
Application of IRIG 106 Digital Data Recorder Standards for Flight Test

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Executive Summary

During flight tests, data is acquired from different sources and in different formats. Sensor data, aircraft avionics bus data, time, voice and video are essential for analysis of these flight tests. IRIG 106 standards exist for recording and transferring of these data types. However, to enhance interoperability of flight test data between (multi-national) test teams, a standard was needed to encapsulate all these data types. For this purpose, the Telemetry Group of the Range Commanders Council (RCC) first published in 2004 the IRIG 106 Chapter 10 Standard, “Solid-State On-Board Recorder Standard”. This standard is evolving up to present.

This AGARDograph gives an introduction to the standard, explains how the standard is positioned among other relevant standards, and describes the equipment and their application in flight tests with some examples. The topics covered include IRIG 106 Chapter 10 compatible recording of (multiple) data streams, synchronization of data, data recorders, data retrieval, processing, and examples of flight test programs. Further development of the standard, originally published for on-board recorders, is described for extending the requirements for ground-based data recorders. The last chapter addresses a number of issues related to the application of the Chapter 10 standard with references to information and possible solutions.

This document shows how data acquisition and data processing in accordance to IRIG 106 Chapter 10 can be applied in NATO flight tests and will thereby contribute to collaboration and cost efficiency.