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ITU-T

TELECOMMUNICATION
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OF ITU

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SERIES D: GENERAL TARIFF PRINCIPLES

General tariff principles – Charging and accounting in the
mobile services

Transmission in encoded form of maritime telecommunications accounting information

ITU-T Recommendation D.91

(Previously CCITT Recommendations)

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ITU-T RECOMMENDATION D.91

TRANSMISSION IN ENCODED FORM OF MARITIME TELECOMMUNICATIONS ACCOUNTING INFORMATION

Source

ITU-T Recommendation D.91 was revised by ITU-T Study Group 3 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 1st of July 1996.

FOREWORD

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the ITU. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, March 1-12, 1993).

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

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 D.91**TRANSMISSION IN ENCODED FORM OF MARITIME TELECOMMUNICATIONS
ACCOUNTING INFORMATION***(Melbourne, 1988; revised in 1990 and in 1996)***1 Introduction**

1.1 Under the provision of Recommendation D.90, Administrations engage in international billing and accounting for radiocommunications handled each month.

1.2 A growing number of Administrations are processing this monthly international accounting data using computer-based billing and accounting systems. Information is drawn from traffic history tapes or diskettes or manually encoded from data, such as inward international accounts and statistical summaries prepared by manual abstraction from copies of traffic tickets.

1.3 It is usual at present to complete computer processing by producing conventional printed accounts following the specifications described in the various accounting Recommendations (D.90). Where the receiving Administration also uses computer facilities, however, this information has to be re-encoded for processing through its system.

1.4 Transmission of data in encoded form avoids the decoding/re-encoding step. It also offers a faster transfer of information than by printed forms through the mail. The latter remains true even if the forwarding Administration has prepared the data by manual/mechanical means.

2 Aim

2.1 The aim of this Recommendation is:

2.1.1 To enable Administrations using computer-based billing and accounting systems to transfer information to each other in encoded form, without the need for decoding into conventional printed form and subsequent encoding into machine-readable form.

2.1.2 To enable other Administrations, if they so desire, to benefit from the greater efficiency of speedier transfer of information to them and to prepare themselves for the introduction of computer working by introducing transmission of data in encoded form in advance of installation of a computer.

2.1.3 To facilitate provision of printed output from computer-based systems in a format suitable for manual/mechanical processing where it is to be forwarded to Administrations not using computer facilities.

2.1.4 To facilitate provision of printed output from manual/mechanical accounting systems in a format suitable for data encoding where it is to be forwarded to Administrations employing computer processing.

3 Method**3.1 Data record**

3.1.1 The aim of this Recommendation can be met by use of a standard data record format for the various elements of information to be transferred. The information elements and their sequence must be compatible with the provisions of the various accounting Recommendations so that decoding to

and encoding from printed output for exchange of information with Administrations using manual/mechanical systems will be as simple as possible.

3.1.2 Between Administrations operating computer-based billing and accounting systems, adherence to the standard data record format for data transmission purposes will ensure that simple interface programme will be needed to enable any one computer installation to generate suitable input for, and accept output from, other computer installations.

3.2 Data transfer

3.2.1 Procedures already exist for transfer of data in conventional (printed) form through the mails. Data in encoded form could be transferred by mailing of magnetic or paper tapes, diskettes, paper tape transmission by telex or data transmission over circuits utilized for this purpose.

3.2.2 While mailing of tapes avoids the encoding task for the receiving Administration there can be delays and loss in transit. In addition, there can be difficulties caused by the fragility of paper tape and incompatibility of various forms of magnetic tape recording.

3.2.3 Transfer of data via the telex service using paper tape transmission and reception can be advantageous for Administrations whether they have computer-based accounting systems or manual/mechanical systems. As both page copy and punched paper tape can be generated at the receiving point, users of either type of accounting system can benefit. Page copy can be used for checking paper tape, with the latter becoming input to a computer. Page copy can also be used as the incoming international account avoiding the need for use of the postal service.

3.2.4 Where large volumes of data are to be exchanged, transmission over higher speed circuits offers significant benefits. Where suitable data links are in use for service transmissions, these could be utilized. Data terminals and modems capable of transmission speed in the range 600 to 2400 bits per second should be sufficient, but higher speeds could be used. For manual/mechanical systems, data received on data terminals can be reproduced as page copy representing an incoming international account. For computer-based accounting systems, data transmission offers the possibility of complete automation of the process by computer-to-computer transfer.

4 Specific recommendations

4.1 It is recommended that:

4.1.1 Where possible data transferred in printed form should be replaced by data transferred in encoded form.

4.1.2 For data transferred in encoded form, the standard data record format detailed in Annex A should be followed.

4.1.3 Transmission of data in encoded form should be by the following means:

- a) physical transfer of magnetic tapes (the standard file structure is given in Annex A);
- b) physical transfer of diskettes (3½ inch/MS DOS);
- c) use of data transmission over telephone circuits, dedicated circuits, telegraph circuits or special data links.

4.1.4 Transmission methods (international packet switching service, electronic mailbox, etc.), operating practices and technical standards should be agreed between the Administrations concerned and should conform to the appropriate ITU-T Recommendations.

5 Code maintenance

5.1 The Secretariat of the ITU-T is responsible for maintenance of the table of service codes and the table of facility codes in Appendices A.I and A.II to Annex A.

5.2 New codes can be allocated by the authority of the Director of the ITU-T. Applications should be made through the ITU-T Secretariat who will arrange for the notification of new codes in the Operational Bulletin.

Annex A

(to Recommendation D.91)

Monthly international accounting information

Fixed record formats

A.1 File description (Structure of data file, Appendix A.VI to Annex A)

A.1.1 Version magnetic tape

The version file has EBCDIC-format (Extended Binary Coded Decimal Interchange Code). The length of the formatted records is 230 characters, blocked by 10.

A.1.2 Version diskette

3½ inch/MS DOS. The length of the formatted record is 230 characters, labelling, Appendix A.VII to Annex A.

A.1.3 The tape, which will contain a header and a trailer record, may consist of several batches. For each accounting authority or country there may be a batch (or, if more than one currency is involved, one batch for each currency) for each of the following services:

- satellite from-ship traffic;
- terrestrial radio from-ship traffic;
- terrestrial radio to-ship telephone and telegram traffic;
- terrestrial radio to-ship telex traffic;
- credit card/reversed charge from-ship traffic for both services.

Each of the traffic batches will contain an accounting authority header record followed by the traffic items and ended by the summary record.

A.1.4 Record description

Fields in numeric format should be right justified with zero filling. Fields in alphanumeric format should be left justified with space filling. Similarly unused fields should be zero or blank filled as appropriate.