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**Terrestrial Trunked Radio (TETRA);
Voice plus Data (V+D);
Part 10: Supplementary services Stage 1;
Sub-part 2: Call report**

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Foreword

This European Telecommunication Standard (ETS) was produced by the Terrestrial Trunked Radio (TETRA) ETSI Project of the European Telecommunications Standards Institute (ETSI).

This ETS consists of 14 parts as follows:

- Part 1: "General network design";
- Part 2: "Air Interface (AI)";
- Part 3: "Interworking at the Inter-System Interface (ISI)";
- Part 4: "Gateways basic operation";
- Part 5: "Peripheral Equipment Interface (PEI)";
- Part 6: "Line connected Station (LS)";
- Part 7: "Security";
- Part 8: "Network management services";
- Part 9: "General requirements for supplementary services";
- Part 10: "Supplementary services Stage 1";**
- Part 11: "Supplementary services Stage 2";
- Part 12: "Supplementary services Stage 3";
- Part 13: "SDL model of the Air Interface (AI)";
- Part 14: "Protocol Implementation Conformance Statement (PICS) proforma specification".

Transposition dates	
Date of adoption of this ETS:	2 June 2000
Date of latest announcement of this ETS (doa):	30 November 2000
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1 Scope

This European Telecommunication Standard (ETS) defines the Stage 1 specifications of the Call Report (CR) supplementary service for the Terrestrial Trunked RAdio as provided by European operators. Stage 1 is an overall service description from the users point of view but does not deal with the details of the human interface itself.

This ETS specifies the service description of the supplementary service and the procedures to be expected with successful and unsuccessful outcomes. In addition the ETS specifies the interactions with other TETRA supplementary services and inter-working considerations.

Supplementary service specifications are produced in three stages according to the method defined in CCITT Recommendation I.130 [1]. The Stage 1 description given in this ETS gives the supplementary service requirements seen from the user point of view. The Stage 2 description identifies the functional capabilities and the information flows needed to support the supplementary service as specified in its Stage 1 description. The Stage 2 description is followed by the Stage 3 description, which specifies the protocols at the air interface and at the various Inter-System Interfaces (ISI) to support the service.

Charging principles and Man Machine Interface are outside the scope of this ETS.

The CR supplementary service enables the call originator to leave his/her identity for the called party.

Use of SDS-TL to provide Call Report is outside the scope of this ETS.

2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] CCITT Recommendation I.130 (1988): "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [2] ITU-T Recommendation I.221 (1993): "Common specific characteristics of services".
- [3] ITU-T Recommendation Z.100 (1993): "CCITT Specification and Description Language (SDL)".
- [4] ETS 300 392-2: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 2: Air Interface (AI)".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of this ETS, the following terms and definitions apply:

bearer service: type of telecommunication service that provides the capability for the transmission of signals between user-network interfaces

busy: either a "network determined user busy" or a "user determined user busy" (see ITU-T Recommendation I.221 [2])

identity presentation: stored/displayed identification provided to the called party for subsequent call back

Mobile Station (MS): physical grouping that contains all of the mobile equipment that is used to obtain TETRA services. By definition, a mobile station contains at least one Mobile Radio Stack (MRS)

CC-SS retention timer: timer started by the infrastructure upon disconnection of the call, which allows the user to use the call Identification in order to invoke/activate/interrogate a supplementary service related to that call. After expiry of the timer, the user is no longer able to use the call Identification in order to carry out supplementary service procedures

SS-CR message validity timer: timer controlled by the infrastructure but defined by the served user, which determines how long a message can be stored in the infrastructure. After expiry of the timer the message is deleted

supplementary service: supplementary service modifies or supplements a bearer service or a teleservice. A supplementary service cannot be offered to a customer as a stand alone service. It should be offered in combination with a bearer service or a teleservice

Switching and Management Infrastructure (SwMI): all of the TETRA equipment for a Voice plus Data (V+D) network except for subscriber terminals. The SwMI enables subscriber terminals to communicate with each other via the SwMI

teleservice: type of telecommunications service that provides the complete capability, including terminal equipment functions, for communication between users according to agreed protocols

user A: specific user that originated the call and requested the supplementary service

user B: user that was initially addressed in the original call set up

user C: user who is the diverted-to user

3.2 Symbols

There are no other symbols in this ETS besides those symbols used in SDL diagrams according to ITU-T Recommendation Z.100 [3].

3.3 Abbreviations

3.3.1 General abbreviations

For the purposes of this ETS, the following general abbreviations apply:

CC	Call Completion
GTSI	Group TETRA Subscriber Identity
ISDN	Integrated Services Digital Network
ITSI	Individual TETRA Subscriber Identity
MS	Mobile Station
NDUB	Network Determined User Busy
SDL	(Functional) Specification and Description Language
SS	Supplementary Service

NOTE: The abbreviation SS is only used when referring to a specific supplementary service.

SwMI	Switching and Management Infrastructure
TETRA	Terrestrial Trunked Radio
UDUB	User Determined User Busy
V+D	Voice Plus Data

3.3.2 Supplementary Service abbreviations

For the purposes of this ETS, the following Supplementary Service abbreviations apply:

BIC	Barring of Incoming Calls
CFB	Call Forwarding on Busy
CFNRy	Call Forwarding on No Reply
CFNRc	Call Forwarding on Not Reachable
CFU	Call Forwarding Unconditional
CR	Call Report

4 SS-CR Stage 1 specification

4.1 Description

4.1.1 General description

Call Report (CR) is a supplementary service which is offered to a calling user A. On encountering a busy called user B, or a called user B which does not answer (no answer equals no reply or not reachable), it shall deliver the identity presentation information. In the case of a called user B which is not reachable, it allows user A to request that the SwMI monitors user B until user B becomes reachable. The SwMI shall then send the identity presentation information to user B.

SS-CR is not applicable to group calls, either when the call is a group call setup or when the calling party calls a GTSI.

4.1.2 Qualifications on applicability to telecommunication services

This supplementary service shall be applicable to all TETRA individual data and speech teleservices and to TETRA individual circuit mode bearer services including data services. SS-CR does not apply to SDS short data system.

4.2 Procedures

4.2.1 Provision/Withdrawal

SS-CR shall be available either to all TETRA users which have subscribed to this service, or generally available to all users within a system. SS-CR may be withdrawn for administrative reasons.

The subscription parameters and values offered by a SwMI shall be an implementation matter. A SwMI may offer more or less parameters and values than those specified below. The SwMI shall send the identity presentation. Other information may be associated to the identity presentation mode.

There are no subscription parameters associated with user B; in particular, user B cannot inhibit the presentation of call report.

In TETRA, the identity presentation containing SS-CR subscriber individual TETRA subscriber Identity (ITSI) is mandatory. Pre defined SS-CR subscriber information is not supported.

Possible subscription options are summarised in table 1.

Table 1: SS-CR subscription parameters

Subscription parameter	Values
Priority	- Indicates the priority of the reported call
Time information	- Indicates the time and date of the SS-CR invocation

4.2.2 Normal procedures

4.2.2.1 Activation/deactivation, definition, registration, interrogation and cancellation

4.2.2.1.1 Activation/deactivation

SS-CR is activated upon provision and may be deactivated upon withdrawal.

4.2.2.1.2 Definition

Shall not be applicable.

4.2.2.1.3 Registration

Shall not be applicable.

4.2.2.1.4 Interrogation

Shall not be applicable.

4.2.2.1.5 Cancellation

As an implementation option, a user A shall be able to send a cancellation message. If SS-CR information has been already sent to user B a cancellation message shall be sent to user B. If the message has not been sent, then the invocation shall be cancelled and the SS shall be considered to be complete.

4.2.2.2 Invocation and operation

When a call from user A fails because the destination user, user B, is busy, user A shall be able to request SS-CR. After disconnection, the Switching and Management Infrastructure (SwMI) should retain the call information for a period governed by the CC-SS retention timer. User A shall be able to request SS-CR during that period. On receipt of a request for SS-CR during that period, the SwMI shall send the SS-CR information to user B.

When a call from user A fails because the destination user, user B, does not answer, user A shall be able to request SS-CR before he/she disconnects. Otherwise, after disconnection, the SwMI should retain the call information for a period governed by the CC-SS retention timer. User A shall be able to request SS-CR during that period. On receipt of a request for SS-CR during that period, the SwMI shall send the SS-CR information to user B.

When a call from user A fails because the destination user, user B, is not reachable, the SwMI shall retain the call information for a period governed by the CC-SS retention timer. User A shall be able to request SS-CR during that period. On receipt of a request for SS-CR during that period, the SwMI shall start monitoring user B and start the SS-CR message validity timer. When the monitoring of user B indicates that user B has become reachable, the SwMI shall send the SS-CR information to user B. When the SS-CR message validity timer expires before user B has become reachable, the SS-CR shall be completed without any further action. The served user shall be able to define the time of the SS-CR message validity timer upon invocation.

NOTE: The handling of multiple requests against the same user B is an implementation matter, typically involving some sort of queue arranged in chronological or priority order.

The value of the CC-SS retention timer (T 321 of ETS 300 392-2 [4] (minimum value)) is implementation dependent.

4.2.3 Exceptional procedures

4.2.3.1 Activation/deactivation, definition, registration, interrogation and cancellation

4.2.3.1.1 Activation/deactivation

Shall not be applicable.

4.2.3.1.2 Definition

Shall not be applicable.

4.2.3.1.3 Registration

Shall not be applicable.

4.2.3.1.4 Interrogation

Shall not be applicable.

4.2.3.1.5 Cancellation

Shall not be applicable.

4.2.3.2 Invocation and operation

4.2.3.2.1 Rejection of SS-CR service request

If user A is not permitted to request SS-CR, the SwMI shall reject the SS-CR request. Examples of conditions that may result in a denial may be:

- service withdrawn;
- service not subscribed to;
- completion failure;
- limit of requests against user B already reached; or
- inter-working with a network which does not support SS-CR;
- the CC-SS retention timer has expired.

If user A is connected in a call and if user A invokes SS-CR, the SS-CR invocation shall be rejected.

4.3 Interactions with other supplementary services

Interactions with other TETRA supplementary services are specified below.

NOTE: As an indication to Stage 3 SS-CR protocol, the Call Report request should be sent both to the user B home swMI and to the B visited swMI.

4.3.1 Calling line identification presentation

Call report shall not have any interaction with calling line identification presentation.

4.3.2 Connected line identification presentation

Call report shall not have any interaction with connected line identification presentation.

4.3.3 Calling/connected line identification restriction

Call report shall not have any interaction with calling/connected line identification restriction.

4.3.4 Call report

Not applicable.

4.3.5 Talking party identification

Call report shall not have any interaction with talking party identification.

4.3.6 Call forwarding unconditional

If the call to user B is forwarded-to user C by SS-Call Forwarding Unconditional (CFU) and user C is either busy, does not answer or is not reachable, then a SS-CR request from user A shall be applied to the diverted-to user C.

4.3.7 Call forwarding on busy

If the call from user A to user B is diverted to user C by SS-Call Forwarding on Busy (CFB) and user C is busy or does not answer or is not reachable, then a SS-CR request made by user A shall be applied to the originally called user B.

4.3.8 Call forwarding on no reply

If the call from user A to user B is diverted to user C by SS-Call Forwarding on No Reply (CFNRy) and user C is busy or does not answer or is not reachable, then a SS-CR request made by user A shall be applied to the originally called user B.

4.3.9 Call forwarding on not reachable

If the call from user A to user B is diverted to user C by SS-Call Forwarding on Not Reachable (CFNRc) and user C is busy or does not answer or is not reachable, then a SS-CR request made by user A shall be applied to the originally called user B.

4.3.10 List search call

Call report shall not have any interaction with list search call.

It is an implementation option which attendant is sent the SS-CR information.

4.3.11 Call authorized by dispatcher

If, in the case when the dispatcher has not answered the intercepted call and subsequently, the served user has invoked the SS-CR, then the invocation shall be rejected.

In the case where the dispatcher has previously authorized the call, then there shall be no interaction.

4.3.12 Short number addressing

Call report shall not have any interaction with short number addressing.

4.3.13 Area selection

If user B is outside of the selected area, there is no call set up and the invocation of SS-CR shall not be possible.

If user B is not reachable, but subsequently reappears outside the selected area, then the SS-CR information may be forwarded.

If user B is not reachable, but subsequently reappears within the selected area, then the SS-CR information shall be forwarded.

4.3.14 Access priority

Call report shall not have any interaction with access priority.

4.3.15 Priority call

Call report shall not have any interaction with priority call.

4.3.16 Call waiting

Call report shall not have any interaction with call waiting.

4.3.17 Call hold

Call report shall not have any interaction with call hold.

4.3.18 Call completion to busy subscriber

Call report shall not have any interaction with call completion to busy subscriber.

4.3.19 Late entry

Call report shall not have any interaction with late entry.

4.3.20 Transfer of control

Call report shall not have any interaction with transfer of control.

4.3.21 Pre-emptive priority call

Call report shall not have any interaction with pre-emptive priority call.

4.3.22 Include call

Call report shall not have any interaction with include call.

4.3.23 Advice of charge

Call report shall not have any interaction with advice of charge.

4.3.24 Barring of outgoing calls

Call report shall not have any interaction with barring of outgoing calls.

4.3.25 Barring of incoming calls

Call report shall not have any interaction with barring of incoming calls.

If SS-Barring of Incoming Calls (BIC) was activated at user B, then no call was set-up and the invocation of SS-CR shall not be possible.

4.3.26 Discreet listening

Call report shall not have any interaction with discreet listening.

4.3.27 Ambience listening

Call report shall not have any interaction with ambience listening.

4.3.28 Dynamic group number assignment

Call report shall not have any interaction with dynamic group number assignment.

4.3.29 Call completion on no reply

Call report shall not have any interaction with call completion on no reply.

4.3.30 Call retention

Call report shall not have any interaction with call retention.

4.4 Inter-working considerations

When users A and B are on a different network, the availability of SS-CR to user A shall be limited by the capabilities of both networks and the inter-working functions between them.

4.5 Overall SDL

Figure 1 contains the dynamic description of SS-CR using the Specification Description Language (SDL) defined in ITU-T Recommendation Z.100 [3]. The SDL process represents the behaviour of the network in providing SS-CR.

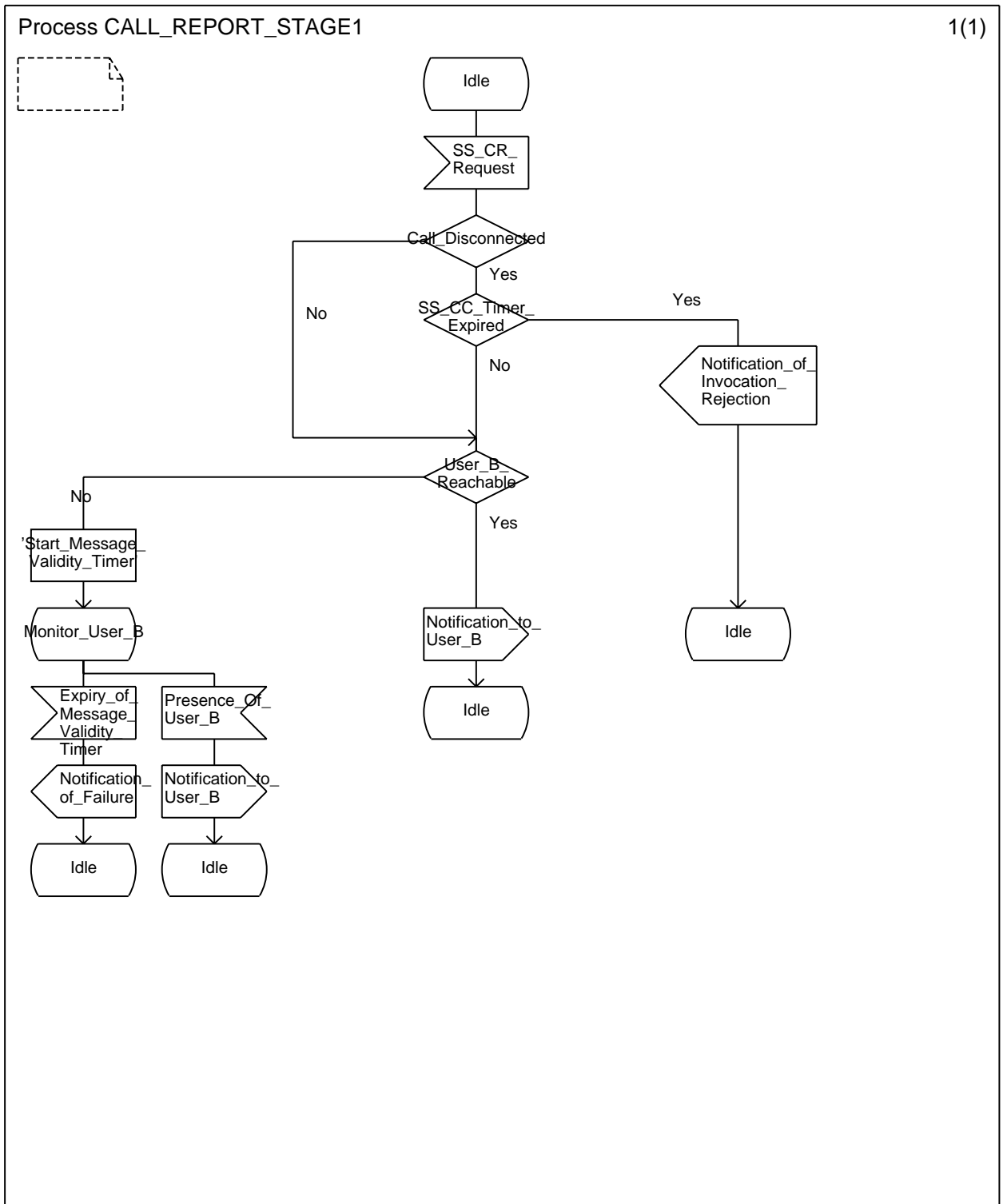


Figure 1: SS-CR, overall SDL

History

Document history	
April 1996	First Edition
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August 2000	Second Edition