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

GB/T 29080-2012

**Evaluation for flight results of geosynchronous
communications satellites**

地球同步轨道通信卫星飞行结果评定

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. The standard proposed by China Aerospace Science and Technology Corporation. This standard by the National Aerospace Technology and Application of Standardization Technical Committee (SAC/TC425) centralized. This standard drafting unit. China Academy of Space Technology satellite communication division. The main drafters of this standard. by Yao Xiang, Li Yang, Zhang Yuntong, Fan Luhai.

This standard belongs to China Aerospace national standards. China Aerospace national standards applicable to national standards in the field of aerospace and revision Management, covering the management of space, space technology, space applications and services of the three fields, is to guide spacecraft and launch vehicle project management, engineering research System, space launch services, in-orbit satellite applications based activities. Geosynchronous communications satellite into orbit after launch, usually go through a period of in-orbit tests, the satellite platform and payload The function and performance tests using test data related to satellites in orbit flight conditions were assessed when a user with a total of Cheng Zhifang When the same evaluation results confirm the flight in orbit to meet the requirements specified in the contract communication satellite, the satellite can be delivered to the user. To ensure the same planet Step orbit communications satellites flying objective and impartial evaluation of results, and user and can be co-sanctioned Cheng Zhifang, it is necessary to clarify and standardize the relevant assessment In accordance with the principles, methods and evaluation project, which has great significance for the geostationary orbit communications satellite development and delivery. Geosynchronous communications satellite flight evaluation of results

1 Scope

China's national standard for evaluating the flight results of a geosynchronous communications satellite - the assessment made after launch and in-orbit test to establish what the spacecraft actually achieved against what it was designed and contracted to achieve. It matters because a communications satellite is bought on a set of numbers, and once it is on station there is no possibility of inspection: the only evidence of its condition is telemetry and the measured performance of its payload. The standard specifies the content, the methods and the criteria for the evaluation of the flight results of geosynchronous orbit communications satellites, and it applies to the evaluation carried out after the launch and the in-orbit testing of such satellites. What is evaluated is taken subsystem by subsystem and then as a whole: the injection accuracy and the orbit acquisition, the station keeping and the propellant consumed against the budget on which the design life depends, the attitude determination and control performance and its pointing accuracy, the power subsystem with the output of the array and the behaviour of the battery through eclipse, the thermal control, the telemetry, tracking and command links, and the communications payload itself - the equivalent isotropically radiated power, the receive figure of merit, the coverage of the beams, the channel performance and the linearity. To these are added the anomalies recorded during the flight and their disposition, which are the part of the evaluation that feeds back into the design of the next satellite. The standard sets how each quantity is derived from the flight data, how it is compared with the design value and with the specification, and how the overall conclusion on the flight is formed and reported. Issued on 31 December 2012 and in force since 1 July 2013.

This standard specifies the principles of geosynchronous communications satellite flight results assessment, based grading, projects, methods and rating determination. This standard applies to satellite development department before geosynchronous orbit communications satellites to deliver user since the satellite separated from the rocket, according to the in-orbit testing Evaluation results are given flight data.

2 Terms and definitions

The following terms and definitions apply to this document.

2.1 Communications satellite communicationssatellite Information for relaying radio communication Sputnik.

2.2 Geosynchronous orbit geosynchronousorbit Earth's rotation and orbital period equal to the period of the track along the line.

2.3 Geosynchronous communications satellite geosynchronouscommunicationssatellite Earth's rotation period and orbital period of the same communication satellites.

2.4 Geostationary orbit communications satellites geostationarycommunicationssatellite

Orbital inclination and eccentricity of geosynchronous orbit communications satellites zero.
Geostationary satellite relative to the ground.

2.5 Equivalent isotropic radiated power equivalent isotropic radiated power EIRP The power applied to the antenna with a given direction of the antenna absolute gain of the product.

2.6 Merit G/T ratio The ratio of the antenna gain and system noise temperature.

2.7 Saturation flux density saturation flux density SFD So that a transponder on the satellite channel output power saturation flux density required inputs.

2.8 Band rejection out-band suppression The degree of inhibition of telecommunications systems electrical signal outside the band.

2.9 Fixed-point precision station accuracy Geostationary satellite at the orbital position after holding the capture point accuracy.