



**SLOVENSKI STANDARD**  
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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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# ETSI EN 300 392-11-14 V1.1.1 (2002-07)

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*European Standard (Telecommunications series)*

**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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## Reference

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## Keywords

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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 300 392-11-14. During the processing for Vote it was converted into an EN.

The present document is part 11, sub-part 14 of a multi-part deliverable covering Voice plus Data (V+D), as identified below:

- EN 300 392-1: "General network design";
- EN 300 392-2: "Air Interface (AI)";
- EN 300 392-3: "Interworking at the Inter-System Interface (ISI)";
- ETS 300 392-4: "Gateways basic operation";
- EN 300 392-5: "Peripheral Equipment Interface (PEI)";
- EN 300 392-7: "Security";
- EN 300 392-9: "General requirements for supplementary services";
- EN 300 392-10: "Supplementary services stage 1";
- EN 300 392-11: "Supplementary services stage 2";**
- Sub-part 1: "Call Identification (CI)";
- Sub-part 2: "Call Report (CR)";
- Sub-part 3: "Talking Party Identification (TPI)";
- Sub-part 4: "Call Forwarding (CF)";
- Sub-part 5: "List Search Call (LSC)";
- Sub-part 6: "Call Authorized by Dispatcher (CAD)";
- Sub-part 7: "Short Number Addressing (SNA)";
- Sub-part 8: "Area Selection (AS)";
- Sub-part 9: "Access Priority (AP)";
- Sub-part 10: "Priority Call (PC)";
- Sub-part 11: "Call Waiting (CW)";

Sub-part 12: "Call Hold (CH)";

Sub-part 13: "Call Completion to Busy Subscriber (CCBS)";

**Sub-part 14: "Late Entry (LE)";**

Sub-part 16: "Pre-emptive Priority Call (PPC)";

Sub-part 17: "Include Call (IC)";

Sub-part 18: "Barring of Outgoing Calls (BOC)";

Sub-part 19: "Barring of Incoming Calls (BIC)";

Sub-part 20: "Discreet Listening (DL)";

Sub-part 21: "Ambience Listening (AL)";

Sub-part 22: "Dynamic Group Number Assignment (DGNA)";

Sub-part 23: "Call Completion on No Reply (CCNR)";

Sub-part 24: "Call ReTention (CRT)";

EN 300 392-12: "Supplementary services stage 3";

ETS 300 392-13: "SDL model of the Air Interface (AI)";

ETS 300 392-14: "Protocol Implementation Conformance Statement (PICS) proforma specification";

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

TS 100 392-16: "Network Performance Metrics";

TS 100 392-17: "TETRA V+D and DMO Release 1.1 specifications".

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### National transposition dates

Date of adoption of this EN:	12 July 2002
Date of latest announcement of this EN (doa):	31 October 2002
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 April 2003
Date of withdrawal of any conflicting National Standard (dow):	30 April 2003

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## 1 Scope

The present document 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 or data call.

Man-Machine Interface (MMI) and charging principles are outside 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 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.

Aspects relating to all supplementary services are detailed in EN 300 392-9 [4].

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## 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.

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SIST EN 300 392-11-14 V1.1.1:2003
- [1] ETSI ETS 300 392-11-16: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 11: Supplementary services stage 2; Sub-part 16: Pre-emptive Priority Call (PPC)".
  - [2] 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] ETSI EN 300 392-2: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 2: Air Interface (AI)".
  - [4] ETSI EN 300 392-9: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 9: General requirements for supplementary services".
  - [5] 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)".



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## 3 Definitions and abbreviations

### 3.1 Definitions

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

**authorized user:** identified user who is able to define and interrogate the SS-LE parameters

**forced LE:** User is forced to join to the indicated call.

NOTE: 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)

**user A:** calling party in a call

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

**server user:** party that receives the SS-LE indications about an ongoing call and joins the call

NOTE: Also known as user B.

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### 3.2 Abbreviations

[SIST EN 300 392-11-14 V1.1.1:2003](https://standards.iteh.ai/catalog/standards/sist/5af841f-5438-472a-8fba-ab2863651b46/sist-en-300-392-11-14-v1-1-1-2003)

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For the purposes of the present document, 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

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## 4 Functional model

### 4.1 Functional model description

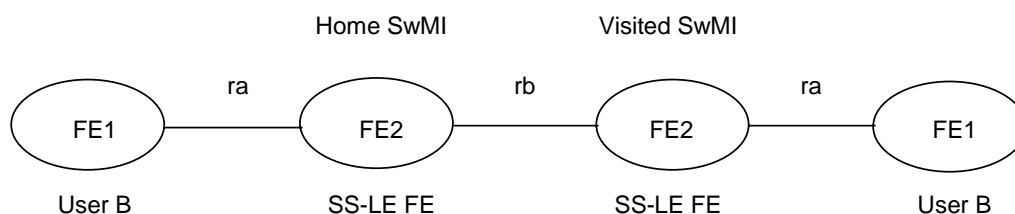
The functional model shall comprise the following Functional Entities (FEs):

- FE1 user B's functional entity;
- FE2 SS-LE functional entity;
- FE3 authorized user's functional entity.

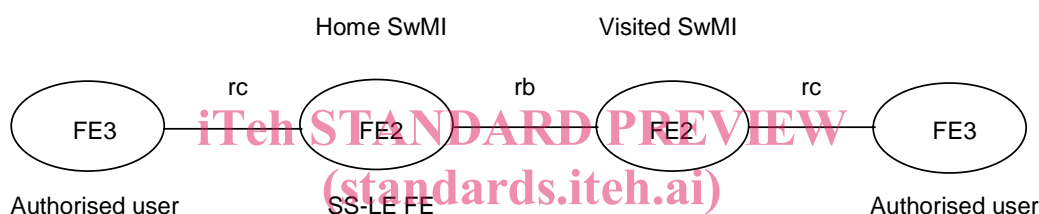
The following relationships shall exist between these FEs:

- ra between FE1 and FE2;
- rb between FE2s in different TETRA SwMIs;
- rc between FE2 and FE3.

Figure 1 shows these FEs and relationships for the operational part, and figure 2 for the management part. Refer to EN 300 392-9 [4] for further details on FE2 division into sub-entities.



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



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

## 4.2 FE description

### 4.2.1 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 visited SwMI FE1 shall send the messages to FE2 in visited SwMI.

### 4.2.2 SS-LE functional entity, FE2

At the reception of call invocation request from a calling user A, FE2 shall determine if the SS-LE is invoked. If so, FE1 shall determine the applied SS-LE type and shall start operation of the SS-LE. During operation FE2 shall send 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 the basic service to which SS-LE is defined, extends to another TETRA system (visited SwMI), FE2 shall send a SS-LE information flow to visited SwMI FE2 to indicate if SS-LE should or should not be invoked in visited SwMI.

### 4.2.3 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. At the reception of the responses, FE3 shall indicate the result to the service user.

### 4.2.4 LE functional entity FE2 in visited SwMI

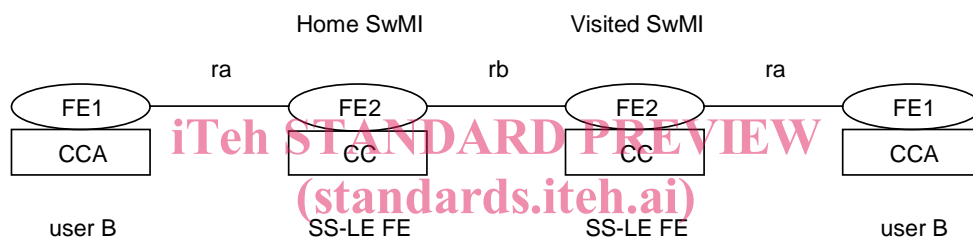
Refer EN 300 392-9 [4] for message routing services in a visited SwMI.

If a basic service extends to visited SwMI, FE2 should receive a SS-LE information flow which indicates if it should or should not invoke SS-LE for the call in visited SwMI. If SS-LE is invoked in visited SwMI for the call, the visited SwMI FE2 shall determine the SS-LE type for the call in visited SwMI. When the SS-LE type is acknowledgement, then the visited SwMI FE 2 shall pass acknowledgement from FE1 to the home SwMI FE2.

The group number shall be known in the visited SwMI either by migration or group linking, refer ETS 300 392-3-5 [5], when the SS-LE service is invoked in the visited SwMI, FE2.

## 4.3 Relationship with basic services

Figure 3 shows the relationship of SS-LE with basic service.



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**Figure 3: The relationships with a basic service**

## 5 Information flows

### 5.1 Definition of information flows

In the tables listing the elements in information flows, the column headed "Type" indicates which if these elements are Conditional (C), Optional (O) and Mandatory (M).

#### 5.1.1 Definition

Only authorized user (FE3) shall make SS-LE definitions. The definition can be to one group identity or a list or range of group identities. FE2 shall acknowledge the definition request. FE2 shall save the SS-LE definitions in the home SwMI for the defined group identity/identities, if the definition request was accepted.

The authorized user may define the LE type to be can be defined. If the LE type is omitted in the definition, it is outside the scope of the present document, which LE type shall be applied and the decision can be made e.g. depending on the congestion in the system.

SS-LE can be defined to be invoked over ISI to extend to several TETRA systems or the SS-LE can be defined not to extend over ISI.