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

GB/T 34511-2017

Relative motion analysis elements after LV/SC separation

星箭分离远场分析要素

(English Translation)

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Table of Contents

- Foreword
- Introduction
- 1 Scope
- 2 Normative references
- 3 Terms and definitions
- 4 Abbreviations
- 5 Analysis input

Foreword

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

This standard uses the translation method identical with ISO 16679:2015 "Space System Star Arrow separation far-field analysis of elements." this standard made the following editorial changes.

--- Standard name changed to "Star Arrow separation far-field analysis elements." this standard proposed by China Aerospace Science and Technology Corporation.

This standard by the National Aerospace Technology and Standardization Technical Committee (SAC/TC425) centralized.

Introduction

Far-field analysis predicts the relative distance after the separation of the rocket from the spacecraft. Analysis results provide support for task design and operation.

This standard for the carrier rocket and spacecraft operators, manufacturing manufacturers to provide specific elements and processes for the development of satellite separation far-field analyst Used to regulate common ground and provide guidance.

Star Arrow separation far-field analysis of elements

1 Scope

This standard specifies the Star Arrow separation far-field analysis elements, including the analysis of input, analysis process, analysis principles, analysis methods, analysis of output.

This standard applies to mission design and verification of spacecraft and launch vehicle

separation relative motion prediction. This standard involves a single launch the relative movement of objects involved in the mission does not cover collision avoidance between launching objects and objects in orbit.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

ISO 14303 launch vehicle and spacecraft interface (Launch-vehicle-to-spacecraft interfaces)

3 Terms and definitions

ISO 14303 defines the following terms and definitions apply to this document.

Star Arrow separation LV/SC separation Under the control of the launch vehicle, the spacecraft and the launch vehicle are disconnected from each other.

Far-field analysis relativemotionanalysis Predict the relative distance between the spacecraft (s) and the object (satellites and other objects produced during the separation) after the separation of the stars and arrows analysis.

Separation speed separationvelocity the relative speed between spacecraft and launch vehicle when separation is completed instantly.

4 Abbreviations

The following abbreviations apply to this document.

LV. Launch Vehicle (LaunchVehicle) SC. Spacecraft

5 Analysis input

The analysis input should include the following information.

a) The theoretical speed, position and attitude of the rocket and (each) spacecraft at the separation point of the star and arrow should be given in a pre-determined coordinate system.

The velocity, position vector should be given in the form of V_x , V_y , V_z , X , Y , Z . For the coordinate systems that may be involved, see Appendix C;

b) speed of separation, body mass and inertia characteristics;