

Contents

1. Introduction.....	1-1
1.1 Changes from TR-TSY-000740, Issue 3.....	1-1
1.2 Background Information on Traffic Measurements.....	1-2
1.3 Network Data Collection Operations System for Traffic Data Acquisition ...	1-3
1.4 NDC OS	1-3
2. Features and Capabilities	2-1
3. Interface Requirements	3-1
3.1 Protocols.....	3-1
3.1.1 BX.25 Based Implementation	3-1
3.1.1.1 Physical Layer	3-2
3.1.1.2 Link Layer	3-4
3.1.1.3 Packet Layer	3-4
3.1.1.4 Transport, Session, and Presentation Layers	3-6
3.1.2 TCP/IP Based Implementation.....	3-6
3.1.2.1 Link Layer	3-7
3.1.2.1.1 Ethernet.....	3-7
3.1.2.1.2 Fast Ethernet.....	3-9
3.1.2.2 Network Layer	3-11
3.1.2.3 TCP Layer.....	3-14
3.1.2.3.1 Logical Channels	3-15
3.1.2.4 TCP/IP Security	3-15
3.1.3 Application Layer	3-16
3.1.3.1 Overview.....	3-16
3.1.3.2 NDC OS to NE Polling and Special Message Descriptions	3-16
3.1.3.3 NE to NDC OS Message Types.....	3-18
3.1.3.4 Message Priorities.....	3-24
3.1.3.5 NDC OS to NE Message Formats	3-28
3.1.3.6 NE to NDC OS Message Formats	3-28
3.1.3.7 NE to NDC OS Message Header Format	3-28
3.1.3.7.1 Overall Header.....	3-28
3.1.3.7.2 Section Header for Message Type 103.....	3-31
3.1.3.7.3 Section Header for Message Type 123.....	3-32
3.1.3.8 Data Section Format	3-33
3.1.3.9 Special Data Field Values.....	3-38
3.1.3.10 NE to NDC OS Message Sizes.....	3-39
3.1.3.11 Data Poll Messages - Octet/Bit Transmission Order	3-39

3.2	Interface Performance	3-40
3.2.1	Availability.....	3-40
3.2.1.1	BX.25 Implementation	3-40
3.2.1.2	TCP/IP Implementation	3-41
3.2.2	Reliability.....	3-41
3.2.2.1	BX.25 Implementation	3-41
3.2.2.2	TCP/IP Implementation	3-41
3.2.3	Data Accuracy.....	3-41
3.2.4	Data Link Capacity	3-41
3.2.4.1	BX.25 Implementation	3-41
3.2.4.2	TCP/IP Implementation	3-42
3.3	Interface Operations and Maintenance.....	3-42
3.3.1	Initialization	3-42
3.3.1.1	BX.25 Implementation	3-42
3.3.1.2	TCP/IP Implementation	3-42
3.3.2	Examples of NDC OS Responses to Abnormal Events	3-43
References	References-1
Glossary	Glossary-1

List of Figures

Figure 3-1.	TR-740 Protocol Stack with BX.25	3-1
Figure 3-2.	TR-740 Protocol Stack With TCP/IPaaaaaaaa	3-6
Figure 3-3.	IEEE Encapsulation (RFC 1042) and Ethernet Encapsulation (RFC 894)	3-8
Figure 3-4.	Ethernet and Fast Ethernet Protocol Sublayersaaaaa	3-10
Figure 3-5.	Format of IP Header	3-12
Figure 3-6.	Format of TCP Header	3-14
Figure 3-7.	Overall Header Format	3-29
Figure 3-8.	Section Header Format for Message Type 103	3-31
Figure 3-9.	Section Header Format for Message Type 123	3-33
Figure 3-10.	Multiple Records Layout (Double Precision Measurements) .	3-34

List of Tables

Table 3-1. Octet/Bit Order of Transmission for 16-Bit Measurements.....	3-3
Table 3-2. Octet/Bit Order of Transmission for 32-Bit Measurements.....	3-3
Table 3-3. Recommended Type-Of-Service Value Assignment.....	3-13
Table 3-4. NDC OS and NTM OS to NE Message Codes.....	3-17
Table 3-5. NE to NDC OS Message Codes.....	3-20
Table 3-6. Command and Response Codes for NDC OS-Originated Messages.....	3-26
Table 3-7. Command and Response Codes for NTM OS-Originated Messages.....	3-27
Table 3-8. Single Precision Section - 16 Record ID Bits.....	3-35
Table 3-9. Single Precision Section - 32 Record ID Bits.....	3-35
Table 3-10. Double Precision Section - Record 32 ID Bits.....	3-35
Table 3-11. Single Precision Data Sections - 48 ID Record Bits.....	3-36
Table 3-12. Single Precision Data Sections - 64 ID Record Bits.....	3-36
Table 3-13. Single Precision Data Sections - 80, 96, 112, or 128 Record ID Bits.....	3-36
Table 3-14. Double Precision Data Sections - 64 ID Record Bits.....	3-36
Table 3-15. Double Precision Data Sections - 96 ID Record Bits.....	3-37
Table 3-16. Double Precision Data Sections - 128 ID Record Bits.....	3-37
Table 3-17. Octet/Bit Order of Transmission for 16-Bit Measurements.....	3-40
Table 3-18. Octet/Bit Order of Transmission for 32-Bit Measurements.....	3-40