IEEE 1904.2

Standard for Management Channel for Customer-Premises Equipment Connected to Ethernet-based Subscriber Access Networks

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Liaison from BBF to SIEPON

…
I am writing to inform you of some recent developments in our work on fiber-access technology which may have an impact on your future work program. We have started a project called WT-301 (Fiber to the Distribution Point), and the systems described by WT-301 typically include a fiber-fed distribution-point unit (DPU) that connects to a piece of CPE via a high-speed copper link. DPUs typically are reverse-powered over the copper link. One of our candidate architectures contains a DPU connected by an IEEE EPON uplink and with a VDSL2 drop.

For the architecture described above, management of the DPU VDSL2 interface via eOAM appears to offer advantages. Clearly, if this is the direction that WT-301 takes the BBF would approach your group and request the development of any necessary eOAM modifications.

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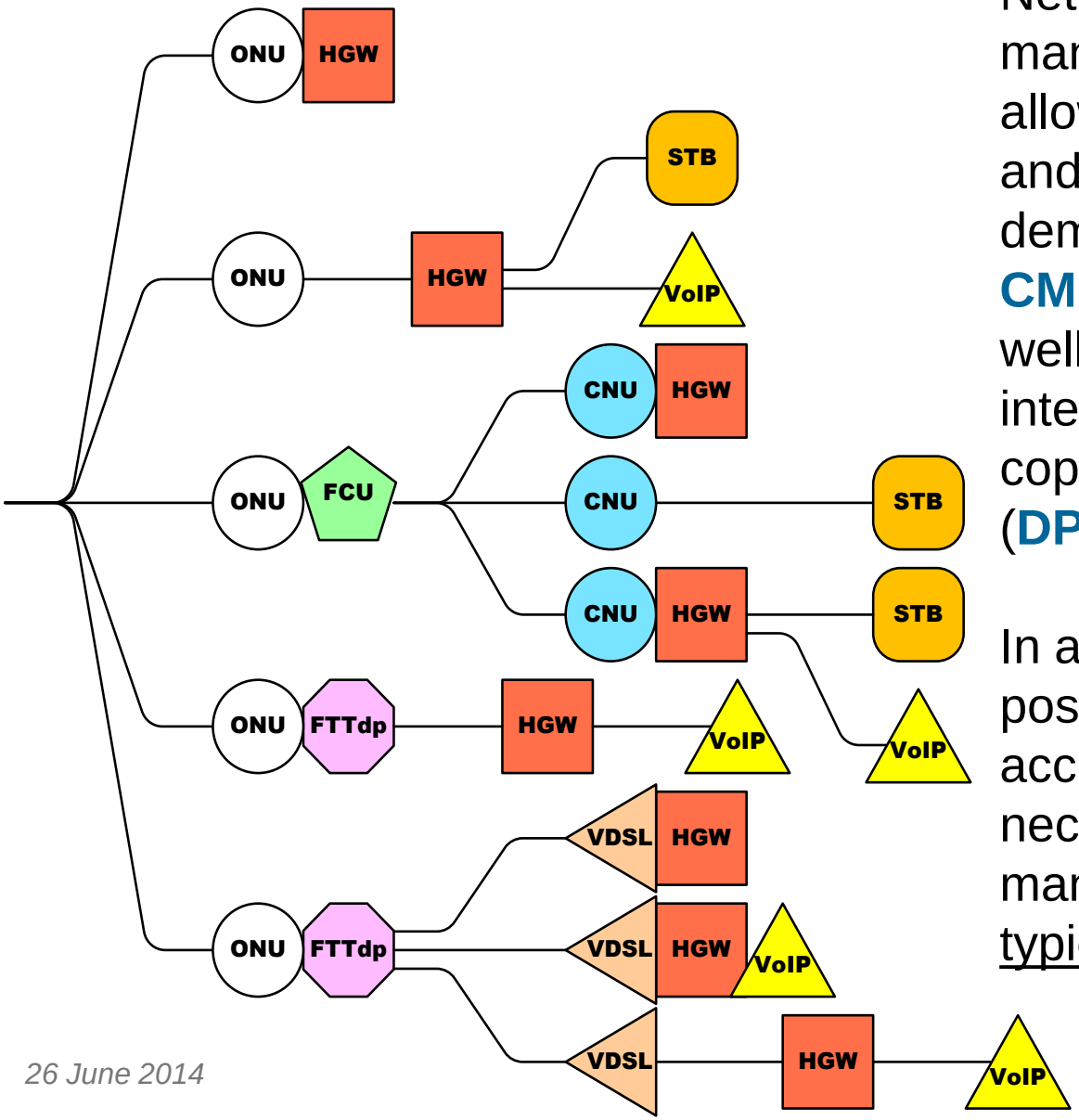
June 2013

PON-based Access Architectures



Network operators require a management system that would allow them to efficiently access and manage the subscriber demarcation device (**ONU, CNU, CM, DSL modem, or RGW**) as well as the various devices that interconnect their optical and copper sections of the network (**DPU or FCU**).

In addition, to achieve the best-possible service quality, the access network operators find it necessary to extend their management domains past the typical demarcation device.

Key Requirements

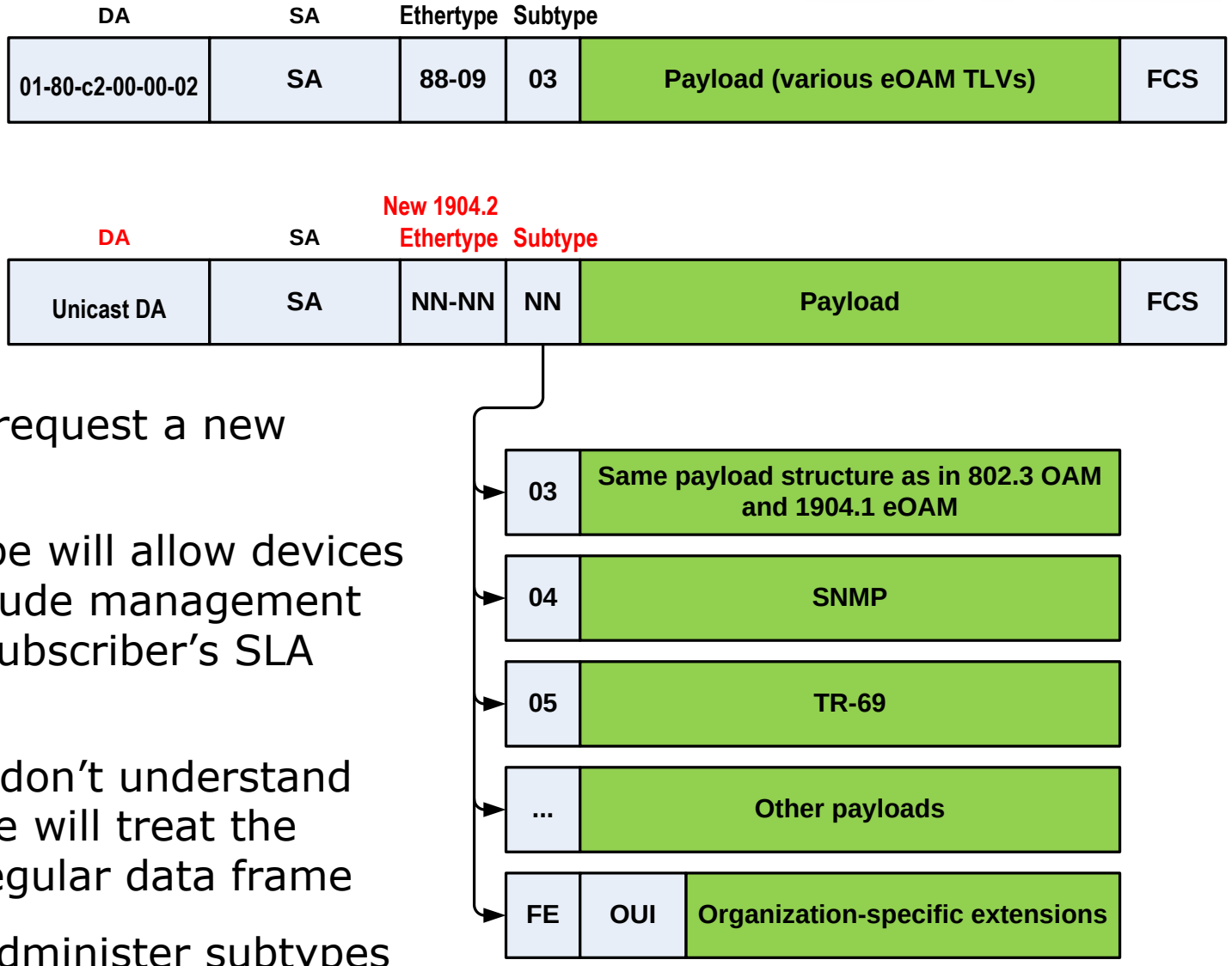
The solution shall

1. Allow multiple management channels reaching various levels of network hierarchy
2. Allow L2-only devices to identify and exclude the management traffic from subscriber's SLA quotas
3. Allow statically-provisioned or dynamically-established management channels.
4. Impose minimal burden on the intermediate nodes
   - The solution shall allow and support, but not require routing, bridging, or MAC learning in intermediate nodes.
   - The solution shall not require specialized hardware or software to process management frames in the intermediate nodes.

Scope of 1904.2 Standard

- This standard will describe a management channel for customer-premises equipment (CPE) connected to Ethernet-based subscriber access networks. The key characteristics of the specified management channel are:
  - Multi-hop capabilities to allow management of various CPE devices located behind an Optical Network Unit (ONU), a Coaxial Network Unit (CNU), a Residential Gateway (RGW), etc.
  - Extensibility to accommodate new management protocols and/or new types of CPE devices.
  - Broadcast/multicast capabilities to allow simultaneous (synchronized) configuration of multiple devices.
  - Encryption capabilities to ensure secure access to managed CPE devices by the network operators.
- The standard will describe the message format as well as processing operations and forwarding rules at the intermediate nodes.

Possible approach



- 1904.2 may request a new Ethertype
- New Ethertype will allow devices to easily exclude management traffic from subscriber's SLA quotas
- Devices that don't understand this Ethertype will treat the frame as a regular data frame
- 1904.2 will administer subtypes to avoid conflicts

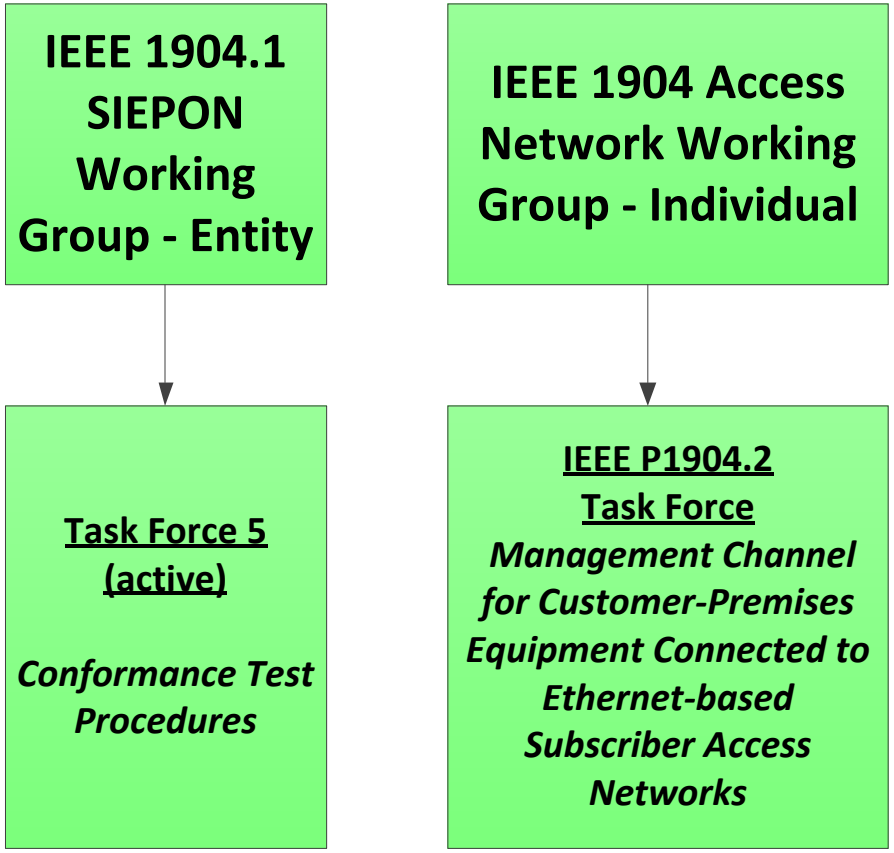
Channel Establishment

- 1904.2 needs to be able to establish a channel from managing master to managed slave
  - Protocol to statically provision forwarding rules at all intermediate nodes
  - Protocol to dynamically establish the forwarding rules (MAC address discovery)

IEEE P1904.2 Project Information

SIEPON and ANWG

1. **IEEE 1904.1 Service Interoperability in Ethernet Passive Optical Networks (SIEPON) Working Group**
   - An entity-based working group
   - Completed 1904.1 standard
   - Working on 1904.1-Conformance standards
   - Will be disbanded after the completion of Conformance standards.
2. **IEEE 1904 Access Networks Working Group (ANWG)**
   - An individual-based working group
   - Scope is broader than SIEPON – everything *access-related*
   - Will take ownership of and be responsible for future revisions of 1904.1 and 1904.1/Conformance standards
   - 1904.2 is a project under 1904 ANWG



Website and Email

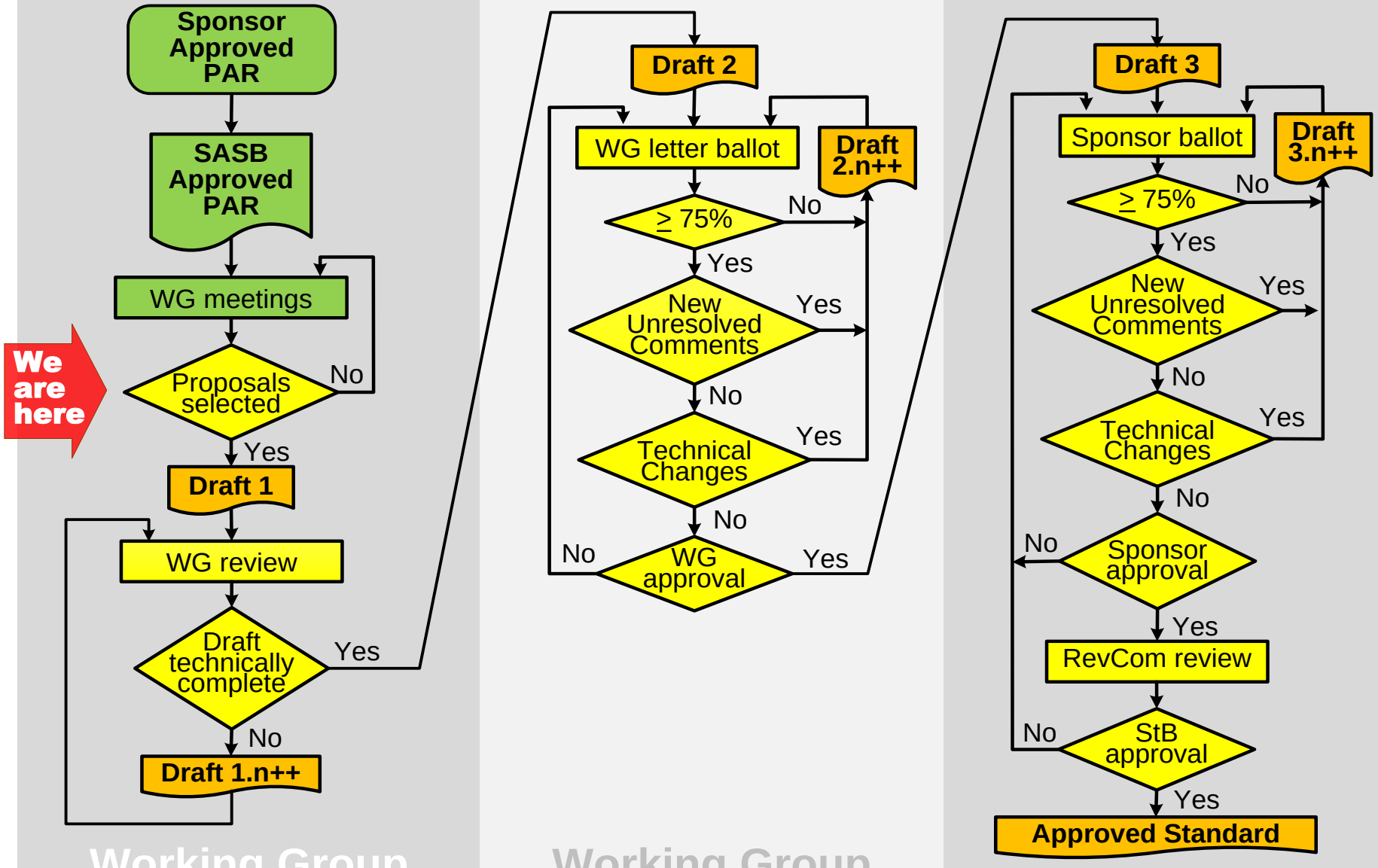
1904.2 Website

- URL: **http://www.ieee1904.org/2/**
- Archived technical contributions are public

1904.2 Email Reflector

- Used for 1904.2 technical discussions
- To subscribe, send email to listserv@ieee.org
  and include this line in the body of the message:
  subscribe stds-1904-2-TF *firstname lastname*
- Archive is public
  (**http://www.ieee1904.org/2/tf2_pub_archive.shtml**)

Standardization Process



2014 Meeting Calendar

January

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

February

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
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16	17	18	19	20	21	22
23	24	25	26	27	28	

March

Su	Mo	Tu	We	Th	Fr	Sa
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16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

April

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May

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June

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15	16	17	18	19	20	21
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29	30					

July

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27	28	29	30	31		

August

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					1	2
3	4	5	6	7	8	9
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24/31	25	26	27	28	29	30

September

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28	29	30				

October

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November

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23/30	24	25	26	27	28	29

December

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
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21	22	23	24	25	26	27
28	29	30	31			

ANWG window	IEEE 802.3	BBF	CableLabs	ITU-T/FSAN	Conferences
2/11-2/13	1/20-1/24	3/10-3/14	3/2-3/5 – Winter Conf.	FSAN: 2/17-2/21	3/9-3/16 - OFC
4/23 – 4/25	3/16-3/21	6/23-6/27	8/3-8/6 – Summer Conf.	SG15: 3/24-4/4	4/5-4/10 - NAB
6/16-6/20	5/12-5/16	9/15-9/19		FSAN: 5/5-5/9	4/29-5/1 –Cable Show
8/18-8/22	7/13-7/18	12/8-12/12		FSAN: 9/1-9/5	9/21-9/25 - ECOC
10/20-10/24	9/8-9/12			FSAN: 10/27-10/31	*10/15-10/17 - SCTE Expo
12/1-12/5	11/2-11/7			SG15: 11/24 – 12/5	

Holidays	
China	1/30-2/5, 4/5-4/7, 5/1-5/3, 5/31-6/2, 9/6-9/8, 10/1-10/7
Israel	3/13-3/17, 4/14-4/22, 6/3-6/5, 9/24-9/26, 10/3-10/4, 10/8-10/15, 12/16-12/24
Japan	1/1-1/3, 1/13,2/11,3/21, 4/29, 5/5-5/6, 7/21, 9/15, 9/23, 10/13, 11/3, 11/24, 12/23 [8/9-8/17 – summer vacation]. [12/27-1/4/15 – winter vacation]
US	1/1, 5/26, 7/4, 9/1, 11/27-11/28, 12/24-12/31

Thank You