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Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 11: Supplementary services stage 2; Sub-part 3: Talking Party Identification (TPI)

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ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE
Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE
Internet: secretariat@etsi.fr - http://www.etsi.org

Tel.: +33 4 92 94 42 00 - Fax: +33 4 93 65 47 16

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Foreword

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

This ETS is a multi-part standard and will consist of the following parts:

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 Stations (LS)";

Part 7: "Security";

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 July 1999
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1 Scope

This ETS specifies the stage 2 description of the Supplementary Service Talking Party Identification (SS-TPI) for the Terrestrial Trunked Radio (TETRA).

The SS-TPI supplementary service enables connected parties in a call to receive the identification of the talking party. The SS-TPI is activated against individual identity in individual call and against group identity in group calls. Man-Machine Interface and charging principles are outside the scope of this ETS.

Supplementary service specifications are produced in three stage according to the method defined in CCITT Recommendation I.130 [4]. 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 (see ETS 300 392-10-3 [2]). 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.

2 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] ETS 300 392-2: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 2: Air Interface (AI)".

[2] ETS 300 392-10-3: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 10: Supplementary services stage 1; Sub-part 3: Talking Party Identification (TPI)".

[3] ETS 300 392-12-3: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 12: Supplementary Services stage 3; Sub-part 3: Talking Party Identification (TPI)".

[4] CCITT Recommendation I.130 (1988): "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN (Blue Book)".

[5] ISO/IEC 11574: "Information technology - Telecommunications and information exchange between systems - Private Integrated Service Network - Circuit-mode 64 kbit/s bearer services - Service description, functional capabilities and information flows".

[6] ETS 300 392-9: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 9: General requirements for supplementary services".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this ETS, the definitions given in ETS 300 392-9 [6] apply with the following modifications:

authorized user: identified user who is allowed to define, activate, deactivate and/or interrogate the infrastructure about the activation/deactivation state of the supplementary service and its' related parameters

served user: user for whom SS-TPI is invoked. That user will thus receive the SS-TPI information when he is the talking/sending party in a call

user B: talking/sending party in a call

NOTE: The qualifiers listening/receiving and talking/sending are used in the above definitions of SS-TPI as a reminder that this supplementary service applies to both speech and data services.

3.2 General abbreviations

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

CC	Basic Service Call Control functional entity
CCA	Basic Service Call Control Agent functional entity

NOTE: CC and CCA are applied as defined in ISO/IEC 11574 [5].

FE	Functional Entity
GTSI	Group TETRA Subscriber Identity
ISI	Inter-System Interface
ITSI	Individual TETRA Subscriber Identity
LS	Line Station
MS	Mobile Station
SS	Supplementary Service

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

SwMI	Switching and Management Infrastructure

3.3 Supplementary service abbreviations

TPI	Talking Party Identification

4 Functional model

4.1 Functional model description

The functional model shall comprise the following Functional Entities (FEs):

FE1	Served user functional entity;
FE21	Served user current SwMI FE;
FE22	Group controlling FE;
FE25	Affected user current SwMI FE;
$FE2_{SS-CAD}$	SS-CAD controlling FE;
FE20	Managed user/group home SwMI FE;
FE3	Authorized user's functional entity.

NOTE: No FE is associated to the affected user since no SS-TPI specific procedures apply for that user.

The following relationships shall exist between these FEs:

ra between FE1 and FE21 and between FE1 and FE22;
rb between FE21 and FE25;
rc between FE22 and FE25;
rd between FE3 and FE20;
re between FE21 and $FE2_{SS\text{-}CAD}$;
rf between $FE2_{SS\text{-}CAD}$ and FE25.

Figures 1 and 2 show these FEs and relationships for the operational part of SS-TPI in the cases of individual call and group call respectively, and figure 3 for the management part of SS-TPI.

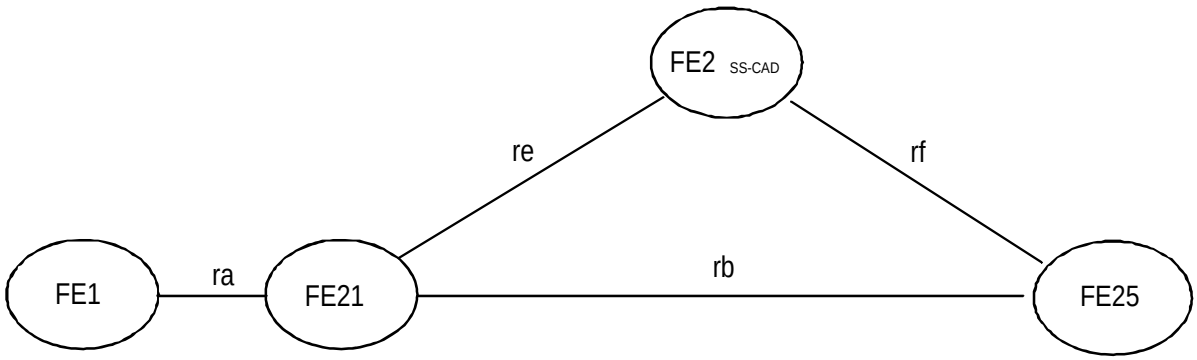

Figure 1: Functional model for the operational part of SS-TPI in the case of individual call

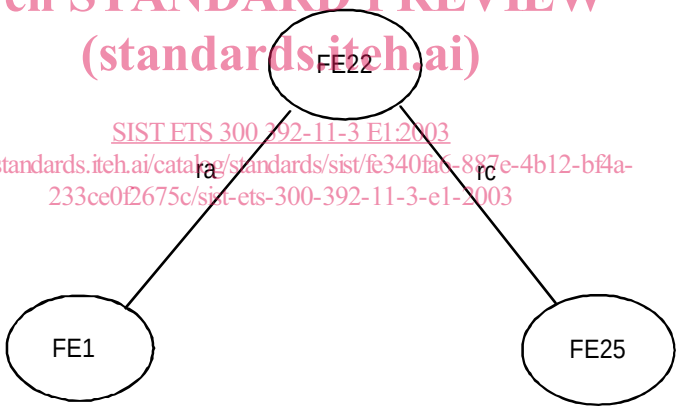

Figure 2: Functional model for the operational part of SS-TPI in the case of group call

NOTE: No $FE2_{SS\text{-}CAD}$ has been shown in figure 2, because the interactions between SS-TPI and SS-CAD are either internal to the originating SWMI or to the group controlling SwMI, thus in any case outside the scope of SS-TPI standardization.

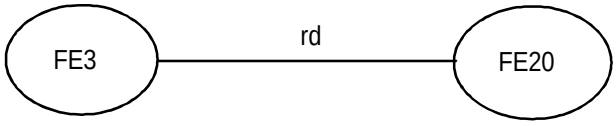

Figure 3: Functional model for the management part of SS-TPI

4.2 Description of functional entities

4.2.1 Served user functional entity, FE1

FE1 is the functional entity that serves the served user application. There shall be no management SS-TPI related function in FE1.

4.2.2 Served user current SwMI functional entity, FE21

When an individual call is being set-up, FE21 shall determine if SS-TPI is activated, and if so, the applicable subscription parameters (i.e. whether talking/sending party mnemonic name has to be delivered and/or the priority of each request for transmission grant sent by the talking/sending party). If SS-TPI has been activated and if the talking/sending party mnemonic name has to be delivered, FE21 shall then invoke SS-TPI in requesting FE25 to send the mnemonic name of the other user involved in the individual call (i.e. the affected user).

NOTE 1: This other user may or may not be granted transmission permission during the call. If yes, he will become the talking/sending user. If not, the served user will not receive any SS-TPI information during the call.

Similarly if SS-TPI has been activated and if the priority of each request for transmission grant from the talking/sending user has to be delivered, FE21 shall then invoke SS-TPI in requesting FE25 to send this priority every time the affected user requests transmission grant, when this information is not readily available through a basic call information flow.

NOTE 2: Since the priority of the request for transmission grant sent by the talking/sending party is delivered in ISI-TX DEMAND, sent from the terminating SwMI to the originating SwMI, FE21 will request FE25 to send this information only when the served user is the connected user.

Still for an individual call, FE21 shall store:

- the affected user identity received by the associated basic call functional entity at call set-up time (see note 3); and

- the affected user mnemonic name if FE21 has received it from FE25 (following its request).

NOTE 3: If the individual call is an intra-TETRA call, the affected user identity is readily available; if it is an inter-TETRA call, the affected user identity is sent as part of one of the ANF-ISIIC SETUP or COMPLETE information flows.

FE21 shall then operate SS-TPI in sending to FE1, either the information received from FE22 during a group call, or the SS-TPI information which it has stored at call set-up time for an individual call plus if it has to be delivered, the priority of each request for transmission grant from the affected user.

4.2.3 Group controlling functional entity, FE22

When establishing a group call, FE22 shall determine if SS-TPI is activated, and if so, the applicable subscription parameters. If SS-TPI has been activated FE22 shall then invoke SS-TPI. If the talking/sending party mnemonic name has to be delivered and if the calling user is not a member of the group and the calling user's FE25 has not already sent his mnemonic name together with the group call set-up request, FE22 shall request that FE25 to send the mnemonic name of that user, if available, when requesting transmission grant for him.

NOTE: According to the specification of group call, it is not possible for users not members of the group other than the calling user to become talking/sending parties in a group call.

FE22 shall then operate SS-TPI in delivering to FE1 the talking/sending party identity, that it shall supplement with the mnemonic name of this party and with the priority of its corresponding request for transmission grant, if these parameters have been subscribed to and are available.