ITU-T SG13 and SG15 Updates

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SG13 Update

Y.17ethoam Update

- Q.5/13 plans to consent Y.17ethoam in Jan'06
  - Y.17ethoam – OAM Functions and Mechanisms for Ethernet based Networks
- Meetings
  - Recent Meetings
    - Aug 29-Sep 09, 2005 – SG13 Plenary Meeting, Geneva
    - Significant progress made to reach consent
  - Future Meetings
    - Nov 28-Dec 02, 2005 – Q.5/13 Interim Meeting, Chicago
    - Jan 16-27, 2006 – SG13 Plenary Meeting, Geneva
- Coordination with other SDOs
  - Coordination with IEEE 802.1
    - To ensure alignment on Fault Management - 802.1ag (CFM)
  - Coordination with MEF
    - To ensure alignment on Service Fault Management & Performance Monitoring work
  - Coordination with DSLF
    - To ensure alignment on Access OAM

Y.17ethoam - Configurations

- Target is to keep MEP and MIP configurations minimal
- MIP Configurations
  - MIP do not need MIP ID
  - MIP do not need to validate MEG ID and MEP ID in ETH-LB and ETH-LT frames
  - Is it possible to eliminate current configuration requirement of ME Level on MIP?
    - Discussion continues though current model is still acceptable.
- Agreement to include a Server MEP
  - This is inline with the Virtual IFF functionality and is required to interwork Ethernet with Server technology for AIS

Y.17ethoam - Defects

- Following defects will be detected via ETH-CC
  - dUnexpectedMELevel — Incorrect ME Level
  - dMismerge — incorrect MEGID
  - dUnexpectedMEP — incorrect MEPID in correct MEGID
  - dUnexpectedPeriod — Mismatched CC Period
- Following defects will be detected via ETH-AIS
  - dAIS — ETH-AIS received

Y.17ethoam – Addressing Aspects

- **Agreement that filtering for OAM based on**
  - **OAM EtherType & ME Levels for Unicast & Multicast OAM frames**
  - **However, agreement to acknowledge Multicast DA with ME Level for current day equipment**
  - **Agreement to acknowledge separate Multicast DA space for ETHD (ETH-LT) and ETHS (ETH-CC, ETH-LB) for current day equipment**
- **Agreement to allow Unicast ETH-CC and ETH-RDI**
  - **With the following comments**
    - **If misconnection detection is needed – multicast ETH-CC to be used**
    - **If misconnection not a concern – unicast ETH-CC may be used**
    - **Requirement in all cases, ETH-CC sink must always report unexpected ETH-CC reception**

Y.17ethoam - Functional Overlap with 802.1ag

- Y.17ethoam and IEEE 802.1ag have common OAM
  - Intent is to keep these OAM functions aligned
    - ETH-CC – CCM
    - ETH-LB – LBM, LBR (Unicast ETH-LB)
    - ETH-LT – LTM, LTR
    - ETH-AIS - AIS
- Y.17ethoam has additional Functions & OpCodes
    - ETH-LB – LBM, LBR (multicast ETH-LB)
    - ETH-LM – LMM, LMR (Loss Measurement) (p2p only)
    - ETH-DM – DMM, DMR (Delay Measurement) (p2p only)
    - ETH-APS – APS (Automatic Protection Switching) (p2p only)
    - ETH-USR – USR (Communication Channel)
    - ETH-Test – one-way and two-way for p2p only
- Y.17ethoam would rely upon IEEE 802.1 for OpCode assignments and common filed encodings

Y.17ethoam – OAM Functional Aspects

- ETH-CC
  - Following periods have been agreed
    - 3.3 ms, 10ms, 100ms, 1s, and 1 minute
  - ETH-CC will not be mandatory, however the reporting of unexpected ETH-CC will be required
- ETH-AIS
  - Agreement to only specify non-selective AIS
    - Selective AIS has been determined to be quite onerous and still does not provide complete coverage e.g. multiple faults
  - Following periods of AIS have been agreed
    - 1s and 1min
  - Utility of AIS in STP questioned?
- ETH-LT
  - Utility of CC DB questioned?

Y.17ethoam – OAM Frame Aspects

- OAM Header Fields
  - Agreement for common OAM Header among different OpCodes
    - OAM Type, ME Level, Version, OpCode, **HdrLength**
  - Agreement to swap position of ME Level and Version fields
    - It would help ME Level (which is to act as subType) follow OAM Type
  - **HdrLength** is still under discussion
- Decision to fix OAM DE to be “discard ineligible”
  - Priority will remain configurable with default set to highest priority applicable to data frames within the service
- Use of TLVs to be limited to extent possible
- Preference to limit MEG ID to 20 bytes
  - Experience in past with other technologies have indicated that larger ID do not get used much

Y.17ethoam – OAM Frame Formats

OAM	TYPE	Version	MELEVEL	OPCODE	Tx Id	MEGID	MEP	TTL	T-MAC	Time Stamp	PRBS/ Pattern	Period	RDI	Data	TxFCf	RxFCb	TxFCb	Timestamp 2	Timestamp 3	Timestamp 4	CRC
CCM	X	X	X	X	-	X	X	-	-	X*	-	X*	X*	-	X*	X*	X*				
LBM					X	-	-	-	-	-	-	-	-	X							
LBR					X	-	-	-	-	-	-	-	-	X							
LTM*					X	-	-	X	X	-	-	-	-	-							
LTR					X	-	-	X	-	-	-	-	-	-							
AIS					-	-	-	-	-	-	-	X	-	-							
LCK					-	-	-	-	-	-	-										
LM*					-	-	-	-	-	-	-				X	X	X				
LMM					-	-	-	-	-	-	-				X	X	X				
LMR					-	-	-	-	-	-	-				X	X	X				
DMM					-	-	-	-	-	X	-							*			
DMR					-	-	-	-	-	X	-							X	X	*	
APS					-	-	-	-	-	-	-										
USR					-	X	X	-	-	-	-										
TEST2w					X	-	-	-	-	-	X										X
TEST1w					X	-	-	-	-	-	X										X

SG15 Update

Ethernet Update

- Q.12/15 is working on:
  - Ethernet Layer Network Architecture (G.8010v2) – targeted consent is 4Q06
  - Unified Framework for Architecture of Transport Networks (G.ufatn) – targeted consent is 4Q06
- Q.9/15 is working on:
  - Ethernet Equipment Specification (G.8021v2)
  - Ethernet Protection Switching (G.8031) – targeted consent is 1Q06
- Q.11/15 is working on:
  - Ethernet Service Specifications (G.8011.x)
  - Ethernet Interface Specification (G.8012v2)
- Meetings
  - Current Meetings
    - Sep 18-23, 2005 – Interim Meeting, Sophia Antopolis
  - Future Meetings
    - Nov 28-Dec 02, 2005 – Q.9,11,12/13 Interim Meeting, Chicago
    - Feb 06-17, 2006 – SG15 Plenary Meeting, Geneva

Backup

Status of related Recommendations

Q.	Rec. No.	N/R	Title or Proposed Title	Issued date	Next Target
5/13	Y.17ethoam	N	OAM functions and mechanisms for Ethernet based networks	--	02/2006
3/15	G.8001	N	Terms and definitions for Ethernet Frames over Transport	--	02/2006
9/15	G.8021	R	Characteristics of Ethernet Transport Network Equipment Functional Blocks	4/2004	02/2006
9/15	G.8031	N	Ethernet protection switching	--	02/2006
11/15	G.7041	R	Generic Framing Procedure (GFP)	05/2005	2008
11/15	G.8011	R	Ethernet over Transport – Ethernet Service Characteristics	08/2004	2007
11/15	G.8011.1	R	Ethernet Private Line Service	04/2004	2007
11/15	G.8011.2	N	Ethernet Virtual Private Line Service	05/2005	2008
11/15	G.8012	R	Ethernet UNI and Ethernet over Transport NNI	08/2004	2007
12/15	G.8010	R	Ethernet Layer Network Architecture	02/2004	11/2006
12/15	G.ufatn	N	Unified Framework for the Architecture of Transport Networks	--	11/2006