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**Broadband Integrated Services Digital Network (B-ISDN);
Applicability of Narrowband Integrated Services Digital Network
(N-ISDN) supplementary services to B-ISDN services**

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Foreword

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

ETRs are informative documents resulting from ETSI studies which are not appropriate for European Telecommunication Standard (ETS) or Interim European Telecommunication Standard (I-ETS) status. An ETR may be used to publish material which is either of an informative nature, relating to the use or the application of ETSs or I-ETSs, or which is immature and not yet suitable for formal adoption as an ETS or an I-ETS.

This ETR describes the applicability of Integrated Services Digital Network (ISDN) supplementary services to Broadband Integrated Services Digital Network (B-ISDN) basic services. It investigates whether the existing supplementary services can be applied in the B-ISDN.

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1 Scope

This ETSI Technical Report (ETR) describes the applicability of Integrated Services Digital Network (ISDN) supplementary services to Broadband Integrated Services Digital Network (B-ISDN) basic services. It investigates whether the existing supplementary services can be applied in the B-ISDN.

The primary objective of this ETR is to contribute to the establishment of supplementary services of B-ISDN. The evaluation of possible technical solutions are outside the scope of this ETR.

2 References

This ETR incorporates by dated and undated reference, provisions from other publications. These 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 ETR only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [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 I.371: "Traffic control and resource management in B-ISDN".
- [4] ETS 300 217: "Network Aspects (NA); Connectionless Broadband Data Service (CBDS)".
- [5] DE/NA-010019: "Broadband Connection Oriented Bearer Service (B-COBS); B-COBS category service description".

3 Definitions and abbreviations

3.1 Definitions

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

bearer service: A type of telecommunication service that provides the capability for the transmission of signals between user-network interface (ITU-T Recommendation I.112 [1]).

teleservice: A type of telecommunication service that provides the complete capability, including terminal equipment functions, for communication between users according to protocols established by agreement between SPs (ITU-T Recommendation I.112 [1]).

supplementary service: A supplementary service modifies or supplements a bearer service or a teleservice. Consequently, it cannot be offered to a customer as a stand-alone service. It must be offered together with or in association with a bearer service or a teleservice. The same supplementary service may be common to a number of telecommunication services (ITU-T Recommendation I.210 [2]).

service type: Service type can be used for implicit declaration by the user of a complete set of traffic parameters, e.g. by declaring the service requested (voice, etc.). Service Type may also include implicit declaration of QoS requirements. Such a descriptor would be used for example as an address of a look-up table delivering the corresponding set of traffic characteristics. In case it is used by a traffic source, it would therefore not be necessary to convey any traffic parameter via signalling (see ITU-T Recommendation I.371 [3]).

3.2 Abbreviations

For the purposes of this ETR, the following abbreviations apply:

ATM	Asynchronous Transfer Mode
BCOBS	Broadband Connection Oriented Bearer Service
B-ISDN	Broadband Integrated Services Digital Network
ISDN	Integrated Services Digital Network
MoU	Memorandum of Understanding
N-ISDN	Narrowband Integrated Services Digital Network
QoS	Quality of Service
SP	Service Provider
UNI	User Network Interface

4 N-ISDN supplementary services description

To provide ISDN, cooperation of N-ISDN and B-ISDN bearer services, supplementary services and teleservices is necessary. The existing descriptions of supplementary services for the N-ISDN can be useful for the development of supplementary services in B-ISDN. ETSI supplementary services considered in this document are listed in table 1.

Table 1: ETSI ISDN supplementary services

Memorandum of Understanding (MoU) supplementary services	References
Number identification service Calling Line Identification Presentation (CLIP) Calling Line Identification Restriction (CLIR) Connected Line Identification Presentation (COLP) Connected Line Identification Restriction (COLR) Malicious Call Identification (MCID) Direct Dialling In (DDI) Sub-addressing (SUB) Multiple Subscriber Number (MSN)	ETS 300 089 ETS 300 090 ETS 300 094 ETS 300 095 ETS 300 128 ETS 300 062 ETS 300 059 ETS 300 050
Call offering service Call Forwarding Unconditional (CFU) Call Forwarding No Reply (CFNR) Call Forwarding Busy (CFB) Call Deflection (CD) Explicit Call Transfer (ECT)	ETS 300 200 ETS 300 201 ETS 300 199 ETS 300 202 ETS 300 367
Call completion service Call Waiting (CW) Call Hold (HOLD) Completion of calls to busy subscriber (CCBS)	ETS 300 056 ETS 300 139 ETS 300 357
Multiparty service Three-Party Supplementary Service (3PTY) Conference Call, add-on (CONF) Meet me Conference (MMC)	ETS 300 186 ETS 300 183 ETS 300 164
Charging services Advice of charge : charging information at call set-up time (AOC-S) Advice of charge : charging information during the call (AOC-D) Advice of charge : charging information at the end of the call (AOC-E) Freephone Service (FPH)	ETS 300 178 ETS 300 179 ETS 300 180 ETS 300 164
Additional information transfer service User to user signalling (UUS)	ETS 300 284
Call barring services Closed User Group (CUG)	ETS 300 136
Miscellaneous services Terminal Portability (TP)	ETS 300 053
New supplementary services Remote Control service(RC) Outgoing Call Barring - Fixed (OCB-F) Outgoing Call Barring - User Controlled (OCB-UC) Trunk Hunting (TH) Line Hunting (LH) Completion of Calls on No Reply (CCNR) Call Forwarding Unconditional to a Service Centre (CFU-S) Incall Modification (IM) Reverse Charging at Call set-up time (REV-S) Advice of Charge on User Request (AOC-R) Selective Call Forwarding (SCF) Support for Private Numbering Plans (SPNP)	DE/NA-010009 DE/NA-012006 DE/NA-010022 DE/NA-010028 DE/NA-010003 DE/NA-010027 DE/NA-010018 DE/NA-010002 DE/NA-010016 DE/NA-010026 DE/NA-010008 DE/NA-010004

5 Applicability of N-ISDN supplementary services to B-ISDN services

Supplementary services can be applied to broadband services provided in on-demand mode only. The ETSI documents relating to B-ISDN bearer services are:

- the "Broadband Connection Oriented Bearer Service Category" (BCOBS), DE/NA-010019 [5], for which three service types have been identified; and
- the "Connectionless broadband data bearer service" (ETS 300 217 [4]).

The applicability of N-ISDN supplementary services to B-ISDN services is shown in annex A.

Annex A: Applicability of N-ISDN supplementary services to B-ISDN services

Table A.1: Applicability of N-ISDN supplementary services to B-ISDN services

B-ISDN services		Supplementary services									
	Service type	CLIP	CLIR	COLP note 3	COLR	MCID	DDI note 1	SUB note 1	MSN note 4	CFU	CFB note 10
Broadband connection oriented bearer service	B-ISDN 64 kbit/s bearer service usable for speech	a,e	a,e	a,e	a,e	b,e	a,e	a,e	a,e	b,s	ffs
	B-ISDN 64 kbit/s bearer service usable for 3,1 kHz audio	a,e	a,e	a,e	a,e	b,e	a,e	a,e	a,e	b,s	ffs
	B-ISDN 64 kbit/s unrestricted bearer service	a,e	a,e	a,e	a,e	b,e	a,e	a,e	a,e	b,s	ffs
	unspecified	a,e	a,e	a,e	a,e	b,e	a,e	a,e	a,e	b,s	ffs
Connectionless broadband data bearer service		c	c	c	c	c	a,e	c	b,e	b,s	c
Broadband videotelephony service		a,e	a,e	a,e	a,e	b,e	a,e	a,e	a,e	b,s	ffs
Broadband videoconference service		a,s	a,e note 2	a,s	a,e note 2	b,e	a,e	a,e	a,e	b,s	ffs
Legend:											
x = priority: a immediately needed (high priority). b may be needed later (low priority). c no market need yet identified or technically impossible.											
y = modifications: s substantially. e editorial.											
ffs = for further study.											
(continued)											

Table A.1 (continued): Applicability of N-ISDN supplementary services to B-ISDN services

B-ISDN services		Supplementary services									
	Service type	CFNR	CD	CFU-S	SCF note 6	ECT note 8	CW	HOLD	CCBS note 14 note 10	3PTY	CONF
Broadband connection oriented bearer service	B-ISDN 64 kbit/s bearer service usable for speech	b,s	b,s	b,s	b,s	b,s	b,s	c	b,s	b,s note 12	b,s note 12
	B-ISDN 64 kbit/s bearer service usable for 3,1 kHz audio	b,s	b,s	b,s	b,s	b,s	b,s	c	b,s	b,s note 12	b,s note 12
	B-ISDN 64 kbit/s unrestricted bearer service	b,s	b,s	b,s	b,s	b,s	b,s	c	b,s	c	c
	unspecified	b,s	b,s	b,s	b,s	b,s	c	c	b,s	c	c
Connectionless broadband data bearer service		c	c	c	c	c	c	c	c	c	c
Broadband videotelephony services		b,s	b,s	b,s	b,s	b,s	c	c	b,s	c	c
Broadband videoconference service		b,s	b,s	b,s	b,s	b,s	c	c	b,s	c	c
Legend:											
x = priority: a immediately needed (high priority). b may be needed later (low priority). c no market need yet identified or technically impossible.											
y = modifications: s substantially. e editorial.											
ffs = for further study.											
(continued)											

Table A.1 (continued): Applicability of N-ISDN supplementary services to B-ISDN services

B-ISDN services		Supplementary services									
	Service type	MMC	AOC-S note 15	AOC-D note 15	AOC-E note 15	AOC-R note 15	FPH	UUS1I note 5	UUS1E	UUS2	UUS3
Broadband connection oriented bearer service	B-ISDN 64 kbit/s bearer service usable for speech	c note 13	a,s	a,s	a,s	ffs	b,e	a,e	b,e	ffs	ffs
	B-ISDN 64 kbit/s bearer service usable for 3,1 kHz audio	c note 13	a,s	a,s	a,s	ffs	b,e	a,e	b,e	ffs	ffs
	B-ISDN 64 kbit/s unrestricted bearer service	c	a,s	a,s	a,s	ffs	b,e	a,e	b,e	ffs	ffs
	unspecified	c	a,s	a,s	a,s	ffs	b,e	a,e	b,e	ffs	ffs
Connectionless broadband data bearer service		c	c	c	c	c	c	c	c	c	c
Broadband videotelephony services		c	ffs	ffs	ffs	ffs	b,e	a,e	b,e	ffs	ffs
Broadband videoconference service		c	ffs	ffs	ffs	ffs	ffs	a,e	b,e	ffs	ffs
Legend: x = priority: a immediately needed (high priority). b may be needed later (low priority). c no market need yet identified or technically impossible. y = modifications: s substantially. e editorial. ffs = for further study.											

(continued)

Table A.1 (concluded): Applicability of N-ISDN supplementary services to B-ISDN services

B-ISDN services		Supplementary services									
	Service type	CUG note 11	TP note 7	OCB-F	OCB-U C	TH	LH	CCNR	IM	REV(S)	SPNP) note 9
Broadband connection oriented bearer service	B-ISDN 64 kbit/s bearer service usable for speech	a,s	c	b,e	b,e	c	c	b,s	c	b,e	a,e
	B-ISDN 64 kbit/s bearer service usable for 3,1 kHz audio	a,s	c	b,e	b,e	c	c	b,s	c	b,e	a,e
	B-ISDN 64 kbit/s unrestricted bearer service	a,s	c	b,e	b,e	c	c	b,s	c	b,e	a,e
	unspecified	a,s	c	b,e	b,e	c	c	b,s	c	b,e	a,e
Connectionless broadband data bearer service		a,s	c	c	c	c	c	c	c	c	ffs
Broadband videotelephony services		a,s	c	b,e	b,e	c	c	b,s	c	b,e	a,e
Broadband videoconference service		a,s	c	ffs	ffs	c	c	c	c	ffs	a,e
Legend: x = priority: a immediately needed (high priority). b may be needed later (low priority). c no market need yet identified or technically impossible. y = modifications: s substantially. e editorial. ffs = for further study.											
NOTE 1:	Where the on demand variant of a bearer service sub-category exists, the supplementary service can be associated with that sub-category.										
NOTE 2:	The degree of necessary modifications (attribute y in the legend) in the case of the broadband videoconference teleservice is for further study.										
NOTE 3:	For point-to-multipoint calls, the COLP supplementary service can be invoked several times, i.e. to report the connected line identity on call acceptance by each user.										
NOTE 4:	The user of this supplementary service in the different B-ISDN access configuration requires for further study.										
NOTE 5:	User-to-User-Signalling 1 implicit can be supported without problems for point-to-point calls. For point-to-multipoint calls there are two cases: - the point-to-multipoint connection is established by setting-up a sequence of individual point-to-point calls. In this case the sending of user-to-user information will not cause any problems at the multipoint end. But at the single point end the single-point user may get some problems to identify the sender of the messages; - the point-to-multipoint connection is established by simultaneously setting-up individual connections. In this case further study is needed.										
NOTE 6:	The entries only cover SCF for no reply and unconditional for SCF on busy, „busy“ has to be clarified in the context of B-ISDN.										
NOTE 7:	There is no bus architecture at the UNI. Notification from the other user (e.g. in N-ISDN) needs to be supported.										
NOTE 8:	Considerations include how to handle the transfer of calls which have different bandwidth requirements and how transfer of multipoint calls should be handled.										
NOTE 9:	Investigation is needed, if there are no implications for B-ISDN, the scope of the current text could be changed to include B-ISDN prior to freezing it at the next meeting of NA 1.										
NOTE 10:	For further study ("busy" has to be clarified in the content of B-ISDN).										
NOTE 11:	The CUG supplementary service will need to apply to each service type.										
NOTE 12:	It is not clear whether this supplementary service should be covered by the B-ISDN or whether it could be used from the N-ISDN (for further study).										
NOTE 13:	The MMC-functionality residing in N-ISDN can be used also from B-ISDN.										
NOTE 14:	What is needed is the call completion functionality. Investigation is needed, if this functionality is part of B-ISDN basic call.										
NOTE 15:	Charging principles in B-ISDN should be clarified.										

History

Document history	
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