



STI 5

Edition 2 /October 2000

Interface Technical Specifications *for France Telecom's network*

As required by Directive 1999/5/EC

GENERAL PRESENTATION OF FRANCE TELECOM'S NETWORK ISDN INTERFACES AND SERVICES

Summary: This document aims at a brief presentation of ISDN interfaces and services provided at these interfaces, in France Telecom's network.

Warning :

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3. the fact that a service not yet commercially open is described in this document can in no case be considered as a binding commitment on France Telecom part to actually open this service.

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1. Introduction

This document presents ISDN interfaces as well as services provided at these interfaces, in France Télécom's network. It describes also the interfaces related to the Numerical Termination of Network Generalized (TNRG) used for the commercial offers Numéris Duo and Numéris Itoo from France Telecom.

It allows also to introduce the associated documents and understand the use of the whole set of documentation. It describes the present situation, called functional step VN6.

It will be updated following the network evolution.

Three other specifications are associated to the present one and constitute the whole set of documentation relating to ISDN: basic access, primary rate access, set of services and associated protocols. These documents are structured in the following way:

- Document STI 6 [1] describes Euro-Numeris access. It defines layer 3 for basic call, provided supplementary services and protocols allowing their implementation. It defines also some France Télécom specific supplementary services provided on both type of access Euro-Numéris and Euro-numéris +.

Note: This document STI 6 is extracted from approval specification CSE P22 30 A, edition 2, December 1994. Remains only what concerns the network side of the interface.

- Document STI 7 [2] defines the Euro-Numéris + access, referring to appropriate ETSI standards. It defines the whole set of protocols, for ISO 3 layers, layer 1, layer 2 and layer 3. The respectively identical layers 1 and 2 for both access types are only defined only in this document.
- Document STI 8 [3] defines packet mode data services, specially the Permanent Logical Link (PLL) service, which is also common to both access types.

Two types of mode(fashion) of connecting RNIS: **Euro-Numéris** and **Euro-Numéris +** is available on the network of France Telecom (locals exchanges).

The various local exchange implemented in France Telecom's network, are of two types: the oldest ones, called 2nd Generation (2G), should be replaced and are in decreasing number, and the other ones, called 3rd Generation (3G) and are to cover the whole territory after a while. The Euro-Numéris access is available for all local exchanges of the network, though Euro-Numéris + access is only available on 3G exchanges.

2. Euro-Numéris access presentation

Euro-Numéris access is defined in details in document STI 6 [1]. It is compatible¹ with ETSI standards on basic call and for the 5 supplementary services with an asterisk of the phase 1 MoU ². These 5 supplementary services are: Calling Line Identification Presentation (CLIP), Calling Line Identification Restriction (CLIR), Direct Dialling-In (DDI), Multiple Subscriber Number (MSN) and Terminal Portability (TP). This access allows terminal equipment attachment for equipment coming from the VN family and conforming to CSE³ specifications (CSE P2230-A edition 2), or from the so-called ETSI family, developed on the basis of ETSI standards. In the last case, only basic call and the 5 MoU supplementary services (CLIP, CLIR, DDI, MSN, TP) may be implemented. Two more supplementary

¹ Compatible : allows the connection and the operation of the terminals of the type ETSI

² MoU : Memorandum of Understanding (Agreement protocol signed in 1989 by 26 operators from 20 European countries)

³ CSE : Comité de Spécifications des Equipements

services, User to User signalling (service 1) and Sub-addressing are also usable (compatible) providing they conform to some restrictions regarding the length of information elements. All other supplementary services use the National facility information element and are not compatible. This type of access should not evolve a priori.

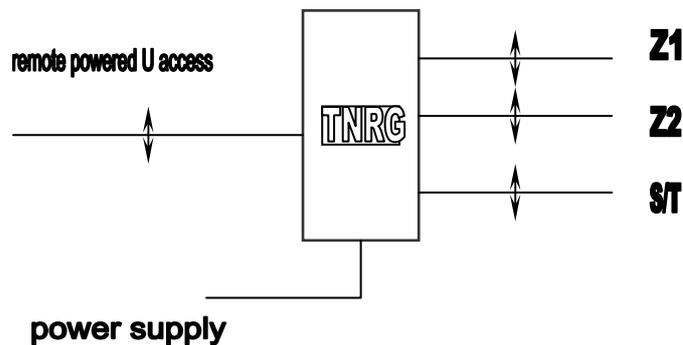
Document STI 6 [1] deals only with the ISDN protocol layer 3. Layer 1 for basic access and for primary rate access are respectively identical for both access types and are defined in document STI 7 [2]. In the same way, the layer 2 protocol, identical for both access types is also defined in STI 7 [2].

3. Euro-Numéris + access presentation

Euro-Numéris + access conforms fully⁴ to ETSI standards for basic call and for all the provided supplementary services defined in ETSI. It uses the functional generic protocol defined in ETSI, for implementation of some supplementary services. Reference specifications as well as all options retained for these standards are described in document STI 7 [2].

As for the first access type, this one offers some non-ETSI standardised services or supplementary services which are defined either in document STI 6 [1], or in document STI 8 [3]. This access type is the only one to support future evolutions of existing services and new services.

4. TNRG presentation



The TNRG is used by France Telecom for its offers Numéris Itoo and Numéris Duo.

The Numerical Termination of Network Generalized (TNRG) makes it possible to offer the following interfaces:

- Two, called analogical interfaces Z1 and Z2,
- One S/T ISDN interface.

The TNRG must be connected to an access ISDN to the basic flow (with the mode of connection either Euro-Numéris, or Euro-Numéris+). The transmission part as well as the telephone function of the minimum service are remote powered by the switch. Interface S/T is transparent with respect to the layers of protocol (layer 2 and above). Each adapted interface (Z) will be seen like a logical terminal (a dynamic TEI by interface).

⁴ fully conform : Respect the ETSI standards (except possibly certain not mandatory options)

The analogical interfaces Z1 and Z2 respect the standards described in the Technical Specifications of Interface STI 1, STI 3 and STI 4. On the other hand the additional services available on these interfaces can be the various also STI 2 does not apply. To know the list of the services available as their description it is necessary to refer to the commercial contract (Appendix 1 in the specific conditions). One can however note that these services are very close functionally to those offered by the traditional analogical interfaces of the network of France Telecom.

ISDN Interface depends on the mode of connection Euro-Numéris or Euro-Numéris + and is completely in conformity with the STI being referred to it (STI 5, STI 6, STI 7 and STI 8).

5. List of available services and supplementary services on RNIS accesses

Available services and supplementary services on the various ISDN access are summarily defined in the following table. This table allows a mapping between technical terms and commercial designations, and indicates also the correspondence with the various acronyms used in the whole set of documents et indicates the reference document to be used following the access type: Euro-Numéris or Euro-Numéris+. Mentioning a reference document in the table means that the corresponding service is available at the local exchange. Mentioning N.A (Non available) indicates the non-availability of the service. A detailed description of the services and associated protocols is respectively given in documents STI 6 [1], STI 7 [2] and STI 8 [3].

It is to be mentioned that although various supplementary services have the same designation on both access types, they may be different (viewed from the service side but mostly from the protocol side), even if for some of them, they remain compatible.

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ISDN interfaces and services general presentation

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Technical name	Commercial name (existing or potential)	English acronym	French acronym	Description	Reference doc.	
					Euro-N access	Euro-N+ access
Services supports						
64 kbit/s for speech				Enables 64 kbit/s coded speech signals transfer on a B channel. Tones and announcements as in PSTN.	STI 7	STI 7
64 kbit/s for 3,1 kHz audio			CCBNT	Enables 64 kbit/s coded audio signals transfer on a B channel. Tones and announcements as in PSTN	STI 7	STI 7
64 kbit/s no restriction		UDI UDI-TA	CCBT	Enables no restriction 64 kbit/s coded digital information transfer on a B channel. Tones and announcements as in PSTN.	STI 7	STI 7
ETSI standard supplementary services						
Calling line identification presentation	<i>Présentation du numéro®</i>	CLIP		Enables a called user to receive the calling line identity on call presentation.	STI 6	STI 7
Calling line identification restriction	<i>Secret appel par appel ou Secret permanent</i>	CLIR		Enable the calling party to prevent communication of his identity to the called party on call presentation.	STI 6	STI 7
Multiple subscriber number	<i>Sélection directe à l'arrivée</i>	MSN	SDA	Allows allocation of several designation numbers to an ISDN basic access. Allocated numbers may be not in a sequence.	STI 6	STI 7
Direct dialling in	<i>Sélection directe à l'arrivée</i>	DDI	SDA	Enables a user to call directly, via the public network, another user on a private network attached to a PABX. Numbers allocated to the private number are in a sequence.	STI 6	STI 7
Terminal portability	<i>Portabilité du Terminal RNIS</i>	TP		During the active phase of a call, enables a user either to replace a terminal equipment by another one on the same plug or to move to another terminal equipment on the same access, or to suspend the active call and resume it on the same terminal equipment and the same plug, or to move a terminal equipment from a plug to another one.	STI 6	STI 7
Sub addressing	<i>Sous-adresse</i>	SUB		Enables the called party to extend his addressing capacity beyond what is allowed by the public network numbering plan. The called user memorises in his terminal equipment the sub-addressing to which it shall answer.	STI 6	STI 7
User-to-user signalling	<i>Minimessage</i>	UUS1	SUU1	Enables users to send messages, via channel D, during the various phases of a communication. Only service 1 is provided (transfer in control messages during call establishment and release).	STI 6	STI 7
Malicious call identification	<i>Contrôle des appels malveillants</i>	MCID	IAM	Enables the called party to trigger calling party identification and information registration (calling line identity, date, time, ...) at the local exchange, during or at the end of a call. Communication of information to the user results from an administrative procedure.	STI 6	STI 7

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Technical name	Commercial name (existing or potential)	English acronym	French acronym	Description	Reference doc.	
					Euro-N access	Euro-N+ access
Call deflection (immediate or in alerting phase)	<i>Renvoi du numéro (ou renvoi du terminal)</i>	CD	RVT	Enables a user to forward, before or during the alerting phase, his incoming calls towards the number (possibly with a joined sub-address) indicated in the forwarding request. There is no impact on outgoing calls in the service to this user.	STI 6	STI 7
Call forwarding busy	<i>Transfert d'appel sur occupation</i>	CFB	RAOC	Enables a user to have all incoming calls forwarded to another number when his access is busy (channels busy or user busy). There is no impact on outgoing calls in the service to this user.	N.A	STI 7
Call forwarding no reply	<i>Transfert d'appel sur non réponse</i>	CFNR	RANR	Enables a user to have all incoming calls not answered when directed to him, forwarded to another numbers. There is no impact for outgoing calls in the service to this user.	STI 6	STI 7
Call forwarding unconditional	<i>Transfert d'appel (national ou international et DOM)</i>	CFU	RAI	Enables a user to transfer to another number all incoming calls addressed to him. There is no impact for outgoing calls in the service to this user.	STI 6	STI 7
Call hold and double call	<i>Signal d'appel (inclut la mise en garde et le double appel)</i>	HOLD		Enables a user to manage simultaneously two calls on the same channel B. The user may put on hold a call to establish or receive another one. He may then go from one correspondent to the other.	STI 6	STI 7
Call waiting	<i>Signal d'appel</i>	CW	IAI	Enables a user to receive notice of an incoming call, while busy. The user may choose to accept, ignore or reject the waiting call. If he accepts the new call while putting on hold the current call, he arrives in the double call situation.	STI 6	STI 7
Charging information during the call	<i>Indication permanente de coût Indication de coût en mode appel par appel</i>	AOC-D	TLT	Enables the user debtor of a call to get real time information regarding the cost of the call (cumulated amount of the charges regarding this call).	STI 6	STI 7
Charging information at the end of the call	<i>Coût total de la communication</i>	AOC-E	CT	Allows providing calling user with the relative cost of the call, at the end of a call (number of pulses).	STI 6	STI 7
Call completion to busy subscriber	<i>AutoRappel</i>	CCBS	ROC	Enables a user A whose call encounters busy destination B, to receive notice of B becoming available and to have an automatic renewal of the call attempt without dialling again.	N.A.	STI 7
Three party	<i>Conférence à trois</i>	3PTY		A user engaged in a call with a correspondent may, after placing it on hold, either establish a call to a third correspondent or accept an incoming call, according to the case. He may then alternate between both of the correspondents or establish a three party call.	N.A.	STI 7
Explicit call transfer	<i>Transfert de communication explicite</i>	ECT		Enables user A who has two calls (one with user B and one with user C), to transform these calls in a new call between user B and user C.	N.A.	STI 7

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Technical name	Commercial name (existing or potential)	English acronym	French acronym	Description	Reference doc.	
					Euro-N access	Euro-N+ access
Calling party name identification	<i>Présentation du nom du demandeur</i>	CNIP		Enables a called party subscriber to receive the name of the calling party, if available, and if the calling party did not specify explicitly the restriction of name presentation.	N.A.	STI 7
Other services and supplementary services						
Outgoing Call Barring-Fixed	<i>Accès sélectif fixe: Accès Sélectif Local, Régional ou National</i>	OCB-F	SR	Enables calls belonging to certain types to be rejected when the served user originates them. This service operates according to the requirements specified by the user on provision.	STI 6	STI 6
Channel specialisation	<i>Spécialisation des canaux B</i>			Allows incoming or outgoing channel specialisation, for some B channels of a subscriber's access.	STI 6	STI 6
Permanent logical link	<i>Accès direct à Transpac par canal D</i>		LLP	Enables users to access, via D channel of the access, to packet data switched services.	3	3
Transgroupe	<i>Collisée Performance</i>		TG	France Télécom's virtual private network service	STI 6	STI 6, STI 7

Note: other services, without impact on terminal interface, can be offer but are not indicated here.

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In order to give a complete overview, the following table shows the reference document to be used following the access type, for the different layer 1 protocols, layer 2 protocol, layer 3 protocol (basic call), bearer services and supplementary services.

Service/function	Description	Reference doc.	
		Euro-N access	Euro-N+ access
Layer 1 basic access	Protocol layer 1 description for basic access	STI 7	STI 7
Layer 1 primary rate access	Protocol layer 1 description for primary rate access	STI 7	STI 7
Layer 2	Protocol layer 2 description	STI 7	STI 7
Layer 3	Protocol layer 3 description for basic call	STI 6	STI 7
Bearer services			
64 kbit/s speech	Speech bearer service description	STI 7	STI 7
64 kbit/s 3,1 kHz audio	3,1 kHz audio bearer service description	STI 7	STI 7
64 kbit/s no restriction	64 kbit/s no restriction bearer service description	STI 7	STI 7
Supplementary services	Various supplementary services description	STI 6	STI 7
Packet service on D channel	D-Channel packet mode service (LLP) description	STI 8	STI 8

The following table shows for each access type available service (English acronyms used). It mentions also compatibility (for ETSI standardised supplementary services) that means that an ETSI approved terminal equipment may operate on an Euro-Numéris access for the supplementary service indicated, with some possible restrictions as regarding the information elements length or some coding. The commentaries in the table indicate these major restrictions.

Supplementary services (SS)	Euro-Numéris access	Euro-Numéris + access	ETSI terminal compatibility on Euro-Numéris access	Commentaries regarding Euro-Numéris access
ETSI standardised SS				
CLIP	Yes	Yes	Yes	Different length following the entity
CLIR	Yes	Yes	Yes	
DDI	Yes	Yes	Yes	Only last 4 digits sending
MSN	Yes	Yes	Yes	Only last 4 digits sending
TP	Yes	Yes	Yes	
SUB	Yes	Yes	Yes	Compatible if useful length ≤ 4 digits
UUS1	Yes	Yes	Yes	Compatible if useful length ≤ 28 bytes
CW	Yes	Yes	No	Systematic call presentation on Euro-Numéris access
HOLD Double call	Yes	Yes	No	
MCID	Yes	Yes	No	
AOC-D	Yes	Yes	No	
AOC-E	Yes	Yes	No	
CFU	Yes	Yes	No	
CFNR	Yes	Yes	No	
CD	Yes	Yes	No	
Packet mode in channel B	No	Yes	No	
CFB	No	Yes	No	
CCBS	No	Yes	No	
3PTY	No	Yes	No	
ECT	No	Yes	No	
CNIP	No	Yes	No	
Other SSs				
Attachment specialisation with	Yes	Yes	Yes	No impact on the terminal equipment
OCB-F	Yes	Yes	Yes	No impact on the terminal equipment
Transgroupe	Yes	Yes	Yes	No impact on the terminal equipment
LLP	Yes	Yes	Yes	

6. Glossary

DDI	Direct Dialling In
3PTY	Appel à Trois (<i>Three party</i>)
AOC-D	Advice Of Charge During the call
AOC-E	Advice Of Charge At the End of the call
CCBNT	Commutation de Circuit dans le canal B Non Transparent (<i>Circuit switching in non-transparent channel B</i>)

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CCBS	Completion of calls to Busy Subscriber
CCBT	Commutation de Circuit dans le canal B Transparent (<i>Circuit switching in transparent channel B</i>)
CD	Call Deflection
CFB	Call Forwarding Busy
CFNR	Call Forwarding No Reply
CFU	Call Forwarding Unconditional
C-H (HOLD)	Call Hold
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
CNIP	Calling Name Identification Presentation
CT	Coût Total (<i>Total cost</i>)
CW	Call Waiting
ECT	Explicit Call Transfer
IAI	Indication d'Appel en Instance (<i>Call waiting</i>)
IAM	Identification des Appels Malveillants (<i>Malicious call identification</i>)
LLP	Liaison Logique Permanente (<i>Permanent logical link</i>)
MCID	Malicious Call Identification
MSN	Multiple Subscriber Number
OCB-F	Outgoing call Baring
RAI	Renvoi d'Appel Inconditionnel (<i>Call forwarding unconditional</i>)
RANR	Renvoi d'Appel sur Non Réponse (<i>Call forwarding no reply</i>)
RAOC	Renvoi d'Appel sur Occupation (<i>Call forwarding busy</i>)
ROC	Rappel automatique sur Occupation (<i>Completion of call to busy subscriber</i>)
RVT	Renvoi du Terminal (<i>Call deflection</i>)
SAPI	Service Access Point Identifier
SDA	Sélection Directe à l'Arrivée (<i>Direct dialling in</i>)
SR	Service Restreint (<i>Restricted service</i>)
SUB	Sub-addressing
SUU1	Signalisation d'Usager à Usager Mode 1 (<i>User-to-user signalling Mode 1</i>)
TEI	Terminal End-point Identifier
TG	Transgroupe
TLT	Télétaxe (<i>Charging information during the call</i>)
TNRG	Terminaison Numérique de Réseau Généralisée
TP	Terminal Portability
UDI	Unrestricted Digital Information
UDI-TA	Unrestricted Digital Information with Tones/Announcements
UUS1	User to User Signalling mode 1

7. References

- [1] STI 6: Euro-Numeris ISDN access interface. Protocole D Layer 3 and supplementary services
- [2] STI 7: Euro-Numeris + ISDN access interface. Layers 1 to 3 and supplementary services
- [3] STI 8: D channel packet mode (LLP) service for ISDN access interfaces
- [4] STI 1: Analogue subscriber interface characteristics
- [5] STI 3: Ringing, tones and dialling on analogue lines
- [6] STI 4: User network interface characteristics for data transmission modem (V23)

8. History

Edition	Date	Commentaries
1	March 2000	Initial version
2	October 2000	Addition of TNRG description and some modifications of shape (trade names)