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INTERNATIONAL TELECOMMUNICATION UNION

CCITT

D.91

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

**GENERAL TARIFF PRINCIPLES
CHARGING AND ACCOUNTING IN
INTERNATIONAL TELECOMMUNICATIONS
SERVICES**

**TRANSMISSION IN ENCODED FORM
OF MARITIME TELECOMMUNICATIONS ACCOUNTING
INFORMATION**

Recommendation D.91

§

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FOREWORD

permanent organ of the International Telecommunication Union (ITU). CCITT 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 Plenary Assembly of CCITT which meets every four years, establishes the topics for study and approves Recommendations prepared by its Study Groups. The approval of Recommendations by the members of CCITT between Plenary Assemblies is covered by the procedure laid down in CCITT Resolution No. 2 (Melbourne, 1988).

Recommendation D.91 was prepared by Study Group III and was approved under the Resolution No. 2 procedure on the 22 of March 1991.

CCITT NOTE

indicate both a telecommunication Administration and a recognized private operating agency.

ã ITU 1991

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TRANSMISSION IN ENCODED FORM OF MARITIME TELECOMMUNICATIONS ACCOUNTING INFORMATION

(Melbourne, 1988, revised 1990)

1 Introduction

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

1.2 A growing number of Administrations are processing this monthly international accounting data using computer based accounting systems. Information is drawn from traffic history tapes 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 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 accounting systems, adherence to the standard data record format for data transmission purposes will ensure that only one 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, 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) 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 CCITT Recommendations.

5 Code maintenance

5.1 The Secretariat of the CCITT is responsible for maintenance of the table of service codes and the table of facility codes in Appendices I and II.

5.2 New codes can be allocated by the authority of the Director of the CCITT. Applications should be made through the CCITT 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*

A.1.1 The file has EBCDIC-format (Extended Binary Coded Decimal Interchange Code). The length of the formatted records is 160 characters, blocked by 10.

A.1.2 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.1.3 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 field should be zero or blank filled as appropriate.

A.1.3.1 *Main header record*

μ

Position

Length

Format

Name of field

Contents

θ1

θ2

Numeric

CODART

Determination of record code

θ3

θ8

Alphanumeric

CDAAIC

AAIC of tape originator

11

θ6

Numeric

CREATN

Creation date of tape YYMMDD

17

20

Alphanumeric

REFERN

Invoice number

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A.1.3.2 *Record accounting authority*

μ

Position

Length

Format

Name of field

Contents

01

02

Numeric

CODART

Determination of record code to 01

03

08

Alphanumeric

CDAAIC

AAIC of accounting authority if traffic code 3 or 4, of origin (or recipient in the case of XCF or CC calls) Administration if traffic code 1, 2 or 5 in field CDDIRE

11

01

Numeric

CDDIRE

Traffic codes:

1 = Terrestrial telephone and telegram traffic ~~chargeable to the shore customer~~

2 = Terrestrial telex traffic ~~chargeable to the shore customer~~

~~3 = Terrestrial traffic chargeable to the ship customer~~

~~4 = Satellite traffic chargeable to the ship customer~~

~~5 = Credit card/reversed charge originating from ship (for use only if such traffic is not included in code 1 records)~~

12

50

10 **Recommendation D.91§** Alphanumeric

NATADM

Name of Administration if codes 1, 2 or 5. Name of accounting authority if codes 3 or 4

A.1.3.3 *Record communication (traffic)*

μ

Position

Length

Format

Name of field

Contents

001

02

Numeric

CODART

Determination of record code to 02

003

07

Alphanumeric

CDCS/CES

Code of coast station/CES

010

06

Numeric

DATCOM

Date of traffic format YYMMDD

016

04

Numeric

TMETFC

Time of commencement of traffic HHMM (UTC), space fill if not applicable

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Alphanumeric

A.1.3.4 *Summary record*

| | μ |
|--|---------------|
| | Position |
| | Length |
| | Format |
| | Name of Field |
| | Contents |
| | θ1 |
| | θ2 |
| | Numeric |
| | CODART |
| Determination of record code to 03 | |
| | θ3 |
| | 16 |
| | Numeric |
| | AMTTOT |
| Total amount (negative amounts possible) | |
| | 19 |
| | θ1 |
| | Numeric |
| | DECIMN |
| Number of decimal digits in AMTTOT | |
| | 20 to 160 |
| | — |
| | Alphanumeric |
| | — |
| Unused field (spaces) | |

A.1.3.5 *Trailer record*

μ

Position

Length

Format

Name of field

Contents

01

02

Numeric

CODART

Determination of record code to 99

03

02

Numeric

NOBATC

Number of batches

05

16

Numeric

AMTTOT

Total amount of all charges

21

01

Numeric

DECIMN

Number of decimal digits in AMTTOT

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22 to 160

A.2 Characteristics and structure of the tape

A.2.1 Physical structure of recording

For recording, the ISO-Norm 1863 is to be used, except that the recording density will be 1600 BPI.

Method of recording:

Record density:

1600 BPI

Number of tracks:

Width of tape:

1/2 inch

Interblock gap:

0.6 inch

Block prefix

3 inch.

A.2.2 Structure of tape

Mono-tape, mono-file.

A.2.3 Tape and file label

Character code for label and EBCDIC code

Volume header label: Volume 1 (see Appendix III)

First file header label and end of file label: HDR1 and EOF1 (see Appendix IV)

Second file header label and end of file label: HDR2 and EOF2 (see Appendix V)

APPENDIX I

(to Annex A to Recommendation D.91)

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Table of service codes (CDKIND)

Code

Description

02

Telephone satellite automatic — Standard A

03

Telephone satellite manual — Standard A

04

Telephone VHF automatic

05

Telephone VHF manual

06

Telephone medium-wave automatic

07

Telephone medium-wave manual

08

Telephone short-wave automatic

09

Telephone short-wave manual

12

Telex satellite automatic — Standard A

13

Telex satellite manual — Standard A

14

Telex VHF automatic

15

Telex VHF manual

16

20 **Recommendation D.918** Telex medium-wave automatic

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APPENDIX II

(to Annex A to Recommendation D.91)

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Table of facility codes (CDFACI)

| Code | Description |
|----------|---------------------------------------|
| 34 | Personal call |
| 35 | Reversed charge (collect) call |
| 36 | Credit card call |
| 37 | Advice of duration and charge (ADC) |
| 38 | Personal call with ADC |
| 39 to 50 | — |
| 51 | Telex letter |
| 52 | — |
| 53 | Voice bank |
| 54 | Data base access (telephone or telex) |

APPENDIX III

(to Annex A to Recommendation D.91)

μ

Volume header label

Position

Assignment of field

Contents

1 to 4

Label identifier and number

Volume 1

5 to 10

Volume No.

6 characters alphanumeric

11

Access

1 character (space)

12 to 31 + 32 to 37

Reserved

A (space)

38 to 50

Identification of owner

13 characters alphanumeric

51

Record density

A (space)

52 to 79

Reserved

A (space)

80

Version of standard label

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81 to 160

APPENDIX IV

(to Annex A to Recommendation D.91)

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First file header label and end of file label

Position

Assignment of field

Contents

1 to 4

Label identification and number

HDR1

EOF1

5 to 21

File identification

All characters alphanumeric

22 to 27

Total file identification

Spaces

Spaces

28 to 31

Number of file section

“0001”

“0001”

32 to 35

Number of file sequence

“0001”

“0001”

36 to 39

Number of generation

“0001”

“0001”

40 to 41

Version number on generation

“00”

“00”

42 to 47

APPENDIX V

(to Annex A to Recommendation D.91)

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Second file header label and end of file label

Position

Assignment of field

Contents

1 to 4

Label identifier and number

HDR2
EOF2

5

Record format

“F”
“F”

6 to 10

Length of block

“10”
“10”

11 to 15

Length of record

“00160”
“00160”

16 to 50

Reserve system

All characters alphanumeric

51 to 52

Length of offset cell buffer

“00”
“00”

53 to 160

Reserved field

§
§
§
§
§