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**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

MH/T 4049-2018

**Technical requirement for voice and surveillance data recorder
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed by the Air Traffic Control Industry Management Office of the Civil Aviation Administration of China.

This standard is under the jurisdiction of the China Academy of Civil Aviation Science and Technology.

Drafting organization of this standard. The Second Research Institute of Civil Aviation Administration of China.

1 Scope

This standard specifies the technical requirements for voice and surveillance data recorders (hereinafter referred to as recorders).

This standard applies to the planning, design, manufacturing, testing, construction and use of recorders.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated references, the latest version (including all amendments) applies to this document.

3.1 Terms and definitions

The following terms and definitions apply to this document.

3.1.1

Recorder

Multi-channel synchronous recording and playback of voice data and monitoring data within a specified time is a special equipment.

3.1.2

Synchronous recording Use a unified time source to record voice data and monitor data.

3.1.3

Playback

Play the recorded voice data and monitoring data.

3.1.4

Synchronous playback Synchronously play the voice data and monitoring data recorded by multiple channels.

3.1.5

Local playback

Play back on the recorder.

3.1.6

Remote playback

Remotely control the recorder playback through the private network.

3.2 Abbreviations

The following abbreviations apply to this document.

4.1 Composition of recorder

The recorder consists of a collection unit (voice data, monitoring data), a data recording and storage unit, a playback unit and a management and maintenance unit group to make.

4.2 General requirements

4.2.1

The recorder should truly and completely record the original data, and the monitoring data and voice data should be synchronously replayed continuously, completely and stably during playback.

according to.

4.2.2

The recorder should support at least two redundant power supplies.

4.2.3

The recorder shall meet the requirements of MH/T 4020 for surge protection of power supply and distribution systems.

4.2.4

The MTBF of the recorder should be greater than 4 500 h, the MTTR should be less than 0.5 h, and the design life of the recorder should be greater than 15 years.

4.2.5

The recorder should work normally under the following conditions.

4.2.6

Clock synchronization shall meet the following requirements.

- Realize the time unity of the whole system
- Has the function of accessing an external synchronous clock source;
- The way to access the external source clock supports at least. RS232 interface, compliant with TIA/EIA-232-F related EIA-232 interface regulations, RJ45 interface conforming to IEC 60603-7-5 related to RJ45 interface regulations;
- Real-time calibration, with fault tolerance to external clock sources;
- The external synchronization clock source is lost, and the recorder is switched to the internal clock. The 48-hour accuracy error is less than 0.5 s.

4.2.7

The data storage time should not be less than 30 days.

4.2.8

The recorder shuts down abnormally, and the restart time should be less than 4 minutes.

4.2.9

The recorder shall have the ability to prevent tampering and deletion of recorded data.

4.2.10

The recorder should be modular in design, easy to expand, and use shelf products.

4.3 Voice data acquisition unit

4.3.1

The voice signal type shall at least have the ability to support analog audio, digital relay, digital telephone, and VoIP voice.

4.3.2

There should be independent voice recording channels and voice playback channels.

4.3.3

Analog audio performance indicators should meet the following requirements.

4.3.4

Digital trunk audio performance indicators should meet the following requirements.

--Voice sampling supports China No. 1 signaling, ITU-T SS7, ITU-T Q.931;

--The signal-to-noise ratio is greater than or equal to 38 dB.

Note: China No. 1 Signalling is the general term for the channel associated signalling used in my country in the automatic telephone switching network. It conforms to the R2 subset specification of the signaling system and is a two-way the signaling system can be transmitted via 2-wire and 4-wire.

4.3.5

VoIP voice should meet the following requirements.

--The protocol supports IETF RFC3261 (SIP), ITU-T H.323, IETF RFC3261 (RTSP);

--Comply with EUROCAE ED-137 protocol standards related to telephone, Internet telephone and records.

--The voice stream format supports the relevant regulations of the IETF RFC3261 (RTSP) format part.