

ICS 49.140
CCS V 75



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

GB/T 46525-2025

**Space data and information transfer systems - Spacecraft
information system service and protocol architecture**

空间数据与信息传输系统 航天器信息系统业务和协议体系结构

Issued on: October 31, 2025

Implemented on: May 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

1.Scope	1
2 Normative References	1
3.Terms and Definitions	1
4.Abbreviations	1
5.Business and Protocol Architecture Components	2
5.1 Architecture Construction Principles	2
5.2 Layered Structure of Business and Protocol Systems	3
5.3 Naming and Addressing Mechanisms	4
5.4 Typical Application Scenarios of the Protocol	5
6.1 Composition of the Application Layer and its Relationship with Lower Layers	7
6.2 Selection of Application Layer Services and Protocols	11
7 Transport Layer Architecture	14
7.1 Composition of the Transport Layer and its Relationship with Upper and Lower Layers	14
7.2 Selection of Transport Layer Protocols	14
8.Network Layer Architecture	15
8.1 Network Layer Composition and Relationship with Upper and Lower Layers	15
8.2 Selection of Network Layer Protocols	16
9.Sub-network layer architecture	17
9.1 Sub-network composition and its relationship with the upper layer	17
9.2 Selection of Sub-Network Layer-Space Communication Protocol	18
37 References	39

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. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Aerospace Technology and Its Applications (SAC/TC425). This document was drafted by: Beijing Spacecraft Overall Design Department, Changchun University of Science and

Technology, Tsinghua University, Nanjing University, and Nanjing University of Finance and Economics. China Aerospace Standardization Institute, Saifite Engineering Technology Group Co., Ltd., Wuhan Zhuomu Technology Co., Ltd., and Huantian Smart Technology Co., Ltd. Co., Ltd., Zhejiang Huilong Chip Technology Co., Ltd. The main drafters of this document are. He Xiongwen, Zhan Panpan, Jia Yuchen, Di Xiaoqiang, Xu Mingwei, Yang Guannan, Zhao Kangxi, Yan Dong, Zhang Tianxiang, and Qiao Yi. Xu Jian, Qiao Liang, Qi Hui, Gu Ming, Cheng Bowen, Zhu Jianbing, Chen Chaoji, Zhou Yuxia, Wang Pengcheng, Zhang Haowei, Yang Le, Niu Jiaxiang, Li Di, Zhou Yan Zhang Yongxin, Zhang Yan, Zou Yunkun, Ye Guoping. Space Data and Information Transmission System Spacecraft Information System Service and Protocol Architecture

1 Scope

GB/T 46525-2025 is the Chinese national standard covering the layered architecture of a spacecraft's data systems - the services offered at each layer and the protocols that implement them, the onboard buses and the space link, and the interfaces that let payloads and ground segment be developed separately. At 23,500 words. First edition, in force from 1 May 2026. Issued on 31 October 2025, it has been in force since 1 May 2026.

This document establishes an architecture for the services and protocols of a spacecraft information system, as well as the corresponding application layer, transport layer, and... The composition of the network layer and subnet layers, and the relationship between services and protocols. This document applies to the design and application of spacecraft information system services and protocols.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 42041 Aerospace Terminology. Space Data and Information Transmission

3 Terms and Definitions

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

3.1 Systems used on spacecraft for information acquisition, transmission, storage, processing, and utilization.

4. Abbreviations The following abbreviations apply to this document. AN. Analogue BP.

Bundle Protocol

chinastandards.org · PREVIEW