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Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 11: Supplementary services stage 2; Sub-part 22: Dynamic Group Number Assignment (DGNA)

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ICS:

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

X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

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

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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".
- 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 Dynamic Group Number Assignment (SS-DGNA) for the Trans-European Trunked Radio (TETRA).

The SS-DGNA enables a user to dynamically define group identities and group related parameters to the TETRA system and to the subscribers in the system. These definitions are used to enable group call invocations to dynamically defined groups. This ETS specifies the creation, modification, deletion and interrogation of group definitions in the Switching and Management Infrastructure (SwMI), in the Mobile Station (MS) and in the Line Station (LS). The operations can be made within one TETRA system or over the Inter System Interface (ISI).

This specification does not include the specification for access priority used for random access in uplink and call priority used by SwMI for resource allocation for a group. Access priority and call priority can be specified for groups using Supplementary Service Access Priority (SS-AP), Supplementary Service Priority Call (SS-PC) and Supplementary Service Pre-emptive Priority Call (SS-PPC).

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 SwMI, in the MS and in the LS. Stage 2 describes the information flows exchanged between these entities, and it also describes 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 SwMI, MS and LS of the service.

2 Definitions and abbreviations

2.1 Definitions

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

affected user: An identified MS or LS user to whom the service is assigned.

authorized user: A user who is authorized to define, cancel, delete and interrogate SS-DGNA numbers.

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

call related DGNA: Creation of a group based on the participants of a referenced call.

call unrelated DGNA: Creation of a group based on identities.

Mobile Station (MS): A 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).

provision: The act of supplying a given service.

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

2.2 Abbreviations

2.2.1 General abbreviations

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

AP	Access Priority
CC	Call Control
CCA	Call Control (functional entity Agent)
DGNA	Dynamic Group Number Assignment
FE	Functional Entity
GSSI	Group Short Subscriber Identity
GTSI	Group TETRA Subscriber Identity
ISI	Inter-System Interface
MS	Mobile Station
LS	Line Station
PC	Priority Call
PPC	Pre-emptive Priority Call
SS	Supplementary Service

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

SwMI Switching and Management Infrastructure

3 Supplementary Service Dynamic Group Number Assignment (SS-DGNA) stage 2 specification

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3.1 Functional model

3.1.1 Functional model description

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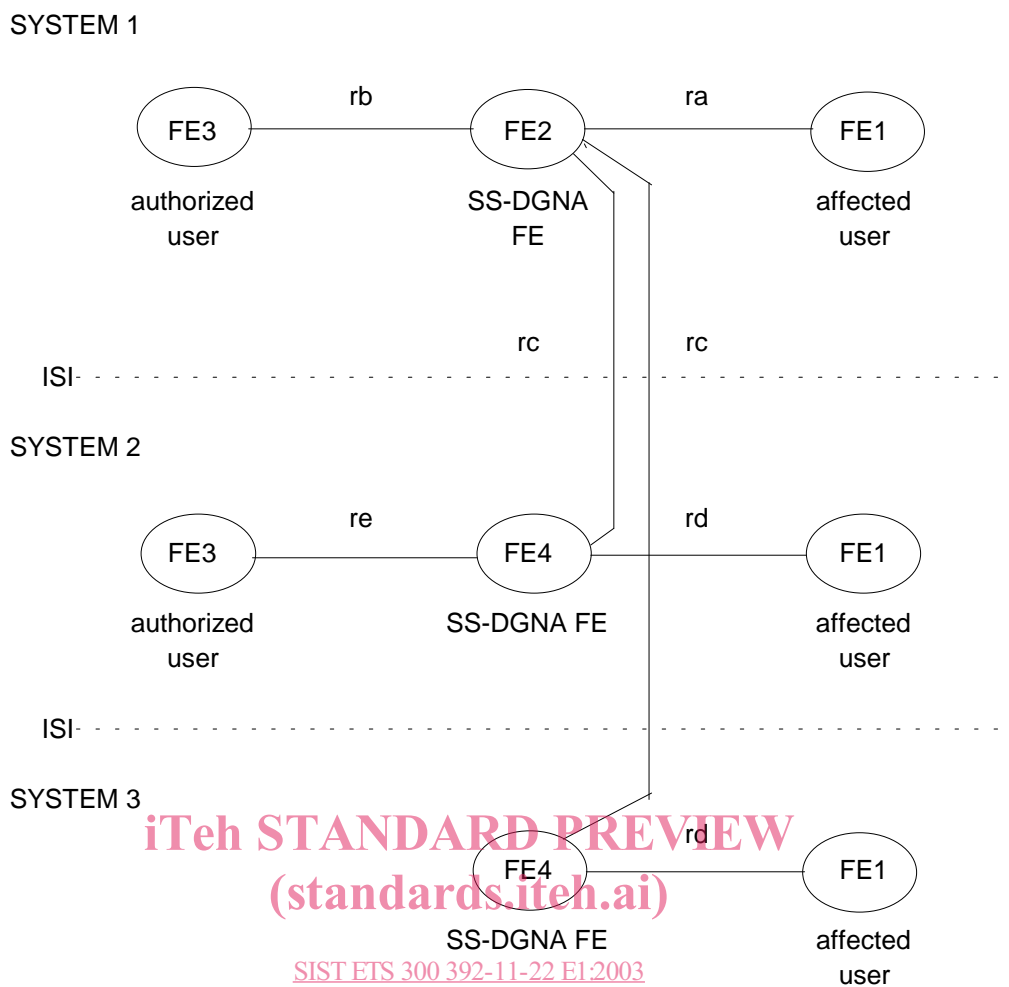
The functional model shall comprise the following Functional Entities (FEs):

- FE1 Authorized user's definition, cancellation and interrogation functional entity in the SS-DGNA system 1;
- FE2 Dynamic Group Number Assignment functional entity;
- FE3 Affected user's functional entity;
- FE4 Generic Dynamic Group Number Assignment functional entity in system 2;
- CC Call Control (functional entity);
- CCA Call Control (functional entity Agent).

The following relationships shall exist between these FEs:

- ra between FE1 and FE2;
- rb between FE2 and FE3;
- rc between FE2 and FE4;
- rd between FE4 and FE1;
- re between FE4 and FE3.

Figure 1 shows these FEs and their relationships.



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Figure 1: Functional model for SS-DGNA

3.1.2 Description of FEs

3.1.2.1 Affected user's functional entity, FE1

FE1 shall receive the SS-DGNA addition/modification and removal information flows to affected users from FE2. When the addition/modification data is sent to FE1, FE1 shall add the SS-DGNA number and parameters to the database in the MS; in case of removal of SS-DGNA number, FE1 shall remove the SS-DGNA number and its parameters from the database in the MS. FE1 should acknowledge the definition/deletion requests to FE2 if acknowledgement have been requested.

In case of addition/modification or removal of SS-DGNA, the FE1 may make local checks before accepting the request. FE1 should also use the network authorization procedure before accepting any SS-DGNA changes. However, FE1 should accept the SS-DGNA requests if they are authorized and valid.

At the reception of interrogation request from a service user, FE1 should send the request to FE2. When FE1 receives the response from FE2, FE1 should indicate the response to the service user.

3.1.2.2 SS-DGNA functional entity, FE2

FE2 shall make the SS-DGNA additions/modifications, deletions, cancellation and interrogations in the SwMI.

At the reception of any SS-DGNA request, FE2 shall verify the SS-DGNA identity, check the validity of parameters and verify that the request is authorized. Upon these checks, FE2 shall reject the service request or accept and perform it.