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Foreword

This European Telecommunication Standard (ETS) has been produced by the Radio Equipment and Systems (RES) Technical Committee 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: "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 stage 1", (DE/RES-06001-10).**
- Part 11: "Supplementary services stage 2", (DE/RES-06001-11).
- Part 12: "Supplementary services stage 3", (DE/RES-06001-12).
- Part 13: "SDL Model of the Air Interface", (DE/RES-06001-13).
- Part 14: "PICS Proforma", (DE/RES-06001-14).
- Part 15: "Inter-working - Extended Operations", (DE/RES-06001-15).
- Part 16: "Gateways for Supplementary Services", (DE/RES-06001-16).

Transposition dates	
Date of adoption of this ETS:	1 March 1996
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1 Scope

This European Telecommunication Standard (ETS) defines the stage 1 specifications of the Supplementary Service Dynamic Group Number Assignment (SS-DGNA) for the Trans-European Trunked Radio (TETRA). Stage 1 is an overall service description from the users point of view but does not deal with the details of the human interface itself.

This ETS specifies the service description of the supplementary service and the procedures to be expected with successful and unsuccessful outcomes. In addition this ETS specifies the interactions with other TETRA supplementary services and inter-working considerations.

Charging principles are outside the scope of this ETS.

The SS-DGNA enables a served user to dynamically create new groups.

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] CCITT Recommendation I.130 (1988): "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [2] ITU-T Recommendation Z.100 (1993): "Specification and Description Language (SDL)".

3 Definitions and abbreviations

3.1 Definitions

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

authorised user: A user who is able to use SS-DGNA on numbers he/she is authorised to.

Base Station (BS): A physical grouping of equipment which provides the fixed portion of the air interface. One base station transmits and receives radio signals to and from a single location area (a single region of geographical coverage). A BS contains at least one Base Radio Stack (BRS).

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.

DGNA number: Group number created with SS-DGNA.

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).

served user: The user who can create, modify and delete own DGNA numbers.

SS-SNA-1: Part of SS-SNA where a short number is used as an alias for an identity.

Supplementary Service (SS): 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.

3.2 Abbreviations

3.2.1 General abbreviations

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

BS	Base Station
GTSI	Group TETRA Subscriber Identity
ISDN	Integrated Services Digital Network
ITSI	Individual TETRA Subscriber Identity
MRS	Mobile Radio Stack
PTN	Private Telephone Network
SDL	(Functional) Specification and Description Language
SS	Supplementary Service

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

SwMI	Switching and Management Infrastructure
TETRA	Trans-European Trunked Radio

3.2.2 Supplementary service abbreviations

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

SS-AL	Ambience Listening
SS-AoC	Advice of Charge
SS-AP	Access Priority
SS-AS	Area Selection
SS-BIC	Barring of Incoming Calls
SS-BOC	Barring of Outgoing Calls
SS-CAD	Call Authorized by Dispatcher
SS-CCBS	Call Completion to Busy Subscriber
SS-CCNR	Call Completion on No Reply
SS-CFB	Call Forwarding on Busy
SS-CFNry	Call Forwarding on No Reply
SS-CFNrc	Call Forwarding on Not Reachable
SS-CFU	Call Forwarding Unconditional
SS-CLIP	Calling Line Identification Presentation
SS-CLIR	Calling/Connected Line Identification Restriction
SS-COLP	COnnected Line identification Presentation
SS-CR	Call Report
SS-CRT	Call ReTention
SS-CW	Call Waiting
SS-DGNA	Dynamic Group Number Assignment
SS-DL	Discreet Listening
SS-HOLD	Call HOLD
SS-IC	Include Call
SS-LE	Late Entry
SS-LSC	List Search Call
SS-PC	Priority Call
SS-PPC	Pre-emptive Priority Call
SS-SNA	Short Number Addressing
SS-TC	Transfer of Control
SS-TPI	Talking Party Identification

4 Supplementary Service Dynamic Group Number Assignment (SS-DGNA) stage 1 specification

4.1 Description

4.1.1 General description

SS-DGNA shall allow a served user or an authorized user to create, modify and delete group(s).

The SS-DGNA may be used to group all the participants in an ongoing call (call related DGNA). SS-DGNA may also be used to create groups based on identities (including Short Number Addressing (SNA)-1) (call unrelated DGNA).

As a network option, call related DGNA may be invoked after the call release within a predefined time.

The lifetime and the management actions on those SS-DGNA numbers shall be outside the scope of this ETS.

4.1.2 Qualifications on applicability to telecommunication services

This supplementary service shall be applicable to all TETRA circuit mode teleservices and bearer services.

4.2 Procedures

4.2.1 Provision and withdrawal

SS-DGNA shall be available to all TETRA users who have subscribed to this service.

The served user and the authorized user shall be identified upon provision.

The service may be provided after pre-arrangement or withdrawn by the service provider.

As a network option, a range of SS-DGNA numbers may be allocated to the served user for later definition.

4.2.2 Normal procedures

4.2.2.1 Activation, deactivation, definition, registration, interrogation, and cancellation

4.2.2.1.1 Activation and deactivation

SS-DGNA shall be permanently activated upon provision.

4.2.2.1.2 Definition

The definition may differ depending on the requested service: call related SS-DGNA or call unrelated SS-DGNA.

For call unrelated SS-DGNA, the served user or an authorized user shall be able to create/modify a group based on a list of identities by sending a list of subscriber identities to the system. That list can contain individual or group identities, and can use SS-SNA-1 to refer to individual or group identities. List search numbers shall not be part of the list. The authorized user shall be required to send the served user identity to which the SS-DGNA number shall belong.

For call related SS-DGNA, the system shall use the composition of the referenced call to create a new group.

The served user or an authorized user may de-assign a SS-DGNA number.

At the conclusion of the definition process, SS-DGNA shall be invoked.

As a network option, either the system may allocate a Group TETRA Subscriber Identity (GTSI) or the served/authorized user may choose a GTSI from his/her list of allocated SS-DGNA numbers.

4.2.2.1.3 Registration

The authorised user shall be registered..

4.2.2.1.4 Interrogation

SS-DGNA may be interrogated on a SS-DGNA number basis by the served user or an authorized user. The results of an interrogation may be:

- SS-DGNA completed or not completed on that SS-DGNA number;
- list of group members containing a status of whether downloading of DGNA information to each identity has been completed;
- list of SS-DGNA numbers the interrogating user has created;
- parameters associated with the DGNA number.

SS-DGNA may be interrogated by an authorized user against a served user identity. The results of an interrogation may be a list of SS-DGNA numbers the authorized user has created for the served user.

4.2.2.1.5 Cancellation

As a network option, SS-DGNA can be cancelled.

The SS-DGNA cancellation shall stop the distribution of the creation/modification/deletion information to the group members.

4.2.2.2 Invocation and operation

After creation of a group, the system shall inform each member of the group of the new group identity.

After modification of a group, the system shall inform the added/removed member of the group of the modification. As a network option, the other members of the group may receive a notification that the group was modified.

After de-assignment of a group, the system shall inform each member of the group that the group identity shall no longer be valid.

If the served user or an authorized user sends a dynamic group composition which has already a group number allocated, the Switching and Management Infrastructure (SwMI) as a network option may inform the served user and may offer him/her an opportunity for cancellation.

The SS-DGNA operation shall become completed either when all the necessary information have been sent to the group members, or when the SS-DGNA number is deleted or after a certain time-out. The time-out value shall be an operator option.

Upon completion, the system shall indicate the result of the SS-DGNA to the user who has requested the service as shown below:

- SS-DGNA fully completed;
- SS-DGNA completed due to a time-out;
- SS-DGNA number deleted.

4.2.3 Exceptional procedures

4.2.3.1 Activation, deactivation, definition, registration, interrogation, and cancellation

4.2.3.1.1 Activation and deactivation

Not applicable.

4.2.3.1.2 Definition

If the infrastructure cannot accept a definition request, then the cause shall be returned to the served user. Possible causes may be:

- service not provided by the network (general error message);
- the user is not the owner of the call;
- the user is not the served user;
- the user is not an authorized user for that SS-DGNA number;
- the user is not an authorized user for that affected user identity;
- modification/deletion requested on a GTSI that is not a SS-DGNA number;
- unknown group (if the SwMI have no knowledge on the group composition).

4.2.3.1.3 Registration

Not applicable.

4.2.3.1.4 Interrogation

If the network cannot accept an interrogation request, the interrogating user shall receive a notification that the SS-DGNA interrogation was unsuccessful. The possible causes for rejection can be:

- the GTSI has not been assigned with SS-DGNA;
- interrogating user is not the served user;
- interrogating user is not an authorized user for the specified SS-DGNA number.

4.2.3.1.5 Cancellation

Not applicable.

4.2.3.2 Invocation and operation

If the network cannot accept an invocation request or if the operation fails, the served user shall receive a notification that the SS-DGNA was unsuccessful. The possible causes can be:

- service not provided by the network;
- service not provided by another network.

If the network encounters some minor exceptional cases during SS-DGNA operation, the served user shall receive a notification that SS-DGNA was completed with some restrictions. The possible causes can be:

- one potential member of the group (Individual TETRA Subscriber Identity (ITSI) or GTSI) cannot be a member of that group (any reason).

4.3 Interactions with other supplementary services

Interactions with other TETRA supplementary services are specified below.

4.3.1 Calling Line Identification Presentation (SS-CLIP)

SS-DGNA shall not have any interaction with SS-CLIP.

4.3.2 Connected Line identification Presentation (SS-COLP)

SS-DGNA shall not have any interaction with SS-COLP.

4.3.3 Calling/Connected Line Identification Restriction (SS-CLIR)

SS-DGNA shall not have any interaction with SS-CLIR.

4.3.4 Call Report (SS-CR)

SS-DGNA shall not have any interaction with SS-CR.

4.3.5 Talking Party Identification (SS-TPI)

SS-DGNA shall not have any interaction with SS-TPI.

4.3.6 Call Forwarding Unconditional (SS-CFU)

SS-DGNA shall not have any interaction with SS-CFU.

4.3.7 Call Forwarding on Busy (SS-CFB)

SS-DGNA shall not have any interaction with SS-CFB.

4.3.8 Call Forwarding on No Reply (SS-CFNRY)

SS-DGNA shall not have any interaction with SS-CFNRY.

4.3.9 Call Forwarding on Not Reachable (SS-CFNRC)

SS-DGNA shall not have any interaction with SS-CFNRC.

4.3.10 List Search Call (SS-LSC)

Call unrelated SS-DGNA: list search numbers shall not be included into the definition list.

Call related SS-DGNA shall not have any interaction with SS-LSC. If some participants of the call have been selected by SS-LSC, the system shall use their attendant identity and not the list search number for the definition.

4.3.11 Call Authorized by Dispatcher (SS-CAD)

SS-DGNA shall not have any interaction with SS-CAD.

4.3.12 Short Number Addressing (SS-SNA)

SS-DGNA shall not have any interaction with SS-SNA.

4.3.13 Area Selection (SS-AS)

SS-DGNA shall not have any interaction with SS-AS.

4.3.14 Access Priority (SS-AP)

SS-DGNA shall not have any interaction with SS-AP.

4.3.15 Priority Call (SS-PC)

SS-DGNA shall not have any interaction with SS-PC.

4.3.16 Call Waiting (SS-CW)

SS-DGNA shall not have any interaction with SS-CW.

4.3.17 Call Hold (SS-HOLD)

SS-DGNA shall not have any interaction with SS-HOLD.

4.3.18 Call Completion to Busy Subscriber (SS-CCBS)

SS-DGNA shall not have any interaction with SS-CCBS.

4.3.19 Late Entry (SS-LE)

SS-DGNA shall not have any interaction with SS-LE.

4.3.20 Transfer of Control (SS-TC)

SS-DGNA shall not have any interaction with SS-TC.

4.3.21 Pre-emptive Priority Call (SS-PPC)

SS-DGNA shall not have any interaction with SS-PPC.

4.3.22 Include Call (SS-IC)

SS-DGNA shall not have any interaction with SS-IC.

4.3.23 Advice of Charge (SS-AoC)

SS-DGNA shall not have any interaction with SS-AoC.

4.3.24 Barring of Outgoing Calls (SS-BOC)

SS-DGNA shall not have any interaction with SS-BOC.

4.3.25 Barring of Incoming Calls (SS-BIC)

SS-DGNA shall not have any interaction with SS-BIC.

4.3.26 Discreet Listening (SS-DL)

SS-DGNA shall not have any interaction with SS-DL.

4.3.27 Ambience Listening (SS-AL)

SS-DGNA shall not have any interaction with SS-AL.

4.3.28 Dynamic Group Number Assignment (SS-DGNA)

Not applicable.

4.3.29 Call Completion on No Reply (SS-CCNR)

SS-DGNA shall not have any interaction with SS-CCNR.

4.3.30 Call Retention (SS-CR)

Not applicable.

4.4 Inter-working considerations

If a user wants to use SS-DGNA in a visited network, it implies that the service shall be offered by the latter and that the overall process shall be centralised in the home SwMI. The request and the associated list (if any) shall be sent to the home system, and all information's and mobile data bases programming orders shall be issued from the home SwMI.

4.5 Overall SDL

Figure 1 contains the dynamic description of SS-DGNA using the Specification Description Language (SDL) defined in ITU-T Recommendation Z.100 [2]. The SDL process represents the behaviour of the network in providing SS-DGNA.

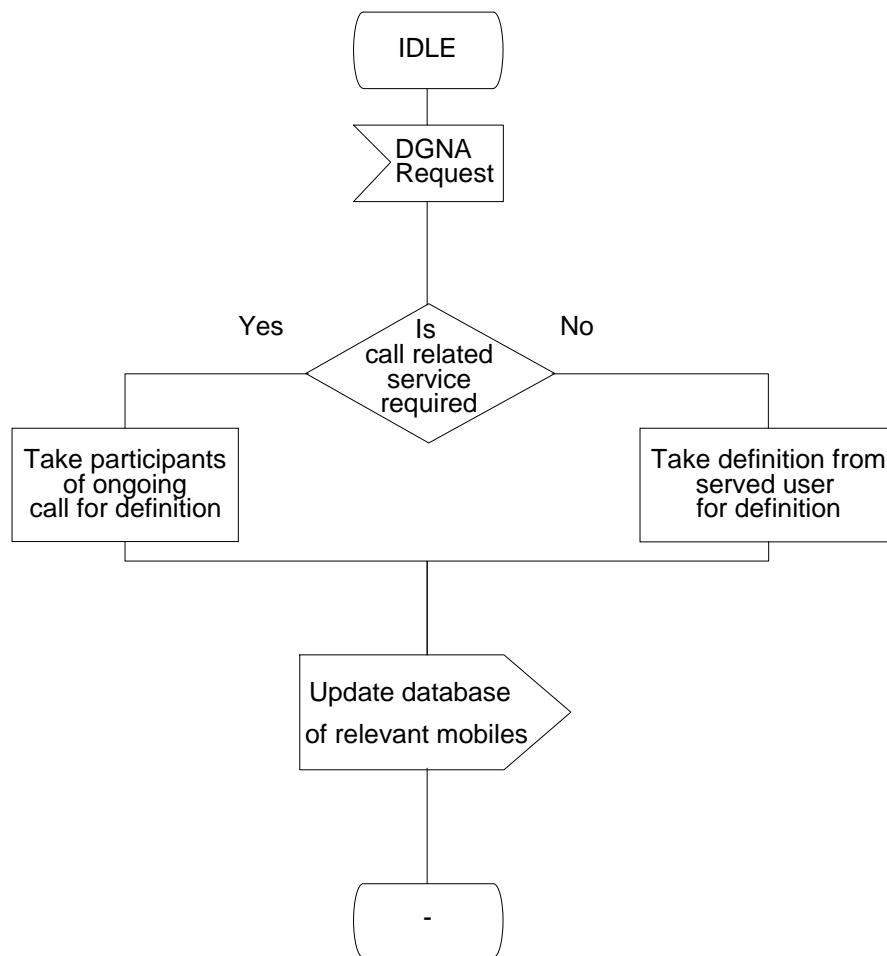


Figure 1: SS-DGNA supplementary service, overall SDL

History

Document history			
November 1994	Public Enquiry	PE 73:	1994-11-07 to 1995-03-03
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