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Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 11: Supplementary services stage 2; Sub-part 10: Priority Call (PC)

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**Terrestrial Trunked Radio (TETRA);
Voice plus Data (V+D);
Part 11: Supplementary services stage 2;
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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Project Terrestrial Trunked Radio (TETRA).

The present document had been submitted to Public Enquiry as ETS 300 392-11-10. During the processing for Vote, it was converted into an EN.

The present document is part 11 of a multi-part deliverable covering Voice plus Data (V+D), as identified below:

- 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;
- TS 100 392-15: "TETRA frequency bands, duplex spacings and channel numbering".

National transposition dates

Date of adoption of this EN:	25 May 2001
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Date of latest publication of new National Standard or endorsement of this EN (dop/e):	28 February 2002
Date of withdrawal of any conflicting National Standard (dow):	28 February 2002

1 Scope

The present document defines the stage 2 specifications of the Supplementary Service Priority Call (SS-PC) for the Terrestrial Trunked Radio (TETRA).

The SS-PC is defined to enable a user to have preferential access to the network resources in a TETRA system in times of congestion. The SS-PC applies for the basic services: circuit mode calls (speech or data). The SS-PC specifies the definition, activation, deactivation and interrogation for the usage of low and high call priorities in the TETRA system. The SS-PC operations are defined for Switching and Management Infrastructure (SwMI), for the Mobile Station (MS) and for the Line Station (LS). SS-PC is defined for subscribers of one TETRA system, but the subscribers may be located in several TETRA systems and the information flows may be delivered over the Inter System Interface (ISI). SS-PC may also be invoked for basic services within one TETRA system or for basic services that extend over ISI to several TETRA systems.

The pre-emptive priorities, Man-Machine Interface (MMI) and charging principles are outside of the scope of the present document.

Stage 2 describes the functional capabilities of the supplementary service introduced in stage 1 description. Stage 2 identifies the functional capabilities for the management and operation of the service in the SwMI, in the MS and in the LS. Stage 2 describes also the information flows exchanged between these entities and the flows sent over the ISI.

NOTE: The stage 2 description is followed by the stage 3 description, which specifies the encoding rules for the information flows and process behaviour for the different entities in the SwMI, the MS and LS.

Aspects relating to all supplementary services are detailed in ETS 300 392-9 [2].

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

- [1] ETSI EN 300 392-2 (V2.3.2): "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 2: Air Interface (AI)".
- [2] ETSI ETS 300 392-9: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 9: General requirements for supplementary services".
- [3] ETSI ETS 300 392-3-5: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 3: Interworking at the Inter-System Interface (ISI); Sub-part 5: Additional Network Feature for Mobility Management (ANF-ISIMM)".
- [4] ETSI EN 300 392-12-10: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 12: Supplementary services stage 3; Sub-part 10: Priority Call (PC)".
- [5] ISO/IEC 11574 (2000): "Information technology - Telecommunications and information exchange between systems - Private Integrated Services Network - Circuit-mode 64 kbit/s bearer services - Service description, functional capabilities and information flows".
- [6] ETSI ETS 300 392-12-16: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 12: Supplementary services stage 3; Sub-part 16: Pre-emptive Priority Call (PPC)".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

authorized user: user who is authorized to define, activate, deactivate and interrogate the SS-PC

call controlling SwMI: in an individual call the call originating SwMI and in a group call the home SwMI of the group

priority level: pre-agreed value allocated to each mobile ITSI or GTSI on a per call basis
It is used to determine priority access to network resources in the event of network congestion.

user A: calling party, the party that invokes or generates invocation of SS-PC

user B: called party in a call for which SS-PC is operated

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

CC	basic service Call Control functional entity
CCA	basic service Call Control functional entity Agent
NOTE:	CC and CCA are applied as defined in ISO/IEC 11574 [5].
FE	Functional Entity
GTSI	Group TETRA Subscriber Identity
ISDN	Integrated Services Digital Network
ISI	Inter-System Interface
ITSI	Individual TETRA Subscriber Identity
SS-PC	Supplementary Service Priority Call
SS-PPC	Supplementary Service Pre-emptive Priority Call
SDL	Specification and Description Language
SS	Supplementary Service
SwMI	Switching and Management Infrastructure
TETRA	Terrestrial Trunked Radio

4 Functional model

4.1 Functional model description

The functional model describes the functional characteristics of the Functional Entities (FEs) involved in the management and operation of SS-PC.

The functional model shall comprise the following FEs:

- FE1 user A's (calling party's) FE;
- FE21 SS-PC FE in home SwMI or controlling SwMI;

NOTE 1: During definition, activation, deactivation and interrogation request, FE21 may either be user A's home SwMI or a group home SwMI.

During invocation and operation, FE21 will be the controlling SwMI of the priority call that has been initiated.

- FE3 authorized user's FE;
- FE5 user B's (called party's) FE;

NOTE 2: Called party in a call in which SS-PC is operated.

- FE25 SS-PC FE in user B's SwMI;

CC Call Control FE in SwMI.

CCA Call Control Agent FE in MS/LS.

The following relationships shall exist between these FEs:

- ra between FE1 and FE21/FE25;
- rb between FE21 and FE25;
- rc between FE21 and FE3;
- rd between FE21/FE25 and FE5.

Figure 1 shows these FEs and relationships for the management part and figure 2 for the operational part.

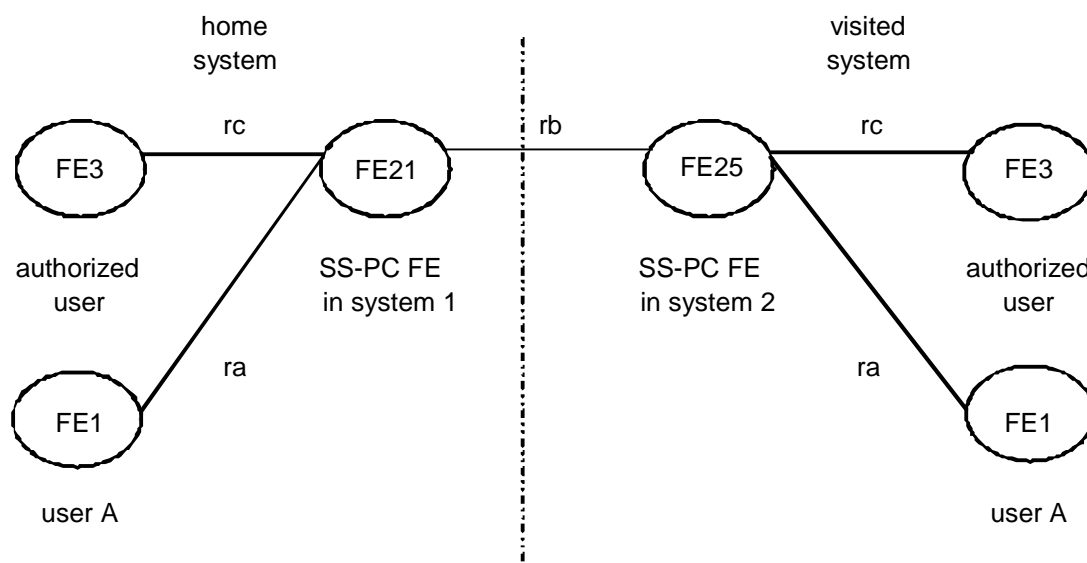


Figure 1: The relations and the functional entities of the management part of SS-PC

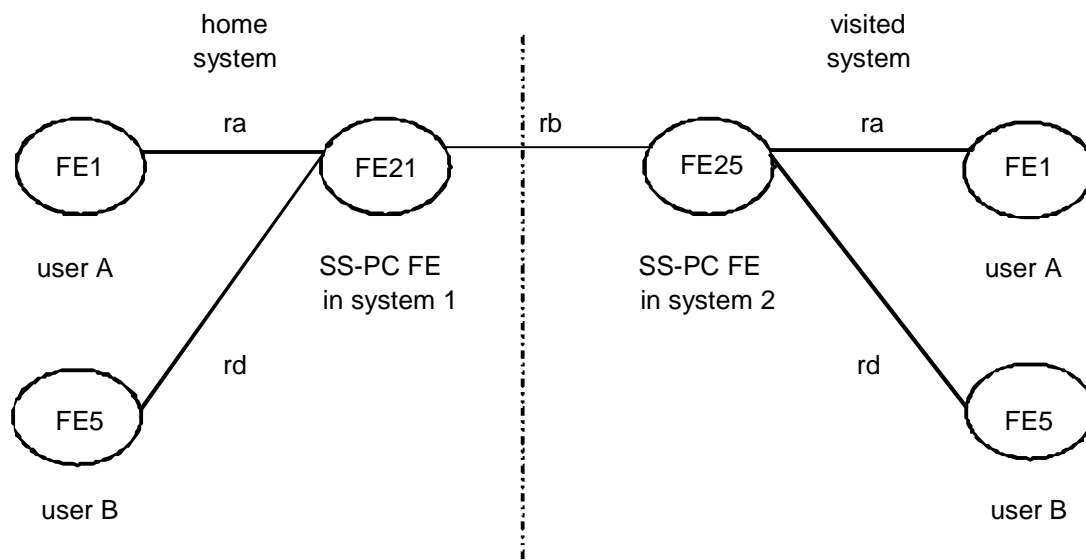


Figure 2: The relations and functional entities of the operational part of SS-PC

4.2 Description of functional entities

4.2.1 User A's functional entity, FE1

The functional tasks of FE1 for definition and interrogation shall be the following:

- as an option, the MS/LS may support reception of SS-PC definition from FE21. Upon acceptance, FE1 shall pass the SS-PC definition request, to the user application and acknowledge the SS-PC definition, if FE21 has requested this;
- as an option, the MS/LS may support SS-PC interrogation, FE1 shall pass the SS-PC interrogation request to FE21, when the user application issues it. Upon reception of the interrogation response from FE21, FE1 shall pass it to the user application.

The functional tasks for operation of FE1 for a priority individual or group call request shall be as follows:

- upon reception of the SS-PC invocation from the user application within a call set-up, FE1 shall send the SS-PC invocation to the SwMI (FE21) with the call set-up;
- upon reception of a SS-PC confirmation from FE21, FE1 shall pass the SS-PC confirmation to the user application;
- when migrated into a visited system the user application shall use "Priority not defined" in the call setup until a definition is provided e.g. by default or downloaded.

NOTE: It is outside of the present document how default values for the home system are allocated.