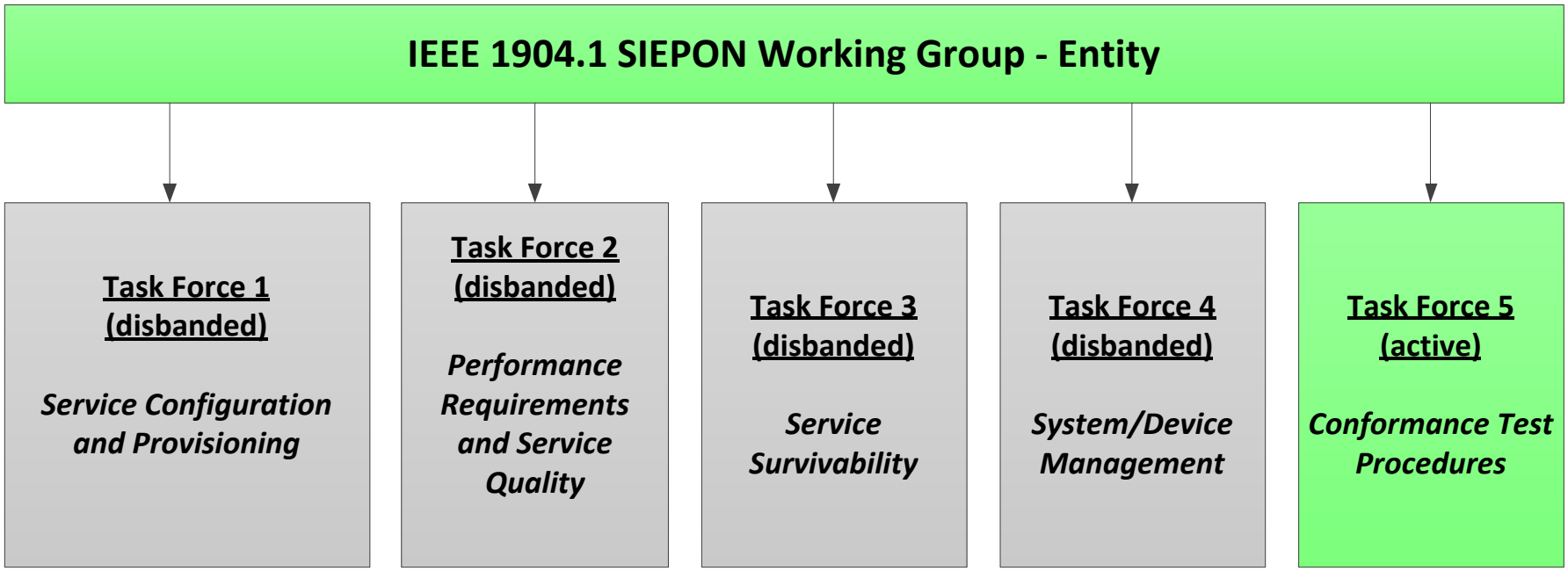
IEEE 1904 Access Networks Working Group

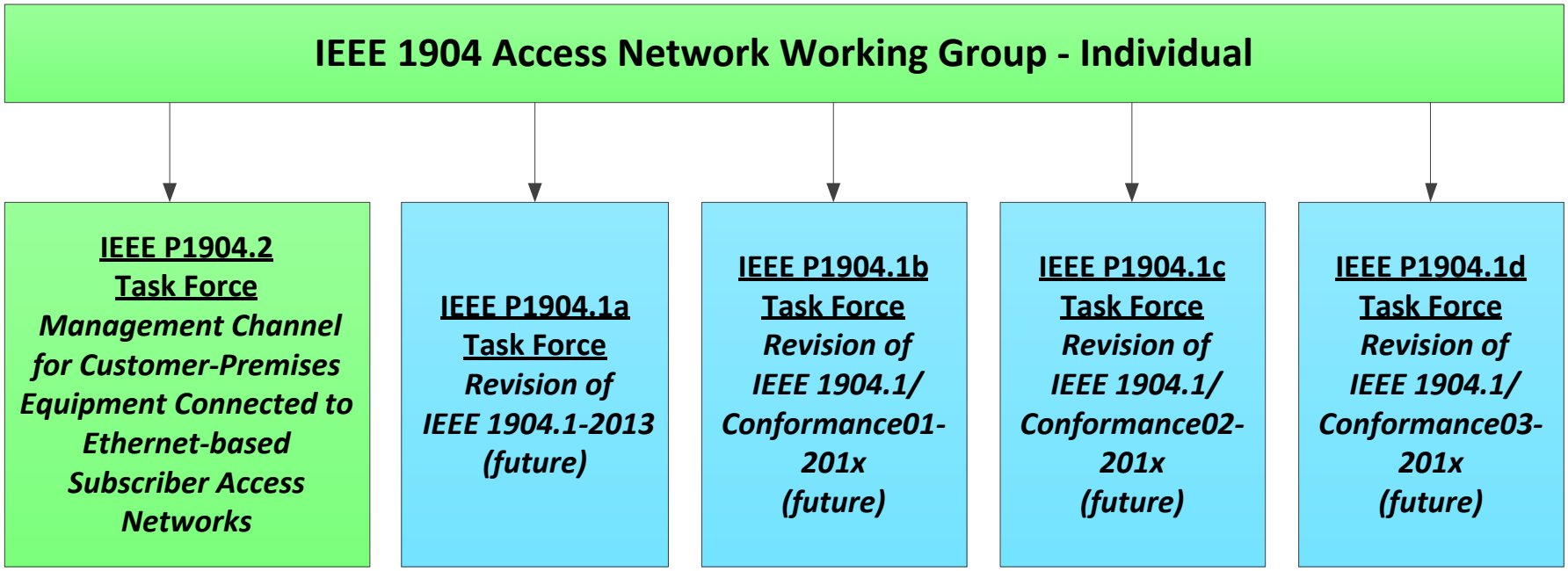
Glen Kramer, ANWG Chair
glen.kramer@ieee.org

Current 1904.1 WG Organization



- Work on 1904.1 draft was divided among 4 task forces: TF1-TF4.
  - This work has been completed and the task forces were disbanded in June 2013.
- TF5 was formed to work on Conformance PARs and is the only active task force now
  - Working on 3 Conformance drafts.

IEEE 1904 Access Networks WG



- IEEE 1904 is now designated a working group
  - Scope is broader than SIEPON
  - Individual-based

IEEE 1904 Charter/Mission

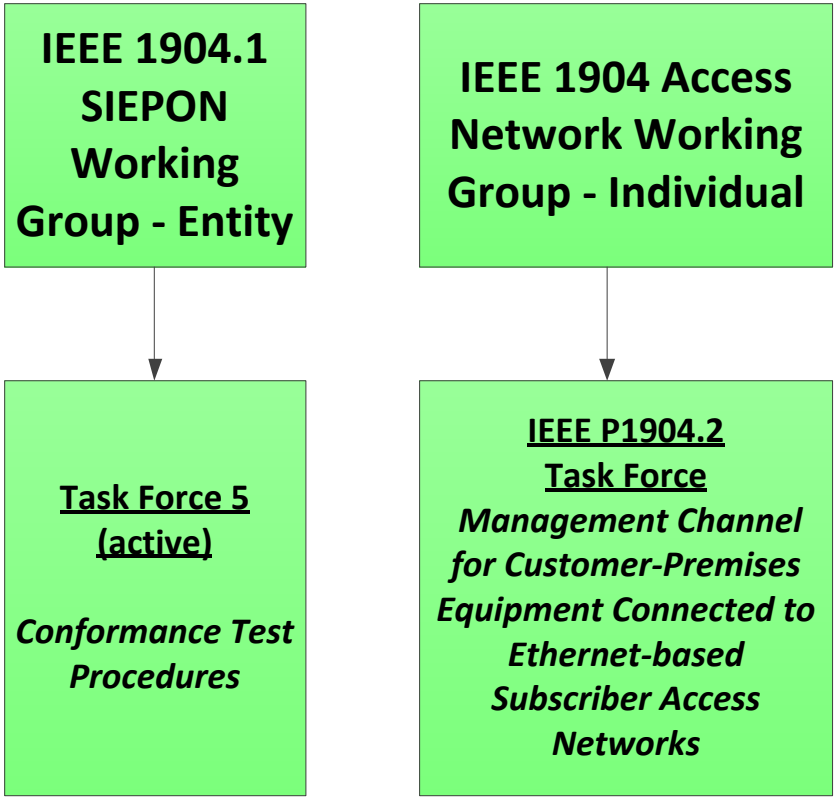
The IEEE 1904 Access Networks Working Group (ANWG) uses an open and accredited process to develop standards for access networks. The Working Group technical expertise covers various optical access architectures based on Ethernet Passive Optical Networks (EPON), such as fiber-to-the-home, fiber-to-the-business, and cellular backhaul.

The ANWG embraces the system-level view of the access network and focuses on functions and protocols required for operating and managing the emerging multi-service and high-capacity communications networks.

Transition Period

- The **IEEE 1904 ANWG** and **IEEE 1904.1 SIEPON WG** operate independently
  - 1904 – individual-based
  - 1904.1 – entity-based

- SIEPON WG will complete the Sponsor Ballot for IEEE P1904.1/Conformance 01/02/03 and will be disbanded after the approvals of IEEE these standards (exp. Oct 2014)

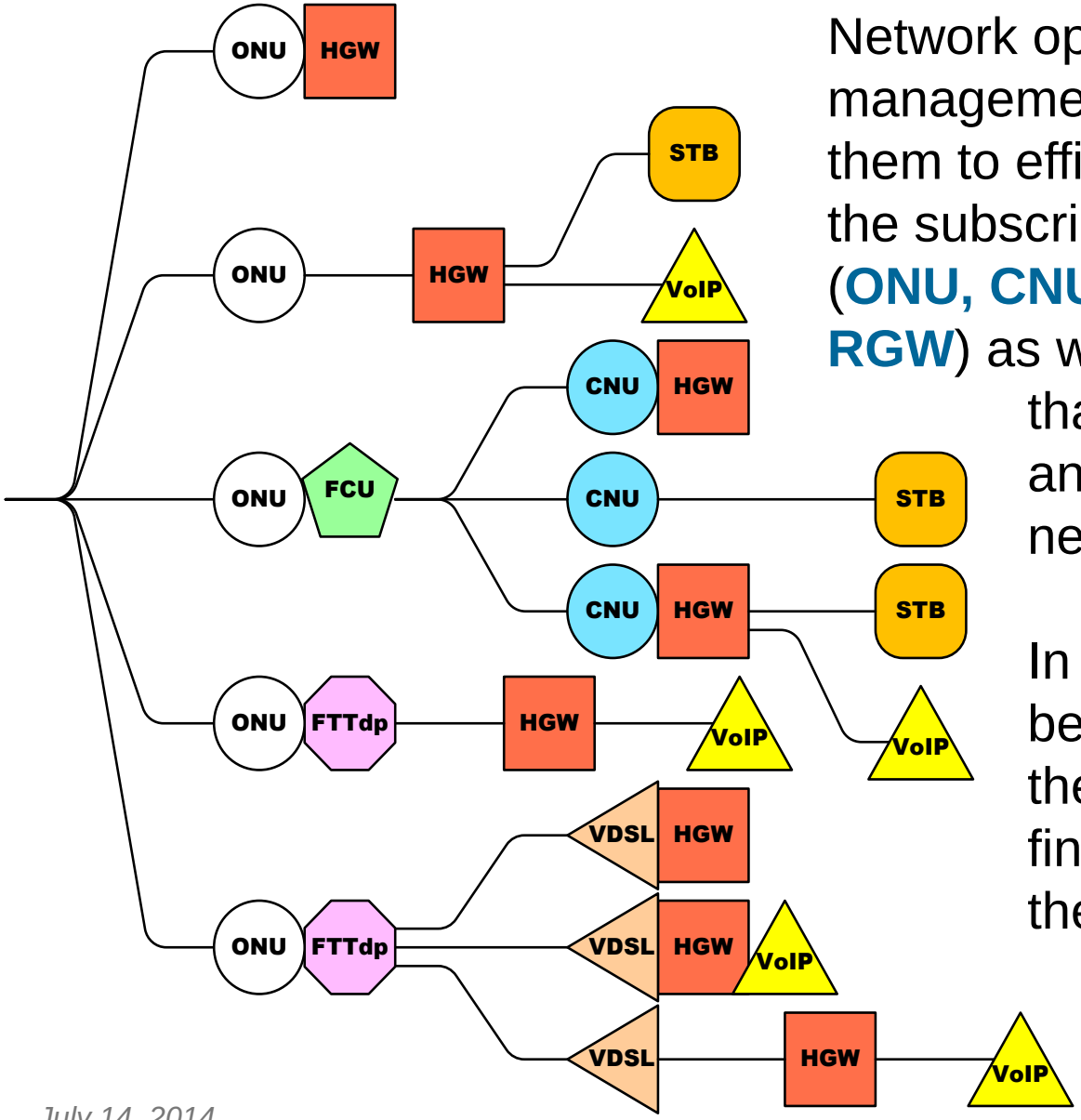


- 1904 ANWG will take ownership of published IEEE std 1904.1-2013 and IEEE std 1904.1/Conformance01/02/03 – 201x standards. The 1904 ANWG will be responsible for future revisions of these standards.

IEEE 1904.2

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

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.

Website and Email

- **1904 WG Website**
  - URL: **http://www.ieee1904.org**
- **1904 WG Reflector**
  - Used for general discussions/announcements
  - To subscribe, send email to listserv@ieee.org and include this line in the body of the message: **subscribe stds-1904-wg *firstname lastname***
  - Archive is public (**http://www.ieee1904.org/wg_pub_archive.shtml**)
- **1904.2 TF Website**
  - URL: **http://www.ieee1904.org/2/**
  - Archived technical contributions are public
- **1904.2 TF 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**)

2014 Meetings

- August –**Amsterdam, Netherlands**
- October – Possibly, Wuhan, China
- December –Tampa, FL

Thank You