

## **Preliminary Design Considerations for Achieving Stabilized Orbit, Telemetry, Command, and Ranging for HTS Communication Satellite**

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**Abstract :** This paper discusses the consideration and trade-offs used for the implementation of robust systems for orbit stability; Telemetry, Command and Ranging (TC& R) for Nigcomsat-1R and applicability for planned NigComSat-2 satellites. NigComSat-1R satellite was built by China Academy of Space Technology (CAST). The Satellite designed with quad-band payload (L, C, Ku, and Ka) was launched on the 20th of December 2011. The functionality of all satellite is driven by robust systems including Attitude & Orbit Control System (AOCS) and TC&R. The planned Nigcomsat-2 is a high throughput Satellite expected to function with better AOCS and TC&R.

**Keywords :** AOCS, CAST, Nigcomsat-1R, TC&R

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