Working Implementation Agreements for Open Systems Interconnection Protocols: Part 2 - Subnetworks

Output from the December 1993 Open Systems Environment Implementors' Workshop (OIW)

SIG Chair: **Fred Burg, AT&T**
SIG Editor: **Doug Kay/Howard Alexander, Sprint International, Brenda Gray, NIST**

Foreword

This part of the Working Implementation Agreements was prepared by the Lower Layers Special Interest Group (LLSIG) of the Open Systems Environment Implementors' Workshop (OIW). See Part 1 - Workshop Policies and Procedures in the "Draft Working Implementation Agreements" for the workshop charter.

Text in this part has been approved by the Plenary of the Workshop. This part replaces the previously existing part on this subject.

Future changes and additions to this version of these Implementor Agreements will be published as a new part. Deleted and replaced text will be shown as struck. New and replacement text will be shown as shaded.

Table of Contents

Part 2 - Subnetworks 1

0 Introduction 1

1 Scope 1

2 Normative References 1

3 Status 1

4 Errata 1

5 Local Area Networks 1
5.1 IEEE 802.2 Logical Link Control 1
5.2 IEEE 802.3 CSMA/CD Access Method 1
5.3 IEEE 802.4 Token Bus Access Method 2
5.4 IEEE 802.5 Token Ring Access Method 2
5.5 Fiber Distributed Data Interface (FDDI) 2
5.5.1 Token Ring Media Access Control (MAC, X3.139–1987) 2
5.5.2 Token Ring Physical Layer (PHY,X3.148–1988) 2
5.5.3 Physical Layer Media Dependent (PMD, X3.166–1989) 2

6 X.25 Wide Area Networks 2
6.1 CCITT Recommendation X.25 2
6.2 ISO 7776 2
6.3 ISO 8208 3

7 Integrated Services Digital Networks (ISDN) 3
7.1 Introduction 3
7.2 Implementation Agreements 3
7.2.1 Physical Layer, Basic Access at "U" 3
7.2.2 Physical Layer, Basic Access at S and T 3
7.2.3 Physical Layer, Primary Rate at "U" 3
7.2.4 Data Link Layer, D–Channel 3
7.2.5 Signaling 3
7.2.6 Data Link Layer B–Channel 4
7.2.7 Packet Layer 4

8 Frame Relay Subnetworks 4

Annex A (informative)

Cross Reference Between CCITT and ANSI Text Relating to ISDN Agreements 5

Annex B (informative)

Bibliography 6

Annex C (informative)

Cross Reference between CCITT and ANSI Text Relating to Frame Relay Agreements 7
C.1 Physical Layer 7
C.2 Data Transfer 8
C.3 Control (Signalling) Procedures 8

Annex D (informative)

Frame Relay Network-to-Network Interface 10

List of Figures

List of Tables

Table C1 - ANS - ITU-T cross references 8
Table C2 - ANS - ITU-T cross references 9

Part 2 - Subnetworks

Editor's Note - All references to Stable Agreements in this Section are to Version 7.

0 Introduction

(Refer to Stable Implementation Agreements Document)

1 Scope

(Refer to Stable Implementation Agreements Document)

2 Normative References

(Refer to Stable Implementation Agreements Document)

3 Status

This material is current as of December 10, 1993.

4 Errata

Errata are reflected in replacement pages of Version 7, Stable Document.

5 Local Area Networks

(Refer to Stable Implementation Agreements Document)

5.1 IEEE 802.2 Logical Link Control

(Refer to Stable Implementation Agreements Document)

5.2 IEEE 802.3 CSMA/CD Access Method

(Refer to Stable Implementation Agreements Document)

5.3 IEEE 802.4 Token Bus Access Method

(Refer to Stable Implementation Agreements Document)

5.4 IEEE 802.5 Token Ring Access Method

(Refer to Stable Implementation Agreements Document)

5.5 Fiber Distributed Data Interface (FDDI)

5.5.1 Token Ring Media Access Control (MAC, X3.139-1987)

(Refer to Stable Implementation Agreements Document)

Further study is needed to confirm whether a lower default value or range for T_Req would be useful.

5.5.2 Token Ring Physical Layer (PHY,X3.148-1988)

(Refer to Stable Implementation Agreements Document)

5.5.3 Physical Layer Media Dependent (PMD, X3.166-1989)

(Refer to Stable Implementation Agreements Document)

6 X.25 Wide Area Networks

6.1 CCITT Recommendation X.25

(Refer to the Stable Implementation Agreements Document).

6.2 ISO 7776

(Refer to the Stable Implementation Agreements Document).

6.3 ISO 8208

(Refer to the Stable Implementation Agreements Document).

7 Integrated Services Digital Networks (ISDN)

7.1 Introduction

(Refer to the Stable Implementation Agreements Document).

7.2 Implementation Agreements

(Refer to the Stable Implementation Agreements Document).

7.2.1 Physical Layer, Basic Access at "U"

(Refer to the Stable Implementation Agreements Document).

7.2.2 Physical Layer, Basic Access at S and T

(Refer to the Stable Implementation Agreements Document).

7.2.3 Physical Layer, Primary Rate at "U"

(Refer to the Stable Implementation Agreements Document).

7.2.4 Data Link Layer, D-Channel

(Refer to the Stable Implementation Agreements Document).

7.2.5 Signaling

(Refer to the Stable Implementation Agreements Document).

7.2.6 Data Link Layer B-Channel

(Refer to the Stable Implementation Agreements Document).

7.2.7 Packet Layer

(Refer to the Stable Implementation Agreements Document).

8 Frame Relay Subnetworks

(Refer to the Stable Implementation Agreements Document).

Annex A (informative)

Cross Reference Between CCITT and ANSI Text Relating to ISDN Agreements

(Refer to the Stable Implementation Agreements Document.)

Annex B (informative)

Bibliography

(Refer to Stable Implementation Agreements Document)

Annex C (informative)

Cross Reference between CCITT and ANSI Text Relating to Frame Relay Agreements

This annex provides a cross-reference listing between those sections of the ANSI Standards mentioned in clause 8 of this part and the sections of the corresponding CCITT Recommendations.

C.1 Physical Layer

ANSI T1.403, which is referenced in 8.3.1 of this part, is equivalent to sections related to the 1544 kbit/s service in the combination of CCITT Recommendations G.703 and G.704. Exceptions to Recommendations G.703 and G.704 are listed below:

CCITT Recommendation G.703

The sections related to the 1544 kbit/s interface in this Recommendation apply with the following exception:

a) Section 2.5: The current text is replaced by: "The B8ZS code shall be used because connecting line systems require suitable signal content to guarantee adequate timing information."

CCITT Recommendation G.704

The sections related to the 1544 kbit/s interface in this Recommendation apply with the following exceptions:

a) Section 2.1.3 - Allocation of the F-bit: The current text is to be replaced by: "Table 1/G.704 which provides the recommended F-bits allocation;"

b) Table 1/G.704:

1) In the column "For character signal," all instances of '1-7' are replaced by '1-8' (related bits are: 966, 2124, 3282, and 4440);

2) The column "For signalling" is not applicable;

3) The column "Signalling channel designation" is not applicable;

4) The note a) below the figure is not applicable as it pertains to items 2) and 3) above;

c) Table 2/G.704: The table is not applicable;

d) Section 2.1.3.1.1 - Multiframe alignment signal: The portion starting with "...as well as to identify..." to the end of the sentence is not applicable;

e) Section 2.1.3.1.3 - 4 kbit/s data link, (third paragraph): The entire paragraph is replaced by: "The idle pattern is the HDLC flag bit pattern (01111110);"

f) Section 2.1.3.2 - Method: twelve-frame multiframe: This section is not applicable;

g) Section 3.1.2 - Use of 64 kbit/s channel time slots: This section is not applicable;

h) Section 3.1.3 - Signalling: All sections under 3.1.3 are not applicable;

i) Section 3.2 - Interface at 1544 kbit/s carrying 32 kbit/s channel time slots: All sections under 3.2 are not applicable;

j) Section 3.3 - Interface at 1544 kbit/s carrying n*64kbit/s: This section is not applicable.

C.2 Data Transfer

The following table provides the cross-reference between those sections of the ANS T1.618 Standard referenced in 8.3.2 of this document and the corresponding ITU-T Q.922 Recommendation.

Table C1 - ANS - ITU-T cross references

ANS T1.618	ITU-5 Recommendation Q.922
Section 4.2	Section 2.2
Section 4.5	Section 2.5
Section 5.3	Section 3.3
Section 5.3.1	Section 3.3.1
Section 5.3.6--Table 1 (a)	Section 3.3.6 -- Table 1/Q.922 (10 bits DLCI)
Section 5.3.6.2	Note
Section 5.3.7	Section 3.3.7
Section 7	Annex A, Section A.6
ANSI T1.606 (referenced in Section 7)	ITU-T Recommendation I.370
Section 7.1	Annex A, Section A.6.2.1
Section 7.2	Annex A, Section A.6.2
Annex A (referenced in Section 7.2)	Appendix I, Section I.2
Section 8	Annex A, Section A.7

NOTE - Section 5.3.6.2 of ANS T1.618 has no corresponding section in ITU-T Recommendation Q.922. This section is not applicable and is not part of the Stable Implementation Agreements.

C.3 Control (Signalling) Procedures

The following table provides the cross-reference between those sections of the ANS T1.617 Standard referenced in 8.3.3 of this document and the corresponding ITU-T Q.933 Recommendation.

Table C2 - ANS - ITU-T cross references

ANS T1.617	ITU-T Recommendation Q.933
Annex D Annex B	Annex A Annex B

Annex D (informative)

Frame Relay Network-to-Network Interface

(Refer to the Stable Implementation Agreements Document.)