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**Prizemni snopovni radio (TETRA) - Govor in podatki (V+D) - 11. del: Dopolnilne storitve stopnje 2 - 11.-14. del: Poznejši vstop (LE)**

Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 11: Supplementary services stage 2; Sub-part 14: Late Entry (LE)

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33.070.10	Prizemni snopovni radio (TETRA)	Terrestrial Trunked Radio (TETRA)
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## Foreword

This draft European Telecommunication Standard (ETS) has been produced by the Radio Equipment and Systems (RES) Technical Committee of the European Telecommunications Standards Institute (ETSI), and is now submitted for the Public Enquiry phase of the ETSI standards approval procedure.

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: "Inter-working", (DE/RES-06001-3).
- Part 4: "Gateways", (DE/RES-06001-4).
- Part 5: "Terminal equipment interface", (DE/RES-06001-5).
- Part 6: "Line connected stations", (DE/RES-06001-6).
- Part 7: "Security", (DE/RES-06001-7).
- Part 8: "Management services", (DE/RES-06001-8).
- Part 9: "Performance objectives", (DE/RES-06001-9).
- Part 10: "Supplementary Services (SS) Stage 1".
- Part 11: "Supplementary Services (SS) Stage 2".**
- Part 12: "Supplementary Services (SS) Stage 3".
- Part 13: "SDL Model of the Air Interface".
- Part 14: "PICS Proforma".
- Part 15: "Inter-working - Extended Operations", (DE/RES-06001-15).

### Proposed transposition dates

Date of latest announcement of this ETS (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

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## 1 Scope

This European Telecommunication Standard (ETS) defines the stage 2 specifications of the Supplementary Service Late Entry (SS-LE) for the Trans-European Trunked Radio (TETRA).

The SS-LE allows radio users to be informed of and, if they are concerned, to join an already existing point-to-multipoint speech call.

Man-Machine Interface (MMI) and charging principles are outside the scope of this ETS.

Stage 2 describes the functional capabilities of the supplementary service introduced in stage 1 description. Stage 2 identifies the functional capabilities for the management of the service in the Switching and Management Infrastructure (SwMI), in the Mobile Station (MS) and in the Line Station (LS). Stage 2 also describes the information flows between these entities and also the flows sent over the Inter-System Interface (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 SwMI, MS and LS of the service.

## 2 Normative references

This ETS incorporates, by dated or 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] prETS 300 392-11-16: "Radio Equipment and Systems (RES); Trans-European Trunked Radio (TETRA); Part 11: Supplementary Services (SS) Stage 2; Part 11-16: Pre-emptive Priority Call (PPC)".
- [2] prETS 300 392-12-16: "Radio Equipment and Systems (RES); Trans-European Trunked Radio (TETRA); Part 12: Supplementary Services (SS) Stage 3; Part 12-16: Pre-emptive Priority Call (PPC)".

## 3 Definitions and abbreviations

### 3.1 Definitions

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

**authorized user:** An identified user who is able to define and interrogate the SS-LE parameters. The definition procedure and principles for authorized user are outside the scope of SS-LE.

**forced LE:** The user should join the ongoing multipoint call as soon as he receives a late entry indication. If the user is already engaged in another communication, the user has to join the highest priority call.

**LE acknowledgement:** Indication sent in LE messages by a SwMI to inform a member who would like to join the call that he has to inform the SwMI of his entering the call.

**LE broadcast:** Indication sent by a SwMI to inform members of a multipoint call which are currently not already involved in this call that they can join directly an existing communication (a channel is already allocated in this cell).

**LE paging:** Indication sent by a SwMI to inform members of a multipoint call which are currently not already involved in this call that they need to ask for a communication channel for that call if they wish to participate the call (a channel is not yet allocated in this cell).

**system 1:** A TETRA system in which SS-LE can be defined and invoked. System 1 is the TETRA system which has same Mobile Network Identity (MNI) as the TETRA group identity to which SS-LE is defined.

**system 2:** A TETRA system to which SS-LE can be extended and invoked. System 2 is a TETRA system which has a different MNI as the TETRA group identity to which SS-LE is defined.

**user A:** Calling party in a call.

**user B:** In a group call a party that receives the SS-LE indications about an ongoing call.

### 3.2 Abbreviations

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

FE	Functional Entity
ISI	Inter-System Interface
LE	Late Entry
SS	Supplementary Service

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

SwMI	Switching and Management Infrastructure
(V)GTSI	Visiting TETRA Subscriber Group Identity

## 4 Supplementary Service Late Entry (SS-LE) stage 2 specification

### 4.1 Functional model

#### 4.1.1 Functional model description

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

- FE1 user B's functional entity;
- FE2 SS-LE functional entity in system 1;
- FE3 authorized user's functional entity;
- FE4 SS-LE functional entity in system 2;
- FE5 user A's (calling party's) functional entity.

The following relationships shall exist between these FEs:

- ra between FE1 and FE2;
- rb between FE2 and FE4 in different TETRA systems;
- rc between FE2 and FE3;
- rd between FE2 and FE5;
- re between FE1 and FE4;
- rf between FE3 and FE4.

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

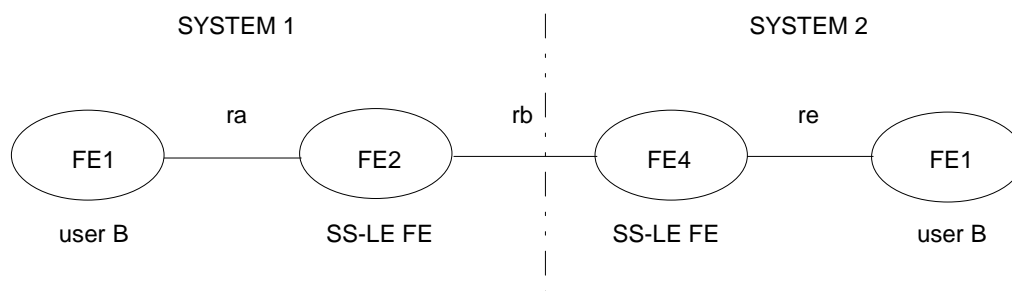


Figure 1: Functional model for the operational part of SS-LE

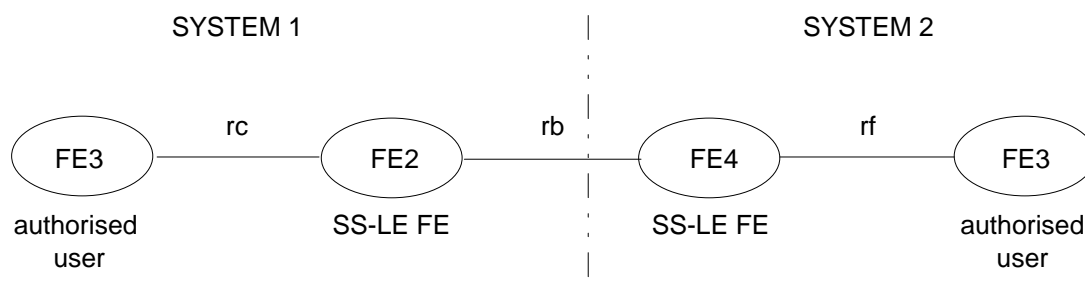


Figure 2: Functional model for the management part of SS-LE

#### 4.1.2 Description of FEs

##### 4.1.2.1 User B's functional entity, FE1

FE1 shall receive notifications of SS-LE from FE2 when SS-LE is invoked for a call. In case of LE acknowledgement, FE1 shall send the acknowledgement when it participates in an ongoing call. In case of LE paging, FE1 shall send the paging response when it aims to participate in an ongoing call. If FE1 is in system 2 FE1 shall send the messages to FE4.

##### 4.1.2.2 SS-LE functional entity, FE2

At the reception of call invocation request from FE5, FE2 shall determine if the SS-LE is invoked. If so, FE1 shall determine the applied SS-LE type, the area etc. and shall invoke the SS-LE. FE2 sends the notifications of SS-LE to FE1s.

FE2 shall receive SS-LE definition requests from FE3s. FE2 shall analyse the requests and if they are found authorized and correct, FE2 shall make the definitions to the system and shall acknowledge to FE3. If not, FE2 shall reject the request and send a negative acknowledgement to FE3.

FE2 shall also receive SS-LE interrogation requests from FE3 about availability or state of a SS-LE service. FE2 shall fetch the response for the interrogation and if FE2 finds the request authorized it shall send the response to FE3.

If any FE1s or FE3s are in system 2 FE2 shall send and receive the messages from them via FE4. If the basic service to which SS-LE is defined, extends to another TETRA system (system 2), FE2 shall send a SS-LE information flow to system 2 to indicate if SS-LE should or should not be invoked in system 2.

##### 4.1.2.3 Authorized user's functional entity, FE3

At the receipt of a request from service user, FE3 shall send SS-LE definition and interrogation requests to FE2. FE3 may perform local checks for the requests and if it finds them valid, FE3 shall send the requests to FE2. If FE3 rejects a request, it shall give an indication to the service user. At the reception of the responses, FE3 shall indicate the result to the service user.

If FE3 is in system 2, it shall send the messages to FE2 via FE4.