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TECHNICAL CORRIGENDUM 1

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Information technology — Telecommunications and information exchange between systems — Local and metropolitan area networks — Specific requirements

Part 1AX: Link aggregation

TECHNICAL CORRIGENDUM 1

Technologies de l'information — Télécommunications et échange d'information entre systèmes — Réseaux locaux et métropolitains — Exigences spécifiques

Partie 1AX: Agrégation de lien

RECTIFICATIF TECHNIQUE 1

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IEEE Std 802.1AX™-2014/Cor 1-2017
(Corrigendum to
IEEE Std 802.1AX-2014)

**IEEE Standard for
Local and metropolitan area networks—
Link Aggregation—Corrigendum 1:
Technical and editorial corrections**

Sponsor

**LAN/MAN Standards Committee
of the
IEEE Computer Society**

Approved 14 February 2017
IEEE-SA Standards Board

Abstract: Technical and editorial corrections are provided in this corrigendum to IEEE Std 802.1AX-2014.

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Introduction

This introduction is not part of IEEE Std 802.1AX-2014/Cor 1-2017, IEEE Standard for Local and metropolitan area networks—Link Aggregation—Corrigendum 1.

This standard contains state-of-the-art material. The area covered by this standard is undergoing evolution. Revisions are anticipated within the next few years to clarify existing material, to correct possible errors, and to incorporate new related material. Information on the current revision state of this and other IEEE 802 standards may be obtained from

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IEEE Standard for Local and metropolitan area networks— Link Aggregation—Corrigendum 1: Technical and editorial corrections

NOTE—The editing instructions contained in this corrigendum define how to merge the material contained therein into the existing base standard. The editing instructions are shown in ***bold italic***. Four editing instructions are used: change, delete, insert, and replace. ***Change*** is used to make corrections in existing text or tables. The editing instruction specifies the location of the change and describes what is being changed by using ~~strike~~through (to remove old material) and underscore (to add new material). ***Delete*** removes existing material. ***Insert*** adds new material without disturbing the existing material. Deletions and insertions may require renumbering. If so, renumbering instructions are given in the editing instruction. ***Replace*** is used to make changes in figures or equations by removing the existing figure or equation and replacing it with a new one. Editing instructions, change markings, and this NOTE will not be carried over into future editions because the changes will be incorporated into the base standard.

6. Link Aggregation

6.1 Overview

6.1.1 Goals and objectives

Change item o) as follows:

- o) **Multipoint Aggregations**—The mechanisms specified in this clause ~~do not~~ support aggregations ~~among more than two~~ Systems ~~that forms a Link Aggregation Group with another individual System or with a Portal consisting of up to three Systems.~~ (See Clause 9, ~~Distributed Resilient Network Interconnect~~, for ~~aggregations among two Portals each consisting of up to three Systems mechanisms that support a Portal forming a Link Aggregation group with an individual System or with another Portal.~~)

6.4.2 LACPDU structure and encoding

6.4.2.1 Transmission and representation of octets

Change item d) as follows:

- d) When consecutive octets are used to represent a MAC address, the least significant bit of the first octet is assigned the value of the first bit of the MAC address, the next most significant bit the value of the second bit of the MAC address, and so on through the eighth bit. Similarly, the least significant through most significant bits of the second octet are assigned the value of the ninth through ~~seventeenth~~sixteenth bits of the MAC address, and so on for all the octets of the MAC address.

6.4.2.4 Version 2 TLVs

Change 6.4.2.4.1 as follows:

6.4.2.4.1 Port Algorithm TLV

This TLV is required to support the Conversation-sensitive LACP operation (6.6.2) and shall be present on all Version 2 LACPDU exchanges. The Port Algorithm TLV structure shall be as shown in Figure 6-9 and as further described in the following field definitions:

TLV_type = Port Algorithm	1
Port_Algorithm_Length = 6	1
Actor_Port_Algorithm	4

Figure 6-9—Port Algorithm TLV

- a) *TLV_type = Port Algorithm.* This field indicates the nature of the information carried in this TLV-tuple. The Port Algorithm TLV is identified by the integer value 0x04.
- b) *Port_Algorithm_Length.* This field indicates the length (in octets) of this TLV-tuple. The Port Algorithm TLV uses a length value of 6 (0x06).
- c) *Actor_Port_Algorithm.* This field contains the value of the Actor_Oper_Port_Algorithm ~~algorithm~~ used to assign frames to Port Conversation IDs. It consists of the 3-octet organizationally unique identifier (OUI) or Company Identifier (CID) identifying the organization that is responsible for this

algorithm and one following octet used to identify the Port Algorithm by that organization. ~~always set equal to a AggPortAlgorithm (7.3.1.1.33).~~ Table 6-4 provides the IEEE 802.1 OUI (00-80-C2) Port Algorithm encodings.

Table 6-4—IEEE Port Algorithms

Port Algorithm field	Value
Unspecified distribution algorithm	00-80-C2-00 ~~0~~
Distribution based on C-VIDs	00-80-C2-01 ~~1~~
Distribution based on S-VIDs	00-80-C2-02 ~~2~~
Distribution based on I-SIDs	00-80-C2-03 ~~3~~
Distribution based on TE-SIDs	00-80-C2-04 ~~4~~
Distribution based on ECMP Flow Hash	00-80-C2-05 ~~5~~
Reserved	00-80-C2-06 through 00-80-C2-FF ~~6-255~~

Change 6.4.2.4.2 as follows:

6.4.2.4.2 Port Conversation ID Digest TLV

This TLV is required to support the Conversation-sensitive LACP operation (6.6.2) and shall be present on all Version 2 LACPDU exchanges. The Port Conversation ID Digest TLV structure shall be as shown in Figure 6-10 and as further described in the following field definitions:

TLV_type = Port Conversation ID Digest	1
Port_Conversation_ID_Digest_Length = 20	1
Link_Number_ID	2
Actor_Conversation_LinkList_Digest	16

Figure 6-10—Port Conversation ID Digest TLV

- TLV_type = Port Conversation ID Digest.* This field indicates the nature of the information carried in this TLV-tuple. The Port Conversation ID Digest TLV is identified by the integer value 0x05.
- Port_Conversation_ID_Digest_Length.* This field indicates the length (in octets) of this TLV-tuple. The Port Conversation ID Digest TLV uses a length value of 2 (0x14).
- Link_Number_ID.* This field contains the operational value of the Link_Number_ID that is assigned to this Aggregation Port in order to identify Link_Number_ID configuration errors.
- Actor_Conversation_LinkList_Digest.* This field contains the value of the MD5 digest ~~Actor_Conversation_LinkList_Digest~~ ~~()~~ [Actor_Oper_Conversation_LinkList_Digest](#) for exchange with the Partner System.

Change 6.4.2.4.3 as follows:

6.4.2.4.3 Port Conversation Mask TLVs

There are four Port Conversation Mask TLVs, as follows:

- a) Port Conversation Mask-1 TLV
- b) Port Conversation Mask-2 TLV
- c) Port Conversation Mask-3 TLV
- d) Port Conversation Mask-4 TLV

~~If any of the Port Conversation Mask TLVs are to be carried in an LACPDU then~~ When LongLACPDUtransmit is TRUE, all four shall be carried together, ~~and~~ placed in the same order as the preceding list, and include the Port Oper Conversation Mask 1 field in the Port Conversation Mask-1 TLV. ~~When LongLACPDUtransmit is FALSE, only the Port Conversation Mask-1, without the Port Oper Conversation Mask 1 field, shall be present. These TLVs are required to support the Conversation-sensitive LACP operation (6.6.2), and they shall be present on all Long LACPDU exchanges.~~

The Port Conversation Mask-1 TLV structure shall be as shown in Figure 6-11 and as further described in the following field definitions:

TLV_type = Port Conversation Mask-1	1
Port_Conversation_Mask_1_Length = <u>3 or 131</u>	1
Port_Conversation_Mask_State	1
Port_Oper_Conversation_Mask_1 (if LongLACPDUtransmit == TRUE)	128

Figure 6-11—Port Conversation Mask-1 TLV

- e) *TLV_type = Port Conversation Mask-1.* This field indicates the nature of the information carried in this TLV-tuple. The Port Conversation Mask-1 TLV is identified by the integer value 0x06.
- f) *Port_Conversation_Mask_1_Length.* This field indicates the length (in octets) of this TLV-tuple. The Port Conversation Mask-1 TLV uses a length value of either 3 (0x03) or 131 (0x83).
- g) *Port_Conversation_Mask_State.* The Port Conversation Mask state variables for the Aggregation Port, encoded as individual bits within a single octet, as follows and as illustrated in Figure 6-12:
 - 1) *ActPar_Sync* is encoded in bit 0. This flag indicates if the Port Conversation Mask used by the Actor's Frame Distributor is the same or not as that used by the Partner's Frame Distributor. TRUE (encoded as a 1) if Partner_Oper_Conversation_Mask == Port_Oper_Conversation_Mask. Its value is otherwise FALSE (encoded as a 0);
 - 2) *Portal System Isolated (PSI)* is encoded in bit 1. This flag is only applicable for Portal Systems (Clause 9) and is used to indicate if the Portal System is isolated from the other Portal Systems within the Portal (). TRUE (encoded as a 1) if DRF_Neighbor_Oper_DRCP_State.IPP_Activity == FALSE on all IPPs on this Portal System. Its value is otherwise FALSE (encoded as a 0);
 - 3) *Discard Wrong Conversation (DWC)* is encoded in bit 2. This flag is used to indicate if the Aggregator will discard frames with incorrect Port Conversation IDs. When the Aggregation Port is ready to activate the link (i.e., Actor_Oper_Port_State.Synchronization is TRUE), it # is encoded as a 1 if Discard_Wrong_Conversation == TRUE and as 0 otherwise. When the Aggregation Port is not ready to activate the link (i.e., Actor_Oper_Port_State.Synchronization is FALSE), this bit is transmitted as 0;
 - 4) All other bits in the octet are reserved for future use. They are transmitted as zero and are ignored on receipt.

BIT	0	1	2	3	4	5	6	7
	ActPar_Sync	PSI	DWC	Reserved	Reserved	Reserved	Reserved	Reserved

NOTE—Bit ordering within this field is as specified in 6.4.2.1.

Figure 6-12—Bit encoding of the Conversation_Mask_State fields

- h) *Port_Oper_Conversation_Mask_1*. ~~This~~ If LongLACPDUtransmit is TRUE, this field contains the Boolean values of the mask for the first 1024 indexed Port Conversation IDs of the Port_Oper_Conversation_Mask Boolean vector encoded in increasing Port Conversation ID order starting from Port Conversation ID 0 up to Port Conversation ID 1023.

The Port Conversation Mask-2 TLV structure shall be as shown in Figure 6-13 and as further described in the following field definitions:

TLV_type = Port Conversation Mask-2	1
Port_Conversation_Mask_2_Length = 130	1
Port_Oper_Conversation_Mask_2	128

Figure 6-13—Port Conversation Mask-2 TLV

- i) *TLV_type = Port Conversation Mask-2*. This field indicates the nature of the information carried in this TLV-tuple. The Port Conversation Mask-2 TLV is identified by the integer value 0x07.
- j) *Port_Conversation_Mask_2_Length*. This field indicates the length (in octets) of this TLV-tuple. The Port Conversation Mask-2 TLV uses a length value of 130 (0x82).
- k) *Port_Oper_Conversation_Mask_2*. This field contains the Boolean values of the mask for the second 1024 indexed Port Conversation IDs of the Port_Oper_Conversation_Mask Boolean vector encoded in increasing Port Conversation ID order starting from Port Conversation ID 1024 up to Port Conversation ID 2047.

The Port Conversation Mask-3 TLV structure shall be as shown in Figure 6-14 and as further described in the following field definitions:

TLV_type = Port Conversation Mask-3	1
Port_Conversation_Mask_3_Length = 130	1
Port_Oper_Conversation_Mask_3	128

Figure 6-14—Port Conversation Mask-3 TLV

- l) *TLV_type = Port Conversation Mask-3*. This field indicates the nature of the information carried in this TLV-tuple. The Port Conversation Mask-3 TLV is identified by the integer value 0x08.
- m) *Port_Conversation_Mask_3_Length*. This field indicates the length (in octets) of this TLV-tuple. The Port Conversation Mask-3 TLV uses a length value of 130 (0x82).
- n) *Port_Oper_Conversation_Mask_3*. This field contains the Boolean values of the mask for the third 1024 indexed Port Conversation IDs of the Port_Oper_Conversation_Mask Boolean vector encoded in increasing Port Conversation ID order starting from Port Conversation ID 2048 up to Port Conversation ID 3071.

The Port Conversation Mask-4 TLV structure shall be as shown in Figure 6-15 and as further described in the following field definitions:

TLV_type = Port Conversation Mask-4	1
Port_Conversation_Mask_4_Length = 130	1
Port_Oper_Conversation_Mask_4	128

Figure 6-15—Port Conversation Mask-4 TLV

- o) *TLV_type = Port Conversation Mask-4*. This field indicates the nature of the information carried in this TLV-tuple. The Port Conversation Mask-4 TLV is identified by the integer value 0x09.
- p) *Port_Conversation_Mask_4_Length*. This field indicates the length (in octets) of this TLV-tuple. The Port Conversation Mask-4 TLV uses a length value of 130 (0x82).
- q) *Port_Oper_Conversation_Mask_4*. This field contains the Boolean values of the mask for the final 1024 indexed Port Conversation IDs of the Port_Oper_Conversation_Mask Boolean vector encoded in increasing Port Conversation ID order starting from Port Conversation ID 3072 up to Port Conversation ID 4095.

Change 6.4.2.4.4 as follows:

6.4.2.4.4 Port Conversation Service Mapping TLV

This TLV is only required when the Service IDs are different from the Conversation ID. The Port Conversation Service Mapping TLV structure shall be as shown in Figure 6-16 and as further described in the following field definitions:

TLV_type = Port Conversation Service Mapping Digest	1
Port_Conversation_Service_Mapping_Digest_Length = 18	1
Actor_Conversation_Service_Mapping_Digest	16

Figure 6-16—Port Conversation Service Mapping TLV

- a) *TLV_type = Port Conversation Service Mapping Digest*. This field indicates the nature of the information carried in this TLV-tuple. The Port Conversation Service Mapping TLV is identified by the integer value 0x0A.
- b) *Port_Conversation_Service_Mapping_Digest_Length*. This field indicates the length (in octets) of this TLV-tuple. The Port Conversation Service Mapping TLV uses a length value of 18 (0x12).
- c) *Actor_Conversation_Service_Mapping_Digest*. This field contains the value of the MD5 digest ~~computed from~~ [aAggAdminServiceConversationMap\[\]](#) ~~(7.3.1.1.38)~~ [Actor_Oper_Conversation_Service_Mapping_Digest](#) for exchange with the Partner System.

6.4.7 Variables associated with each Aggregation Port

Change the name and definition of the variable *enable_long_pdu_xmit* as follows:

~~enable_long_pdu_xmit~~ [Enable_Long_PDU_Xmit](#)

~~A variable~~ [An administrative control](#) indicating that Long LACPDUs can be transmitted. TRUE when Long LACPDUs can be transmitted, FALSE when only fixed sized LACPDUs (110 octets) can be transmitted. The variable is only applicable to Version 2 or higher implementations of the protocol.

Value: Boolean

6.4.8 Variables used for managing the operation of the state machines

Change the definition of the variable LACP_Enabled as follows:

LACP_Enabled

This variable indicates that the Aggregation Port is operating the LACP. If the link is not a point-to-point link, [or the LACP operation is disabled](#), the value of LACP_Enabled shall be FALSE. Otherwise, the value of LACP_Enabled shall be TRUE.

Value: Boolean

6.4.9 Functions

Change the description of recordDefault as follows:

recordDefault

This function records the default parameter values for the Partner carried in the Partner Admin parameters (Partner_Admin_Port_Number, Partner_Admin_Port_Priority, Partner_Admin_System, Partner_Admin_System_Priority, Partner_Admin_Key, and Partner_Admin_Port_State) as the current Partner operational parameter values (Partner_Oper_Port_Number, Partner_Oper_Port_Priority, Partner_Oper_System, Partner_Oper_System_Priority, Partner_Oper_Key, and Partner_Oper_Port_State) and sets Actor_Oper_Port_State.Defaulted and Partner_Oper_Port_State.Synchronization to TRUE. [It also sets the variables Link_Number_ID and Partner_Link_Number_ID to the value of Admin_Link_Number_ID.](#)

Change the description of Enable_Collecting as follows:

Enable_Collecting

This function causes the Aggregator Parser of the Aggregator to which the Aggregation Port is attached to start collecting frames from the Aggregation Port. [When Conversation-sensitive collection and distribution is supported, this function also calls the updatePartnerDistributionAlgorithm function \(6.6.2.4\).](#)

Change the description of Enable_Collecting_Distributing as follows:

Enable_Collecting_Distributing

This function causes the Aggregator Parser of the Aggregator to which the Aggregation Port is attached to start collecting frames from the Aggregation Port, and the Aggregator Multiplexer to start distributing frames to the Aggregation Port. [When Conversation-sensitive collection and distribution is supported, this function also calls the updatePartnerDistributionAlgorithm function \(6.6.2.4\).](#)

Change the description of recordVersionNumber as follows:

recordVersionNumber

This function records the Partner's LACP implementation version as carried in the received LACPDU's *Version Number* field and updates the value of the variable Partner_LACPDU_Version_Number with the received value. [If Partner_LACPDU_Version_Number is 1:](#)

[The variables Link_Number_ID and Partner_Link_Number_ID are both set to the value of Admin_Link_Number_ID.](#)

This function is only applicable to Version 2 or higher implementations of this protocol.

6.4.12 Receive machine

Replace Figure 6-18 with the following:

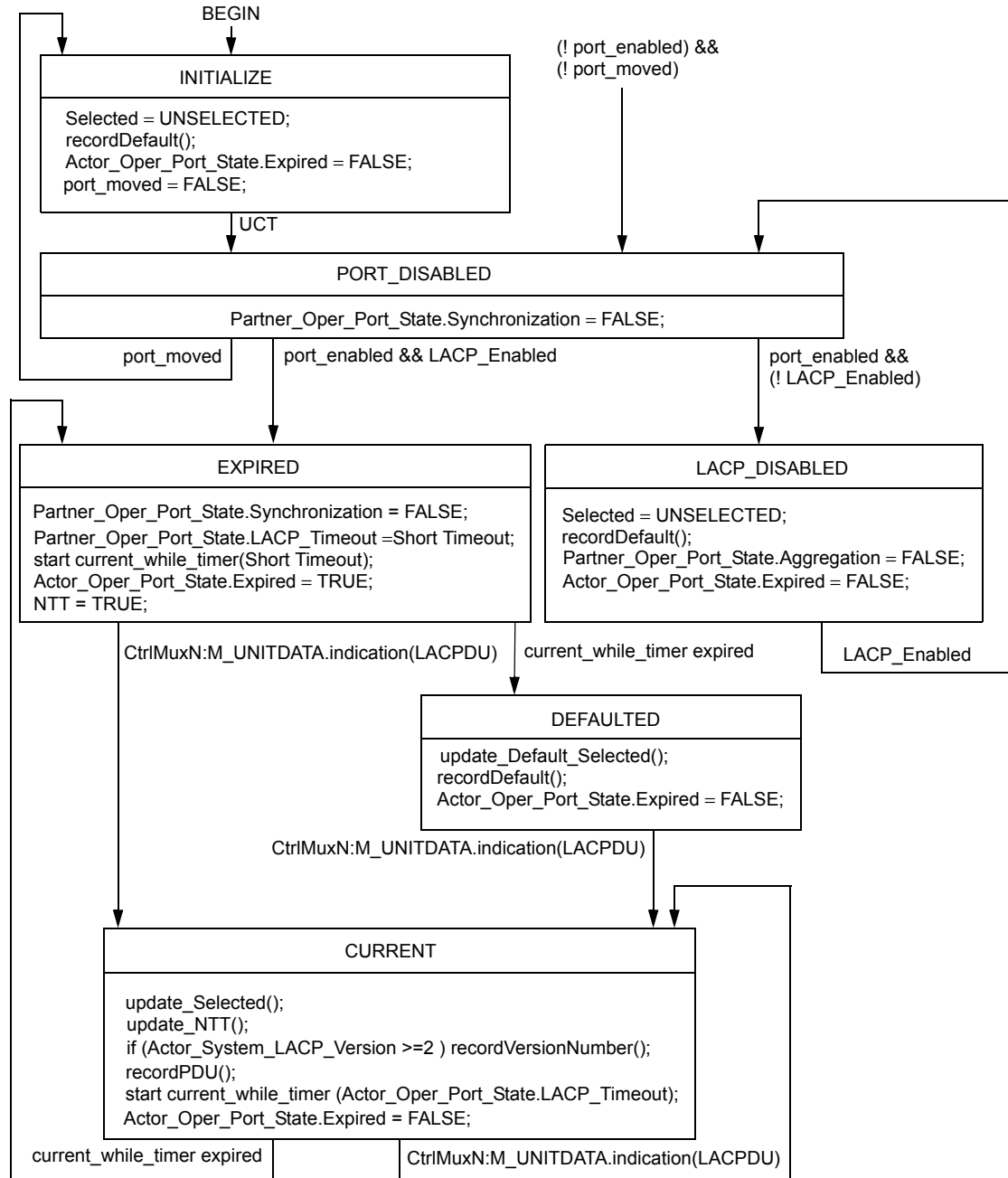


Figure 6-18—Receive machine state diagram

Change 6.4.14.2 as follows:

6.4.14.2 Selection Logic—Recommended default operation

The recommended default behavior provides an element of determinism (i.e., history independence) in the assignment of Aggregation Ports to Aggregators. It also has the characteristic that no additional MAC addresses are needed, over and above those already assigned to the set of underlying MACs.

NOTE—This standard does not specify any alternative selection rules beyond the recommended set. A wide variety of selection rules are possible within the scope of the requirements stated in 6.4.14.1. In particular, it is possible within these requirements to support implementations that provide fewer Aggregators than Aggregation Ports, as well as implementations designed to minimize configuration changes at the expense of less deterministic behavior.

~~Each Aggregation Port has an Aggregator associated with it, (i.e., the number of Aggregators in the System equals the number of Aggregation Ports supported). Each Aggregation Port/Aggregator pair is assigned the same operational Key and Port Number. When there are multiple Aggregation Ports in an aggregation, the Aggregator that the set of Aggregation Ports selects is the Aggregator with the same Port Number as the lowest-numbered Aggregation Port in the aggregation. Note that this lowest-numbered Aggregation Port may not be in a state that allows data transfer across the link; however, it has selected the Aggregator in question. This is illustrated in Figure 6-20. In the default configuration, each Aggregation Port has an Aggregator associated with it (i.e., the number of Aggregators in the System equals the number of Aggregation Ports supported), and each Aggregation Port and each Aggregator is assigned the same operational Key value. This configuration may be altered to assign either of the following:~~

- a) Different Key values to different sets of Aggregation Ports when it is not possible or not desirable to place Aggregation Ports from the different sets into the same Link Aggregation Group, or
- b) A given Key value to fewer Aggregators than Aggregation Ports (e.g., to support dual-homed configurations described in 6.7.5).

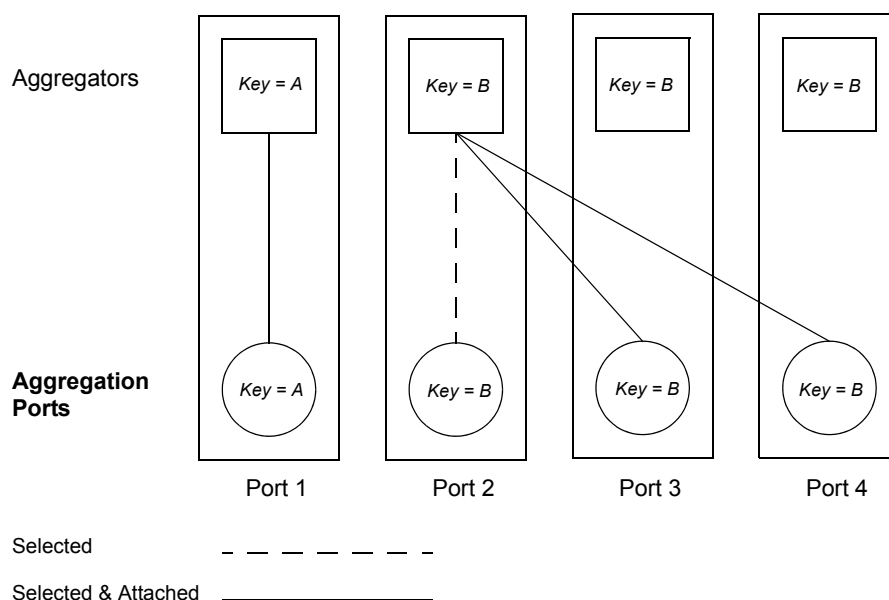


Figure 6-20—Selection of Aggregators

If the Aggregation Port is Individual, then the Aggregator selected is always the Aggregation Port's own Aggregator. Otherwise, an Aggregator is selected from the set of Aggregators ~~corresponding to the set of Aggregation Ports that will form the aggregation~~ with the same operational Key value as the Aggregation Port. ~~The Aggregator selected is the lowest numbered Aggregator with the same selection parameters as those of the Aggregation Port~~ When multiple Aggregation Ports have the same selection parameters they will select the same Aggregator. These selection parameters are as follows:

- a) Actor's System ID
- b) Actor's operational Key
- c) Partner's System ID
- d) Partner's operational Key
- e) Individual_Aggregator state (which has to be FALSE)

Whenever possible, the Aggregator selected is the Aggregator associated with the lowest numbered Aggregation Port in the set with the same selection parameters. Note that this lowest Numbered Aggregation Port may not be in a state that allows data transfer across the link; however, it has selected the Aggregator in question. This is illustrated in Figure 6-20. If it is not possible to select the Aggregator associated with the lowest numbered Aggregation Port (e.g., if the lowest numbered Aggregation Port and its associated Aggregator have different operational Key values), then the Aggregator selected can be any Aggregator with a matching Key value that has not been selected by any Aggregation Ports with Port_Enabled set to True. If such an Aggregator cannot be found, then the Aggregation Port does not select an Aggregator until the situation changes and an appropriate Aggregator can be found.

Change 6.4.16 as follows:

6.4.16 Transmit machine

When the Transmit machine creates a LACPDU for transmission, it shall fill in the following fields with the corresponding operational values for this Aggregation Port:

- a) Actor_Port and Actor_Port_Priority
- b) Actor_System and Actor_System_Priority
- c) Actor_Key
- d) Actor_State
- e) Partner_Port and Partner_Port_Priority
- f) Partner_System and Partner_System_Priority
- g) Partner_Key
- h) Partner_State
- i) CollectorMaxDelay

When the Periodic machine is in the NO_PERIODIC state, the Transmit machine shall

- Not transmit any LACPDUs, and
- Set the value of NTT to FALSE.

When the LACP_Enabled variable is TRUE and the NTT (6.4.7) variable is TRUE, the Transmit machine shall ensure that a properly formatted LACPDU (6.4.2) is transmitted [i.e., issue a CtrlMuxN:M_UNITDATA.Request(LACPDU) service primitive], subject to the restriction that no more than three LACPDUs may be transmitted in any Fast_Periodic_Time interval. If NTT is set to TRUE when this limit is in force, the transmission shall be delayed until such a time as the restriction is no longer in force. The NTT variable shall be set to FALSE when the Transmit machine has transmitted a LACPDU.

If the transmission of a LACPDU is delayed due to the preceding restriction, the information sent in the LACPDU corresponds to the operational values for the Aggregation Port at the time of transmission, not at the time when NTT was first set to TRUE. In other words, the LACPDU transmission model is based upon the transmission of state information that is current at the time an opportunity to transmit occurs, as opposed to queuing messages for transmission.

When the LACP_Enabled variable is FALSE, the Transmit machine shall not transmit any LACPDUs and shall set the value of NTT to FALSE.

In a Version 2 implementation, ~~when enable_long_pdu_xmit and LongLACPDUtransmit are TRUE~~ the transmitted LACPDU ~~will be a Long LACPDU~~ shall include the Version 2 TLVs, formatted as defined in 6.4.2.4 6.4.2 and including the Port Conversation Mask TLVs (6.4.2.4.3). When LongLACPDUtransmit is TRUE, the LACPDU contains all four Port_Oper_Conversation_Mask TLVs including the Port_Oper_Conversation_Mask_1 field in the Port Conversation Mask-1 TLV. When LongLACPDUtransmit is FALSE, the LACPDU contains the Port Conversation Mask-1 TLV without the Port_Oper_Conversation_Mask_1 field, and does not contain the Port Conversation Mask-2 TLV, Port Conversation Mask-3 TLV, or Port Conversation Mask-4 TLV.

Delete 6.4.18 in its entirety.

6.6 Conversation-sensitive frame collection and distribution

Change item d) as follows:

- d) TLVs included in LACPDUs allow the Frame Distributor to specify which Conversation IDs are being transmitted on each Aggregation Port. ~~The Frame Collector stores this information in the Collection_Conversation_Mask.~~

6.6.1 Conversation-sensitive collection and distribution state diagrams

6.6.1.1.1 Variables

Insert a new Admin_Discard_Wrong_Conversation variable as follows:

Admin_Discard_Wrong_Conversation

Provides administrative control over the Discard_Wrong_Conversation parameter that determines whether the Frame Collector discards any frame received from an Aggregation Port with a Port Conversation ID not set in Collection_Conversation_Mask. The variable is set equal to aAggAdminDiscardWrongConversation (7.3.1.1.37) and the default value is AUTO.

Values:

FORCE_TRUE: The value of Discard_Wrong_Conversation is always TRUE.

FORCE_FALSE: The value of Discard_Wrong_Conversation is always FALSE.

AUTO: The value of Discard_Wrong_Conversation is TRUE if all of Differ_Port_Algorithms, Differ_Port_Conversation_Digests, and Differ_Conversation_Service_Digests are FALSE, and is FALSE otherwise.

Change the description of Discard_Wrong_Conversation as follows:

Discard_Wrong_Conversation

Discard frames with incorrect Port Conversation IDs flag. If TRUE, the Frame Collector discards any frame received from an Aggregation Port with a Port Conversation ID not set in Collection_Conversation_Mask, ~~and the Frame Distributor uses only the frame distribution algorithm selected by the aAggPortAlgorithm (7.3.1.1.33).~~ If FALSE, the Frame Collector does not filter frames received from the Aggregation Ports. The variable is set to TRUE if Admin_Discard_Wrong_Conversation is FORCE TRUE, or if Admin_Discard_Wrong_Conversation is AUTO and all of the variables Differ Port Algorithms, Differ Port Conversation Digests, and Differ Conversation Service Digests are FALSE, and is set to FALSE otherwise equal to aAggAdminDiscardWrongConversation (7.3.1.1.37).

Value: Boolean

6.6.1.5 State diagram

Replace Figure 6-29 with the following:

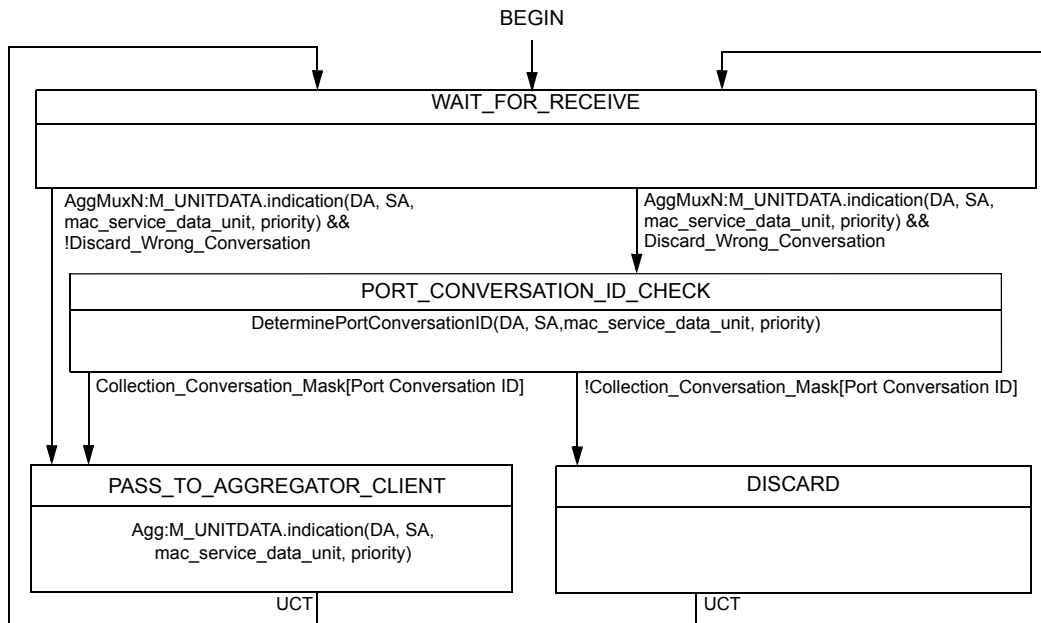


Figure 6-29—Conversation-sensitive collection state diagram

6.6.2 Conversation-sensitive LACP state diagrams

6.6.2.1 Per-Aggregator Variables

Change the description of Conversation_PortList[] as follows:

Conversation_PortList[]

This array holds the mapping of Port Conversation IDs to Aggregation Ports inside the System or Portal, derived from the primary `aAggConversationAdminLink[]` managed object. An array of 4096 lists, indexed by Conversation ID, that determines which Aggregation Port ~~in this System (or Portal)~~ attached to this Aggregator carries which Conversation ID. Each item in the array is a list of the Port IDs (6.3.4) of the Aggregation Ports in this System (or in this Portal, if this Aggregator is attached to a DR Function [9.3]), in priority order from most desired to least desired, for carrying the indexed Conversation ID. This variable is updated by the `updateConversationPortList` function, which is always invoked when a new `aAggConversationAdminLink[]` (7.3.1.1.35) or new `aAggPortLinkNumberID` (7.3.2.1.27) operator command is issued.

Value: sequence of Port IDs (6.3.4)

Change the description of Partner_Admin_Port_Algorithm as follows:

Partner_Admin_Port_Algorithm

The value for the algorithm of the Partner System, assigned by administrator or System policy for use when the Partner's information is unknown. Its default value is set to ~~NULL~~ "Unspecified" (Table 6-1).

Value: 4-octet (3-octet OUI or CID identifying the organization that is responsible for defining this algorithm followed by one octet identifying this specific algorithm).

Change the description of Partner_Conversation_PortList_Digest as follows:

Partner_Conversation_PortList_Digest

The ~~last-received digest of the Partner System's prioritized Port Conversation ID-to-Aggregation Port assignments~~ most recently modified value of Partner Oper Conversation_PortList_Digest for any Aggregation Port active on this Aggregator.

Value: MD5 digest

Change the description of Partner_Conversation_Service_Mapping_Digest as follows:

Partner_Conversation_Service_Mapping_Digest

The ~~last-received digest of the Partner System's Port Conversation ID-to-Service ID assignments~~ most recently modified value of Partner Oper Conversation_Service_Mapping_Digest for any Aggregation Port active on this Aggregator.

Value: MD5 digest

Change the description of Partner_Port_Algorithm as follows:

Partner_Port_Algorithm

The ~~last-received value of the algorithm used by the Partner System to assign frames to Port Conversation IDs~~ most recently modified value of Partner Oper Port_Algorithm for any Aggregation Port active on this Aggregator.

Value: 4-octet (3-octet OUI or CID identifying the organization that is responsible for defining this algorithm followed by one octet identifying this specific algorithm).

6.6.2.2 Variables associated with each Aggregation Port

Change the description of ChangeActorOperDist as follows:

ChangeActorOperDist

This variable tracks the variable Actor_Oper_Port_State.Distributing. ~~It sets the WTR_timer to aAggPortWTRTime and is set to TRUE~~ when the Actor_Oper_Port_State.Distributing changes from FALSE to TRUE and there is at least one Aggregation Port in the same LAG having a non NULL Port_Oper_Conversation_Mask. ~~The variable is set to TRUE when the WTR_timer is not running and the Actor_Oper_Port_State.Distributing changes from TRUE to FALSE or when the WTR_timer expires and Actor_Oper_Port_State.Distributing is TRUE.~~ This variable is also set to TRUE if new values for the aAggConversationAdminLink[] (7.3.1.1.35) or aAggAdminServiceConversationMap[] (7.3.1.1.38) are initiated. When the variable is set to TRUE, updateLocal is set to TRUE on all other Aggregation Ports attached to the same Aggregator. ChangeActorOperDist is set to FALSE by the updateConversationMask function.
Value: Boolean

Delete the variable Partner_Admin_Link_Number_ID.

Change the description of Partner_DWC as follows:

Partner_DWC

The ~~last received~~ most recently recorded value of the Partner System's DWC value.
Value: Boolean

Insert the descriptions of the following variables:

Actor_Oper_Conversation_PortList_Digest

The prioritized Port Conversation ID-to-Aggregation Port assignments of the Aggregator to which this Aggregation Port was most recently attached. The default value for an Aggregation Port that has not yet been attached to an Aggregator is NULL.
Value: MD5 digest

Actor_Oper_Conversation_Service_Mapping_Digest

The Port Conversation ID-to-Service ID assignments of the Aggregator to which this Aggregation Port was most recently attached. The default value for an Aggregation Port that has not yet been attached to an Aggregator is NULL.
Value: MD5 digest

Actor_Oper_Port_Algorithm

The algorithm to assign frames to Port Conversation IDs used by the Aggregator to which this Aggregation Port was most recently attached. The default value for an Aggregation Port that has not yet been attached to an Aggregator is "Unspecified" (Table 6-1).
Value: 4-octet (3-octet OUI or CID identifying the organization that is responsible for defining this algorithm followed by one octet identifying this specific algorithm).

Partner_Oper_Conversation_PortList_Digest

The most recently recorded digest of the Partner System's prioritized Port Conversation ID-to-Aggregation Port assignments.

Value: MD5 digest

Partner_Oper_Conversation_Service_Mapping_Digest

The most recently recorded digest of the Partner System's Port Conversation ID-to-Service ID assignments.

Value: MD5 digest

Partner_Oper_Port_Algorithm

The most recently recorded value of the algorithm used by the Partner System to assign frames to Port Conversation IDs.

Value: 4-octet (3-octet OUI or CID identifying the organization that is responsible for defining this algorithm followed by one octet identifying this specific algorithm).

6.6.2.4 Functions

Change the description of recordReceivedConversationMaskTLV as follows:

recordReceivedConversationMaskTLV

This function records the parameter value for the *ActPar_Sync*, *DWC*, and *PSI* carried in a received Port Conversation Mask-1 TLV (6.4.2.4.3) as the current operational parameter values for the Partner_ActPar_Sync, *Partner_DWC*, and *Partner_PSI* respectively.

This function also concatenates the value of *Port_Oper_Conversation_Mask_1*, *Port_Oper_Conversation_Mask_2*, *Port_Oper_Conversation_Mask_3*, and *Port_Oper_Conversation_Mask_4* carried by the Port Conversation Mask-1 TLV, ..., etc. (6.4.2.4.3), and it records the concatenation as the current value for the Partner_Oper_Conversation_Mask variable. ~~If this function is implemented by a Portal System (Clause 9), it also records the parameter value for the PSI carried in a received Port Conversation Mask-1 TLV (6.4.2.4.3) as the current operational parameter value for the Partner_PSI.~~

It then compares the variable *Port_Oper_Conversation_Mask* to the *Partner_Oper_Conversation_Mask* and, if they are different:

It sets *ActPar_Sync* to FALSE;

It sets *updateLocal* to TRUE;

Else:

It sets *ActPar_Sync* to TRUE;

If *Partner_ActPar_Sync* is FALSE, sets *updateLocal* to TRUE.

Change the description of recordConversationPortDigestTLV as follows:

recordConversationPortDigestTLV

This function records the parameter value for the *Link_Number_ID* ~~and the Actor_Conversation_LinkList_Digest~~ carried in a received Port Conversation ID Digest TLV (6.4.2.4.2) as the current operational parameter value for the *Partner_Link_Number_ID* ~~and the Partner_Conversation_PortList_Digest~~ respectively.

~~It compares the newly updated value of the Partner_Link_Number_ID to the value of Link_Number_ID and if they are different, then:~~

~~The reportToManagement function is invoked to alert the Manager to the existence of a configuration error in the Aggregation ports selection choices for the Port Conversation IDs between the Systems or Portals at the ends of the LAG. In addition if this System's or Portal's Identifier is numerically larger than the Partner's, then~~

~~Link_Number_ID == Partner_Link_Number_ID; and~~

~~The function updateConversationPortList is invoked.~~

If this System's or Portal's Identifier is numerically larger than the Partner's, then Link_Number_ID = Partner_Link_Number_ID; otherwise, Link_Number_ID = Admin_Link_Number_ID. If this results in a change to the value of Link_Number_ID while Actor_Oper_Port_State.Distributing is TRUE, then ChangeActorOperDist is set to TRUE so that the function updateConversationPortList will be invoked.

This function also records the Actor_Conversation_LinkList_Digest carried in a received Port Conversation ID Digest TLV (6.4.2.4.2) as the current operational parameter value Partner_Oper_Conversation_PortList_Digest. If this results in a change to the value of Partner_Oper_Conversation_PortList_Digest and this Aggregation Port is ready to activate the link (i.e., if Actor_Oper_Port_State.Synchronization is TRUE), then the newly recorded value of Partner_Oper_Conversation_PortList_Digest is copied to the Aggregator's Partner_Conversation_PortList_Digest variable. The ~~It then compares the~~ newly updated value of the Partner_Conversation_PortList_Digest is then compared to the value of Actor_Conversation_LinkList_Digest and, if they are different:

The variable Differ_Port_Conversation_Digests is set to TRUE.

Otherwise:

The variable Differ_Port_Conversation_Digests is set to FALSE.

Change the description of recordConversationServiceMappingDigestTLV as follows:

recordConversationServiceMappingDigestTLV

This function records the parameter value for the *Actor_Conversation_Service_Mapping_Digest* carried in a received Port Conversation Service Mapping TLV (6.4.2.4.4) as the current operational parameter value for ~~Partner_Conversation_Service_Mapping_Digest~~ Partner_Oper_Conversation_Service_Mapping_Digest.

If this results in a change to the value of Partner_Oper_Conversation_Service_Mapping_Digest and this Aggregation Port is ready to activate the link (i.e., if Actor_Oper_Port_State.Synchronization is TRUE), then the newly recorded value of Partner_Oper_Conversation_Service_Mapping_Digest is copied to the Aggregator's Partner_Conversation_Service_Mapping_Digest variable. The ~~It then compares the~~ newly updated value of the Partner_Conversation_Service_Mapping_Digest is then compared to the value of Actor_Conversation_Service_Mapping_Digest and, if they are different:

The variable Differ_Conversation_Service_Digests is set to TRUE.

Otherwise:

The variable Differ_Conversation_Service_Digests is set to FALSE.

Change the description of recordDefaultConversationPortDigest as follows:

recordDefaultConversationPortDigest

This function records the default parameter ~~values~~ value for the Partner ~~as follows:~~ provided by the Partner_Admin_Conversation_PortList_Digest as the current Partner operational parameter value for Partner_Conversation_PortList_Digest.

~~Partner_Admin_Conversation_PortList_Digest
== Partner_Admin_Conversation_PortList_Digest;
Partner_Link_Number_ID == Partner_Admin_Link_Number_ID;
It also initializes Link_Number_ID to its configured value as follows:
Link_Number_ID == Admin_Link_Number_ID;
It also sets Differ_Port_Conversation_Digests to FALSE.~~

Change the description of recordDefaultConversationServiceMappingDigest as follows:

recordDefaultConversationServiceMappingDigest

This function records the default parameter value for the Partner provided by the Partner_Admin_Conversation_Service_Mapping_Digest as the current Partner operational parameter value for Partner_Conversation_Service_Mapping_Digest.
It also sets Differ_Conversation_Service_Digests to FALSE.

Change the description of recordDefaultPortAlgorithm as follows:

recordDefaultPortAlgorithm

This function records the default parameter value for the Partner provided by the Partner_Admin_Port_Algorithm as the current Partner operational parameter value for Partner_Port_Algorithm.
It also sets Differ_Port_Algorithms to FALSE.

Change the description of recordPortAlgorithmTLV as follows:

recordPortAlgorithmTLV

This function records the parameter value for the *Actor_Port_Algorithm* carried in a received Port Algorithm TLV (6.4.2.4.1) as the current operational parameter value for ~~Partner_Port_Algorithm~~ Partner_Oper_Port_Algorithm.

If this results in a change to the value of Partner_Oper_Port_Algorithm and this Aggregation Port is ready to activate the link (i.e., if Actor_Oper_Port_State.Synchronization is TRUE), then the newly recorded value of Partner_Oper_Port_Algorithm is copied to the Aggregator's Partner_Port_Algorithm variable. The ~~It then compares the~~ newly updated value of the Partner_Port_Algorithm is then compared to the value of Actor_Port_Algorithm and if they are different or any of them has the value θ "Unspecified" (Table 6-1):

The variable Differ_Port_Algorithms is set to TRUE.
Otherwise:

The variable Differ_Port_Algorithms is set to FALSE.

Change the description of updateConversationMask as follows:

updateConversationMask

This function computes a new value for the Port_Oper_Conversation_Mask based on the Conversation_PortList[].

It first computes a new Boolean vector for the Comp_Oper_Conversation_Mask to be used by this Aggregation Port as follows: For every indexed Port Conversation ID, the selection priority list for all Aggregation Ports in the same LAG, which is provided by Conversation_PortList[], is checked to identify and exclude all Aggregation Ports for which the Actor_Oper_Port_State.Distributing = FALSE (condition that covers the cases where the associated Aggregation Ports are either non operable (port_enabled = FALSE), or in an EXPIRED state, or not in the LAG)—~~and all Aggregation Ports for which the WTR_timer is running~~. The new Boolean vector for the Comp_Oper_Conversation_Mask to be used by this Aggregation Port is computed based on this modified priority list by setting TRUE for every indexed Port Conversation ID that has the highest selection priority for this Aggregation Port. If this function is implemented by a Portal System (Clause 9), with its DRF_Portal_System_Number value set to a value that is different than 1, its Portal's System Identifier set to a value that is numerically lower than the Partner's System Identifier, and PSI == Partner_PSI == TRUE, then Comp_Oper_Conversation_Mask is set to NULL. Such functionality is set to prohibit network partition when the Portal Systems in both interconnected Portals become isolated.

It then compares the value of Port_Oper_Conversation_Mask to the new value of Comp_Oper_Conversation_Mask. If they are different:

~~It updates Collection_Conversation_Mask as follows:~~

~~If ChangeAggregationPorts == TRUE or, updateAllLocal == TRUE, or, when the function is implemented by a Portal System, IppAllUpdate == TRUE;~~

It sets the Collection_Conversation_Mask to the Boolean vector corresponding to the result of the logical AND operation between the Comp_Oper_Conversation_Mask and the current Collection_Conversation_Mask;

~~Otherwise if ChangeAggregationPorts == FALSE and updateAllLocal == TRUE and, when the function is implemented by a Portal System, IppAllUpdate == FALSE;~~

~~It sets Collection_Conversation_Mask = Comp_Oper_Conversation_Mask;~~

It updates the Port_Oper_Conversation_Mask to the ~~new value of Boolean vector corresponding to the result of the logical AND operation between the Comp_Oper_Conversation_Mask and the current Port_Oper_Conversation_Mask, and sets ActPar_Sync to FALSE;~~

Otherwise:

it leaves Port_Oper_Conversation_Mask and Collection_Conversation_Mask unmodified.

~~Finally it sets ChangeActorOperDist to FALSE and if enable_long_pdu_xmit If enable_long_pdu_xmit Enable Long PDU Xmit is TRUE, and Partner LACPDU Version Number is greater than or equal to 2, and ActPar_Sync or Partner_ActPar_Sync is FALSE, it starts the current_while_Long_LACP_timer, using Slow_Periodic_Time (6.4.4) as the start value; sets NTT to TRUE; and keeps the variable LongLACPDUtransmit TRUE until the timer's expiration.~~

Finally, it sets ChangeActorOperDist to FALSE.

Change the name of updateConvesationPortList as follows:

updateConvesationPortList

Insert the following description of updatePartnerDistributionAlgorithm at the end of the subclause:

updatePartnerDistributionAlgorithm

If Actor_Oper_Port_State.Defaulted is TRUE or if Partner_LACPDU_Version_Number is 1:
The current values of Partner_Admin_Port_Algorithm, Partner_Admin_Conversation_PortList_Digest, and Partner_Admin_Conversation_Service_Mapping_Digest are copied to the selected Aggregator's Partner_Port_Algorithm, Partner_Conversation_PortList_Digest, and Partner_Conversation_Service_Mapping_Digest variables respectively.

Otherwise, if selected is SELECTED and Partner_Oper_Port_State.Synchronization is TRUE:
The current values of Partner_Oper_Port_Algorithm, Partner_Oper_Conversation_PortList_Digest, and Partner_Oper_Conversation_Service_Mapping_Digest are copied to the selected Aggregator's Partner_Port_Algorithm, Partner_Conversation_PortList_Digest, and Partner_Conversation_Service_Mapping_Digest variables respectively.

The value of the Partner_Port_Algorithm is compared to the value of Actor_Port_Algorithm and if they are different or any of them has the value "Unspecified" (Table 6-1):

The variable Differ_Port_Algorithms is set to TRUE.

Otherwise:

The variable Differ_Port_Algorithms is set to FALSE.

The value of the Partner_Conversation_PortList_Digest is compared to the value of Actor_Conversation_LinkList_Digest and, if they are different:

The variable Differ_Port_Conversation_Digests is set to TRUE.

Otherwise:

The variable Differ_Port_Conversation_Digests is set to FALSE.

The value of the Partner_Conversation_Service_Mapping_Digest is compared to the value of Actor_Conversation_Service_Mapping_Digest and, if they are different:

The variable Differ_Conversation_Service_Digests is set to TRUE.

Otherwise:

The variable Differ_Conversation_Service_Digests is set to FALSE.

6.6.2.5 Timers

Change 6.6.2.5 as follows:

current_while_Long_LACP_timer

This timer is used to indicate the transmission of Long LACPDUs. It is always started with the value Slow_Periodic_Time (6.4.4).

actor_CDS_churn_timer

This timer is used to detect Actor CDS churn states. It is started using the value Churn_Detection_Time (see 6.4.4).

partner_CDS_churn_timer

This timer is used to detect Partner CDS churn states. It is started using the value Churn_Detection_Time (see 6.4.4).

~~WTR_timer~~

~~This timer is used to prevent frequent distribution changes due to an intermittent defect. It allows for a fixed period of time to elapse when the Actor_Oper_Port_State.Distributing changes from FALSE to TRUE before updating the Port_Oper_Conversation_Mask. It is started using the value aAggPortWTRTime (7.3.2.1.29). There is one per Aggregation Port.~~

The timers specified in this subclause have an implementation tolerance of ± 250 ms.

6.6.2.7 State diagrams

Replace Figure 6-34 with the following:

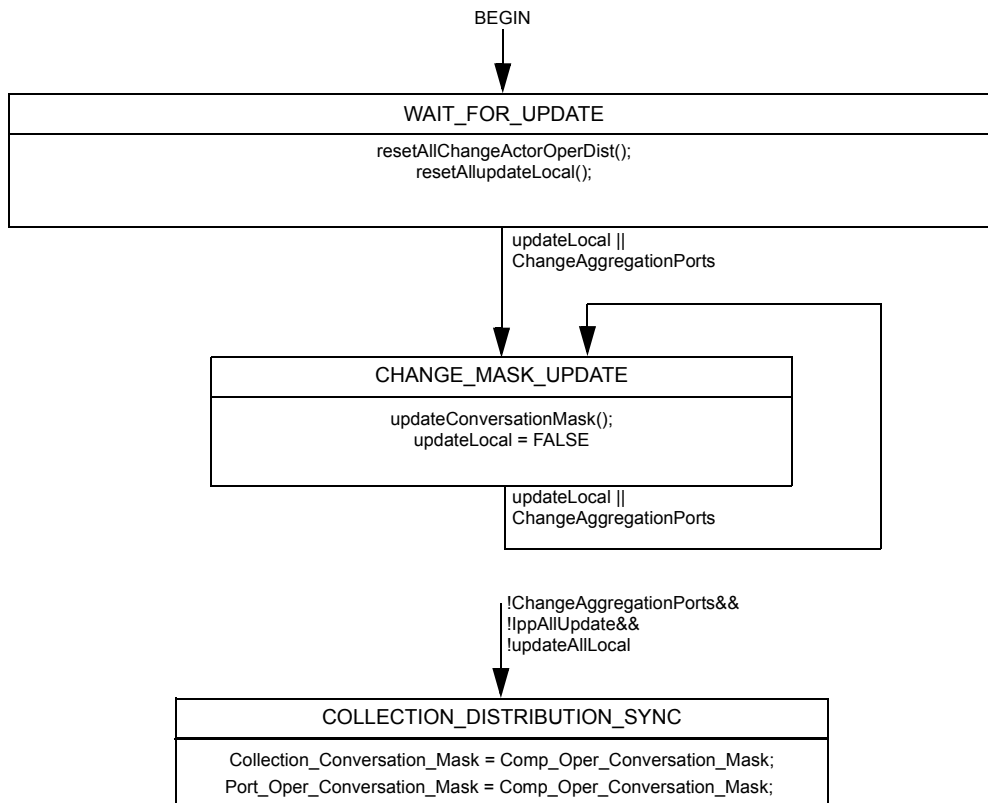


Figure 6-34—Update Mask state diagram

Insert new subclause 6.7.5 as follows:

6.7.5 LACP configuration for dual-homed Systems

A Link Aggregation System is said to be dual-homed (or multi-homed) when it has a set of Aggregation Ports intended to be connected to two (or more) Partner Systems with the restriction that only one LAG is formed from that set of Aggregation Ports. This restriction is achieved by configuring the Administrative Keys, and assigning the Operational Keys, such that:

- All Aggregation Ports in the set are allocated the same Operational Key value, and that value is different than the Operational Key value allocated to any Aggregation Ports that are not in the set; and
- Only one Aggregator has an Operational Key value that is the same as the Operational Key value of the Aggregation Ports in the set.

The result is that only one Aggregator is available for the set of Aggregation Ports.

Figure 6-37 shows two examples of dual-homed systems. In Figure 6-37(a), the dual-homed System is connected to two different Partner Systems. In this case, the two Aggregation Ports cannot select the same Aggregator, and only one Aggregator is available, so the selection logic causes only one Aggregation Port of the set to be selected. The result is a single Link Aggregation Group that includes only one link and connects to only one of the Partner Systems. The Aggregation Port that is not initially selected is held in reserve. Should the link attached to the initially selected Aggregation Port fail, the other Aggregation Port will be selected for a new Link Aggregation Group that again includes only one link but connects to the other Partner System.

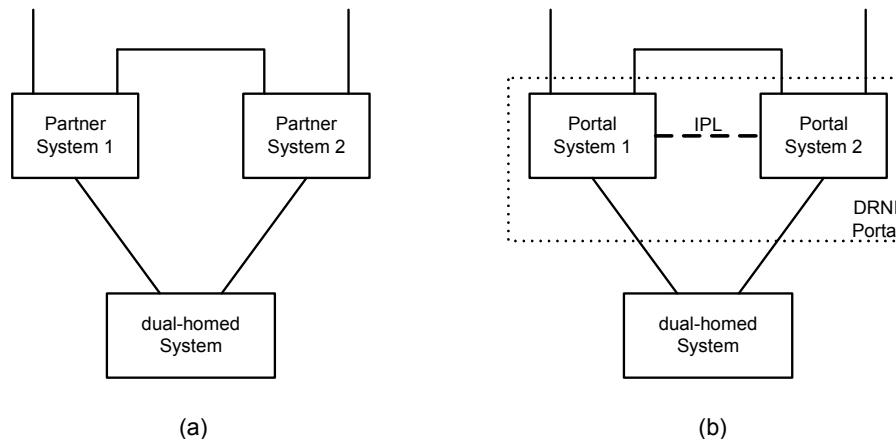


Figure 6-37—Dual-homed System examples

In Figure 6-37(b), the dual-homed System is connected to two different Portal Systems in a DRNI Portal (9.1). The normal DRNI operation allows both Portal Systems to present themselves as a single Partner System with the same Operational Key value on both links, resulting in both links become active in a single LAG. If the Intra-Portal Link (IPL) fails, however, the two Portal Systems will use different Operational Key values, which prevents both links from forming a single LAG. In this case, the restriction that the dual-homed system only has a single Aggregator available for these Aggregation Ports results in one Aggregation Port being SELECTED and the other UNSELECTED.

In both cases, the recommended default configuration of 6.4.14.2 would cause both links to become active in separate LAGs, with the resulting possibility of forming a data loop. Using the restricted configuration for a dual-homed System guarantees that no loop is formed without relying on any external loop prevention protocol.

7. Management

Replace Table 7-1 with the following:

Table 7–1—Link Aggregation capabilities

				DTE									
	Object name	Object type	Operations supported	Basic package (mandatory)	Mandatory package (mandatory)	Recommended package (optional)	Optional package (optional)	Aggregation Port statistics (optional)	Aggregation Port debug information (optional)	Per-Service Frame Distribution package (optional)	DRNI package (optional)	IPP statistics (optional)	IPP debug information (optional)
oAggregator (7.3.1)													
	aAggID	ATTRIBUTE	GET	X									
	aAggDescription	ATTRIBUTE	GET		X								
	aAggName	ATTRIBUTE	GET-SET		X								
	aAggActorSystemID	ATTRIBUTE	GET-SET		X								
	aAggActorSystemPriority	ATTRIBUTE	GET-SET		X								
	aAggAggregateOrIndividual	ATTRIBUTE	GET		X								
	aAggActorAdminKey	ATTRIBUTE	GET-SET		X								
	aAggActorOperKey	ATTRIBUTE	GET		X								
	aAggMACAddress	ATTRIBUTE	GET		X								
	aAggPartnerSystemID	ATTRIBUTE	GET		X								
	aAggPartnerSystemPriority	ATTRIBUTE	GET		X								
	aAggPartnerOperKey	ATTRIBUTE	GET		X								
	aAggAdminState	ATTRIBUTE	GET-SET		X								
	aAggOperState	ATTRIBUTE	GET		X								
	aAggTimeOfLastOperChange	ATTRIBUTE	GET		X								
	aAggDataRate	ATTRIBUTE	GET		X								
	aAggOctetsTxOK	ATTRIBUTE	GET			X							
	aAggOctetsRxOK	ATTRIBUTE	GET			X							
	aAggFramesTxOK	ATTRIBUTE	GET		X								
	aAggFramesRxOK	ATTRIBUTE	GET		X								
	aAggMulticastFramesTxOK	ATTRIBUTE	GET				X						
	aAggMulticastFramesRxOK	ATTRIBUTE	GET				X						
	aAggBroadcastFramesTxOK	ATTRIBUTE	GET				X						
	aAggBroadcastFramesRxOK	ATTRIBUTE	GET				X						
	aAggFramesDiscardedOnTx	ATTRIBUTE	GET			X							
	aAggFramesDiscardedOnRx	ATTRIBUTE	GET			X							

Table 7–1—Link Aggregation capabilities (continued)

Object name	Object type	Operations supported	DTE							
			Basic package (mandatory)	Mandatory package (mandatory)	Recommended package (optional)	Optional package (optional)	Aggregation Port statistics (optional)	Aggregation Port debug information (optional)	Per-Service Frame Distribution package (optional)	DRNI package (optional)
aAggFramesWithTxErrors	ATTRIBUTE	GET		X						
aAggFramesWithRxErrors	ATTRIBUTE	GET		X						
aAggUnknownProtocolFrames	ATTRIBUTE	GET		X						
aAggLinkUpDownNotificationEnable	ATTRIBUTE	GET-SET	X							
nAggLinkUpNotification	NOTIFICATION		X							
nAggLinkDownNotification	NOTIFICATION		X							
aAggPortList	ATTRIBUTE	GET		X						
aAggCollectorMaxDelay	ATTRIBUTE	GET-SET	X							
aAggPortAlgorithm	ATTRIBUTE	GET-SET						X		
aAggPartnerAdminPortAlgorithm	ATTRIBUTE	GET-SET						X		
aAggConversationAdminLink[]	ATTRIBUTE	GET-SET						X		
aAggPartnerAdminPortConversationListDigest	ATTRIBUTE	GET-SET						X		
aAggAdminDiscardWrongConversation	ATTRIBUTE	GET-SET						X		
aAggAdminServiceConversationMap[]	ATTRIBUTE	GET-SET						X		
aAggPartnerAdminConvServiceMappingDigest	ATTRIBUTE	GET-SET						X		
aAggPortEnableLongLACPDUXmit	ATTRIBUTE	GET-SET						X		
oAggregationPort (7.3.2)										
aAggPortID	ATTRIBUTE	GET	X							
aAggPortActorSystemPriority	ATTRIBUTE	GET-SET	X							
aAggPortActorSystemID	ATTRIBUTE	GET	X							
aAggPortActorAdminKey	ATTRIBUTE	GET-SET	X							
aAggPortActorOperKey	ATTRIBUTE	GET	X							
aAggPortPartnerAdminSystemPriority	ATTRIBUTE	GET-SET	X							
aAggPortPartnerOperSystemPriority	ATTRIBUTE	GET	X							
aAggPortPartnerAdminSystemID	ATTRIBUTE	GET-SET	X							
aAggPortPartnerOperSystemID	ATTRIBUTE	GET	X							
aAggPortPartnerAdminKey	ATTRIBUTE	GET-SET	X							
aAggPortPartnerOperKey	ATTRIBUTE	GET	X							
aAggPortSelectedAggID	ATTRIBUTE	GET	X							
aAggPortAttachedAggID	ATTRIBUTE	GET	X							
aAggPortActorPort	ATTRIBUTE	GET	X							
aAggPortActorPortPriority	ATTRIBUTE	GET-SET	X							
aAggPortPartnerAdminPort	ATTRIBUTE	GET-SET	X							

Table 7–1—Link Aggregation capabilities (continued)

Object name	Object type	Operations supported	DTE							
			Basic package (mandatory)	Mandatory package (mandatory)	Recommended package (optional)	Optional package (optional)	Aggregation Port statistics (optional)	Aggregation Port debug information (optional)	Per-Service Frame Distribution package (optional)	DRNI package (optional)
aAggPortPartnerOperPort	ATTRIBUTE	GET	X							
aAggPortPartnerAdminPortPriority	ATTRIBUTE	GET-SET	X							
aAggPortPartnerOperPortPriority	ATTRIBUTE	GET	X							
aAggPortActorAdminState	ATTRIBUTE	GET-SET	X							
aAggPortActorOperState	ATTRIBUTE	GET	X							
aAggPortPartnerAdminState	ATTRIBUTE	GET-SET	X							
aAggPortPartnerOperState	ATTRIBUTE	GET	X							
aAggPortAggregateOrIndividual	ATTRIBUTE	GET	X							
aAggPortOperConversationPasses	ATTRIBUTE	GET						X		
aAggPortOperConversationCollected	ATTRIBUTE	GET						X		
aAggPortLinkNumberID	ATTRIBUTE	GET-SET						X		
aAggPortPartnerAdminLinkNumberID	ATTRIBUTE	GET-SET						X		
aAggPortWTRTime	ATTRIBUTE	GET-SET						X		
aAggPortProtocolDA	ATTRIBUTES	GET-SET	X							
oAggPortStats (7.3.3)										
aAggPortStatsID	ATTRIBUTE	GET					X			
aAggPortStatsLACPDUxRx	ATTRIBUTE	GET					X			
aAggPortStatsMarkerPDUsRx	ATTRIBUTE	GET					X			
aAggPortStatsMarkerResponsePDUsRx	ATTRIBUTE	GET					X			
aAggPortStatsUnknownRx	ATTRIBUTE	GET					X			
aAggPortStatsIllegalRx	ATTRIBUTE	GET					X			
aAggPortStatsLACPDUxTx	ATTRIBUTE	GET					X			
aAggPortStatsMarkerPDUsTx	ATTRIBUTE	GET					X			
aAggPortStatsMarkerResponsePDUsTx	ATTRIBUTE	GET					X			
oAggPortDebugInformation (7.3.4)										
aAggPortDebugInformationID	ATTRIBUTE	GET					X			
aAggPortDebugRxState	ATTRIBUTE	GET					X			
aAggPortDebugLastRxTime	ATTRIBUTE	GET					X			
aAggPortDebugMuxState	ATTRIBUTE	GET					X			
aAggPortDebugMuxReason	ATTRIBUTE	GET					X			
aAggPortDebugActorChurnState	ATTRIBUTE	GET					X			
aAggPortDebugPartnerChurnState	ATTRIBUTE	GET					X			
aAggPortDebugActorChurnCount	ATTRIBUTE	GET					X			