

Recommendation T/SF 31-05 (Cannes 1983, revised in Odense 1986)

GENERAL SUPPLEMENTARY SERVICE ASPECTS OF AN INTEGRATED SERVICES DIGITAL NETWORK (ISDN)

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1. PROVISION

1.1. General Aspects

That one or more Supplementary Services can be associated with a basic Telecommunication Service. This applies to both Bearer Services and Teleservices. Supplementary Services cannot be offered to users on a stand alone basis, but must be offered in association with a basic Telecommunication Services.

Supplementary Services are suited to assist Users in using Bearer or Teleservices.

1.2. Provision of new types of Supplementary Services

That with the introduction of the ISDN's separate signalling channel (D channel), administrations would envisage introducing Supplementary Services which have not been provided with existing networks because:

- (a) the control procedure were too cumbersome or,
- (b) the interruption of the call in progress in order to send control signals would have been unacceptable.

An example of such a Supplementary Service is Number Identification.

1.3. Relevance of Supplementary Services

That the operation of Supplementary Services should always be relevant to the form of traffic being carried. A matrix relating the relevance of Supplementary Services to Bearer Services and a matrix relating to Teleservices see T/SF 31-06.

1.4. Location of Supplementary Services

The Supplementary Service may be located in either the network or the terminal or a combination of both. When Supplementary Services are terminal located some restriction and safeguards will be required on terminal solution e.g.

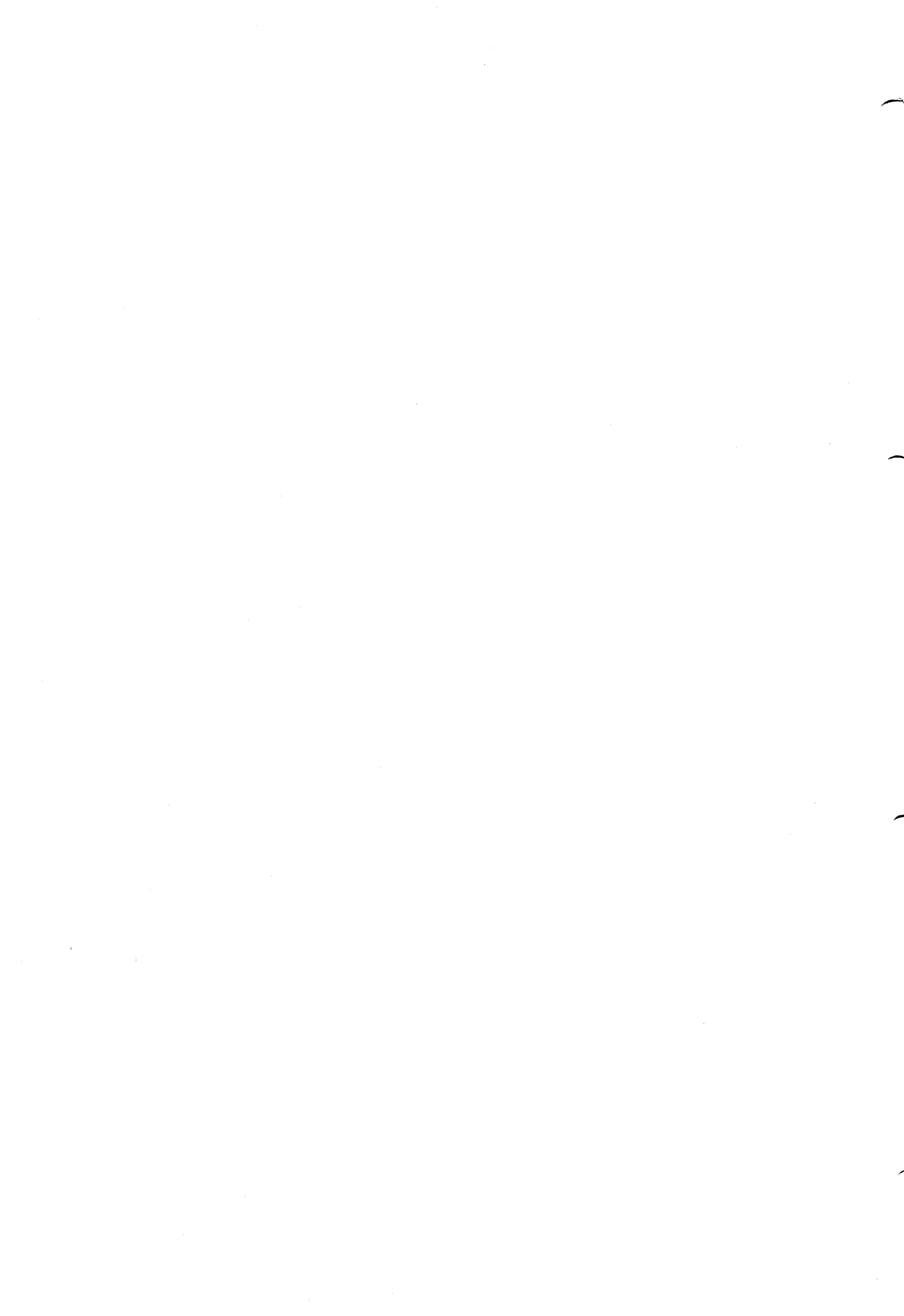
- they shall not be allowed to influence the control of charging;
- they shall not override network security and secrecy requirements;
- they shall not abuse the network. For example generation of excessive ineffective traffic due to "Last Number Repetition".

2. LIST OF SUPPLEMENTARY SERVICES

That an agreed list of Supplementary Services is contained in Annex 1.

3. DEFINITIONS OF SUPPLEMENTARY SERVICES

That agreed definitions of Supplementary Services are contained in Annex 2.



Annex 1

LIST OF SUPPLEMENTARY SERVICES

- | Nr. | TITLE |
|-----|--|
| 1. | ABBREVIATED ADDRESS |
| 2. | ADVICE OF CHARGE |
| 3. | ALARM CALL SERVICE |
| 4. | ALARM (WARNING) SERVICE |
| 5. | BOOKED CALL |
| 6. | CALLED BARRING SERVICES |
| 7. | CALL HOLD |
| 8. | CALL HOLD |
| 9. | CALL WAITING |
| 10. | CENTRALISED DISTRIBUTION OF RECORDED PRIVATE INFORMATION |
| 11. | CENTRALISED PBX FACILITIES (CENTREX) |
| 12. | CHANGE OF SERVICE DURING AN ESTABLISHED CALL |
| 13. | CLOSED USER GROUP |
| 14. | CODE/SPEED CONVERSION |
| 15. | COMPLETION OF CALLS TO BUSY SUBSCRIBERS |
| 16. | CONFERENCE CALL |
| 17. | CREDIT CARD CALLING |
| 18. | DATE AND TIME CALL RECORD |
| | (a) DIGITAL CONNECTIVITY |
| 19. | DIRECT DIALLING IN |
| 20. | DIRECTORY ENQUIRIES <u>AUTOMATIC</u> |
| 21. | <u>MANUAL</u> |
| 22. | DIVERSION SERVICES |
| | (a) CALL FORWARDING UNCONDITIONAL SERVICE DESCRIPTION |
| | (b) CALL FORWARDING NO-REPLY SERVICE DESCRIPTION |
| | (c) CALL FORWARDING BUSY SERVICE DESCRIPTION |
| 23. | EDITING |
| 24. | EXPENDING OF A CALL IN PROGRESS |
| 25. | FAULT REPORTING SERVICE |
| 26. | FIXED DESTINATION CALL |
| 27. | FREEPHONE SERVICE |
| 28. | GENERAL DE-ACTIVATION SERVICE |
| 29. | GENERAL TELECOMMUNICATIONS INFORMATION SERVICE |
| 30. | INTERCEPTION OF CALLS |
| 31. | LECTURE CALL |
| 32. | LINE HUNTING |
| 33. | LOGGING OF INCOMING CALLS |
| 34. | MALICIOUS CALL IDENTIFICATION |
| 35. | NATIONAL SELECTION AND INDICATION OF THROUGHPUT CLASS |
| 36. | NUMBER IDENTIFICATION |
| | (a) CALLING LINE IDENTIFICATION PRESENTATION |
| | (b) CALLING LINE IDENTIFICATION RESTRICTION |
| | (c) CONNECTED LINE IDENTIFICATION PRESENTATION |
| 37. | OPERATOR ACCESS TO AND CONTROL OF SUPPLEMENTARY SERVICES |
| 38. | OUT OF AREA LINES |
| 39. | PACKET DELIVERY CONFIRMATION |
| 40. | PAYPHONE SERVICE |
| 41. | PERMANENT SUBSCRIBER NUMBER |
| 42. | PRIORITY |
| 43. | PRIORITY SELECTION |
| 44. | REPEAT LAST CALL |
| 45. | SEQUENCE CALLING |

46. SUB-ADDRESSING
47. TERMINAL PORTABILITY
48. TERMINAL SELECTION
49. THREE PARTY SERVICE
50. TRANSFER OF CHARGES
51. UNIVERSAL ACCESS NUMBERS
52. USER SELECTION OF PAD PARAMETERS SETTINGS
53. USER-TO-USER SIGNALLING
54. WIDE AREA SERVICE

Annex 2

DEFINITIONS OF SUPPLEMENTARY SERVICES COMMON TO VOICE AND NON-VOICE SERVICES

1. ABBREVIATED ADDRESS

Definition

The possibility for a subscriber to make a call by sending a short code instead of the full number.

2. ADVICE OF CHARGE

This supplementary service provides charging information to an ISDN user for all chargeable calls.

3. ALARM CALL SERVICE

Definition

The possibility for a user to cause an alarm call or calls to be made to his line at a time or times specified in advance by him, and to receive an appropriate indication when the call is answered.

4. ALARM (WARNING) SERVICE

Definition

A service which will provide a suitable signalling device (e.g. key or sensor device) at the customers premises which when operated will cause the network to send information to identify the particular premises to a specified terminal, e.g. the Police or security agency. Signals will be continuously exchanged between the network and the customers premises to protect against faults or sabotage.

5. BOOKED CALL

Definition

With prior information from a subscriber, a call may be made automatically from his termination to a particular number or services (excluding the Alarm Call Service) at a specified date and time.

6. CALL BARRING SERVICES

Definition

The possibility for a subscriber to have certain categories of call barred from his termination, i.e.:

- all incoming calls;
- all outgoing calls;
- incoming calls from selective addresses;
- outgoing calls to selective addresses.

7. CALL FORWARDING SERVICE

Definition

The possibility for a customer to obtain a number in a distant area and have all calls to that number automatically forwarded—at his cost—to a number in his premises.

Description

A subscriber who wants to receive calls at his premises at low cost for callers in a certain (distant) area, can be allocated a number in that area. All calls to that allocated number are automatically forwarded through the public switched network to a number connected to the nominated subscriber's premises. The calling subscriber is charged for the call to the allocated number only; the charge related to the forwarded part of the call is applied to the controlling subscriber. The service will only be available on pre-arrangement with the Administration.

8. CALL HOLD

Definition

An engaged user can hold the existing call and may reconnect to the existing call at a later time.

9. CALL WAITING

Definition

The possibility for a customer to be notified of an incoming call whilst his termination is in the busy state. Subsequently, the customer can either answer the incoming call, reject or ignore the call.

10. CENTRALISED DISTRIBUTION OF RECORDED PRIVATE INFORMATION

Definition

The possibility for a subscriber to record and have stored one or more messages which can be either forwarded to registered addresses or called for by intended recipients. At the registration of the messages the times for delivery, storage, etc., may be indicated.

11. CENTRALISED PBX FACILITIES (CENTREX)

Definition

The provision to customers by means of specially equipped public exchanges of services normally available only in PABXs e.g. internal connexions.

12. CHANGE OF SERVICE DURING AN ESTABLISHED CALL

Definition

The possibility for a user to change the service during an existing call without disconnecting the call.

13. CLOSED USER GROUP

Definition

The possibility for a group of users, connected to the ISDN, to intercommunicate only amongst themselves and, if required, one or more users may be provided with incoming/outgoing access to users outside this group.

14. CODE/SPEED CONVERSION

Definition

Terminals with different speeds are enable to intercommunicate. Character signals or groups of character signals in one code are automatically converted into corresponding signals or groups of signals in another code.

15. COMPLETION OF CALLS TO BUSY SUBSCRIBERS

Completion of Calls to Busy Subscriber (CCBS) allows a calling user A, encountering a busy destination B, to be notified when the busy destination B becomes not busy and to have the service provider reinitiate the call to the specified destination B if User A desires.

16. CONFERENCE CALLING (ADD ON)

Definition

This supplementary service provides a user with the ability to have a multi-connection call, i.e. a simultaneous communication between more than two parties.

17. CREDIT CARD CALLING

Definition

Payment of charges by placing a credit card in a specially adapted terminal.

18. DATE AND TIME CALL RECORD

(a) Digital connectivity

Definition

The digital connectivity is a user facility that enables user to establish a fully digital path at 64 kbit/s user-to-user(s).

19. DIRECT DIALLING IN

Definition

This service enables a user to call directly to another user on an ISDN-Private Branch Exchange (ISPBX)/Centrex or other complex subscriber's installations, without attendant intervention. This supplementary service is based on the use of the ISDN number and does not include subaddressing.

20/21. DIRECTORY ENQUIRY SERVICES

Definition

A service whereby users can be informed of subscriber's numbers, and possibly also name or address information by means of automatic or manual retrieval.

22. DIVERSION SERVICES

(a) Call Forwarding unconditional service description

Definition

This service permits a served user to have the network send all incoming calls, or just those associated with a specified basic service, addressed to the served user's ISDN number to another number. The served user's originating service is unaffected. If this service is activated, calls are forwarded no matter what the condition of the termination. Other Call Forwarding services provide for Call Forwarding based on condition (e.g. Call Forwarding Busy (CFB) and Call Forwarding No Reply (CFNR)).

In normal situations, the CFU service is provided on a per access basis. (In these situations, there is a one-to-one relationship between ISDN number and access.) However, the network may recognise multiple numbers on single interface; in addition, it may not understand a complete ISDN number (e.g. DDI). In these cases the CFU service is offered on the basis of the part of the ISDN number which the network can recognise.

(b) Call Forwarding No-Reply service description

Definition

This service permits a served user to have the network send all incoming calls, or just those associated with a specified basic service, which meet No-Reply and are addressed to the served user's ISDN number to another number. The served user's originating service is unaffected.

In normal situations, the CFNR service is provided on a per access basis. (In these situations, there is a one-to-one relationship between ISDN number and access.) However, the network may recognise multiple numbers on single interface; in addition, it may not understand a complete ISDN number (e.g. DDI). In these cases the CFNR service is offered on the basis of the part of the ISDN number which the network can recognise.

(c) Call Forwarding Busy service description

Definition

This service permits a served user to have the network send all incoming calls, or just those associated with a specific basic service, which meet busy and are addressed to the served user's ISDN number to another number. The served user's originating service is unaffected.

In normal situations, the CFB service is provided on a per access basis. (In these situations, there is a one-to-one relationship between ISDN number and access.) However, the network may recognise multiple numbers on single interface; in addition, it may not understand a complete ISDN number (e.g. DDI). In these cases the CFB service is offered on the basis of the part of the ISDN number which the network can recognise.

23. EDITING

Definition

A function provided by the network which will give terminal users an opportunity to edit characters sent to the network before the network takes action.

24. EXPEDITING OF A CALL IN PROGRESS

Definition

Intervention by an operator, interrupting a call in progress, in order to allow another incoming call to be offered.
Embraces "Operator Override".

25. FAULT REPORTING SERVICE

Definition

A service which enables faults to be identified to the Administration. The fault information may originate either from the customer, or automatically from the customer's terminal or from the network.

26. FIXED DESTINATION CALL

Definition

The possibility for a subscriber to set up a call to a number, nominated by the subscriber, without the need to send address signals to the network.

27. FREEFONE SERVICE

Definition

A subscriber can be allocated a special (Freefone) number and the charge for all calls to this number are paid by him instead of by the callers.

28. GENERAL DE-ACTIVATION SERVICE

Definition

The possibility for a subscriber to de-active all Supplementary Services activated on his line except "Abbreviated Address" and services requiring keywords.

29. GENERAL TELECOMMUNICATIONS INFORMATION SERVICE

Definition

A service whereby users can, by means of automatic or manual retrieval, be informed of the general Telecommunications Services and Supplementary Services in a country e.g.:

- call prefixes;
- access codes for various telecommunications services;
- calling procedures;
- control procedures;
- telecommunications charges.

30. INTERCEPTION OF CALLS

Definition

Calls which, for reasons such as those listed below, cannot reach the wanted number may be intercepted and diverted to an operator, an answering machine giving a verbal or written announcement, or a tone, to give the callers the appropriate information.

- Change of a particular number including advice of new number.
- Renumbering of a group of numbers or a change of dialling code.
- Wrong information in directory.
- Dialling of an unallocated code.
- Dialling of a number allowed by the numbering plan but not yet allocated or no longer in service.
- Route(s) out of order.
- Route(s) congested.
- Subscriber's line temporarily out of order.
- Suspension of service owing to non-payment.

31. LECTURE CALL

Definition

A lecture call is an established connexion between a caller and two or more parties whereby information is passed unidirectionally from the caller to the other connected parties. The call is set up by an automatic device programmed by the caller from his own terminal.

The service embraces "Broadcast facility".

32. LINE HUNTING

Definition

The automatic selection of a free line from a group of lines servicing a subscriber on receipt of a call to that subscriber's general directory number.

33. LOGGING OF INCOMING CALLS

Definition

The possibility for a subscriber to have registered details of all incoming calls to a particular termination, e.g.:

- Caller's number
- Time ringing commenced
- Time of answer or time of abandonment
- Time of release
- Advice on transferred charges.

34. MALICIOUS CALL IDENTIFICATION

Definition

At the discretion of the Administration, assistance is given to ascertain the origin of malicious, nuisance or absence calls.

35. NATIONAL SELECTION AND INDICATION OF THROUGHPUT CLASS

Definition

This facility enables the calling and called terminals to indicate and negotiate a throughput class in bit/second that will not be exceeded on the virtual call.

36. NUMBER IDENTIFICATION

(a) Calling Line Identification Presentation (CLIP)

Definition

This supplementary service provides for the ability to indicate the ISDN number of the calling line with possible additional address information to the called party.

Note. The additional information may be a subaddress. Other items are for further study.

(b) Calling Line Identification Restriction (CLIR)

Definition

Calling line identification restriction is a supplementary service offered to the calling party to restrict presentation of the calling party's ISDN-number, possible with additional address information, to the called party.

Note. The additional address information may be a subaddress. Other items are for further study.

(c) Connected Line Identification Presentation

Definition

The supplementary service Connected Line Identification provides the ability to indicate the ISDN number of the connected line with possible additional address information to the calling party during the call establishment phase.

37. OPERATOR ACCESS TO AND CONTROL OF SUPPLEMENTARY SERVICES

Definition

The possibility for an Administration operator to be able to control Supplementary Services on behalf of customers.

38. OUT OF AREA LINES

Definition

The possibility to connect a subscriber to a public exchange when he is not located within the area of that exchange.

39. PACKET DELIVERY CONFIRMATION

Definition

A user facility which will provide information to the sending termination that the receipt of a given packet has been acknowledged by the nominated addressee(s).

40. PAYPHONE SERVICE

Definition

A service offered by means of special equipment permitting outgoing calls to be made after insertion of adequate coin(s) or token(s) or coded card.

Outgoing calls to certain services (e.g. emergency service) may be allowed without payment. Incoming calls may be received without payment.

This service embraces "Debit card service".

41. PERMANENT SUBSCRIBER NUMBER

Definition

The possibility for a subscriber having moved from one location to another, to retain his access number.

42. PRIORITY

Definition

Network provision is made to give preferential treatment to certain calls in the order of path or circuit selection.

43. PRIORITY SELECTION

Definition

A facility which enables a user to request preference for a call.

44. REPEAT LAST CALL

Definition

The possibility for a subscriber to have stored the last number dialled and to be able to repeat that number by dialling a short code. The user may store the last number dialled either during the call or before releasing the call.

This service embraces "Repeat call service", "Number call", "Last number repetition".

45. SEQUENCE CALLING

Definition

Incoming calls may be diverted automatically to a series of numbers. Each of the numbers is called in turn until a call is set up or call all the numbers have been tested.

46. SUB-ADDRESSING

This supplementary service allows the served user to expand his addressing capacity beyond the one given by the ISDN number. A sub-address, if presented by a calling user, is delivered unaffected to the called (served) user. Only the served user defines the significance of the sub-address.

So the called user can give some supplementary possibilities to his calling users if he has previously initiated them into this fact. The most common applications will be:

1. to select or to prefer a specific terminal at the called customer's termination, as well as
2. to invoke a specific process in a terminal at the called customer's termination.

Note. This second use of sub-addressing is considered as having lower priority of implementation and will not be dealt with in the initial phase. However, interworking compatibility between terminals should be supported in any case.

47. TERMINAL PORTABILITY

Definition

This supplementary service allows a user to move a terminal from a socket to another within one given access installation during the established state of a call.

The portability of a terminal during the idle state is part of the basic access capabilities and does not require any user procedure.

The portability of a terminal in the call establishment and in the call clearing phases is not possible. The portability of a terminal during alerting (in called subscriber termination) is for further study.

48. TERMINAL SELECTION

Definition

Calls can be dialled via the public network directly to terminals connected to the basic access.

49. THREE-PARTY SERVICE

Definition

The Three-Party service enables a user to establish a three party conversation. A user who is active on a call is able to hold that call, make an additional call to a third party, switch from one call to the other as required (privacy being provided between the two calls), and/or release one call and return to the other, or join the two calls together into a three-way conversation.

50. TRANSFER OF CHARGES

Definition

The possibility for the automatic transfer of call charges either to some other subscriber or to a special account.

51. UNIVERSAL ACCESS NUMBERS

Definition

A customer with several installations in different parts of the country can be reached from anywhere in the country by dialling one given number. Calls from subscribers on exchanges in pre-determined areas of the country will be routed to installations chosen (with certain restrictions) for the area in question by the customer having the service.

52. USER SELECTION OF PAD PARAMETERS SETTINGS

Definition

A procedure which allows both the non-packet mode DFTE and the packet mode DTE, when communicating via a PAD, to select the values of certain PAD parameters. Values may be selected individually, or en-bloc when selecting a specified standard profile.

53. USER-TO-USER SIGNALLING

The user-to-user signalling (UUS) supplementary services allow an ISDN user to send/receive a limited amount of information to/from another ISDN user over the signalling channel in association with a call to the other ISDN user.

Note. These procedures are applicable to user-to-user information (UUI) transfer in association with a circuit-switched telecommunications service only. Procedures to permit UUI transfer in association with other types of calls (e.g. packet bearer services) need to be investigated.

54. WIDE AREA SERVICE

Definition

For a flat-rate charge a subscriber may make an unlimited number of calls within a prescribed area from a particular termination without the registration of call charges.