

REPORT 1159

CHARACTERISTICS OF AN AUTOMATIC IDENTIFICATION SYSTEM FOR
VHF AND UHF TRANSMITTING STATIONS IN THE
MARITIME MOBILE SERVICE

(Question 97/8)

(1990)

Introduction

Administrations participating in the Regional Agreement concerning the VHF radiotelephone service on the river Rhine have developed a system for the automatic identification of maritime VHF radiotelephone equipment (ATIS).

This ATIS system will eventually be employed in all maritime VHF radiotelephones, for hand-held and fixed installations, on-board inland waterway vessels sailing the river Rhine, and the Netherlands inland waterways. Implementation of ATIS on a mandatory basis for maritime VHF radiotelephones on such vessels is expected to be completed in 1994.

The ATIS signal format is based on Recommendation 493 *- Digital Selective Calling - for use in the maritime mobile service and on Recommendation 7 of the Regional Rhine Agreement.

Signal characteristics

ATIS signals will be emitted at the end of every transmission cycle (release of PTT switch). For extended or continuous transmission the ATIS signal will be repeated at least once in every five minutes.

ATIS signal emission at the end of a transmission cycle avoids the effects of settling time of the VHF transmitter and receiver. It also enables the communication link to be directly available for speech when the PTT switch is activated.

The aural perception of the FSK modulated ATIS signal is like a short noise burst with a duration of approximately 285 msec.

By transmitting the ATIS signal at the end of a transmission cycle, the end of the ATIS "noise burst" will almost coincide with the noise generated in VHF receivers due to lifting of the squelch and no additional audible interference is heard.

The ATIS signal will be transmitted by the mobile unit on the communication channel selected, irrespective of the choice except for VHF channel 70 on Appendix 18 to the Radio Regulations which is allocated for regular DSC calls. In Rhine VHF radiotelephone equipment channel 70 will normally be blocked since no DSC infrastructure is foreseen along the river Rhine.

* NOTE BY THE CCIR SECRETARIAT:

In the revision of Recommendation 493 certain terms have been changed (for example "signal" and "symbol" have been replaced with the term "character" in a number of places in Annex I.

By selecting a specific format specifier for ATIS purposes, symbol 121, DSC decoders which might be used on public correspondence channels can be programmed not to read ATIS signal sequences.

Annexed to this Report is the performance standard developed for use in the framework of the Regional Agreement concerning the VHF radiotelephone service on the river Rhine, Munich 1976.

ANNEX

Automatic transmitter identification (ATIS) for maritime VHF radiotelephones

1. GENERAL

- 1.1 The ATIS equipment which is intended to be permanently connected to an existing VHF Rhine radiotelephone installation shall be type-approved by the administration.
- 1.2 VHF Rhine radiotelephone installations in which an ATIS facility is integrated shall be subject to additional type-testing by the administration.
- 1.3 The ATIS facility shall generate the identification signal automatically.
- 1.4 The ATIS signal shall be transmitted at the end of every transmission.
In case a continuous transmission takes place the ATIS signal shall be transmitted at least once in a five minutes period. The end of a transmission is considered to be every release of the "push-to-transmit" switch of the equipment.
- 1.5 The ATIS signal shall be transmitted on all channels available in the VHF Rhine radiotelephone installation.
- 1.6 In the case the VHF Rhine radiotelephone installation is equipped with a Digital Selective Calling facility in conformity with CCIR Rec.493, the ATIS signal may be inhibited when a DSC call is made.
- 1.7 In the case the VHF Rhine radiotelephone installation is equipped with a facility to transmit data, the transmission of an ATIS signal may be inhibited if the dataprotocol contains the identification of the transmitting station. During the subsequent correspondence the ATIS signal shall be transmitted periodically in conformity with § 1.4.

2. TECHNICAL REQUIREMENTS

- 2.1 The ATIS shall comply with the CCIR recommendation 493* digital selective calling system for use in the maritime mobile service with exception of the dot-pattern, which may be omitted.
- 2.2 The ATIS facility shall in no way influence the functioning of other communication or navigational equipment.
- 2.3 If separate ATIS equipment is used the equipment shall be connected to an existing VHF Rhine radiotelephone installation by means of a electrical connection which can not be removed easily. Use of an acoustical or similar interconnection is not allowed.
- 2.4 The ATIS facility shall be considered to be a part of the VHF Rhine radiotelephone installation. The requirements for VHF Rhine radiotelephone installations apply, if relevant, to the ATIS equipment.
- 2.5 During the transmission of the ATIS-signal the RF output power of the transmitter shall be retained at nominal value.
- 2.6 It shall not be possible for the operator to easily disconnect or to change the programming of the ATIS facility.
- 2.7 The format of the ATIS signal sequence shall comply with the requirements of this specification.
- 2.8 The system is a synchronous system using a ten-unit error-detecting code as listed in Table 1 of this specification. The first seven bits of the ten-unit code of Table 1 of this specification are information bits. Bits 8, 9 and 10 indicate, in the form of a binary number, the number of B elements that occur in the seven information bits, a Y element being binary number 1 and a B element a binary number zero. For example, a BYY sequence for bits 8, 9 and 10 indicates 3 ($0 \times 4 + 1 \times 2 + 1 \times 1$) B elements in the associated seven information bit sequence; and a YYB sequence indicates 6 ($1 \times 4 + 1 \times 2 + 0 \times 1$) B elements in the associated seven information bit sequence. The order of transmission for the information bits is the least significant bit first, but for the check bits it is the most significant bit first.

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