

**Integrated Services Digital Network (ISDN);
ISDN service enhancements based on DDI ranges
for call diversion supplementary services**



Reference

DES/SPAN-020075

Keywords

DDI, ISDN, supplementary service

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Contents

| | |
|---|----|
| Intellectual Property Rights | 4 |
| Foreword..... | 4 |
| Introduction | 4 |
| 1 Scope | 5 |
| 2 References | 5 |
| 3 Definitions and abbreviations | 6 |
| 3.1 Definitions | 6 |
| 3.2 Abbreviations | 6 |
| 4 User requirements | 6 |
| 5 Description | 6 |
| 6 Intercommunication considerations | 8 |
| 6.1 Effect of DDI ranges on the DDI supplementary service and the interactions with diversion supplementary services | 8 |
| 6.1.1 Call Forwarding Unconditional (CFU) | 8 |
| 6.1.2 Call Forwarding Busy (CFB) | 8 |
| 6.1.3 Call Forwarding No Reply (CFNR) | 8 |
| 6.1.4 Call Deflection (CD)..... | 8 |
| 6.1.5 Selective Call Forwarding (SCF) | 8 |
| Bibliography | 9 |
| History | 10 |

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Foreword

This ETSI Standard (ES) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN), and is now submitted for the ETSI standards Membership Approval Procedure.

Introduction

The present document describes the structure and the functions of DDI ranges and the effects on the DDI supplementary service and the call diversion supplementary services.

1 Scope

The present document defines the possibility to assign several call diversion supplementary services to a DDI range as an alternative to assigning supplementary services to the whole access.

The purpose of the introduction of DDI ranges is to fulfil the user requirements concerning the DDI supplementary service and the interactions with the call diversion supplementary services.

The present document shall be considered as a base for the revision of the interaction sections of the DDI supplementary service and the call diversion supplementary services.

The ISDN Service enhancements based on DDI ranges for call diversion supplementary services are applicable to all circuit-switched telecommunication services.

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, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

- [1] ITU-T Recommendation I.112 (1993): "Vocabulary of terms for ISDNs".
- [2] ITU-T Recommendation I.210 (1993): "Principles of telecommunication services supported by an ISDN and the means to describe them".
- [3] ITU-T Recommendation E.164 (1997): "The international public telecommunication numbering plan".
- [4] ETS 300 062 (1991): "Integrated Services Digital Network (ISDN); Direct Dialling In (DDI) supplementary service; Service description".
- [5] ETS 300 199 (1994): "Integrated Services Digital Network (ISDN); Call Forwarding Busy (CFB) supplementary service; Service description".
- [6] EN 301 133 (1997): "Integrated Services Digital Network (ISDN); Selective Call Forwarding (SCF) supplementary services (unconditional, busy and no reply); Service description".

3 Definitions and abbreviations

3.1 Definitions

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

DDI range: summarized group of sequential DDI numbers including one or more than one DDI number

The DDI range is specified as a subscription option to allow controlling of supplementary services as an alternative to the assigning of supplementary services to the whole access.

DDI range identifier: first DDI number of each DDI range to identify this range for activation, deactivation and/or interrogation procedures

Integrated Services Digital Network (ISDN): see ITU-T Recommendation I.112 [1], subclause 2.3, definition 308

supplementary service: see ITU-T Recommendation I.210 [2], subclause 2.4

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

basic access: see ITU-T Recommendation I.112 [1], subclause 2.4, definition 425

primary rate access: see ITU-T Recommendation I.112 [1], subclause 2.4, definition 426

access: general term, used in the present document, denoting basic accesses and/or primary rate accesses

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

| | |
|------|-------------------------------------|
| ISDN | Integrated Services Digital Network |
| DDI | Direct Dialling In |

4 User requirements

- For the user it is possible to control the activation, deactivation and interrogation based on DDI ranges as an alternative to the "all numbers" option.
- The use of a DDI range allows more flexibility in managing a complex private network.
- Where the private network consists of several nodes corresponding to DDI ranges, it allows specific treatment of calls to each node over a shared public access.
- If a private network on a customer site fails or is taken out of service, the public network can readily forward calls to a second destination.

5 Description

The application of DDI ranges is intended for the use on accesses to which a private ISDN is connected to the public ISDN at the T reference point.

The provision of DDI ranges is a service provider option.

DDI ranges shall be provided or withdrawn after prior arrangement with the service provider.

The use of DDI ranges requires the provision of the DDI supplementary service to a hunt group.

The private network provider controls DDI ranges by using the first DDI number of each DDI range as an DDI range identifier.

A DDI range consists of a coherent block of sequential DDI numbers (e.g. 100 to 199). As a service provider option a DDI range can include non-sequential sets of DDI numbers (e.g. 204, 301, 306).

The use of different sized ranges starting with the same DDI number (DDI range identifier) is not possible.

The application of DDI ranges has to ensure a clear identification of the DDI range to allow a flexible handling of supplementary services associated with the DDI range. The configuration of overlapping ranges (e.g. ranges 100 to 199 and 157 to 189) and a multiple allocation of DDI range identifiers per hunt group number shall not apply.

DDI ranges do not cover the whole access. Between the ranges gaps can exist (e.g. one range is 100 to 199 and the next is 300 to 399).

The service can be offered with the following network provider option giving:

- the maximum number of DDI ranges per hunt group (range 1 to 15).

The maximum value used is chosen by the network operator.

NOTE 1: A hunt group can consist of only one access.

NOTE 2: In the case that a hunt group exists of more than one group number the maximum value relates to each group number.

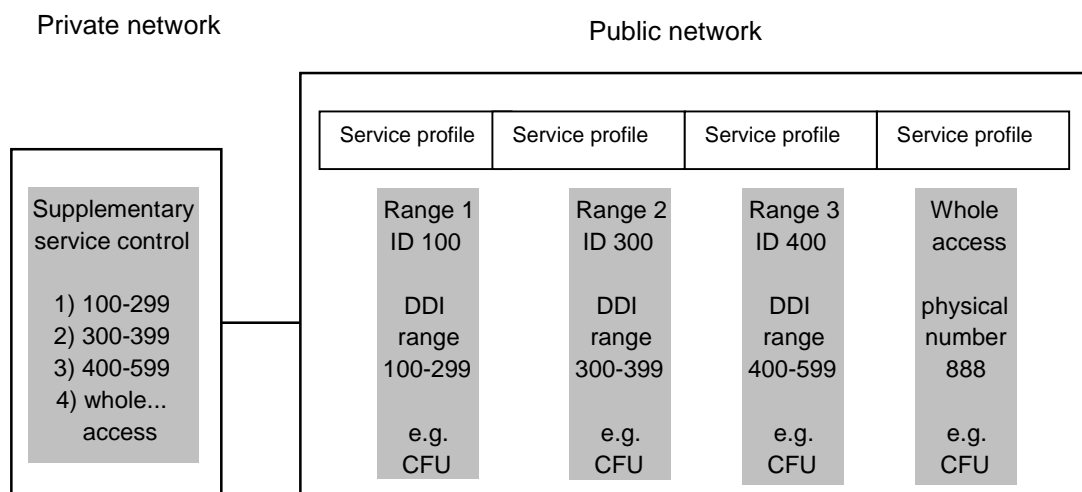


Figure 1: Access configuration with DDI ranges

6 Intercommunication considerations

6.1 Effect of DDI ranges on the DDI supplementary service and the interactions with diversion supplementary services

This subclause applies also for the DDI [4] and the diversion supplementary service descriptions [5] - [6].

6.1.1 Call Forwarding Unconditional (CFU)

As a service provider option, the served user can, if subscribed to, indicate that the activation of the CFU supplementary service shall apply for a DDI range for which the CFU supplementary service is subscribed to. In this case the activation for these DDI ranges shall replace any previous activation of the CFU supplementary service on basis of the whole access.

6.1.2 Call Forwarding Busy (CFB)

As a service provider option, the served user can, if subscribed to, indicate that the activation of the CFB supplementary service shall apply for a DDI range for which the CFB supplementary service is subscribed to. In this case the activation for these DDI ranges shall replace any previous activation of the CFB supplementary service on basis of the whole access.

6.1.3 Call Forwarding No Reply (CFNR)

As a service provider option, the served user can, if subscribed to, indicate that the activation of the CFNR supplementary service shall apply for a DDI range for which the CFNR supplementary service is subscribed to. In this case the activation for these DDI ranges shall replace any previous activation of the CFNR supplementary service on basis of the whole access.

6.1.4 Call Deflection (CD)

As a service provider option, the CD supplementary service can be provided on a DDI range basis or to the whole access.

6.1.5 Selective Call Forwarding (SCF)

As a service provider option, the served user can, if subscribed to, indicate that the activation of the SCF supplementary service shall apply for a DDI range for which the SCF supplementary service is subscribed to.

In this case the activation for these DDI ranges shall replace any previous activation of the SCF supplementary service on basis of the whole access.

Bibliography

The following material, though not specifically referenced in the body of the present document (or not publicly available), gives supporting information.

- DEN/SPAN-020028 (1994): "Integrated Services Digital Network (ISDN); Trunk Hunting (TH) supplementary service; Service description".
- ETS 300 200 (1994): "Integrated Services Digital Network (ISDN); Call Forwarding Unconditional (CFU) supplementary service; Service description".
- ETS 300 201 (1994): "Integrated Services Digital Network (ISDN); Call Forwarding No Reply (CFNR) supplementary service; Service description".
- ETS 300 202 (1994): "Integrated Services Digital Network (ISDN); Call Deflection (CD) supplementary service; Service description".
- ETS 300 345 (1995): "Integrated Services Digital Network (ISDN); Interworking between public and private ISDNs for the provision of telecommunication services; General aspects".

History

| Document history | | | |
|-------------------------|---------------|-------------------------------|-------------------------------------|
| V1.1.1 | December 1999 | Membership Approval Procedure | MV 200006: 1999-12-14 to 2000-02-11 |
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