Q.933 Annex A and T1.617 Annex D Frame Format

Element	8765 4321
Opening flag	0111 1110
Frame Relay Header	
Unnumbered Info Frame	0000 0011
Protocol Discriminator	0000 1000
Call Reference	0000 0000
Message Type	
Locking Shift (ANSI only)	1001 0101
1st Information Element	
2nd Information Element	
3rd Information Element (and all following elements)	
Frame Check Sequence (msb)	
Frame Check Sequence (lsb)	
Closing Flag	0111 1110

Frame Relay Header (2 Bytes)

8	7	6	5	4	3	2	1
DLCI most significant bits						C/R	0 (EA)
DLCI least significant bits				FECN	BECN	DE	1 (EA)

Message Type 8765 4321

Status	0111 1101
Status Enquiry	0111 0101

Report Type Information Element 8765 4321 octet

Report type information element identifier	0101 0001 (ITU-T) 0000 0001 (ANSI)	1
Length of report type contents	0000 0001	2
Type of report		

Types of Reports (octet 3) 8765 4321

Full Status	0000 0000
Link Integrity Verification only	0000 0001
Single VC asynchronous status	0000 0010

Link Integrity Verification Information Element 8765 4321 octet

Link integrity verification information element identifier	0101 0011 (ITU-T) 0000 0011 (ANSI)	1
Length of link integrity verification contents	0000 0010	2
Send sequence number (1~255)		3
Receive sequence number (0~255)		4

VC Status Information Element 8765 4321 octet

VC status information element identifier	0101 0111 (ITU-T) 0000 0111 (ANSI)	1
Length of VC status contents	0000 0011	2
0 (ext) **0** (spare) **<DLCI most significant 6 bits>**		3
1 (ext) **<DLCI 2nd most significant 4 bits>** **000** (spare)		4
1 (ext) **000** (spare) **0/1** (new) **0** (spare) **0/1** (active) **0** (spare)		5

Note 1: This information is only present in full status and asynchronous reports.
Note 2: Only full status reports may contain multiple VC status information elements.

NORTEL NETWORKS

Nortel Networks Multiservice Switch 7400/15000/20000

Frame Relay UNI Job Aid

Summary Card

NN10600-905

What is Frame Relay?

Frame Relay is a high-speed access service that provides high performance connectivity for such applications as Local Area Network (LAN) interconnection.

Operating at the core sublayer of the OSI model, Frame Relay avoids all the comprehensive checks and retransmission mechanisms. The checks and retransmission mechanisms are handled by the higher levels at the DTEs, and as such, enable a much higher CIR and throughput. Frame Relay relies upon the integrity of the transmission medium and the capability of the end nodes to detect and correct any transmission failures by requesting a retransmission of the errored frame.

The result is that Frame Relay only supports core communications functions such as transparency, multiplexing, and detection of transmission errors.

For a more detailed description of Frame Relay, consult
NN10600-900 *Nortel Networks Multiservice Switch 7400/15000/20000 Frame Relay Technology Fundamentals*.

Frame Relay Service

Service characteristics

Frame Relay service between the user device and the network is provided by the UNI (User Network Interface). The service provides order-preserving, reliable with best-effort delivery between UNIs on both sides of a network. Each frame has a logical identifier, a DLCI (Data Link Connection Identifier); which allows multiple connections to many destinations over a single channel.

Types of LMI

The Local Management Interface operates over a pre-determined DLCI, and is used to report the status of all connections at that Frame Relay interface. Three slightly different specifications govern the Frame Relay LMI:

- Vendor Forum specification, the original specification as devised by the four founding members of the Frame Relay Forum.
- ANSI T1.617 Annex D.

Operator commands

Provisioning mode commands

Following is a list of commands used to provision the Frame Relay service. These commands are common to all components.The help, list, and display commands may be used both within and outside of provisioning mode. The add, delete, and set commands may only be issued if you are in provisioning mode.

Command	Description
help	information about commands, components and attributes
list	displays all the provisionable attributes of a component
add	adds a component or subcomponent
delete	deletes a component and its subcomponent
set	changes the value of a provisionable attribute for a particular component
display	displays all the provisionable attributes for a particular component in a particular view

For more information on configuring Frame Relay refer to NN10600-901 *Nortel Networks Multiservice Switch 7400/15000/20000 Frame Relay Configuration Management*.

Provisioning system commands

The following commands belonging to the ProvisioningSystem (Prov) component provide the provisioning functionality required to manipulate provisioning views or components.

Command	Description
start prov	starts provisioning mode -only one console at a time may enter provisioning mode
end prov	exits provisioning mode
clear prov	deletes all non-permanent components from the Editing View
copy prov	copies components from a specified view into the Editing View
check prov	invokes semantic checking of components in the Editing View
activate prov	causes the Current View to have the same provisioning data as the Editing View
confirm prov	ensures that the connectivity to the operator was maintained after being activated -may only be used by privileged operators
commit prov	displays the initial configuration that the module will be set to on CP processor restart (initial start up, restart due to roll back, etc.) -only one “committed view”
save prov	saves provisioning data described in a particular view
load prov	copies provisioning data stored on disk into the Editing View
tidy prov	deletes all provisioning files that were last modified between two specified dates

Frame Relay UNI Job Aid Summary Card 6.1S1