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Service Description**

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## Foreword

This European Telecommunication Standard (ETS) has been produced by the Network Aspects (NA) Technical Committee of the European Telecommunications Standards Institute (ETSI).

In accordance with CCITT Recommendation I.130 [1], the following three level structure is used to describe the supplementary telecommunications services as provided by European public telecommunications operators under the pan-European Integrated Services Digital Network (ISDN):

- Stage 1: is an overall service description, from the user's standpoint;
- Stage 2: identifies the functional capabilities and information flows needed to support the service described in stage 1; and
- Stage 3: defines the signalling system protocols and switching functions needed to implement the service described in stage 1.

This ETS details the stage 1 aspects (overall service description) for the Direct Dialling In (DDI) supplementary service. The stage 2 and stage 3 aspects are detailed in ETS 300 063 (1991) and ETS 300 064 (1991), respectively.

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## 1 Scope

This standard defines the stage one of the Direct Dialling In (DDI) supplementary service for the pan-European Integrated Services Digital Network (ISDN) as provided by European public telecommunications operators. Stage one is an overall service description from the user's point of view (see CCITT Recommendation I.130 [1]), but does not deal with the details of the human interface itself.

This standard defines the interworking requirements of private ISDNs with the public ISDN.

In addition this standard specifies the base functionality where the service is provided to the user via a private ISDN.

This standard does not specify the additional requirements where the service is provided to the user via a telecommunications network that is not an ISDN but does include interworking requirements of other networks with the public ISDN.

Interactions with supplementary services not listed in Clause 8 are outside the scope of this standard.

Charging principles are outside the scope of this standard.

The DDI supplementary service enables a user to call directly via a public ISDN a user on a private ISDN by using the public ISDN numbering plan.

The DDI supplementary service is applicable to all telecommunication services.

This standard is applicable to the stage two and stage three standards for the ISDN DDI supplementary service. The terms "stage two" and "stage three" are also defined in CCITT Recommendation I.130 [1]. Where the text indicates the status of a requirement (i.e. as strict command or prohibition, as authorisation leaving freedom), as a capability or possibility, this shall be reflected in the text of the relevant stage two and stage three standards.

Furthermore, conformance to this standard is met by conforming to the stage three standards with the field of application appropriate to the equipment being implemented. Therefore no method of testing is provided for this standard.

## 2 Normative references

This standard 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 standard 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 characterisation of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [2] CCITT Recommendation I.112 (1988), "Vocabulary of terms for ISDNs".
- [3] CCITT Recommendation E.164 (1988), "Numbering plan for the ISDN era".
- [4] CCITT Recommendation I.210 (1988), "Principles of telecommunication services supported by an ISDN and the means to describe them".
- [5] CCITT Recommendation Q.9 (1988): "Vocabulary of switching and signalling terms".

### 3 Definitions

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

**Integrated Services Digital Network (ISDN):** See CCITT Recommendation I.112 [2], § 2.3, definition 308.

**service; telecommunications service:** See CCITT Recommendation I.112 [2], § 2.2, definition 201.

**supplementary service:** See CCITT Recommendation I.210 [4], § 2.4.

**ISDN number:** A number conforming to the numbering plan and structure specified in CCITT Recommendation E.164 [3].

**basic call (procedures):** The procedures by which a call (as an instance of a basic telecommunications service) is established and terminated.

**basic access:** See CCITT Recommendation Q.9 [7], § 1, definition 1551.

**primary rate access:** See CCITT Recommendation Q.9 [7], § 1, definition 1552.

### 4 Symbols and abbreviations

DDI	Direct Dialling In
ISDN	Integrated Services Digital Network
PSTN	Public Switched Telephone Network

### 5 Description

The DDI supplementary service shall apply to the basic access and the primary rate access.

The DDI supplementary service enables a user to call directly via a public ISDN a user on a private ISDN by use of the public ISDN numbering plan [3].

The network shall send all or part of the ISDN number. If part of the ISDN number is sent, it shall be the last part of the ISDN number, i.e. if one digit is sent, it shall be the last digit of the ISDN number, if n digits are sent, this shall be the last n digits of the ISDN number. This information shall be used by the private ISDN, in order to progress the call to the destination.

NOTE: In the case where the part of the ISDN number is sent by the network, this part is either a fixed number of digits applying for all subscribers or, as a network option, a number of digits defined on a per subscriber basis.

DDI shall apply to public ISDNs having either a closed or an open numbering plan.

### 6 Procedures

#### 6.1 Provision and withdrawal

The DDI supplementary service shall be provided or withdrawn after prior arrangement with the service provider. The service provider shall allocate a set of ISDN numbers.

#### 6.2 Normal procedures

##### 6.2.1 Activation, deactivation and registration

Not applicable.



### **6.2.2 Erasure**

Not applicable.

### **6.2.3 Invocation and operation**

Call initiation procedures shall be the same as for basic services. The calling and called users shall perceive the same completion procedures as for the basic service.

Upon call acceptance, the calling user shall be connected to the called user designated by the ISDN number.

### **6.2.4 Interrogation**

Not applicable.

## **6.3 Exceptional procedures**

### **6.3.1 Activation, deactivation and registration**

Not applicable.

### **6.3.2 Erasure**

Not applicable.

### **6.3.3 Invocation and operation**

If the called user is busy or does not answer, the procedures for basic calls shall apply. If a call is offered with incomplete address information, the call shall be released by time supervision within the public network.

NOTE: A corresponding time supervision within the private ISDN is advisable.

### **6.3.4 Interrogation**

Not applicable.

## **7 Intercommunication considerations**

### **7.1 Interworking with non-ISDNs**

As for the basic call.

### **7.2 Interworking with private ISDNs**

This standard describes the mechanism which enables a user on a public ISDN to call directly a user on a private ISDN. There are no additional considerations for the DDI supplementary service when interworking with private ISDNs.

NOTE: If the public network does not know what equipment is connected to the access, the DDI supplementary service can apply.

## **8 Interaction with other supplementary services**

In the case of the interaction with other supplementary services, these supplementary services shall be applicable to the whole access, unless explicitly stated otherwise.

### **8.1 Advice of charge services**

#### **8.1.1 Charging information at call set-up time**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

#### **8.1.2 Charging information during the call**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

#### **8.1.3 Charging information at the end of the call**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.2 Call waiting**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.3 Call hold**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.4 Call transfer services**

#### **8.4.1 Explicit call transfer**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

#### **8.4.2 Single step call transfer**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.5 Number identification services**

#### **8.5.1 Calling line identification presentation**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

NOTE: At the calling party's user-network interface, the network may be supplied with a calling party number as a result of the DDI supplementary service applying either:

- at that interface, in which case a partial or full calling party number may be supplied and may be subject to screening by the ISDN, or
- at that interface or at another interface to which the same private ISDN is attached, in which case a full (international or national) ISDN number may be supplied, subject to the existence of a special arrangement for not screening.

### **8.5.2 Calling line identification restriction**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.5.3 Connected line identification presentation**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

NOTE: At the called party's user-network interface, the network may be supplied with a connected party number as a result of the DDI supplementary service applying either:

- at that interface, in which case a partial or full connected party number may be supplied and may be subject to screening by the ISDN, or
- at that interface or at another interface to which the same private ISDN is attached, in which case a full (international or national) ISDN number may be supplied, subject to the existence of a special arrangement for not screening.

### **8.5.4 Connected line identification restriction**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.6 Closed user group**

Closed user group membership shall not be available on a per ISDN number basis, but instead shall be on the basis of the entire range of ISDN numbers applicable at an access or group of accesses.

### **8.7 Completion of calls to busy subscriber**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.8 Conference services**

#### **8.8.1 Conference call, add-on**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

#### **8.8.2 Meet me conference**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.9 Direct dialling in**

Not applicable.

### **8.10 Diversion services**

#### **8.10.1 Call forwarding unconditional**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

#### **8.10.2 Call forwarding busy**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.10.3 Call forwarding no reply**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.10.4 Call deflection**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.11 Freephone**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.12 Malicious call identification**

If the DDI supplementary service is provided to the served user of the malicious call identification supplementary service, then the malicious call identification supplementary service shall be provided either globally for the whole access or, as a network option, for specific ISDN numbers forming part of the DDI supplementary service, according to access arrangements.

In both cases, the complete ISDN number of the called user shall be registered.

### **8.13 Multiple subscriber number**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

NOTE 1: Subscription to the DDI supplementary service and the multiple subscriber number supplementary service is mutually exclusive. However, in some networks both supplementary services could coexist on the same access (e.g., for future extension of service provision).

NOTE 2: The information provided by the public ISDN in the DDI supplementary service can be used by the private ISDN in the context of the private ISDN's multiple subscriber number supplementary service.

### **8.14 Subaddressing**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.15 Terminal portability**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.16 Three party**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

### **8.17 User-user signalling**

No impact, i.e. neither supplementary service shall affect the operation of the other supplementary service.

## History

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