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

GB/T 39353-2020

**Space data and information transfer systems. Proximity space
link protocol. Synchronization and coding sublayer**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to modify and adopt ISO 21459.2015 "Space Data and Information Transmission System Proximity-1 Space Link Agreement"

Discussion on the synchronization and coding sublayer.

Compared with ISO 21459.2015, this standard has many structural adjustments. Appendix A lists this standard and ISO 21459.2015.

The chapter number comparison list.

Compared with ISO 21459.2015, there are technical differences between this standard and the clauses involved in these differences have been

The set vertical single line (|) is marked, and a list of the corresponding technical differences and their reasons is given in Appendix B.

This standard also made the following editorial changes.

---Modify the standard name. the original name is synchronized and coded by "Space Data and Information Transmission System Proximity-1 Space Link Protocol"

Sublayer" is changed to "Space Data and Information Transmission System Neighboring Space Link Protocol Synchronization and Coding Sublayer";

--- Deleted part of the document structure and references in Chapter 1 of ISO 21459.2015;

--- Changed Appendix F "Abbreviations" in ISO 21459.2015 to Chapter 4 of the main text;

---Deleted ISO 21459.2015 Appendix A "Protocol Implementation Conformance Statement";

--- Deleted Appendix B "Business" of ISO 21459.2015;

--- Deleted Appendix D of ISO 21459.2015 "Security, SANA and Patent Description";

--- Deleted Appendix E "References" of ISO 21459.2015.

This standard was proposed and managed by the National Aerospace Technology and Application Standardization Technical Committee (SACTC425).

Drafting organizations of this standard. Beijing Space Vehicle General Design Department, Beihang University, Anhui Xiuwu Industrial Technology Co., Ltd., China

National Aerospace Standardization Institute.

1 Scope

This standard specifies the main functions of the synchronization and coding sublayer of the data link layer in the adjacent space link of the space data and information transmission system,

Data structure, channel coding, sender and receiver process.

This standard applies to communications between adjacent spacecraft. It is recommended to be used together with GB/T 39352 and GB/T 39354.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 39352 Space Data and Information Transmission System Adjacent Space Link Protocol Data Link Layer (GB/T 39352-2020, ISO 22663.2015, MOD)

GB/T 39354 Space Data and Information Transmission System Adjacent Space Link Protocol Physical Layer (GB/T 39354-2020, ISO 21460.2015, MOD)

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Space link

Communication links between spacecraft and between spacecraft and the ground.

Note. A space link includes one or more one-way or two-way physical channels.

3.2

Adjacent space link

Adjacent link

It is a communication link for direct communication between spacecraft in the distance range of 1m to 100,000km.

Used for the communication link between the main spacecraft and the auxiliary spacecraft.

Note. Short-distance, two-way, fixed or mobile radio frequency links are mainly used to carry out between detectors, landers, patrol devices, orbital constellations, and orbital repeaters.

Communication has the characteristics of small delay, medium signal energy (not weak signal), independent conversation and short time.

3.3

Adjacent link transmission unit

A data unit composed of the CCSDS adjacent space link transmission frame plus ASM and CRC.

4 Abbreviations

The following abbreviations apply to this document.

ASM. Additional synchronization flag