Design, Implementation and Test of Payload Data Handling LAPAN-A3/IPB Satellite

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ABSTRACT

The Payload Data Handling (PDH) of LAPAN-A3/IPB is a technological challenge, since it will have to process a large amount of data with limited resources. The PDH main tasks include optimizing bandwidth capacity of payload data transmission, CCSDS data packetisation, channel encoding and compression, before being stored on-board ready to be transmitted. This paper shows the trade off between communication subsystem and payload subsystem design, as well as some test conducted to optimise the performance of PDH. The result shows that PDH configuration with Concatenated Reed-solomon (255,223) and Convolutional Encoding rate 1/2 k=7 is the most suitable option for LAPAN-A3/IPB mission. This configuration will gives 7 db coding gain and 4 dB link margin when implemented with 105 mbps QPSK modulator.

Keyword : Payload, Data Handling,Channel Encoding.