



TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

INTERWORKING BETWEEN NETWORKS

MOBILE DATA TRANSMISSION SYSTEMS

ITU-T Recommendation X.351

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NOTES

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- 2 In this Recommendation, the expression “Administration” is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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Recommendation X.351

SPECIAL REQUIREMENTS TO BE MET FOR PACKET ASSEMBLY/DISASSEMBLY FACILITIES (PADs) LOCATED AT OR IN ASSOCIATION WITH COAST EARTH STATIONS IN THE PUBLIC MOBILE SATELLITE SERVICE

(Malaga-Torremolinos, 1984; amended at Melbourne, 1988)

The CCITT,

considering

(a) that the PAD is defined in Recommendation X.3;

(b) that the DTE/DCE interface for a start-stop mode DTE accessing a PAD is defined in Recommendation X.28;

(c) that the procedures for the exchange of control information and user data between a PAD and a packet mode DTE are given in Recommendation X.29;

(d) that Recommendation X.350 gives the general requirements to be met for data transmission in the maritime satellite service;

(e) that start-stop mode DTEs are in use in the maritime satellite service;

(f) that it is desirable that such DTEs are offered access to and from packet switched public data networks via PADs located at or in association with coast earth stations or maritime satellite data switching exchanges (MSDSEs);

(g) that it is desirable to employ the same access procedures, service initiation and exchange of control information and characters in all PADs in the maritime satellite service (maritime PADs).

Note 1 - The term *maritime PAD* is used for PADs located at or in association with coast earth station in the maritime satellite service designed in accordance with this Recommendation.

Note 2 - This Recommendation does not specify PADs to be used on-board ships.

unanimously recommends

(1) that PADs in the Maritime Satellite Service (maritime PADs) should meet the requirements of this Recommendation in order to ensure full compatibility between PADs associated with different coast earth stations or mobile satellite data switching exchanges (MSDSEs) (see Recommendation X.350 for the definition of MSDSE). The general specifications of PADs are given in Recommendations X.3, X.28 and X.29;

(2) that the maritime PAD shall accept calls from any ship participating in the Maritime Satellite Service. Optionally, the maritime PAD may also offer the capability of setting up calls to ship board start-stop mode DTEs;

(3) that maritime PADs shall offer the initial standard profile given in Table 3/X.351;

(4) that maritime PADs will in addition offer other standard profiles defined in Recommendation X.28;

(5) that the user on board the ship should be advised to place the data call through the maritime PAD which is nearest to the called subscriber in order to avoid long terrestrial routes;

(6) that the protocol should enable access to and from unattended start-stop mode DTEs on-board ships and ensure efficient disconnection of the access information path at the end of a virtual call in order to avoid undue holding of the satellite circuit;

(7) that network user identification (NUI) facility is required for all calls set up from an on-board DTE in order to avoid fraudulent calls. The format of the NUI facility request signal is defined in Annex A;

(8) that maritime PADs may be located as shown in Annex B.

1 Procedures for establishing the access information path for ship originated calls

1.1 DTE/DCE interface

The access information path should be provided by the use of modems standardized for use in the public switched telephone network:

- i) At the rate of 300 bit/s for full duplex operation in accordance with Recommendation V.21. Channel No. 1 is to be used in the direction from the ship to the PAD and channel No. 2 in the opposite direction. Tone disabling is required for disabling of echo suppressors.
- ii) At the rate of 1200 bit/s for full duplex operation in accordance with Recommendation V.22, alternative B, mode ii) with 10 bits per character (i.e. one start bit, eight information bits and one stop bit) [§ 4.2.1 b) of Recommendation V.22]. The handshake procedure should be in accordance with Figure 4/V.22. The ship board modem shall transmit in the low channel and receive in the high channel. The modem of the PAD will have the opposite channel configuration. Tone disabling is required for disabling of echo suppressors.
- iii) At the rate of 75/1200 bit/s in accordance with Recommendation V.23. The rate of 75 bit/s should be used for the direction from the on-board DTE to the PAD and the rate of 1200 bit/s should be used for the other direction. Tone disabling is required for disabling of echo suppressors.

Note 1 - The alternative given in ii) above is preferred.

Note 2 - Administrations may offer other additional data rates at the maritime PAD.

The particular interchange circuits provided, and their operation, shall be in accordance with Recommendation V.24 and clamping of circuit 104 should be implemented in accordance with Recommendation V.24, § 4.3.

1.2 Procedures for setting up the access information path by the DTE

1.2.1 Setting up the satellite link

The satellite link is established by using procedures defined within the INMARSAT system.

1.2.2 Dialling procedures

The dialling procedures for setting up telephone circuits in the INMARSAT system is given in Recommendation E.211.

Table 1/X.351 gives the dialling sequences which should be used for accessing the maritime PADs using the modems given in § 1.1.

TABLE 1/X.351

**Dialling information for accessing
the modems defined in § 1.1**

Data signaling rate (bit/s)	Dialling sequence
300	2002
1200	2003
75/1200	2011