

***IEEE P802.3dg
Downshift/Upshift
Proposal & Draft Text***

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1 Overview

This document provides draft text supporting “Downshift/Upshift”.

These concepts have been previously presented to the group:

- September 2025: [IEEE P802.3dg Downshift/Upshift Proposal & Draft Text](#)
- July 2025: [Downshift/Upshift \(presentation\)](#), [Proposed draft text](#)
- May 2024: [IEEE 802.3dg 100BASE-T1L: Downshift - part 2](#)
- May 2022: [Downshift](#)

1.1 Description

802.3 Auto-Negotiation (AN) for twisted paired PHYs is specified in 802.3 Clause 28 (BASE-T) and Clause 98 (BASE-T1).

The basic philosophy of AN is during link startup:

- Exchange “capabilities”
- Resolve “best” capability values supported by both link partners.

BASE-T1 Priority Resolution has extra complexity compared to BASE-T. 98B.4 Priority Resolution specifies the following priority list:

- 25GBASE-T1
- 10GBASE-T1
- 5GBASE-T1
- 2.5GBASE-T1
- 1000BASE-T1
- 100BASE-T1
- 10BASE-T1S full duplex
- 10BASE-T1S half-duplex
- 10BASE-T1L

This list does not consider the different possible operating voltages (e.g., see 146.6.4 and Table 98B–1 for 10BASE-T1L Increased Transmit Level) can also affect link stability. It’s expected that “Increased Transmit Level” will be more resilient, but that may not always be the case. 146.6.4 specifies that Increased Transmit Level is preferred. This may not be the desired outcome, .e.g.,

- Preferring to run at the lower Transmit Level for reduced energy consumption/emissions
- A line impairment (e.g., a SPoE Midspan) which limits supported voltages

Downshift specifies a separate list of preferred link settings. This starts with the list in 98B.4, and adds additional parameters, e.g., operating voltages, to create a configurable preferred link parameters list. The default list for BASE-T1L is as follows:

- 100BASE-T1L Increased Transmit Level
- 100BASE-T1L
- 10BASE-T1L Increased Transmit Level
- 10BASE-T1L

Downshift is implemented by monitoring link failures and AN signaling. When the link failure rate exceeds a

threshold, and the current link parameters are not the least preferred supported by both peers, the advertised abilities are modified to remove the current link parameters, as outlined below:

1. Auto-negotiation (AN) selects a set of link parameters (e.g., PHY ability, Increased Transmit Level) .
2. Link training.
3. Bring link up.
4. If the link does not come up or fails repeatedly, and the current link parameters are not the least preferred set supported by both peers, remove the current link parameters from the AN advertisement.

Upshift works in a similar fashion. If the link is stable for an extended period, and the current link parameters are not the most preferred set supported by both peers, add the next most preferred back into the AN advertisement and restart AN. NOTE WELL: this will interrupt the link.

Other conditions can reset the downshift process. These include:

- No valid AN signaling (`ability_match = false`) is received. Causes of this include the cable was removed, the port was shut down or the peer rebooted.

1.2 Changes from July 2025

Detailed reviews showed several issues, and potentially a simpler approach to specify downshift/upshift.

1.2.1 Priority Resolution

In addition to the normal technology priority resolution specified in 98B.4 Priority Resolution, Downshift needs to consider other abilities, e.g., 10BASE-T1L Increased Transmit Level.

10BASE-T1L supports two transmit voltages (2.4 Vpp and 1.0 Vpp). Clause 146.6.4 specifies how the transmit voltage is determined during the Auto-Negotiation process, but not as part of the Clause 98 Arbitration state diagram (Figure 98–7). While Clause 146.6.4 favors 2.4 Vpp over 1.0 Vpp, but this may not always be the desired outcome (e.g., when optimizing for lower power, or lower emissions).

To address these challenges, as part of downshift a new list will be specified to define the desired transitions between “operating modes” (e.g., speed, PHY type, voltage). This list will be part of Clause 45 and Clause 30 definitions and can be modified using these interfaces.

1.2.2 State Diagrams

There is a strong preference not to change the current Clause 98 Arbitration state diagram. A new annex will be specified with a state diagram (with variables, functions, etc) running “in parallel” with the current Figure 98–7—Arbitration state diagram state diagram.

1.2.3 Clause 30 Definitions

Clause 30 definitions are pending based on the groups’ response to the proposals for Annex 98D and Clause 45.

1.3 Change Log

Plan B document

- September 2025
 - Changes pre 802.3 Interim in Minneapolis
- August 2025
 - First draft of Plan B document

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3 Proposed text changes

3.1 New Annex 98.D

Add the following new normative annex.

Annex 98D

(normative)

Downshift/Upshift for Single Differential-Pair Media

This annex specifies downshift/upshift for BASE-T1L PHYs that support this optional functionality.

98D.1 Downshift/Upshift Sequence

Downshift/Upshift uses an independent Downshift/Upshift Sequence to that defined in 98B.4. The 98B.4 list would include transitions that don't make sense (e.g., 100BASE-T1 to 10BASE-T1S). Each "family" of PHYs (e.g., BASE-T1L vs BASE-T1) or "Technology Category" defines its own default sequence, but these can be modified using clause 45/30.

98D.1.1 BASE-T1L Sequence

The default Downshift/Upshift Sequence for the BASE-T1L PHYs is defined below:

- 100BASE-T1L Increased Transmit Level
- 100BASE-T1L
- 10BASE-T1L Increased Transmit Level
- 10BASE-T1L

98D.2 Detailed functions and state diagrams

98D.2.1 State diagram notation

The notation used in the state diagrams follows the conventions of state diagrams as described in 21.5, along with the extensions described in 145.2.5.2. State diagram timers follow the conventions of 40.4.5.2. The notation ++ after a counter or integer variable indicates that its value is to be incremented.

Default initializations, unless specified, are left to the implementer

Variables of the form "mr_x", where x is a label, comprise a management interface that is intended to be connected to the Management function. However, an implementation-specific management interface may provide the control and status function of these bits. The mapping between state diagram variables and Single twisted-pair Auto-Negotiation MDIO registers is shown in Table 98D-1.

98D.2.2 State diagram variables

PreferredLinkList;

The user configured list of link settings (e.g., technology-dependent PMA and PMA parameters) ordered from most preferred to least preferred.

MostPreferredLink;

The most preferred link settings supported by both peers.

LeastPreferredLink;

The least preferred link settings supported by both peers.

CurrentLink:

The current link settings. Setting this changes mr_adv_ability and potentially other settings (e.g., 10BASE-T1L Transmit Level).

NextHigherLink:

The next link settings above CurrentLink.

NextLowerLink:

The next link settings below CurrentLink.

mr_ds_downshift_enabled

Boolean variable indicating whether downshift is enabled.

mr_ds_upshift_enabled

Boolean variable indicating whether upshift is enabled.

mr_ds_downshift_supported

Boolean variable indicating whether downshift/upshift is supported.

mr_ds_fail_threshold

The number of link failures within the downshift threshold period before downshift is triggered.

Values: Integer number from 1 to 255

mr_ds_period_downshift

The downshift threshold period in seconds.

Values: Integer number from 1 to 255

mr_ds_period_restart

The restart threshold period in seconds.

Values: Integer number from 1 to 255

mr_ds_period_upshift

The upshift threshold period in seconds.

Values: Integer number from 1 to 4095

98D.2.3 State diagram timers

All timers operate in the manner described in 14.2.3.2 with the following additions:

- A timer is reset and stops counting upon entering a state where “stop timer” is asserted.
- While a timer is running x_timer_running is asserted

ds_downshift_timer

Timer used to evaluate downshift trigger conditions.

Duration: mr_ds_downshift_period seconds.

ds_restart_timer

Timer used to restart downshift/upshift when no valid signaling is detected, i.e., being in Figure 98-7 ABILITY DETECT and not receiving any link codewords with good CRC16.

Duration: break_link_timer_[ANSP] + mr_ds_restart_period.

ds_upshift_timer

Timer used to evaluate upshift trigger conditions.

Duration: mr_ds_link_upshift_period.

98D.2.4 State diagram counters

mr_ds_downshift_attempts

The number of downshift attempts since auto-negotiation was enabled.

mr_ds_restarts

The number of times downshift was restarted since auto-negotiation was enabled.

mr_ds_upshift_attempts

The number of upshift attempts since auto-negotiation was enabled.

ds_fail_count

The number of link failures in the last downshift threshold period.

98D.2.6 State diagram

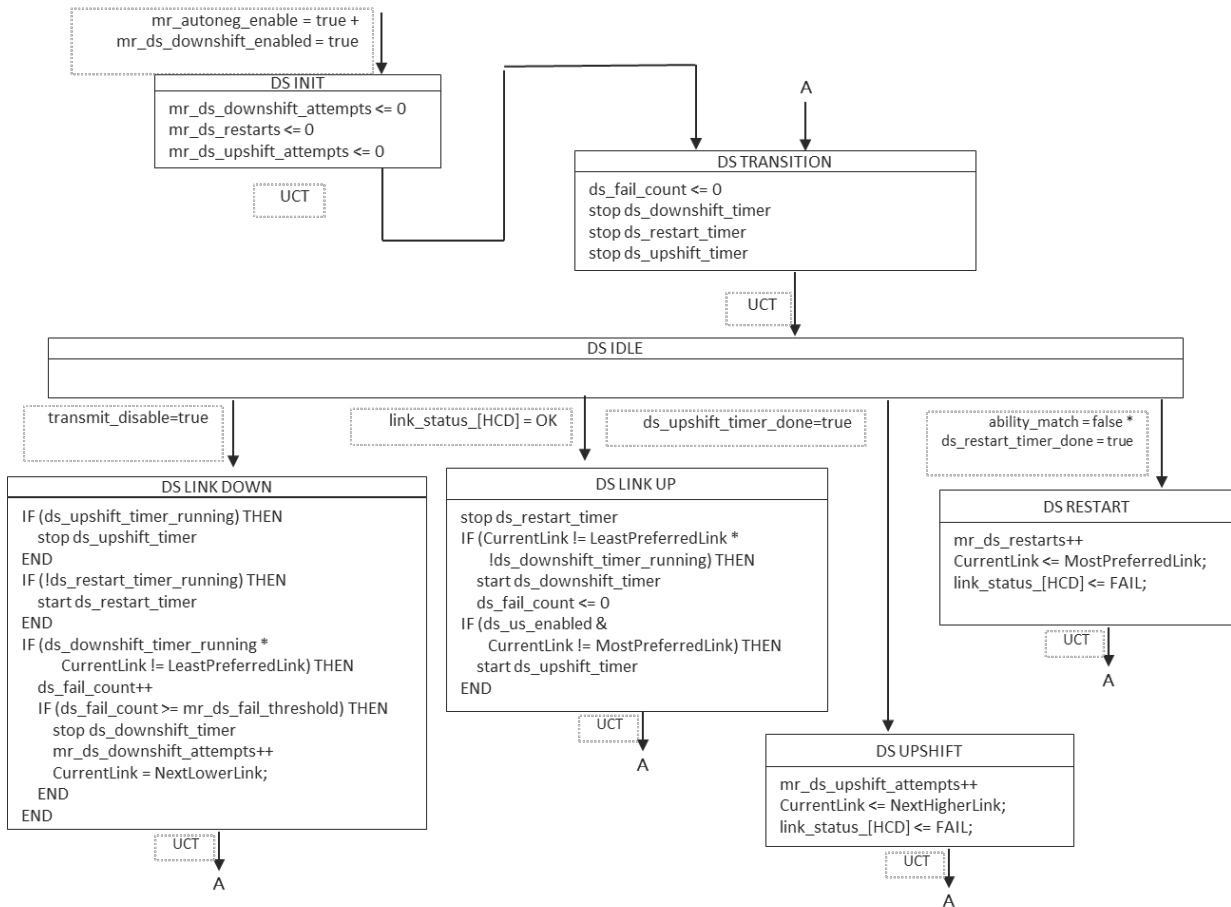


Figure 1 Downshift state diagram

98D.2.7 State diagram variable to MDIO register mapping

Table 98D-1 specifies the state diagram variable to MDIO register mapping.

Table 98D-1—State diagram variable to MDIO register mapping

State diagram variable	Description / MDIO register mapping
mr_ds_downshift_enabled	7.528.0 – Downshift enabled
mr_ds_upshift_enabled	7.528.1 – Upshift enabled
mr_ds_downshift_supported	7.529.0 – Downshift/Upshift supported
mr_ds_fail_threshold	7.530.8:15 – Downshift threshold
mr_ds_period_downshift	7.529.0:7 – Downshift period
mr_ds_period_restart	7.531.0:7 – Restart period
mr_ds_period_upshift	7.532.0:11 – Upshift period
mr_ds_downshift_attempts	7.533.15:0 – Downshift attempts
mr_ds_restarts	7.534.15:0 – Downshift Restarts
mr_ds_upshift_attempts	7.535.15:0 – Upshift attempts

98D.2.8 Downshift Preference List Enumerations

Downshift makes use of a configurable list of link settings to specify the preferred order used in downshift/upshift. Table 98D-2 specifies enumerations for these link settings.

The enumerations have two components, following the "Clause 98 Technology Ability Field" proposal from Curren et al ([Clause 98 Technology Ability Field](#)). The enumerations are 8 bits, comprised of a 3 bit Technology Category (see Table 98B-1—Technology Ability Field bit assignments) and a 5 bit type within Technology Category.

Table 98D-2— Link Setting Enumerations for BASE-T1

Technology Category	Value(s)	What
0	0-15	Reserved
1		BASE-T1L Technology Category
	16	10BASE-T1L Increased Transmit Level
	17	10BASE-T1L
	18	100BASE-T1L Increased Transmit Level
	19	100BASE-T1L
	20-31	Increased Transmit Level
2-7	32-63	Reserved

98D.3 Protocol implementation conformance statement (PICS) proforma for Annex 98D, Downshift/Upshift for Single Differential-Pair Media

98D.3.1 Introduction

The supplier of a protocol implementation that is claimed to conform to Annex 98D, Downshift/Upshift for Single Differential-Pair Media, shall complete the following protocol implementation conformance statement (PICS) proforma. A detailed description of the symbols used in the PICS proforma, along with instructions for completing the PICS proforma, can be found in Clause 21.

98D.3.2 Identification

98D.3.2.1 Implementation identification

Supplier	
Contact point for inquiries about the PICS	
Implementation Name(s) and Version(s)	
Other information necessary for full identification—e.g., name(s) and version(s) for machines and/or operating systems; System Name(s)	
NOTE 1—Only the first three items are required for all implementations; other information may be completed as appropriate in meeting the requirements for the identification. NOTE 2—The terms Name and Version should be interpreted appropriately to correspond with a supplier's terminology (e.g., Type, Series, Model).	

98D.3.2.2 Protocol summary

Identification of protocol standard	IEEE Std 802.3xx-202x, Annex 98D, Downshift/Upshift for Single Differential-Pair Media
Identification of amendments and corrigenda to this PICS proforma that have been completed as part of this PICS	
Have any Exception items been required? No [] Yes [] (See Clause 21; the answer Yes means that the implementation does not conform to IEEE Std 802.3xx-202x,.)	

98D.3.3 Major capabilities/options

Item	Feature	Sub clause	Value/Comment	Status	Support
*DNSFT	PHY support for Downshift/Upshift	98.5		M	Yes [] No []

98D.3.4 PICS proforma tables for Downshift/Upshift for Single Differential-Pair Media

98D.3.4.1 Downshift

Item	Feature	Sub clause	Value/Comment	Status	Support
DNSFTN	Downshift supported	98D.2	mr_ds_downshift_supported	DNSFT:M	Yes [] No []
DNSFTN	Downshift enabled	98D.2	mr_ds_downshift_enabled	DNSFT:M	Yes [] No []
DNSFTN	Downshift attempts	98D.2	mr_ds_downshift_attempts	DNSFT:M	Yes [] No []
DNSFTN	Downshift link attempts and link attempts threshold	98D.2	mr_ds_fail_threshold mr_ds_period_downshift ds_fail_count	DNSFT:M	Yes [] No []
DNSFTN	Downshift reset when AN signal not detected	98D.2	mr_ds_period_restart mr_ds_restarts ds_trigger_restart	DNSFT:M	Yes [] No []

98D.3.4.2 Upshift

Item	Feature	Sub clause	Value/Comment	Status	Support
UPSFTN	Upshift supported	98D.2	mr_ds_upshift_supported	DNSFT:M	Yes [] No []
UPSFTN	Upshift enabled	98D.2	mr_ds_upshift_enabled	DNSFT:M	Yes [] No []
UPSFTN	Upshift timer	98D.2	mr_ds_period_upshift	DNSFT:M	Yes [] No []
UPSFTN	Upshift attempts	98D.2	mr_ds_upshift_attempts	DNSFT:M	Yes [] No []

3.2 Clause 45 Modifications

3.2.1 Table 45–378—Auto-Negotiation MMD registers

Change Table 45–378—Auto-Negotiation MMD registers by replacing the second last row (7.528 through 7.32767) as follows:

Register address	Register name	Subclause
7.528	BASE-T1 Downshift Control	45.2.7.28
7.529	BASE-T1 Downshift Status	45.2.7.29
7.530	BASE-T1 Downshift Parameters	45.2.7.30
7.531	BASE-T1 Downshift Restart Parameters	45.2.7.31
7.532	BASE-T1 Upshift Parameters	45.2.7.32
7.533	BASE-T1 Downshift Attempts	45.2.7.33
7.534	BASE-T1 Downshift Restarts	45.2.7.34
7.535	BASE-T1 Upshift Attempts	45.2.7.35
7.536	BASE-T1 Downshift Preference List Entries 0 & 1	45.2.7.36
7.537	BASE-T1 Downshift Preference List Entries 2 & 3	45.2.7.37
7.538 through 7.32767	Reserved	

3.2.2 Downshift MDIO registers

Add the following subclauses after 45.2.7.27 10BASE-T1 AN status register (Register 7.527).

45.2.7.28 BASE-T1 Downshift Control (Register 7.528)

The assignment of bits in the BASE-T1 Downshift control register is shown in Table 45-402a.

Table 45-402a—BASE-T1 Downshift control register bit definitions

Bit(s)	Name	Description	R/W
7.528.2:15	Reserved	Value always 0	RO
7.528.1	Upshift enabled	1 = enabled 0 = disabled	R/W
7.528.0	Downshift enabled	1 = enabled 0 = disabled	R/W

45.2.7.28.1 Downshift Enabled

Setting bit 7.528.0 enables or disables Downshift, see Table 98D-1
mr_ds_downshift_enabled.

45.2.7.28.2 Upshift Enabled

Setting bit 7.528.1 enables or disables Upshift, see Table 98D-1
mr_ds_upshift_enabled.

45.2.7.29 Downshift Status (Register 7.529)

The assignment of bits in the BASE-T1 Downshift status register is shown in Table 45-402b.

Table 45-402b–BASE-T1 Downshift status register bit definitions

Bit(s)	Name	Description	R/W
7.529.1:15	Reserved	Value always 0	RO
7.529.0	Downshift/Upshift supported	1 = supported 0 = not supported	RO

45.2.7.29.1 Downshift/Upshift Supported

Bit 7.529.0 reports whether Downshift/Upshift is supported, see Table 98D-1 `mr_ds_downshift_supported`.

45.2.7.30 BASE-T1 Downshift Parameters (Register 7.530)

The assignment of bits in the BASE-T1 Downshift Threshold register is shown in Table 45-402c.

Table 45-402c–BASE-T1 Downshift Threshold register bit definitions

Bit(s)	Name	Description	R/W
7.530.8:15	Downshift threshold	The number of link failures used when evaluating Downshift trigger.	R/W
7.530.0:7	Downshift period	The period in seconds used when evaluating the Downshift trigger	R/W

45.2.7.30.1 Downshift Period

Setting 7.530.0:7 sets the period to evaluate the link failure count before triggering Downshift, see Table 98D-1 `mr_ds_period_downshift`.

45.2.7.30.2 Downshift Threshold

Setting 7.530.8:15 sets the number of link failures within the trigger period before triggering Downshift, see Table 98D-1 `mr_ds_fail_threshold`.

45.2.7.31 BASE-T1 Downshift Restart Parameters (Register 7.531)

The assignment of bits in the BASE-T1 Downshift Restart Parameters register is shown in Table 45-402d.

Table 45-402d–BASE-T1 Upshift Parameters register bit definitions

Bit(s)	Name	Description	R/W
7.531.8:15	Reserved	Value always 0	RO
7.531.0:7	Restart period	The period in seconds used when evaluating the restart trigger	R/W

45.2.7.31.1 Restart Period

Setting 7.531.0:11 sets the period to evaluate before triggering Restart

processing, see Table 98D-1 mr_ds_period_restart.

45.2.7.32 BASE-T1 Upshift Parameters (Register 7.532)

The assignment of bits in the BASE-T1 Upshift Parameters register is shown in Table 45-402e.

Table 45-402e-BASE-T1 Upshift Parameters register bit definitions

Bit(s)	Name	Description	R/W
7.532.12:15	Reserved	Value always 0	RO
7.532.0:11	Upshift period	The period in seconds used when evaluating the link Upshift trigger	R/W

45.2.7.32 Upshift Period

Setting 7.532.0:11 sets the period to evaluate before triggering Upshift processing, see Table 98D-1 mr_ds_period_upshift.

45.2.7.33 BASE-T1 Downshift Attempts (Register 7.533)

The assignment of bits in the BASE-T1 Downshift Attempts register is shown in Table 45-402f. All the bits in this register are read only; therefore, a write to the register shall have no effect.

Table 45-402f-BASE-T1 Downshift Attempts register bit definitions

Bit(s)	Name	Description	R/W
7.533.15:0	Downshift attempts	The number of Downshift attempts on the interface.	RO

45.2.7.33.1 Downshift attempts

Bits 7.533.15:0 report the number of Downshift attempts since the last time Auto-Negotiation was enabled on the interface, see Table 98D-1 mr_ds_downshift_attempts.

45.2.7.34 BASE-T1 Downshift Restarts (Register 7.534)

The assignment of bits in the BASE-T1 Downshift Restarts register is shown in Table 45-402g. All the bits in this register are read only; therefore, a write to the register shall have no effect.

Table 45-402g-BASE-T1 Downshift Restarts register bit definitions

Bit(s)	Name	Description	R/W
7.534.15:0	Downshift restarts	The number of Downshift restarts on the interface.	RO

45.2.7.34.1 Downshift Restarts

Bits 7.533.15:0 report the number of Downshift attempts since the last time Auto-Negotiation was enabled on the interface, see Table 98D-1 mr_ds_restarts.

45.2.7.35 BASE-T1 Upshift Attempts (Register 7.535)

The assignment of bits in the BASE-T1 Upshift Attempts register is shown in Table

45-402h. All the bits in this register are read only; therefore, a write to the register shall have no effect.

Table 45-402h-10BASE-T1 Upshift Attempts register bit definitions

Bit(s)	Name	Description	R/W
7.535.15:0	Upshift attempts	The number of Upshift attempts since Auto-Negotiation was enabled on the interface.	RO

45.2.7.35.1 Upshift attempts

Bits 7.535.15:0 report the number of Upshift attempts since the last time Auto-Negotiation was enabled on the interface, see Table 98D-1 mr_ds_upshift_attempts.

45.2.7.36 BASE-T1 Downshift Preference List Entries 0 & 1 (Register 7.536)

The assignment of bits in the BASE-T1 Downshift Restart Parameters register is shown in Table 45-402d.

Table 45-402d-BASE-T1 Upshift Parameters register bit definitions

Bit(s)	Name	Description	R/W
7.536.8:15	Entry 1	Preference List Entry 1	R/W
7.536.0:7	Entry 0	Preference List Entry 0	R/W

45.2.7.36.1 Entry 0

Bits 7.536.0:7 contain Entry 0 of the Downshift Preference List. The enumerations are specified in 98D.2.8.

45.2.7.36.2 Entry 1

Bits 7.536.0:7 contain Entry 1 of the Downshift Preference List. The enumerations are specified in 98D.2.8.

45.2.7.37 BASE-T1 Downshift Preference List Entries 2 & 3 (Register 7.537)

The assignment of bits in the BASE-T1 Downshift Restart Parameters register is shown in Table 45-402d.

Table 45-402d-BASE-T1 Upshift Parameters register bit definitions

Bit(s)	Name	Description	R/W
7.537.8:15	Entry 3	Preference List Entry 1	R/W
7.537.0:7	Entry 2	Preference List Entry 0	R/W

45.2.7.37.1 Entry 2

Bits 7.537.0:7 contain Entry 2 of the Downshift Preference List. The enumerations are specified in 98D.2.8.

45.2.7.37.2 Entry 3

Bits 7.537.0:7 contain Entry 3 of the Downshift Preference List. The enumerations are specified in 98D.2.8.

3.3 Clause 30 Modifications

3.3.1 Text description of managed objects

Replace the oAutoNegotiation entry text in 30.2.2.1 with the following:

If implemented, oAutoNegotiation is contained within oMAU. The oAutoNegotiation managed object class provides the controls necessary to manage the instance of Auto-Negotiation.

Add the following to the list in 30.2.2.1 following oAutoNegotiation

oAutoNegDownshift

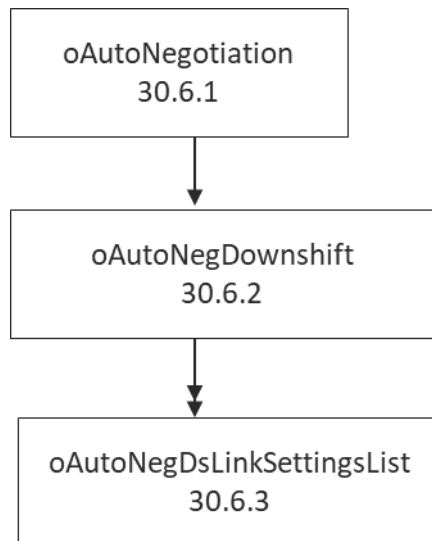
If implemented, oAutoNegDownshift is contained within oAutoNegotiation. The oAutoNegDownshift managed object class provides the controls necessary to manage the Downshift/Upshift functions of Auto-Negotiation.

oAutoNegDsLinkSettingsList

If implemented, oAutoNegDsLinkSettingsList is contained within oAutoNegDownshift. The oAutoNegDsLinkSettingsList managed object class provides additional controls necessary to manage the Downshift/Upshift functions of Auto-Negotiation.

3.3.2 Containment

Change Figure 30–3 by adding oAutoNegDownshift and oAutoNegDsLinkSettingsList within oAutoNegotiation as follows:



3.3.3 Capabilities

Insert a new column to the right of “Auto-Negotiation Package (mandatory)” labelled “Auto-Negotiation Downshift package (optional) ”,

Insert the following row(s) to ‘Table 30–1e—Capabilities’ after the row for acAutoNegAdminControl while adjusting for other amendments as needed.

Name			Other packages	Auto-Negotiation Downshift package (optional)
oAutoNegDownshift managed object class (30.6.2)				
aAutoNegDownshiftSupported	ATTRIBUTE	GET		X
aAutoNegDownshiftControl	ATTRIBUTE	GET-SET		X
aAutoNegUpshiftControl	ATTRIBUTE	GET-SET		X
aAutoNegDownshiftThreshold	ATTRIBUTE	GET-SET		X
aAutoNegDownshiftPeriod	ATTRIBUTE	GET-SET		X
aAutoNegDownshiftRestartPeriod	ATTRIBUTE	GET-SET		X
aAutoNegUpshiftPeriod	ATTRIBUTE	GET-SET		X
aAutoNegDownshiftAttempts	ATTRIBUTE	GET		X
aAutoNegDownshiftRestarts	ATTRIBUTE	GET		X
aAutoNegUpshiftAttempts	ATTRIBUTE	GET		X
oAutoNegDsLinkSettingsList managed object class (30.6.3)				
aAutoNegDsLinkSettingsEntry	ATTRIBUTE	GET-SET		X

3.3.4 Downshift attributes

Add the following before ‘30.7 Management for Link Aggregation’ while adjusting for other amendments as needed.

30.6.2 Auto-Negotiation Downshift managed object class

This subclause formally defines the behaviours for the oAutoNegDownshift managed object class attributes.

30.6.2.1 Auto-Negotiation Downshift attributes

30.6.2.1.1 aAutoNegDownshiftUpshiftSupported

ATTRIBUTE

APPROPRIATE SYNTAX:
BOOLEAN

BEHAVIOUR DEFINED AS:
Reports if an interface supports Downshift/Upshift (45.2.7.29.1).;

30.6.2.1.2 aAutoNegDownshiftControl

ATTRIBUTE

APPROPRIATE SYNTAX:
BOOLEAN

BEHAVIOUR DEFINED AS:
This action is used to enable or disable Downshift(45.2.7.28.1).;

30.6.2.1.3 aAutoNegUpshiftControl

ATTRIBUTE

APPROPRIATE SYNTAX:
BOOLEAN

BEHAVIOUR DEFINED AS:
This action is used to enable or disable Upshift.;

30.6.2.1.4 aAutoNegDownshiftThreshold

ATTRIBUTE

APPROPRIATE SYNTAX:
INTEGER

BEHAVIOUR DEFINED AS:
The number of link failures within the trigger period that will trigger Downshift. The default value is 8. Value range is 1 to 255, inclusive.

30.6.2.1.5 aAutoNegDownshiftPeriod

ATTRIBUTE

APPROPRIATE SYNTAX:
INTEGER

BEHAVIOUR DEFINED AS:

The period used to evaluate the number of link failures to trigger Downshift.
The default value is 8. Value range is 1 to 255, inclusive.

30.6.2.1.6 aAutoNegDownshiftRestartPeriod

ATTRIBUTE

APPROPRIATE SYNTAX:
INTEGER

BEHAVIOUR DEFINED AS:

The period used to evaluate triggering Downshift restart. The default value is 8. Value range is 1 to 255, inclusive.

30.6.2.1.7 aAutoNegUpshiftPeriod

ATTRIBUTE

APPROPRIATE SYNTAX:
INTEGER

BEHAVIOUR DEFINED AS:

The period used to evaluate triggering Upshift. The default value is 256. Value range is 1 to 4095, inclusive.

30.6.2.1.8 aAutoNegDownshiftAttempts

ATTRIBUTE

APPROPRIATE SYNTAX:
Generalized nonresettable counter.

BEHAVIOUR DEFINED AS:

The number of Downshift attempts on the interface.

30.6.2.1.9 aAutoNegDownshiftRestarts

ATTRIBUTE

APPROPRIATE SYNTAX:
Generalized nonresettable counter.

BEHAVIOUR DEFINED AS:

The number of Downshift restarts on the interface.

30.6.2.1.10 aAutoNegUpshiftAttempts

ATTRIBUTE

APPROPRIATE SYNTAX:

Generalized nonresettable counter.

BEHAVIOUR DEFINED AS:

The number of Upshift attempts on the interface.

30.6.3 Auto-Negotiation Downshift Link Settings List managed object class

This subclause formally defines the behaviours for the oAutoNegDsLinkSettingsList managed object class attributes.

30.6.3.1 Auto-Negotiation Downshift Link Settings List attributes

30.6.3.1.1 aAutoNegLinkSettingsListEntry

ATTRIBUTE

APPROPRIATE SYNTAX:

A SEQUENCE that meets the requirements of the description below:

Unknown	unknown
10BaseT1LIt1	10BASE-T1L (Clause 146) using Increased Transmit Level (146.5.4.1).
10BaseT1L	10BASE-T1L (Clause 146).
100BaseT1LIt1	100BASE-T1L (Clause 190) using Increased Transmit Level (190.5.2).
100BaseT1L	100BASE-T1L (Clause 146).

BEHAVIOUR DEFINED AS:

The link settings of this list entry (see 98D.2.8).;

End of Document