

Telefónica O2 Czech Republic, a.s.	<b>Technická specifikace externí</b>	TIMP.TE000007
Platnost:	22.3.2007	Verze: 01.00
Účinnost:	22.3.2007	
Bezpečnostní klasifikace:	interní	

## Zuni Interface with U Signalling

Účel:

Dokument začleňuje stávající vnitřní technický normativ společnosti (viz příloha) do nového jednotného systému správy řídicích dokumentů společnosti Telefónica O2 Czech Republic, a.s.

Působnost:

Působností, odpovědnosti a pravomoci se podle zásad původního technického normativu přenášejí na věcně příslušné odpovídající organizační složky společnosti Telefónica O2 Czech Republic, a.s.

Proces:

Provozní podpora

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### Neřízený výtisk

Telefónica O2 Czech Republic, a.s.

IČ: 60193336

společnost zapsaná v obchodním rejstříku vedeném Městským soudem v Praze, oddíl B, ložka 2322 se sídlem: Za Brumlovkou 266/2, 140 22 Praha 4 – Míche, Česká republika

Tento dokument je považován za vlastnictví společnosti a může být užíván výhradně příslušnými zaměstnanci společnosti pro vnitřní potřebu a k určenému účelu.

## 1. Úvodní ustanovení

### 1.1. Účel

Tento dokument se vydává z důvodu začlenění stávajícího vnitřního technického normativu společnosti jako platného dokumentu do nového jednotného systému správy řídicích dokumentů společnosti Telefónica O2 Czech Republic, a.s. podle směrnice M832.SM0001 Řídicí dokumenty (Managing Documents).

### 1.2. Působnost, odpovědnosti a pravomoci



# TECHNICAL SPECIFICATION

## TSPE 2078

### Z<sub>UNI</sub> INTERFACE

### WITH U SIGNALLING

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**Approved: 24. 8. 2004**

## 1. Initial provisions

### 1.1. Scope

The purpose of this document is to specify characteristics of interfaces to be used between AN and TEs on one side and between AN and SNs (LE, LL, DN, ...) on the other side, in the access network of ČESKÝ TELECOM, a.s.

### 1.2. Validity and obligation

The document is according to the valid company regulation documents of ČESKÝ TELECOM, a.s. obligatory for NU - ND and is to be considered a valid recommendation within the entire company ČESKÝ TELECOM, a.s. It is valid from the date of approval (see the first page).

### 1.3. References

The document replaces TPK 2027A "UNI AND SNI INTERFACES OF TRANSMISSION EQUIPMENT FOR ACCESS NETWORK" - part 3.1 (ČESKÝ TELECOM, a.s. - 10.3.1999)

Other related documents:

ITU-T Q.512	Exchange interface for subscriber access; 1989
ITU-T Q.522	Transmission characteristics at 2-wire analogue interfaces of digital exchange; 1988
ITU-T I.411	ISDN user-network interfaces-reference configurations; 1988
ITU-T I.430	Basic user-network interface layer 1 specification; 1988
ITU-T I.431	Primary Rate User-Network Interface Layer 1 Specification; 1988
ITU-T G.703	Physical/Electrical characteristics of hierarchical digital interfaces; 1988
ITU-T G.704	Synchronous frame structures used at primary and secondary hierarchical level; 1988
ITU-T G.706	Frame alignment and cyclic redundancy check (CRC) procedures relating to basic frame structures defined in recommendation G.704; 1988
ITU-T G.712	Transmission performance characteristics of pulse code modulation; 1992
ITU-T X.21	Interface between Data Terminal Equipment and Data Circuit Terminating Equipment for synchronous operation on Public Data Networks; 1992
ITU-T G.823	The control of jitter and wander within digital networks which are based on the 2048 kbit/s hierarchy; 1993
ETS 300 001	Attachments to Public Switched Telephone Network (PSTN); General technical requirements for equipment connected to an analogue subscriber interface in the PSTN; 1992
ETS 300 011	Integrated Services Digital Network; Primary rate user-network interface Layer 1 specification and test principles; 1992
ETS 300 011/A1	Integrated Services Digital Network; Primary rate user-network interface Layer 1 specification and test principles; 1992
ETS 300 012	Integrated Services Digital Network (ISDN); Basic user-network interface Layer 1 specification and test principles; April 1992
ETS 300 125	Integrated Services Digital Network (ISDN); User-network interface data link layer specification. Application of ITU-T Recommendations Q.920/I.440 and Q.921/I.441; 1991

## 2. ACCESS NETWORK INTERFACES

The following *Figure 1* describes the generic structure of an ANE.

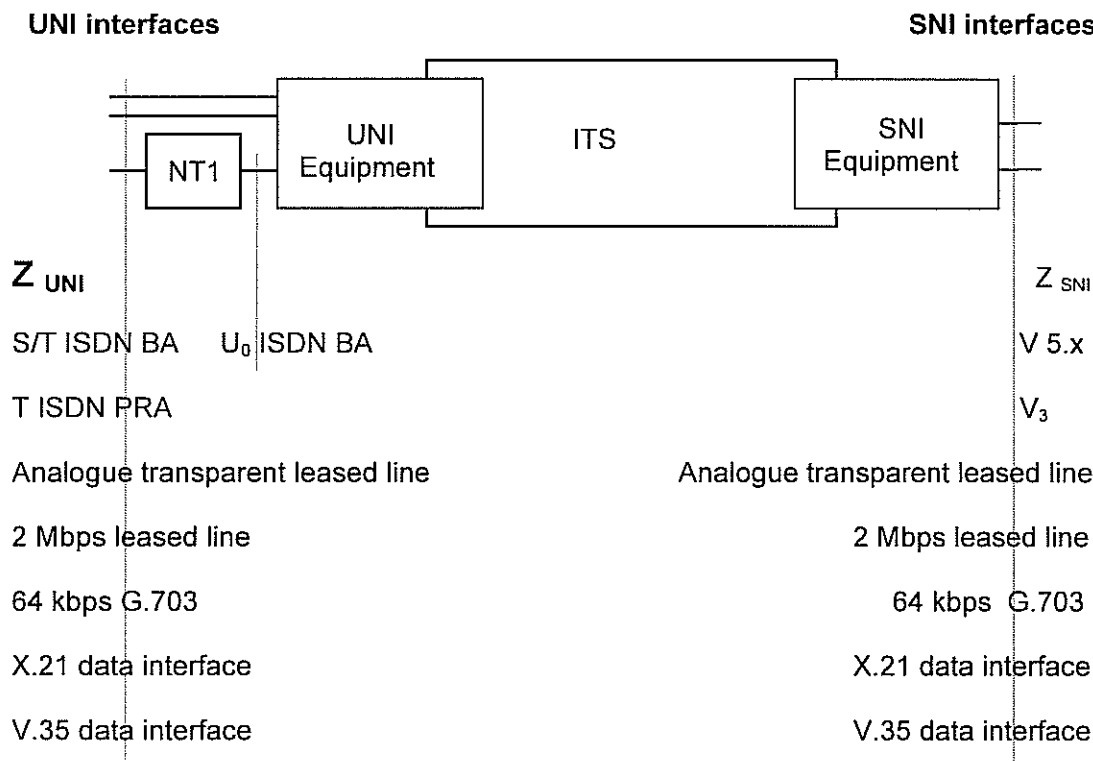


Figure 1: Generic structure of ANE

## 3. Z<sub>UNI</sub> interface with U signalling

### 3.1. Application area

This interface shall be used between ANE and a subscriber terminal with the analog subscriber loop signaling ( telephone set, fax, answering machine, ...).

The parameters of the Z<sub>UNI</sub> interface may be modified (reduced) if the maximum required subscriber loop resistance of ANE is less then 1450 Ω. In this case ANE must fulfill requirements of ETS 300 001 for electrical parameters at the subscriber socket and the required parameters are described for the loop resistance 1450 Ω, 500 Ω and 200 Ω without resistance of TE.

### 3.2. Static parameters of subscriber loop

#### 3.2.1. Max. R of subscriber loop

There are used three classes of maximum subscriber loop resistance in the SPT TELECOM, a.s. access network, i.e.

- Standard subscriber loop ..... 1450 Ω + R of TE \*)
- Reduced subscriber loop 1 ..... 500 Ω + R of TE \*)

**3.3.2. Transmitting tone level**

Max. R of subscriber loop	1450 $\Omega$	500 $\Omega$	200 $\Omega$
Tone level	-12 dBm $\pm 1$ dBm	min. -19 dBm	min. -22 dBm

**3.3.3. Transmitting signal levels**

3.3.3.1. Relative level .....0 dBr

3.3.3.2. Tolerance of level adjustment ..... $\pm 0,4$  dB

3.3.3.3. Short term (10 minutes) level stability ..... $\pm 0,1$  dB

3.3.3.4. Long term (1 year) level stability ..... $\pm 0,3$  dB

**3.3.4. Receiving signal levels**

3.3.4.1. Relative level .....-7 dBr

3.3.4.2. Tolerance of level adjustment ..... $\pm 0,4$  dB

3.3.4.3. Short term (10 minutes) level stability ..... $\pm 0,1$  dB

3.3.4.4. Long term (1 year) level stability ..... $\pm 0,3$  dB

**3.3.5. Impedance of ANE**

Two types of impedance are possible:

- $Z_R = 600 \Omega$
- $Z_C = 220 \Omega$  serial with (115 nF parallel 820  $\Omega$ )

NOTE: If ANE does not allow for a choice between these two alternatives, impedance  $Z_C$  is preferred.

If the value of return loss fulfills requirement given in the following paragraph, other type of complex impedance is possible.

**3.3.6. Return loss of terminating impedance**

Frequency range (Hz)	Return loss (dB)
300 - 600	$\geq 14$
600 - 3400	$\geq 18$

### 3.4. Evaluation time of the A subscriber (calling subscriber)

#### 3.4.1. Recognition of the subscriber loop closing:

not evaluated ..... < 20 ms  
 off-hook of the calling subscriber ..... ≥ 300 ms

#### 3.4.2. Recognition of the loop interruption:

not evaluated ..... < 10 ms  
 flash ..... 30 - 180 ms  
 not evaluated as on-hook of the calling subscriber ..... ≤ 185 ms  
 on-hook of the calling subscriber ..... ≥ 400 ms

#### 3.4.3. Decade dialling parameters are presented in Figure 3

### 3.5. Evaluation time of the B subscriber (called subscriber)

#### 3.5.1. Recognition of the subscriber loop closing:

not evaluated ..... < 10 ms  
 during ringing ..... ≥ 100 ms  
 in other states ..... ≥ 200 ms

#### 3.5.2. Recognition of the loop interruption:

not evaluated ..... < 10 ms  
 flash ..... 30 - 180 ms  
 not evaluated as on-hook of the called subscriber ..... ≤ 185 ms  
 on-hook of the called subscriber ..... ≥ 400 ms

#### 3.5.3. Time for faulty loop (parking state) escape..... ≤ 5 s

### 3.6. Ringing

#### 3.6.1. Nominal rms. of the ringing generator voltage

Max. R of subscriber loop	1450 Ω	500 Ω	200 Ω
Nominal RMS	75 ± 5 V	57 V ± 5 %	52 V ± 5 %

### 3.8. Transmission of Calling Line Identification Presentation (CLIP)

3.8.1. Transmission of CLI is based on ETSI EN 300 659-1 in variant associated with ringing, during ringing.

3.8.2. Data format and coding of CLI contains following parameters (according with ETSI EN 300 659-3, chapter 5.2.1):

Date and Time

Calling Line Identification or reason of Calling Line Identification Absence

Called Line Identification

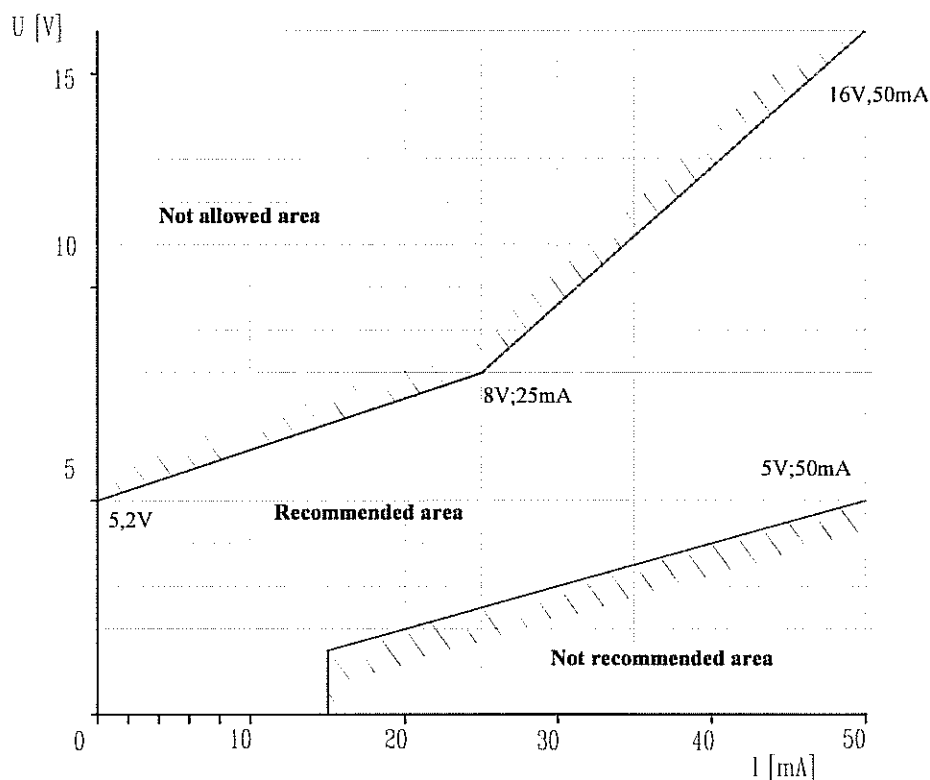


Figure 2:  
Cut-off V-A characteristic of terminal equipment

**TSPE 2078 - Z<sub>UNI</sub> INTERFACE WITH U SIGNALLING**

Published as an internal technical standard by ČESKÝ TELECOM, a.s.

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