleted the reference to ISO 18424:2013:

Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents:

Introduction

The design and development of spacecraft requires the use of a variety of tools and technologies, many of which are based on telemetry, remote control information models and exchange formats defined as the basis: During the spacecraft research and development cycle, multiple units and multiple ground systems often work together, and it is necessary to perform operations between these systems:

Data exchange of telemetry and remote control models and formats: If there is no standard for data exchange, telemetry and remote control information need to be processed during each interaction process:

Custom input, format conversion and verification of information are not only heavy workload, but also time-consuming and error-prone:

A typical example is the collaboration between the spacecraft development department and the spacecraft operation and control department: Telemetry and remote control as defined by the spacecraft development department the data format is quite different from that used by ground systems: This resulted in the translation and transcription of the data and the addition of custom software testing quantity, and also increases the probability of error: Standardization of telemetry and telecontrol data definition formats will simplify this process and make it easier to use between different systems:

Enables direct data exchange without the need to develop task-specific database import/export tools: Ideally, for those who follow the same A ground system with standardized telemetry and remote control data, spacecraft operators can very efficiently migrate spacecraft missions from a ground system to another ground system:

Based on the above background, this document standardizes spacecraft telemetry and remote control models and formats to reduce the development, Integration and testing time

is reduced, and implementation costs are reduced:

Spatial data and information transmission system based on XML Telemetry and remote control information exchange specification

1 Scope

This document specifies a space system root element for telemetry and remote control information exchange based on XML, including telemetry data and remote control indicators:

The metadata structure and service type collection of the order:

This document is applicable to the exchange of telemetry and remote control information for spacecraft systems, subsystems, stand-alone machines, and software:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations for undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

GB/T 42041-2022 Aerospace terminology space data and information transmission

3 Terms and definitions

The terms and definitions defined in GB/T 42041-2022 and the following apply to this document:

Telemetry;TM

A measurement technology that detects the parameters of the measured object on the aircraft and transmits them to the receiving end through a certain distance:

[Source: GB/T 42041-2022,3:3:7] 3.2 remote controltelecommand;TC Technology that uses communication means to transmit commands and inject data to spacecraft that are separated by a certain distance:

[Source: GB/T 42041-2022,3:3:37]

4 Abbreviations

The following abbreviations apply to this document:

SAX: XML simplified API interface (SimpleAPI for XML)