



**IRIG STANDARD 106-13  
PART I**

**TELEMETRY STANDARDS**

**ABERDEEN TEST CENTER  
DUGWAY PROVING GROUND  
REAGAN TEST SITE  
WHITE SANDS MISSILE RANGE  
YUMA PROVING GROUND**

**NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION  
NAVAL AIR WARFARE CENTER WEAPONS DIVISION  
NAVAL UNDERSEA WARFARE CENTER DIVISION, KEYPORT  
NAVAL UNDERSEA WARFARE CENTER DIVISION, NEWPORT  
PACIFIC MISSILE RANGE FACILITY**

**30TH SPACE WING  
45TH SPACE WING  
96TH TEST WING  
412TH TEST WING  
ARNOLD ENGINEERING DEVELOPMENT COMPLEX  
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**

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**DOCUMENT 106-13**

**TELEMETRY STANDARDS  
(PART 1)**

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**TELEMETRY GROUP**

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US Army White Sands Missile Range,  
New Mexico 88002-5110**

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## Changes in This Edition

This document is an updated version of and replaces Range Commanders Council (RCC) Document 106-11 (Part 1: Telemetry Standards [June 2011]). The RCC Telemetry Group (TG) made an extensive effort to produce a well-coordinated and useful document. The following is a summary of these efforts.

- a. Task TG-92: Updates to IRIG 106 Chapter 6  
OBJECTIVE/SCOPE: Update IRIG 106 Chapter 6 to include capabilities required by the RCC members, conflicts with Chapter 10, and relocation of legacy system to the appendix.
- b. Task TG-103: Restructure TMATS XML Schema  
OBJECTIVE/SCOPE: To improve the structure of the Telemetry Attributes Transfer Standard (TMATS) XML schema. The schema was originally developed to be identical in both format and content to the plain text ‘code name’ TMATS described in 106 Chapter 9. The goal is to take better advantage of the inherent features and constructs of XML.
- c. Task TG-105: Updates to TMATS for 106-13  
OBJECTIVE/SCOPE: To enhance the content of the Telemetry Attributes Transfer Standard (TMATS) as needed to keep it current with the data standards in the remainder of 106.
- d. Task TG-107: Standard for Instrumentation Hardware Description  
OBJECTIVE/SCOPE: Establish a standard for describing commonly used types of instrumentation hardware (signal conditioning, data acquisition units, etc.). No such standard currently exists. Previous attempts to come up with such a standard led to the conclusion that definitions of even simple devices such as recorders were so diverse among different ranges that finding any common ground was not possible. Technology advances in data description languages now make a hardware description standard possible.
- e. Task TG-109: 2013 Updates to Digital Telemetry Recorder Standards  
OBJECTIVE/SCOPE: Update IRIG 106 Chapter 6, 9, 10 to include data recorder capabilities required by the RCC members.
- f. Task TG-113: Necessary Bandwidth Definition Updates to IRIG 106 and NTIA Redbook  
OBJECTIVE/SCOPE: Update Necessary Bandwidth definitions and calculation methods in IRIG 106 to ensure consistency with the NTIA Redbook. Impacts Appendix A.
- g. Task TG-114: Update IRIG 106 Appendix N  
OBJECTIVE/SCOPE: Update Appendix N of IRIG 106 to include new Transmitter Control Commands.

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## Preface

The TG of the RCC has prepared this document to foster the compatibility of telemetry transmitting, receiving, and signal processing equipment at the member ranges under the cognizance of the RCC. The Range Commanders highly recommend that telemetry equipment operated by the ranges and telemetry equipment used in programs that require range support conform to these standards.

These standards do not necessarily define the existing capability of any test range, but constitute a guide for the orderly implementation of telemetry systems for both ranges and range users. The scope of capabilities attainable with the utilization of these standards requires the careful consideration of tradeoffs. Guidance concerning these tradeoffs is provided in the text. The standards provide the necessary criteria on which to base equipment design and modification. The ultimate purpose is to ensure efficient spectrum utilization, interference-free operation, interoperability between ranges, and compatibility of range user equipment with the ranges.

This standard, published in two parts, is complemented by a companion series, RCC Document 118, Test Methods for Telemetry Systems and Subsystems, RCC Document 119, Telemetry Applications Handbook, and RCC Document 124, Telemetry Attributes Transfer System (TMATS) Handbook.

The policy of the TG is to update the telemetry standards and test methods documents as required to be consistent with advances in technology.

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