

SIEMENS

Information

**Description of Output Data
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**Interadministration Charging and Statistics
IACHASTA**

EWSD V12

The document comprises 31 pages, all pages have issue no 01.

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0 General Information

0.1 Issue Control

The document comprises 31 pages, all pages have issue no. 01

0.2 Glossary and Abbreviations

ANGRP	Recorded announcement group
DLU	Digital Line Unit
DN	Directory Number
FGRPATT	File group attributes
FTAM	File Transfer Acces and Management
IACHASTA	Inter Administration Charging and Statistics
LSB_HI	Least Significant Byte - Highest
LSB_LO	Least Significant Byte - Lowest
MML	Man Machine Language
PBX	Private Branch Exchange
SAM	Sequential Access Method
TGRP	Trunk Group
TMR	Transmission Medium Requirement

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1 Introduction

This document specifies the **binary record format** of the IACHASTA metering records.

The Inter Administration Charging and Statistics function is meant in the EWSD for accounting and statistics between national and international administrations.

IACHASTA records contain data from selected traffic from and between originating objects and destination objects.

The originating objects can be:

- For subscribers:
 - Private branch exchange (PBX)
 - Digital Line Unit (DLU)
 - Directory number block (DN-Block)
- For trunks:
 - Trunk group (TGRP)

The destination objects can be:

- For subscribers:
 - Private branch exchange (PBX)
 - Digital Line Unit (DLU)
 - Directory number block (DN-Block)
- For trunks:
 - Trunk group (TGRP)
 - Recorded announcement trunk group (ANGRP)
- For Zoning points :
 - Statistic indexes.

The originating and destination objects are marked by means of IACHASTA object names that can be freely assigned (each name with up to 6 characters, alphanumeric).

A registration point indicates which IACHASTA object or object combination must be registered. A registration point as a combination of an originating and a destination object is called a double sided registration point (=matrix point).

A registration point activating an object to or from one side is called a single sided registration point.

The registration points can have an alphanumeric name with up to 12 positions. In this case is the registration point a "named registration point". Registration points without a name are called "anonymous registration points".

The following registrations are possible :

- Single sided registration: contains only single sided registration points.
- Double sided registration: contains only double sided registration points.

- Mixed registration: contains as well single as double sided registration points.

For each registration point type the IACHASTA call data can be split either per line category or per TMR (transmission medium requirement).

If split per TMR, the call data can be registered separately for up to 4 TMR's (3.1kHz audio, speech, 64 kbit/s unrestricted and 64 kbit/s unrestricted preferred).

If split per line category, the call data can be registered separately for up to 3 line categories (public pay phone, service handset and others).

The call data registered with IACHASTA for a traffic relationship are registered separately for up to 6 different time groups. The switches between the time groups can be executed weekday category dependent.

The following call data can be registered for the selected registration points:

- standard data:
 - call duration time in seconds
 - number of calls
 - duration time before answer in seconds
 - number of seizures
- optional data:
 - number of A side charges
 - number of B side charges

Accounting will automatically take place each month, at the first day of the month, at 0 o'clock, and also when the end of the registration period is reached. The name of the account file contains the number of the day in the year (see chapter 6).

The purpose of the intermediate monthly accounting is to avoid an overflow of IACHASTA meters in case that the operator would forget to execute an intermediate accounting manually.

The accounting can also be done by using a command file for the start of the command EDIT MET. An intermediate accounting by manual start of EDIT MET does not inhibit the automatic accounting at the first day of the month or at the end of the registration period.

The account file contains the data registered between the begin and the termination time, which are indicated in the header. The contents of the meter starts again from zero after each accounting.

An account file will also be generated when no meter (= registration point) is relevant for this registration. This means that the account file consists of only the two header records.

e.g.: If during an active registration all IACHASTA registration points of the registration are canceled, but not the registration itself, only the next first account file will contain the meters of the canceled registration points. All following account files will only contain the two headers and no charge records.

2 File Format Description

The IACHASTA feature requires a file on disk to store the IACHASTA metering records in **binary format** that are generated in EWSD.

FILE NAME : CA.IR.rnnns.ffff (Explanation see chapter 6).

The account file contains records of three different formats:

- two header records
- one charges record

FORMAT : SAM with a fixed length of all records.

SEQUENCE : After the two header records, we have all charges records. The charges records are not sorted.

BLOCK LENGTH : In case of a transfer to a magnetic tape or a magnetic optical disk, the block length can be set with the parameter COPATT at the command SET FGRPATT (see Operating Instructions).
The closing block is not always completely filled. It ends after the last completed record.

RECORD LENGTH : All records have the same length. The length depends on the counter set format (optional data) and on the chosen way of splitting call data. The length of a record is determined at the creation time of the file and is an element of the first header record (record length determination, see next chapter).

TAPE ORGANIZATION : The volume structure and tape labels correspond to the standards used in EWSD for output on magnetic tape. The description of these items is beyond the scope of this document.

Attention :

The labels must be coded in EBCDIC, because only this coding allows binary data (i.e. for each byte all 256 possible bit combinations are permitted). ISO-7 coding is not allowed for binary data, because it only uses 7 bit of the possible 8.

3 Remarks on File Contents

3.1 Record selection criterion

The record selection is specified by the registration type.

If the accounting is done for the single sided registration, only the meters of the single sided registration points are selected.

In the same way the selection of the double sided registration is possible.

At a mixed registration, the single and double sided registration points are selected.

3.2 Meter contents

A registration point has one meter.

A charges record is written per meter.

The meter can be split into counter sets. A counter set contains the counters for one time group and one traffic group.

The splitting layout is defined by the command ENTR IACSET. It defines the maximum number of time groups and the maximum number of traffic groups.

The meter contains as much counter sets as have been defined by the command ENTR IACSET. This means that a meter can contain not relevant counter sets, that are set to zero (when a traffic / time group combination is not relevant for this registration point).

e.g. : If 4 time groups as maximum are defined and for the used schedule only the first and second time group are used, then the counter sets belonging to the third and fourth time group are not relevant and are set to zero. Equally can a traffic group not be used and the counter sets belonging to this not used traffic group are set to zero.

Number of counter sets in one meter = number of time groups * number of traffic groups

A counter set contains the standard and, if registered (i.e. activated with the ENTR CDTDAT command), also the optional data.

As optional data the CHARGE PULSES A and the CHARGE PULSES B are foreseen.

The choice which optional data will be written in the account file is fixed at the start of the registration. During the registration, the choice which data are written in the account file can not be changed, but one can still start or stop the registration of the data.

3.3 Record length

The length of a charges record depends on the length of one counter set and the number of counter sets.

- Every charges record contains a fixed part of 13 bytes with:
 - the registration point type and
 - the registration name

- The choice of the counter set format (= optional data) determines the length of one counter set. There are 4 possible types of charges records:

Type	Contents	Length (Bytes)
0	only standard data	14
1	standard data + charges A-side	18
2	standard data + charges B-side	18
3	standard data + charges A-side + charges B-side	22

Table 1: Charges Record types

- The chosen way of splitting the call data is the second dependency, which determines the number of counter sets. The split (number of counter sets in one meter) is defined by the number of used time groups (between 1 and 6) and the number of used traffic groups (between 1 and 4). Both values numbers are available in the second header record. They can be administered by the ENTR IACSET command.

Number of counter sets in one meter = number of traffic groups * number of time groups.

traffic group 1	time group 1	= counter set 1
	time group 2	= counter set 2
	.	
	time group m	= counter set m
traffic group 2	time group 1	= counter set m + 1
	time group 2	= counter set m + 2
	.	
	time group m	= counter set 2 * m
.	.	
.	.	
traffic group n	time group 1	= counter set (n-1) * m + 1
	time group 2	= counter set (n-1) * m + 2
	.	
	time group m	= counter set n * m

n = max. traffic group

m = max. time group

Table 2: Charges Record split according to Traffic Groups and Time Groups

When e.g. 4 traffic groups and 3 time groups are used, 12 counter sets will be foreseen per meter.

Which time group and which traffic group is valid for a specific counter set can be determined from the following formulas :

$$\text{traffic group} = ((\text{counter set} - 1) / \text{no of time groups}) + 1$$

$$\text{time group} = ((\text{counter set} - 1) \text{ MOD no of time groups}) + 1$$

e.g. In case of 4 traffic groups and 3 time groups :

counter set 1: traffic group 1 - time group 1
 counter set 2: traffic group 1 - time group 2
 counter set 3: traffic group 1 - time group 3
 counter set 4: traffic group 2 - time group 1
 counter set 5: traffic group 2 - time group 2
 counter set 6: traffic group 2 - time group 3
 counter set 7: traffic group 3 - time group 1
 counter set 8: traffic group 3 - time group 2
 counter set 9: traffic group 3 - time group 3
 counter set 10: traffic group 4 - time group 1
 counter set 11: traffic group 4 - time group 2
 counter set 12: traffic group 4 - time group 3

The total length of a charges record is

$$\text{Length}_{\text{charge record}} = f + (\text{csl} + \text{csn})$$

f = length of fixed part

csl = length of counter set, dependent on the charges record type (14, 18 or 22 Bytes)

csn = number of counter sets

= number of traffic groups * number of time groups

ENTR IACSET: TRAGRPMX = 1 to 4 and

ENTR IACSET: TIMGRPMX = 1 to 6

e.g.: Minimum length of one charges record is $13 + 14 (1*1) = 27$ Bytes

Maximum length of one charges record is $13 + 22 (4*6) = 541$ Bytes

Table 3: Length of the Charges Record

All records (header records and charges records) have the same length.

The length is written in the first header record.

3.4 Maximum counter contents

The recording counters in the account file are dimensioned so that they normally do not reach the maximum value of the counter within the course of one month. An overflow on this maximum value is not possible. When the maximum value of a counter is reached, all additions to this counter will be ignored. It is possible to generate an intermediate file on disk before the maximum value is reached.

- The recording counters for **charges and durations** are dimensioned on 31 bits.
The **maximum value** that can be stored is **2,147,483,647** (pulses or seconds).
- The recording counters for the **number of calls or number of seizures** are dimensioned on 3 bytes.
The **maximum value** is **16,777,215**.

4 Record Format Description

The account file consists of two header records and a number of charges records. All these records have the same record length.

HEADER RECORD 1	= Registration Identification Record
HEADER RECORD 1	= Registration Characteristics Record
CHARGES RECORD 1	= Registration Meter Record 1, 2,... n
CHARGES RECORD 2	Following types of charges records exist : <ul style="list-style-type: none"> • TYPE 0: with neither A nor B charges • TYPE 1: with A side charges • TYPE 2: with B side charges • TYPE 3: with A and B side charges
.	
.	
CHARGES RECORD n	

Table 4: Record types in the account file

4.1 Header Record 1

The header record 1 is the first record of the account file and is used as identification record of the file.

This record contains the length of the records and the identification data :

- identifier : "IACHASTA"
- identification version number
- record length
- exchange identification

4.2 Header Record 2

The header record 2 is the second record of the account file. It specifies the construction of the charges records and contains the characteristics of the registration.

The characteristics are :

- charges record type
- number of time groups
- number of traffic groups
- traffic group definition for single and for double registration points
- begin and termination date/time of the registration

4.3 Charges Record

A charges record is written per meter. It contains the data of all time groups and traffic groups of this meter.

The length of the charges record is depending on the chosen optional data and on the chosen way of splitting the call data.

The number of counter sets per meter is retrieved from the Header Record 2. It is the product of the number of time groups and the number of traffic groups

The length of one counter set depends on the Charges Record type. This type is determined from the optional data (A and/or B side charges included or not).

- TYPE 0 : neither A nor B side charges registered
- TYPE 1 : only A side charges registered
- TYPE 2 : only B side charges registered
- TYPE 3 : A and B side charges registered

When for this registration no meter (registration point) is valid, then the created account file contains no charges records.

4.4 General record coding details

In chapter "Field Description" the fields are marked as "binary", or "character". This section describes in general the byte/bit pattern of these fields in EWSD

4.4.1 Coding of binary fields

The least significant byte of the binary number is stored in the highest memory location (=LSB HI). One can say that, when the highest memory location is right situated, the binary numbers are right aligned with leading zeros

Example: Storage of a binary integer in a 3 byte field

Integer = 1995 → H'7CB → H'0007CB			
byte 0	byte 0 + 1	byte 0+ 2	byte position
7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	bit position
0 0 0 0 0 0 0 0	0 0 0 0 0 1 1 1	1 1 0 0 1 0 1 1	
0 0	0 7	C B	

Table 5: Example of coding of binary fields

4.4.2 Coding of character fields

Character fields are coded in ISO-7-Bit Code. The first character is stored at the lower memory location of the field (=LSB LO). Trailing bytes are filled up with spaces. When the lowest memory location is left situated the character fields are left aligned.

Example : Storage of the character string BRUSSELS in a character field that has a length of 9 bytes.

byte 0	byte 0 + 1	byte 0+ 2	byte position
7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	bit position
4 2	5 2	5 5	ASCII
B	R	U	

byte 0	byte 0 + 1	byte 0+ 2	byte position
7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	bit position
5 3	5 3	4 5	ASCII
S	S	E	

byte 0	byte 0 + 1	byte 0+ 2	byte position
7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	bit position
4 C	5 3	2 0	ASCII
L	S	space	

Table 6: Example of coding of character fields

5 Field Description

All records have the same length. The record length depends on the chosen optional data (A- or B-side charges) and on the chosen way of splitting call data in more than one group. For further details, please refer to chapter "Remarks on file contents".

5.1 Header Record 1

REGISTRATION IDENTIFICATION RECORD					
F I E L D	B Y T E	L E N G T H	FIELD NAME	A L I G N M E N T	REMARKS
			7 6 5 4 3 2 1 0		
1	0	8	FILE IDENTIFICATION STRING	L	character in ISO-7-Bit-Code = 'IACHASTA'
2	8	1	VERSION IDENTIFICATION		binary, value = 1
3	9	2	RECORD LENGTH		binary, value between 27 and 541
4	11	16	EXCHANGE IDENTIFICATION	L	character in ISO-7-Bit-Code
5	27	n	FILLER BYTES		binary, value = 0 (H'00)

Table 7: Field description of HEADER RECORD 1

Length of the fixed part of HEADER 1 record is 27 bytes

n = record length - 27

= length of a Charges Record - length of the fixed part of header 1

5.2 Header Record 2

REGISTRATION CHARACTERISTICS RECORD					
F I E L D	B Y T E	L E N G T H	FIELD NAME	A L I G N M E N T	REMARKS
			7 6 5 4 3 2 1 0		
1	0	1	CHARGES RECORD TYPE		binary, value 0 - 3 0 = standard call data 1 = STD + A-side charges 2 = STD + B-side charges 3 = STD + A- and B-side charges

			7	6	5	4	3	2	1	0	
2	1	1	NO OF TIME GROUPS								binary, value 1 - 6 1 = one time group 2 = two time groups 3 = three time groups 4 = four time groups 5 = five time groups 6 = six time groups
3	2	1	NO OF TRAFFIC GROUPS								binary, value 1 - 4 1 = one traffic group 2 = two traffic groups 3 = three traffic group 4 = four traffic groups
4	3	1	TRAFFIC CRITERION FOR SINGLE REGISTRATION POINTS								binary, value 0 - 2 0 = no criterion 1 = TMR selected 2 = Line category selected
TG1	4	1	RESERVED				TG1 S3	TG1 S2	TG1 S1	TG1 S0	traffic group 1, single reg. points only relevant if field 4 /= 0
6	5	1	RESERVED				TG2 S3	TG2 S2	TG2 S1	TG2 S0	traffic group 2, single reg. points only relevant if field 4 /= 0
7	6	1	RESERVED				TG3 S3	TG3 S2	TG3 S1	TG3 S0	traffic group 3, single reg. points only relevant if field 4 /= 0
8	7	1	RESERVED				TG4 S3	TG4 S2	TG4 S1	TG4 S0	traffic group 4, single reg. points only relevant if field 4 /= 0
9	8	1	TRAFFIC CRITERION FOR DOUBLE REGISTRATION POINTS								binary, value 0 - 2 0 = no criterion 1 = TMR selected 2 = Line category selected
10	9	1	RESERVED				TG1 D3	TG1 D2	TG1 D1	TG1 D0	traffic group 1, double reg. points only relevant if field 9 /= 0
11	10	1	RESERVED				TG2 D3	TG2 D2	TG2 D1	TG2 D0	traffic group 2, double reg. points only relevant if field 9 /= 0
12	11	1	RESERVED				TG3 D3	TG3 D2	TG3 D1	TG3 D0	traffic group 3, double reg. points only relevant if field 9 /= 0
13	12	1	RESERVED				TG4 D3	TG4 D2	TG4 D1	TG4 D0	traffic group 4, double reg. points only relevant if field 9 /= 0
14	13	2	BEGIN DATE : YEAR								binary, value range 0 - 9999
15	15	1	BEGIN DATE : MONTH								binary, value range 1 - 12
16	16	1	BEGIN DATE : DAY								binary, value range 1 - 31
17	17	1	BEGIN TIME : HOUR								binary, value range 0 - 23
18	18	1	BEGIN TIME : MINUTE								binary, value range 0 - 59
19	19	2	TERMINATION DATE : YEAR								binary, value range 0 - 9999
20	21	1	TERMINATION DATE : MONTH								binary, value range 1 - 12
21	22	1	TERMINATION DATE : DAY								binary, value range 1 - 31
22	23	1	TERMINATION TIME : HOUR								binary, value range 0 - 23
23	24	1	TERMINATION TIME : MINUTE								binary, value range 0 - 59
24	25	1	FILLER BYTES								H'00

Explanation of the flags for traffic groups:

Flags: **TGa Sb** or **TGa Db** = selected TMR or Line category for Traffic Group **a** for a **Single** or **Double** sided registration point.

If TMR is selected (field 4, resp. field 9):

S0 or D0 = 3.1 kHz audio

S1 or D1 = speech

S2 or D2 = 64 KBIT per sec. unrestricted

S3 or D3 = 64 KBIT per sec. unrestricted preferred (fallback)

If Line category is selected (field 4, resp. field 9):

S0 or D0 = normal

S1 or D1 = coinbox

S2 or D2 = office

S3 or D3 = (not used)

Table 8: Field description of HEADER RECORD 2

Length of the fixed part of HEADER 2 record is 25 bytes

n = record length - 25

= length of a Charges Record - length of the fixed part of header 2

5.3 Charges Record Type 0

REGISTRATION METER RECORD WITH NEITHER A- NOR B-CHARGES												
FIELD	BYTE	LENGTH	FIELD NAME								ALIGNMENT	REMARKS
			7	6	5	4	3	2	1	0		
1	0	1	RESERVED						RP1	RP2		registration point type
2	1	12	REGISTRATION POINT IDENTIFICATION								L	character in ISO-7-Bit-Code
(n-1)4+3	(n-1)14+13	3	COUNTER SET n NUMBER OF CALLS									binary, value 0 - FFFFFFFF
(n-1)4+4	(n-1)14+16	4	COUNTER SET n CALL DURATION									binary, value 0 - 3FFFFFFF
(n-1)4+5	(n-1)14+20	3	COUNTER SET n NUMBER OF SEIZURES									binary, value 0 - FFFFFFFF
(n-1)4+6	(n-1)14+23	4	COUNTER SET n DURATION BEFORE ANSWER									binary, value 0 - 3FFFFFFF

with n = number of counter sets, depending on the number of time groups and on the number of traffic groups (1 ≤ n ≤ 24)

Table 9: Field description of CHARGES RECORD TYPE 0

Field 1: REGISTRATION POINT TYPE

Flag RP0 = 0 Anonymous registration point

= 1 Named registration point

Flag RP1 = 0 Double sided registration point

= 1 Single sided registration point

Remark : Single and double sided registration points can occur together in the account file of a mixed registration.

The registration type is only contained in the file name (if not renamed by TRANS FILE).

Field 2: REGISTRATION POINT IDENTIFICATION

This field contains the identification of the registration point. There are two possibilities:

1. The registration point is a **named** registration point. The name is given to the registration point at its creation. In this case, the registration point identification field contains this name.
2. The registration point is an **anonymous** registration point. This means, there is no name assigned to this registration point at its creation. In this case, the registration point identification field is split up in two parts. The first 6 bytes are foreseen for the IACHASTA origin object name, corresponding to the originating object used for the creation of the registration point. The last 6 bytes are for the IACHASTA destination object name, corresponding to the destination object used at the creation of the registration point. For a single sided (e.g. originating) registration points, the not used part (in this case the destination object name) is filled with blanks.

Examples:

NAMED

0	1	2	3	4	5	6	7	8	9	10	11
B	R	U	S	S	E	L	S				

ANONYMOUS

single sided, only origin object

0	1	2	3	4	5	6	7	8	9	10	11
G	H	E	N	T							

ANONYMOUS

single sided, only origin object

0	1	2	3	4	5	6	7	8	9	10	11
G	H	E	N	T							

ANONYMOUS

single sided, only destination object

0	1	2	3	4	5	6	7	8	9	10	11
						P	A	R	I	S	

ANONYMOUS

double sided

0	1	2	3	4	5	6	7	8	9	10	11
G	H	E	N	T		P	A	R	I	S	

Length of a Charges Record : refer to Chapter 3 Remarks on File Contents.

5.4 Charges Record Type 1

REGISTRATION METER RECORD WITH A-CHARGES												
F I E L D	B Y T E	L E N G T H	FIELD NAME								A L I G N M E N T	REMARKS
			7	6	5	4	3	2	1	0		
1	0	1	RESERVED						RP1	RP2		registration point type
2	1	12	REGISTRATION POINT IDENTIFICATION								L	character in ISO-7-Bit-Code
(n -1)5+3	(n -1)18+13	3	COUNTER SET n NUMBER OF CALLS									binary, value 0 - FFFFFFFF
(n -1)5+4	(n -1)18+16	4	COUNTER SET n CALL DURATION									binary, value 0 - 3FFFFFFF
(n -1)5+5	(n -1)18+20	3	COUNTER SET n NUMBER OF SEIZURES									binary, value 0 - FFFFFFFF
(n -1)5+6	(n -1)18+23	4	COUNTER SET n DURATION BEFORE ANSWER									binary, value 0 - 3FFFFFFF
(n -1)5+7	(n -1)18+27	4	COUNTER SET n CHARGES A-SIDE									binary, value 0 - 3FFFFFFF

with n = number of counter sets, depending on the number of time groups and on the number of traffic groups (1 ≤ n ≤ 24)

Table 10: Field description of CHARGES RECORD TYPE 1

Field descriptions : refer to 5.3 Charges Record Type 0.

5.5 Charges Record Type 2

REGISTRATION METER RECORD WITH B-CHARGES												
F I E L D	B Y T E	L E N G T H	FIELD NAME								A L I G N M E N T	REMARKS
			7	6	5	4	3	2	1	0		
1	0	1	RESERVED						RP1	RP2		registration point type
2	1	12	REGISTRATION POINT IDENTIFICATION								L	character in ISO-7-Bit-Code
(n -1)5+3	(n -1)18+13	3	COUNTER SET n NUMBER OF CALLS									binary, value 0 - FFFFFF
(n -1)5+4	(n -1)18	4	COUNTER SET n									binary, value 0 - 3FFFFFFF

REGISTRATION METER RECORD WITH B-CHARGES					
	+16		CALL DURATION		
(n -1)5+5	(n -1)18 +20	3	COUNTER SET n NUMBER OF SEIZURES		binary, value 0 - FFFFFF
(n -1)5+6	(n -1)18 +23	4	COUNTER SET n DURATION BEFORE ANSWER		binary, value 0 - 3FFFFFFF
(n -1)5+7	(n -1)18 +27	4	COUNTER SET n CHARGES B-SIDE		binary, value 0 - 3FFFFFFF

with n = number of counter sets, depending on the number of time groups and on the number of traffic groups (1 ≤ n ≤ 24)

Table 11: Field description of CHARGES RECORD TYPE 2

Field descriptions : refer to 5.3 Charges Record Type 0.

5.6 Charges Record Type 3

REGISTRATION METER RECORD WITH A- and B-CHARGES												
FIELD	BYTE	LENGTH	FIELD NAME								ALIGNMENT	REMARKS
			7	6	5	4	3	2	1	0		
1	0	1	RESERVED						RP1	RP2		registration point type
2	1	12	REGISTRATION POINT IDENTIFICATION								L	character in ISO-7-Bit-Code
(n -1)6+3	(n -1)22+13	3	COUNTER SET n NUMBER OF CALLS									binary, value 0 - FFFFFFFF
(n -1)6+4	(n -1)22+16	4	COUNTER SET n CALL DURATION									binary, value 0 - 3FFFFFFF
(n -1)6+5	(n -1)22+20	3	COUNTER SET n NUMBER OF SEIZURES									binary, value 0 - FFFFFFFF
(n -1)6+6	(n -1)22+23	4	COUNTER SET n DURATION BEFORE ANSWER									binary, value 0 - 3FFFFFFF
(n -1)6+7	(n -1)22+27	4	COUNTER SET n CHARGES A-SIDE									binary, value 0 - 3FFFFFFF
(n -1)6+8	(n -1)22+27	4	COUNTER SET n CHARGES B-SIDE									binary, value 0 - 3FFFFFFF

with n = number of counter sets, depending on the number of time groups and on the number of traffic groups (1 =< n =< 24)

Table 12: Field description of CHARGES RECORD TYPE 3

Field descriptions : refer to 5.3 Charges Record Type 0.

6 Operating Instructions

There are two possibilities for starting the accounting.

- Start an accounting per MML-Command EDIT MET. This is allowed for long term as well as for time-limited registrations.
- Start automatically at the end of a time-limited registration or each month, at the first day of the month, at 0 o'clock as well for time-limited as for long term registrations.

The accounting task creates one or two files, depending on the defined registration type (mixed, single or/and double).

The name of the created account file will be :

CA.IR.rnnns.ffff

with

- r = S in case of a single-sided registration
= D in case of a double-sided registration
= M in case of a mixed registration
- nnn = a numerical value between 1 and 999
nnn will indicate the actual day number of the year;
If more than 10 account files for exist for this day, the first free number starting from 400 is taken.
- s = a serial number from 0 to 9, allowing more than one account file for the same day and the same registration.
- ffff = the file extension which has (eventually) been entered at the start of the registration with parameter FILEEXT of command ACT IACRG taken.

The created account file is transferred with the command TRANS FILE or with FTAM to an other output device in accordance with the specified file group attributes.

For safety reasons at least two copies of the account file should be made before the account file is released. The number of copies is specified by the parameter SAF COP in the SET FGRPATT command for the file group CA.IR.

The account file can only be deleted (with command DEL FILE), when the number of copies is reached.

7 Examples

Account file with 2 named and 2 anonymous registration points are created with following MML commands :

Enter the IACHASTA settings:

ENTR IACSET: TIMGRPMX=3, TRAGRPMX=3;

→ number of counter sets in one meter = $3 \times 3 = 9$

Modify IACHASTA traffic distinction:

**MOD IACTRADI:RGPTTYPE=SINGLE, DISTINCT=TMR, TRAGRP2=SPEECH,
TRAGRP1=KBIT64&KBIT64FB, TRAGRP3=A3KHZ1;**

Create IACHASTA objects:

CR IACOBJ: OBJ=GHENT, DLU=30;

CR IACOBJ: OBJ=PARIS, DLU=40;

CR IACOBJ: OBJ=DNB, DN=9753200, LAC=069;

Create IACHASTA registration points:

CR IACRGPT : OBJORIG=DNB, OUT=MET, SCHED=1, RGPT=BRUSSELS1;

CR IACRGPT : OBJDEST=DNB, OUT=MET, SCHED=1, RGPT=BRUSSELS4;

CR IACRGPT : OBJORIG=GHENT, OUT=MET, SCHED=1;

CR IACRGPT : OBJDEST=PARIS, OUT=MET, SCHED=1;

Display IACHASTA call data treatment data:

DISP CDTDAT;

→ the extra non standard data items 'CHARGES' and 'BMETPULS' are not set.

→ the mark UCALLIAC is not set.

Activate IACHASTA registration at 13.09:

ACT IACRG: OUT=MET, RGPTTYPE=SINGLE;

Two calls are setup with 3.1 KHZ AUDIO as transmission medium requirement.

i.e. Traffic group 3 is valid for the calls.

The schedule 1 is used for the registration points and no changes are done for this schedule.

i.e. Time group 1 is valid as default for all calls.

The call data of the calls is accumulated in counter set 7 of the meter of the registration points (= traffic group 3, time group 1).

Account IACHASTA meters at 13.41:

EDIT MET: TYPE=IACMET, RGPTTYPE=SINGLE;

Dump of the account file :

HEADER RECORD 1

0: 49 41 43 48 41 53 54 41 01 00
10: 8B 54 38 31 31 42 52 44 20 20
20: 20 20 20 20 20 20 20 00 00 00
30: 00 00 00 00 00 00 00 00 00 00
40: 00 00 00 00 00 00 00 00 00 00
50: 00 00 00 00 00 00 00 00 00 00
60: 00 00 00 00 00 00 00 00 00 00
70: 00 00 00 00 00 00 00 00 00 00
80: 00 00 00 00 00 00 00 00 00 00
90: 00 00 00 00 00 00 00 00 00 00
100: 00 00 00 00 00 00 00 00 00 00
110: 00 00 00 00 00 00 00 00 00 00
120: 00 00 00 00 00 00 00 00 00 00
130: 00 00 00 00 00 00 00 00 00 00

Byte 0: File identification string= IACHASTA
Byte 8 : Version identification= 01
Byte 9 : Record length= 139
Byte 11 : Exchange identification= T811BRD
Byte 27 : Filler= 00

HEADER RECORD 2

130
140: 03 03 01 0C 02 01 00 00 00 00
150: 00 00 07 CB 08 03 0D 09 07 CB
160: 08 03 0D 29 00 00 00 00 00 00
170: 00 00 00 00 00 00 00 00 00 00
180: 00 00 00 00 00 00 00 00 00 00
190: 00 00 00 00 00 00 00 00 00 00
200: 00 00 00 00 00 00 00 00 00 00
210: 00 00 00 00 00 00 00 00 00 00
220: 00 00 00 00 00 00 00 00 00 00
230: 00 00 00 00 00 00 00 00 00 00
240: 00 00 00 00 00 00 00 00 00 00
250: 00 00 00 00 00 00 00 00 00 00
260: 00 00 00 00 00 00 00 00 00 00
270: 00 00 00 00 00 00 00 00

Byte 139 : Charges record type = 00
Byte 140 : No of time groups = 03
Byte 141 : No of traffic groups = 03
Byte 142 : Traff. crit. for single registration
= 01(TMR selected)
Byte 143 : traff.grp 1: S3= 1 (kBIT64FB)
S2= 1 (kBIT64)
Byte 144 : traff.grp 2: S1= 1 (speech)
Byte 145 : traff.grp 3: S0= 1 (3.1kHz audio)
Byte 146 : traff.grp 4: = 0 no tmr selected
Byte 147 : Traff. crit. for double registration
= 0 (no criterion)
Byte 148/149/150/151 : not relevant
Byte 152 : begin date : year 1995
Byte 154 : begin date : month 08
Byte 155 : begin date : day 03
Byte 156 : begin time : hour 13
Byte 157 : begin time : minute 09
Byte 158 : end date : year 1995
Byte 160 : end date : month 08
Byte 161 : end date : day 03
Byte 162 : end time : hour 13
Byte 163 : end time : minute 41

CHARGES RECORD 1 (type 0, named reg. point)

270: 03 42
280: 52 55 53 53 45 4C 53 31 20 20
290: 20 00 00 00 00 00 00 00 00 00
300: 00 00 00 00 00 00 00 00 00 00
310: 00 00 00 00 00 00 00 00 00 00
320: 00 00 00 00 00 00 00 00 00 00
330: 00 00 00 00 00 00 00 00 00 00
340: 00 00 00 00 00 00 00 00 00 00
350: 00 00 00 00 00 00 00 00 00 00
360: 00 00 00 00 00 00 00 00 00 00
370: 00 00 00 00 00 00 00 02 00 00
380: 00 28 00 00 02 00 00 00 17 00
390: 00 00 00 00 00 00 00 00 00 00
400: 00 00 00 00 00 00 00 00 00 00
410: 00 00 00 00 00 00 00

Byte 278 : RP0= 1 (named registration point)
RP1= 1 (single sided)
Byte 279 : Reg.point ident.= BRUSSELS1
Byte 291 : Counter set 1= 0
Byte 305 : Counter set 2= 0
Byte 319 : Counter set 3= 0
Byte 333 : Counter set 4= 0
Byte 347 : Counter set 5= 0
Byte 361 : Counter set 6= 0
Byte 375 : Counter set 7= no of calls = 2
Byte 378 : Counter set 7= call duration = 40
Byte 382 : Counter set 7= no of seizures = 2
Byte 385 : Counter set 7= dur.bef.answer = 23
Byte 389 : Counter set 8 = 0
Byte 403 : Counter set 9 = 0

CHARGES RECORD 2 (type 0, named reg. point)

```
410:          03 42 52 identical with charges record 1 with
420: 55 53 53 45 4C 53 34 20 20 20 Byte 418 : Reg.point ident.= BRUSSELS4
430: 00 00 00 00 00 00 00 00 00 00
440: 00 00 00 00 00 00 00 00 00 00
450: 00 00 00 00 00 00 00 00 00 00
460: 00 00 00 00 00 00 00 00 00 00
470: 00 00 00 00 00 00 00 00 00 00
480: 00 00 00 00 00 00 00 00 00 00
490: 00 00 00 00 00 00 00 00 00 00
500: 00 00 00 00 00 00 00 00 00 00
510: 00 00 00 00 00 00 02 00 00 00
520: 28 00 00 02 00 00 00 17 00 00
530: 00 00 00 00 00 00 00 00 00 00
540: 00 00 00 00 00 00 00 00 00 00
550: 00 00 00 00 00 00
```

CHARGES RECORD 3 (type 0, anonymous reg.point, origin object)

```
550:          02 47 48 45 Byte 556 : RP0= 0 (anonymous reg. point)
560: 4E 54 20 20 20 20 20 20 20 00 RP1= 1 (single sided)
570: 00 00 00 00 00 00 00 00 00 00 Byte 557 : Reg.point ident. ORIG=GHEENT,DEST=..
580: 00 00 00 00 00 00 00 00 00 00 Byte 569 : Counter set 1= 0
590: 00 00 00 00 00 00 00 00 00 00 Byte 583 : Counter set 2= 0
600: 00 00 00 00 00 00 00 00 00 00 Byte 597 : Counter set 3= 0
610: 00 00 00 00 00 00 00 00 00 00 Byte 611 : Counter set 4= 0
620: 00 00 00 00 00 00 00 00 00 00 Byte 625 : Counter set 5= 0
630: 00 00 00 00 00 00 00 00 00 00 Byte 639 : Counter set 6= 0
640: 00 00 00 00 00 00 00 00 00 00 Byte 653 : Counter set 7= no of calls= 2
650: 00 00 00 00 00 02 00 00 00 28 Byte 656 : Counter set 7= call duration= 40
660: 00 00 02 00 00 00 17 00 00 00 Byte 660 : Counter set 7= no of seizures= 2
670: 00 00 00 00 00 00 00 00 00 00 Byte 663 : Counter set 7= dur.bef.answer= 23
680: 00 00 00 00 00 00 00 00 00 00 Byte 667 : Counter set 8= 0
690: 00 00 00 00 00 Byte 681 : Counter set 9= 0
```

CHARGES RECORD 4 (type 0, anonymous reg.point, destination object)

```
690:          02 20 20 20 20 identical with charges record 3 with
700: 20 20 50 41 52 49 53 20 00 00 Byte 696 : Reg.point ident. ORIG= ,DEST=PARIS
710: 00 00 00 00 00 00 00 00 00 00
720: 00 00 00 00 00 00 00 00 00 00
730: 00 00 00 00 00 00 00 00 00 00
740: 00 00 00 00 00 00 00 00 00 00
750: 00 00 00 00 00 00 00 00 00 00
760: 00 00 00 00 00 00 00 00 00 00
770: 00 00 00 00 00 00 00 00 00 00
780: 00 00 00 00 00 00 00 00 00 00
790: 00 00 00 00 02 00 00 00 28 00
800: 00 02 00 00 00 17 00 00 00 00
810: 00 00 00 00 00 00 00 00 00 00
820: 00 00 00 00 00 00 00 00 00 00
830: 00 00 00 00
```