

TECHNICAL NOTE

INTERFACES MIB COMPLIANCE

1. Introduction

This document states the compliance of the PFA MIB implementation to RFC 1573 [1] and, where relevant, how the MIB objects relate to the native MML interface of the PFA.

Note that

1. All objects described in this document are *read-only*.
2. The PFA implementation of MIB objects with the syntax type *counter* currently differs from that defined in RFC 1155 [2]. PFA counters take a maximum value of $2^{31} - 1$ and use bit 32 to indicate if the counter has wrapped.
3. It is possible to *reset* PFA statistics from the native MML command interface and hence the successive values retrieved through the SNMP interface could be affected. *This, however, does not affect Ether NI, X.25 NI, FR NI and SLIP interfaces.*

2. Interfaces Supported

The PFA supports ifTable, ifStackTable and parts of ifXtable for the following types of interfaces:

LA	Ether Physical Interface
Ether NI	IP over Ether Interface
X25 NI	IP over X.25 (RFC 1356) Encapsulation
FR NI	IP over Frame Relay (RFC 1490) Encapsulation
SLIP	Serial Line IP Network Interface
PP	Packet/Frame (synchronous only) Physical Port Object
LP	Packet Switching Link Port Object (including X.25/X.75 over Frame Relay)
NP	Packet Switching Network Port Object (including X.25/X.75 over Frame Relay)
FP	Frame Relay Port Object
MP	Multilink PPP object
LCP	PPP Link Control Protocol object

ifNumber is supported and provides a total of currently configured interfaces of the above types. ifTestTable and ifRcvAddressTable are not supported in this release.

If an object is not supported for a specific PFA interface, a value of 0 (zero) is returned.

3. ifTable

Object Name	Explanation
ifIndex	Supported for all PFA interfaces listed in Sec. 2
ifDescr	Supported - see Sec. 3.1
ifType	Supported - see Sec 3.2
ifMtu	Supported for Ether, SLIP, X25 NI and FR NI and also for the following interfaces: LA LILAx:FRSIZE PP LIPPx:N1 X.25, X.75 and X.25/X.75 over Frame Relay NP LINPx:MPS QLLC NP LINPx:QLLC_PACKET_SIZE LCP STMP:RMRU. Dependent on far-end equipment. Only valid when connected. MP Not available via MML. Dependent on far-end equipment.
ifSpeed	Supported for Ether, SLIP and also for the following interfaces: LA LILAx:SPEED PP LIPPx:RATE MP Maximum of STMP:CURRENT RATE IN and CURRENT RATE OUT
ifPhysAddress	Supported for Ether and the the following interfaces: LA LILAx:MACADDR SDLC LP LINPx:ADDR
ifAdminStatus	Supported in <i>read-only</i> mode for all PFA interfaces listed in Sec. 2.
ifOperStatus	Supported for all PFA interfaces listed in Sec. 2.
ifLastChange	Supported for all PFA interfaces listed in Sec. 2.
ifInOctets	Supported for Ether, SLIP, X25 NI and FR NI and also for the following interfaces: LA STLAP:octets_in PP STPPP:OCTETS_IN NP STNPP:L3_OCTETS_IN LCP STLCP:OCTETS IN MP Not available via MML

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ifInUcastPkts	Supported for Ether, SLIP, X25 NI and FR NI and also for the following interfaces: LA STLAP:unicast_in PP STPPP:RX_FRAMES NP STNPP:L3_DATA_IN LCP STLCP:PACKETS IN MP STMPP:RX PACKETS
ifInNUcastPkts	Supported for Ether and the LA interface as following: LA STLAP:non_unicast_in
ifInDiscards	Supported for Ether, SLIP, X25 NI and FR NI and also for the following interfaces: LA STLAP:discard_in PP STPPP:MEM_ERRS FP STFPP:NO_FRAMES_DISCARDED LCP STLCP:DISCARDS IN MP STMPP:RX QUEUE SIZE EXCEEDED
ifInErrors	Supported for Ether, SLIP, X25 NI and FR NI and also for the following interfaces: LA STLAP:error_rx PP STPPP:FCS + STPPP:OVERRUNS MP STMPP:INVALID HEADERS + SEQNO ERRORS
ifInUnknownProtos	Supported for the following interfaces as following: LA STLAP:unknown_rx MP STMPP:INVALID PIDS
ifOutOctets	Supported for Ether, SLIP, X25 NI and FR NI and also for the following interfaces: LA STLAP:octets_out PP STPPP:OCTETS_OUT NP STNPP:L3_OCTETS_OUT LCP STLCP:OCTETS OUT MP Not available via MML

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ifOutUcastPkts	Supported for Ether, SLIP, X25 NI and FR NI and also for the following interfaces: LA STLAP:unicast_out PP STPPP:TX_FRAMES NP STNPP:L3_DATA_OUT LCP STLCP:PACKETS OUT MP STMPP:TX PACKETS
ifOutNUcastPkts	Supported for Ether and the LA interface as the following: LA STLAP:non_unicast_out
ifOutDiscards	Supported for Ether, SLIP, X.25 NI and FR NI and also for the following interfaces: LA STLAP:discard_out PP STPPP:TX_DISCARDS LCP STLCP:DISCARDS OUT MP STMPP:TX DISCARDS
ifOutErrors	Supported for Ether, SLIP, X.25 NI and FR NI and also for the following interfaces: LA STLAP:error_tx PP STPPP:TX_UNDERRUNS
ifOutQlen	Supported for Ether, SLIP, X.25 NI and FR NI and also for the following interfaces: LA STLAP:out_q_len
ifSpecific	Supported for all PFA interfaces listed in Sec. 2.

3.1. ifDescr

As the same version of software is running on each PFA interface, ifDescr will only provide the type of individual interface through ifDescr as specified in the following table.

The sysDescr object from MIB-II Systems group will provide details of the PFA hardware and software in the form "Ericsson ERIPAX PFA Vx.x.x ID:nnn.nnn Ryy.y DATE:yyyy-mm-dd TIME:hhmmss", where:

Vx.x.x is the Version Number of the PFA system, e.g. V2.0.0

Ry.y.y is the Revision Number of the PFA Software, e.g. R17.5

ID:nnn.nnn is the hardware and software identifier of the PFA.

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DATE and TIME date and time of the PFA software build.

Interface Name	Description
Packet PP	PACKET PP=1-1-1-port
Frame PP	FRAME PP=1-1-1-port
SDLC LP	SDLC LP=1-1-1-port-drop
LAPB LP	X25 LP=(1-1-1-[port XF] or 1-1-1-MP[1..m]-an)
LLC-LP	LLC LP=1-1-0-la-drop
QLLC NP	QLLC NP=1-1-1-port-drop or QLLC NP=1-1-0-la-drop
X.25 NP	X25 NP=(1-1-1-[port XF] or 1-1-1-MP[1..m]-an)
X.75 NP	X75 NP=(1-1-1-[port XF] or 1-1-1-MP[1..m]-an)
LA	ETHER LA=1-1-0-la
Ether NI	ETHER LOCIP=n.n.n.n
X25 NI	X25 LOCIP=n.n.n.n
Frame Relay NI	FR LOCIP=n.n.n.n
SLIP	SLIP LOCIP=n.n.n.n
Frame Relay FUI	FUI FP=(1-1-1-port or 1-1-1-MP[1..m]-3)
Frame Relay FDI	FDI FP=(1-1-1-port or 1-1-1-MP[1..m]-3)
Frame Relay FTI	FTI FP=(1-1-1-port or 1-1-1-MP[1..m]-3)
LCP	LCP LCP=1-1-1-port
MP	MP MP=MP[1..m]

Where:

- port is the PFA port number in the range 1 to 18.
- drop is the SDLC / QLLC drop number in the range 1 to 8.
- XF is the Frame Relay port number in the range 'xf1' to 'xf15'.
- n.n.n.n is the IP address in the standard dotted decimal notation.
- la is the LAN port number (1..2).

m is the maximum number of MP bundles available.

an is the MP attachment number (1..2)

3.2. ifType

Interface	ifType value
PP	One of the following, depending on the type of the physical interface: rs232(33) v11(64) v36(65) g703-64K(66) g703-2Mb(67)
SDLC LP	sdlc(17)
LAPB LP	lapb(16)
LLC LP	sdlc (17)
QLLC NP	qllc(68)
X25 NP	x25ple(40)
X75 NP	other(1)
LA	ethernetCsmacd(6)
Ether NI	ethernetCsmacd(6)
X25 NI	rfc1356(63)
Frame Relay NI	rfc1490fr(58)
SLIP	slip(28)
FUI/FDI/FTI	frameRelay(32) if DTE frameRelayService(44) if DCE other (1) if FTI
LCP	ppp(23)
MP	ppp(23)

4. ifStackTable

This table shows the layering relationship between PFA interfaces and is supported for the interfaces where the relationship between the individual layers of a protocol stack is specifiable by the user at the time the stack is built. No entries are found in this table if the layering relationship between individual protocol layers is determined dynamically through an intermediate object (e.g. Frame Relay LMI or WAN IWU) or if only some of the layers are supported (e.g. SLIP) by SNMP in this release of the PFA.

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Figures 1a, 1b and 1c on the following pages show the layering relationship between different PFA interfaces and which relationships are shown in ifStackTable. Specifically, the following PFA stacks are supported stacks:

X.25/X.75 and QLLC (PP, LP and NP);

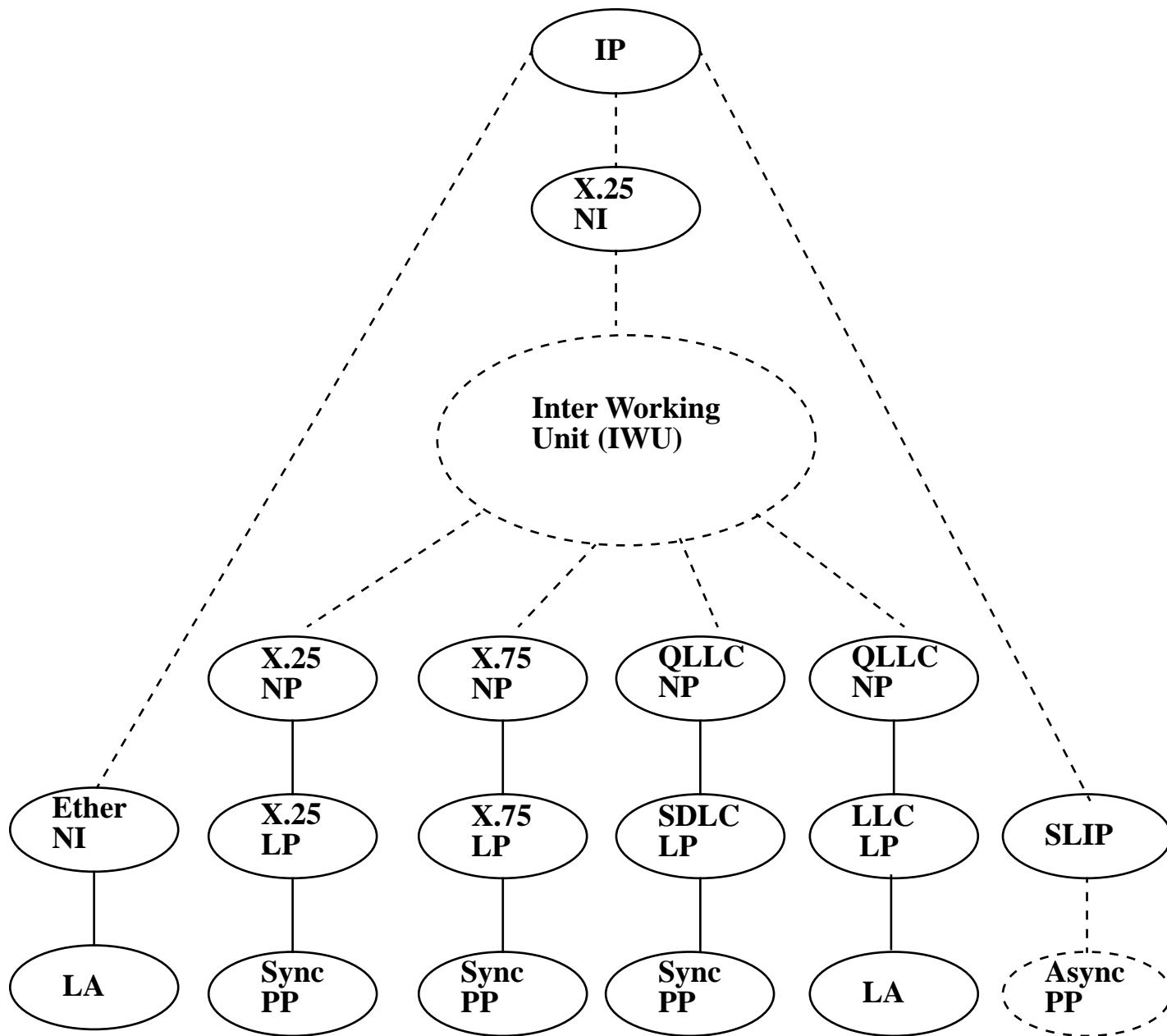
X.25/X.75 over Frame Relay (LP and NP);

LLC-LP and QLLC-NP

Frame Relay PP and FP;

Ether NI and the LAN port (NI and LA)

X.75 and Frame Relay over MP over LCP..



Key:



Interface layer not present in ifTable



Layering relationship not shown in ifStackTable

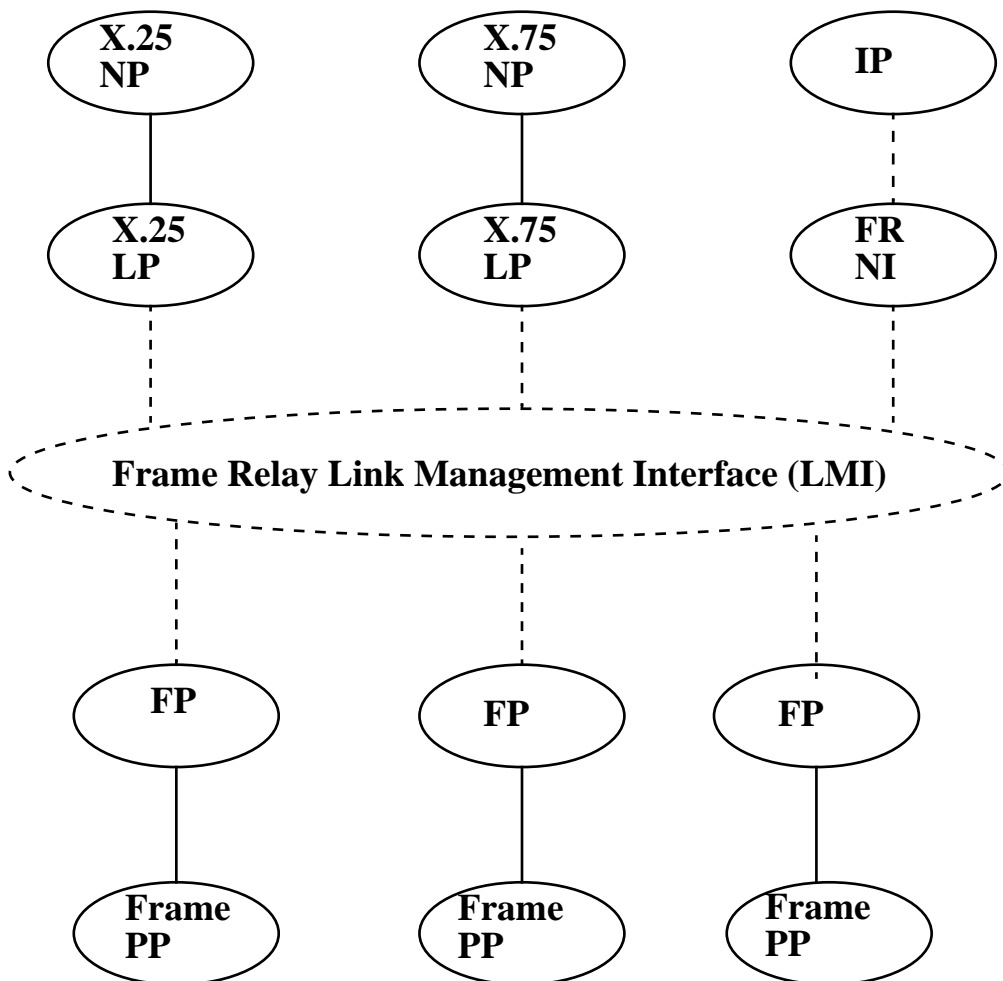
Figure 1a. Layering Relationship in the PFA (continued)

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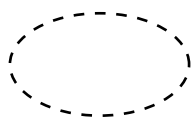
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Key:



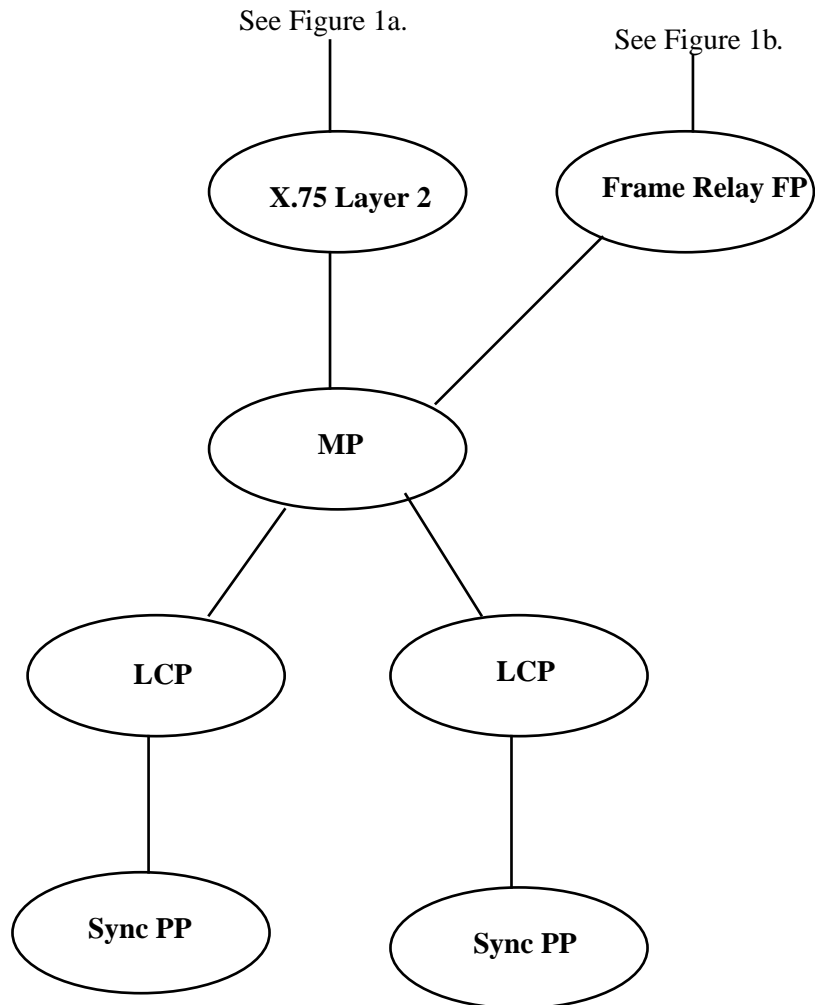
Interface layer not present in ifTable



Layering relationship not shown in ifStackTable

Figure 1b. Layering Relationships in the PFA

Figure 1c. Layering Relationships in the PFA



5. ifXTable

PFA implements the following objects from ifXTable. Objects not listed below are not supported in the PFA and a *noSuchName* error value is returned in response to a GET request.

Object Name	Explanation
ifName	Supported for all PFA interfaces listed in Sec. 2. The value returned is the key which can be used with an MML command to obtain configuration and statistics information about the interface. This is the port number in case of the PP, LP, NP, FP, MP, LCP and LA interfaces and the local IP address (LOCIP) for SLIP, Ether NI, X.25 NI and FR NI.
ifLinkUpDownTrapEnable	Supported for all PFA interfaces listed in Sec. 2
ifConnectorPresent	Supported for all PFA interfaces listed in Sec. 2

6. REFERENCES

- [1] RFC 1573 - Evolution of the Interfaces Group of MIB-II.
- [2] RFC 1155 - Structure and Identification of Management Information for TCP/IP-based Internet