Catalog

of recommended interfaces for interconnection

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Keywords: Interconnection, interfaces

Based on: Loi sur les télécommunications du 30 avril 1997 [Telecommunications Act (TA)],

Ordonnance sur les services de télécommunication du 6 octobre 1997 [Telecommunications Services Regulation (TSR)],

Agreement between providers of telecommunication services in Switzerland.

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1. Introduction

This catalogue defines the types of interface recommended by the Federal Office for Communication for the interconnection of two telecommunications service providers.

The catalogue is drawn up in accordance with article 11 of the Telecommunications Act of 30 April 1997 (TA) and article 35 paragraph 1 of the Telecommunications Services Regulation of October 1997 (TSR).

2. In general

2.1 Scope

The types of interface recommended in this catalogue are based on international standards (see references below) and are aimed at ensuring communication between users of the universal service (interoperability).

Other types of interconnection interfaces in keeping with international standards could be added later if necessary.

2.2 References

[1]   RS 748.10, TA
Telecommunications Act of 30 April 1997.

[2]   RS 784.101.1, TSR
Telecommunications Services Regulation of 6 October 1997 on telecommunications services.

[3]   ITU-T standards defining electrical and physical interfaces:

G.703: Physical/electrical characteristics of hierarchical digital interfaces
G.704: Synchronous frame structures used at 1544, 6312, 2048, 8488 and 44736 kbps hierarchical levels
G.706: Frame alignment and cyclic redundancy check (CRC) procedures relating to basic frame structures defined in Recommendation G.704

[4]   ETSI standards defining the Message Transfer Part (MTP) of SS7:

ETS 300 008-1: Message Transfer Part (MTP) to support international interconnection

Part1: Protocol Specification

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[5] ETSI standards defining the ISUP Version 2 i:

ETS 300 356-1-19: ISUP version 2 for the international interface

Part 1: "Basic services";
Part 2: "ISDN supplementary services";
Part 3: "Calling Line Identification Presentation (CLIP) supplementary service";
Part 4: "Calling Line Identification Restriction (CLIR) supplementary service";
Part 5: "Connected Line Identification Presentation (COLP) supplementary service";
Part 6: "Connected Line Identification Restriction (COLR) supplementary service";
Part 7: "Terminal Portability (TP) supplementary service";
Part 8: "User-to-User Signalling (UUS) supplementary service";
Part 9: "Closed User Group (CUG) supplementary service";
Part 10: "Subaddressing (SUB) supplementary service";
Part 11: "Malicious Call Identification (MCID) supplementary service";
Part 12: "Conference call, add-on (CONF) supplementary service";
Part 14: "Explicit Call Transfer (ECT) supplementary service";
Part 15: "Diversion supplementary services";
Part 16: "Call Hold (HOLD) supplementary service";
Part 17: "Call Waiting (CW) supplementary service";
Part 18: "Completion of Calls to Busy Subscriber (CCBS) supplementary service";
Part 19: "Three-Party (3PTY) supplementary service";

[6] ETSI standards defining the Signalling Connection Control Part (SCCP) of SS7.

ETS 300 009-1: Signalling Connection Control Part (SCCP) (connectionless and connection-oriented) to support international interconnection

Part1: Protocol Specification

[7] ETSI standards defining the Transaction Capabilities (TC) of SS7:

ETS 300 287-1: Transaction Capabilities (TC) version 2

Part1: Protocol Specification

[8] ETSI standards defining the Application of ISDN User Part (ISUP) version 2 for the ISDN-Public Land Mobile Network (PLMN) of SS7:

ETS 300 646-1 Application of ISDN User Part (ISUP) version 2 for the ISDN-Public Land Mobile Network (PLMN) signalling interface

Part1: Protocol Specification

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3. Definitions

Definitions from ETSI NA8 (not yet official):

interface shall mean the common boundary between two associated systems (ITU-T);

interoperability shall mean the capability to provide successful communication between end-users across a mixed environment of different domains, networks, facilities, equipment etc.

Definitions from the TA of 30 April 1997 :

telecommunications service shall mean the transmission of information for third parties by means of telecommunications techniques;

telecommunications installations shall mean apparatus, lines or equipment intended for the transmission of information by means of telecommunications techniques or used for that purpose;

interconnection shall mean the connection of telecommunications installations and services, enabling them to operate together in accordance with logical systems and telecommunications techniques and allowing access to the services of third parties;

4. Symbols and abbreviations

CCITT no. 7	Comité Consultatif international Télégraphique et Téléphonique (replaced by ITU)
ETS	European Telecommunications Standard
ETSI	European Telecommunications Standard Institute
ISDN	Integrated Services Digital Network
ISUP	ISDN User Part
ITU-T	International Telecommunications Union – Telecommunications sector
LTC	Loi sur les télécommunications du 30 avril 1997
MTP	Message Transfer Part
OST	Ordonnance sur les services de télécommunication du 6 octobre 1997
RS	Recueil Systématique (federal legal archives)
SS7	Signalling System No. 7
TA	Telecommunications Act of 30 April 1997
TSR	Telecommunications Services Regulation of 6 October 1997

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5. Recommended interconnection interfaces

5.1 Mandatory requirements of interconnection interfaces

5.1.1 Descriptions and technical conditions

This section contains standards for the circuit switched network interconnection to support calls which are subject for the basic offer according to TSR Art. 35, see [2]:

- Physical/electrical interface: ITU-T G.703/G.704/G.706, see [3]

- SS7 Message Transfer Part (MTP): ETS 300 008-1, see [4]

- SS7 ISDN User Part (ISUP): ETS 300 356-1
  ETS 300 356-2
  ETS 300 356-3
  ETS 300 356-4
  ETS 300 356-5
  ETS 300 356-6
  ETS 300 356-11, see [5]

5.2 Optional interconnection interfaces on the basis of mutual agreement

The two providers of telecommunication services have the possibility to define on the basis of mutual agreements additional or alternative requirements complying with the legal aspects as follows:

- Additional supplementary services which are available in the networks of the two providers of telecommunication services (i.e. see list in Chapter 2.2 [References])
- Alternative interfaces

6. Requirements of interconnection interfaces

The interconnection interfaces must provide at least:

- the exchange of signalling information necessary for allowing carrier selection for national and international calls
- the exchange of signalling information necessary for providing number portability
- the exchange of signalling information required for caller identification
- the exchange of information to allow the operation of supplementary services related to the universal service
- the exchange of information to allow the operation of emergency services related to the universal service