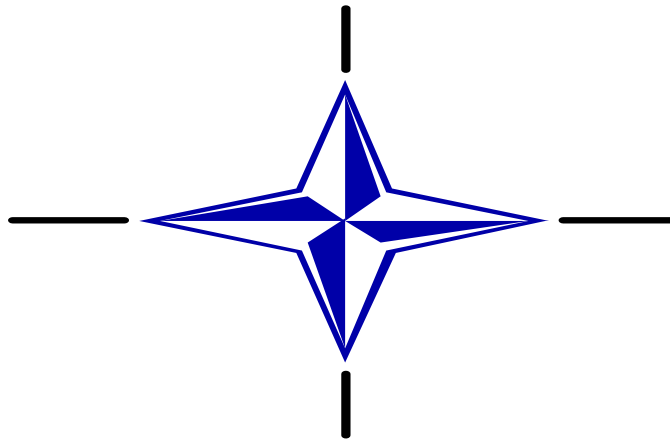


**NORTH ATLANTIC TREATY ORGANIZATION
(NATO)**



**NATO STANDARDIZATION AGENCY
(NSA)**

**STANDARDIZATION AGREEMENT
(STANAG)**

**SUBJECT: THE 600 BIT/S, 1200 BIT/S AND 2400 BIT/S NATO INTEROPERABLE NARROW BAND
VOICE CODER**

Promulgated on

Director NSA

Record of Amendments

Explanatory Notes

Ratification and Implementation Details

Record of National Reservations and Comments

Related Documents

A. NATO Documents

- STANAG 4198 Parameters and Coding Characteristics That Must Be Common To Assure Interoperability of 2400 bps Linear Predictive Encoded Digital Speech
- STANAG 4209 The NATO Multi-Channel Tactical Digital Gateway -- Standards for Analogue to Digital Conversion of Speech Samples

B. ITU Documents

See Annex B (Section B.2.2)

C. United States Government Federal Standards

- FED-STD-1016 Telecommunications: Analog to Digital Conversion of Radio Voice by 4,800 Bit/Second Code Excited Linear Prediction (CELP)
- FED-STD-1037 Glossary of Telecommunications Terms
- FIPSPUB-137 Telecommunications: Analog to Digital Conversion of Voice by 2,400 Bit/Second Linear Predictive Coding

D. United States Government Military Standards

- MIL-STD-188-113 Interoperability and Performance Standards for Analog-to-Digital Conversion Techniques
- MIL-STD-3005 Analog-To-Digital Conversion of Voice by 2,400 Bit/Second Mixed Excitation Linear Prediction (MELP)

E. Order of precedence

In the event of a conflict between the text of this standard and the references cited herein, the text of this standard shall take precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

1 AIM

The aim of this agreement is to achieve a minimum standard of voice performance and interoperability for low rate voice coding across the communications infrastructure. To achieve this standard a common tri rate voice-coding algorithm at 600 bit/s, 1200 bit/s and 2400 bit/s is defined. This is intended to enable seamless end-to-end interoperability among and between the strategic and tactical NATO and National communication domains.

The aim is accomplished by the specification of the voice digitizer characteristics, voice coder performance, the coding tables and the bit stream definition requirements.

2 AGREEMENT

Participating nations agree to use the specifications in this STANAG as an interoperable method of transmitting and receiving 600 bit/s, 1200 bit/s and 2400 bit/s digital representations of a voice signal. This agreement applies for 2-party and multi-party communications, and it applies for clear and encrypted voice communication.

3 DEFINITIONS

See Annex F

4 GENERAL

4.1 Contents of the STANAG

This STANAG contains design requirements for digital coding of voice by Enhanced Mixed Excitation Linear Prediction (MELPe). STANAG-4591 is defined by the bit streams generated by the 600 bit/s MELPe, 1200 bit/s MELPe and the 2400 bit/s MELPe voice-coding algorithm. In addition, the STANAG contains the design requirements for a mandatory noise pre-processor (NPP).