

Overview and Guide to the IEEE 802 LMSC

September 2012

DISCLAIMER:

This guide assembles in one place some info to assist first-time and regular attendees of the IEEE 802 LAN/MAN Standards Committee (LMSC) sessions. It draws on the work of other members of the committee and acknowledges their contribution to this guide.

INTRODUCTION:

The IEEE 802 (LMSC) develops Local Area Network (LAN) and Metropolitan Area Network (MAN) standards, mainly for the lowest 2 layers of the ISO Reference Model for Open Systems Interconnection (OSI). IEEE 802 coordinates with other national and international standards groups, with some IEEE 802 standards now published by ISO as international standards. There is strong international participation in IEEE 802, and some sessions are held outside the U.S.

With work ongoing on a number of standards, the overall picture can be confusing at first. The material handed out at registration, and the overview of meetings and organizations in this guide, will help make some sense of the many parallel activities. Newcomer training from 10 to 11 am on Monday morning provides an orientation on how IEEE 802 creates standards. Most Working Group meetings start Monday late morning or afternoon and then continue each day of the session concluding between Monday afternoon and Friday Morning. The plenary session concludes with a meeting of the LMSC Executive Committee on Friday afternoon. You'll find a wide range of attendance and topics in the Working Group meetings - for instance, in the early stages of a standard there is more technical presentation and less editorial work. In between plenary sessions, work continues over the four months until the next plenary session, and most Working Groups hold interim sessions between the plenaries, and continue discussions and document editing by email. The personal contacts you can make during the week will be very helpful, so take time to meet people as well as study the documents.

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- HISTORY (how did we get here?)
- ORGANIZATION (who does what, WGs / SGs / TAGs, IEEE Standards Office)
- STANDARDS PROCESS (inception, liaison, consensus, ballots, and publication)
- DOCUMENTS (drafts, email, standards, and how to get them)

PLENARY SESSIONS:

In March, July, and November of each year, all the Working Groups of LMSC meet together at one location in Plenary Session. These plenary sessions are scheduled 1-3 years ahead and are attended by about 1000 people. For information about upcoming sessions, visit the IEEE 802 website at <http://www.ieee802.org>. You can contact the plenary session meeting planners, via email at 802info@ieee.org.

Pre-registration by credit card is offered on the web to reduce lines for registration at the session. A registration fee is collected from each attendee to cover the costs of the session (conference, network, printing, and AV services, wireless & wired hi-speed LAN access to Internet, refreshments, the Wednesday evening social, etc.). Preregistration information is available at <http://www.ieee802.org>. There is a reduced fee for early registration. The onsite registration desk is open 5-8pm Sunday and from 8am to 5pm Monday thru Thursday for registrations and information. If you pre-register on the web, you will only need to pick-up your pre-printed badge, receipt, and session information. If you wait to register on site you will have to stand in line, wait for your information entry, your payment verification, and your badge print-out before you can proceed to other activities.

The typical overall schedule for the plenary session week is as follows:

Saturday: some Groups have pre-session meetings

Sunday: some Groups have pre-session meetings

5:00 pm - 8:00 pm: onsite registration and pre-registration badge pick-up

Monday: 8:00 am - 10:30 am: Opening Executive Committee meeting

8:00 am - 5:00 pm: onsite registration and pre-registration badge pick-up

8:00 am - 10:30 am: some Group pre-session meetings

10:00 am - 11:00 am : Newcomer training

11:00 am - 6:00 pm: Individual Working Group opening meetings

6:30 pm -9:30 pm: evening tutorials

Tuesday: 8:00 am - 6:00 pm: Working Group meetings

8:00 am - 5:00 pm: onsite registration and pre-registration badge pick-up

6:30 pm - 9:30 pm: some working group subgroup meetings

Wednesday: 8:00 am - 6:00 pm: Working Group meetings

8:00 am - 5:00 pm: onsite registration and pre-registration badge pick-up

6:30 pm - 9:30 pm: Social Reception

Thursday: 8:00 am - 9:00 pm: Working Group meetings including some Working Group closing meetings

8:00 am - 5:00 pm: onsite registration and pre-registration badge pick-up

Friday: 8:00 am - 12:00 noon: some Working Group closing meetings

1:00 pm – 6:00 pm: Closing Executive Committee meeting

NOTE: Executive Committee meetings are open to any interested observers from IEEE 802.

The evening tutorials on Monday are often used to publicize work on potential new standards - the topics are listed in the material posted on the Session Attendees Web Portal. The Wednesday

evening social is an opportunity to meet and talk with people from other Working Groups, as well as being known as a place to score some good food and entertainment.

The real work of the plenary session happens in the individual Working Group meetings, with some Working Groups split into several subgroups/task groups during parts of the week. It is not possible to follow what's happening in all groups, so it is best to concentrate on just one or two. Since the detailed schedules for each group may change during the week, check the web portal or bulletin board at the registration desk for the latest meeting times and room assignments.

HISTORY:

The first meeting of the IEEE "Local Area Network Standards Committee", Project 802, was held in February of 1980. (The project number, #802, was simply the next number in the sequence being issued by the IEEE for standards projects). There was originally only going to be one LAN standard, with speeds ranging from 1 to 20 Mb/s. It was later divided into a Media or Physical layer (PHY) standard, a Media Access Control (MAC) standard, and a Higher Level Interface (HLI) standard. The original access method was similar to that for Ethernet and used a passive bus topology. However, by the end of 1980 token access methods were proposed, and a year after there were three different MACs: CSMA/CD, Token Bus, and Token Ring.

In the years since, other MAC and PHY working groups have been added, as well as several Technical Advisory Groups. The unifying theme has been a common upper interface to the Logical Link Control (LLC) sublayer, some common data framing elements, and some commonality in media interfaces. The scope of work has grown to include Metropolitan Area Networks (MANs) and many higher data rates have been added. .

ORGANIZATION:

IEEE 802 LMSC is organized into a number of Working Groups (WGs) and Technical Advisory Groups (TAGs) operating under the oversight of a sponsor Executive Committee (EC).

The structure of the EC and the WGs and TAGs is explained below:

802.0 Executive Committee (EC):

- Chairman – **Paul Nikolich**, email: p.nikolich@ieee.org
- 1st Vice Chairman – **Pat Thaler**, email: pthaler@broadcom.com
- 2nd Vice Chairman – **James P.K. Gilb**, email: gilb@ieee.org
- Executive Secretary – **Jon Rosdahl**, email: jrosdahl@ieee.org
- Recording Secretary – **John D'Ambrosia**, email: jdambrosia@ieee.org
- Treasurer – **Clint Chaplin**, email: clint.chaplin@gmail.com
- Member Emeritus (non-voting) - **Geoff Thompson**, email: gthomps@nortel.com

- Member Emeritus (non-voting) – **Buzz Rigsbee**, email: everett.o.rigsbee@boeing.com
- All WG and TAG Chairs as listed below are included as EC voting members:

Working Groups (WG) & Technical Advisory Groups (TAG):

- **802.1 High Level Interface (HLI) Working Group**
Chairman - **Tony Jeffree**, email: tony@jeffree.co.uk
- **802.3 CSMA/CD (Ethernet) Working Group**
Chairman – **David Law**, email: David_Law@3com.com
- **802.11 Wireless LAN (WLAN) Working Group**
Chairman - **Bruce Kraemer**, email: bkraemer@ieee.org
- **802.15 Wireless Personal Area Network (WPAN) Working Group**
Chairman - **Bob Heile**, email: bheile@ieee.org
- **802.16 Broadband Wireless Access (BWA) Working Group**
Chairman - **Roger Marks**, email: r.b.marks@ieee.org
- **802.17 Resilient Packet Ring (RPR) Working Group**
Chairman - **John Lemon**, email: jlemon@ieee.org
- **802.18 Radio Regulatory Technical Advisory Group**
Chairman – **Michael Lynch**, email: freqmgr@ieee.org
- **802.19 Coexistence Technical Advisory Group**
Chairman – **Steve Shellhammer**, email: shellhammer@ieee.org
- **802.20 Mobile Broadband Wireless Access Working Group**
Chairman – **Radhakrishna Canchi**, email: canchi@ieee.org
- **802.21 Media Independent Handover Working Group**
Chairman – **Subir Das**, email: subirdas21@gmail.com
- **802.22 Wireless Regional Area Networks Working Group**
Chairman – **Apurva Mody**, email: apurva_mody@ieee.org
- **802.24 Smart Grid Technical Advisory Group**
Chairman – **James P.K. Gilb**, email: gilb@ieee.org

Working Groups (WGs) are subgroups of IEEE 802 that develop standards. Technical Advisory Groups (TAGs) are formed to provide a pool of technical expertise needed by multiple WGs. Each amendment project approved within an existing group is assigned suffix letter(s), for example IEEE 802.3bk Extended EPON. When there are multiple standards developed by one group, they are usually distinguished by an additional number, for example IEEE 15.1 and IEEE 15.2. For historical reasons, in the IEEE 802.1 Working Group multiple standards are assigned suffix letter(s), for example 802.1D for MAC Bridges. Typically a Study Group (SG) is formed when a new area is first investigated for standardization. The SG can be within an existing WG or TAG, or it can be independent of the WGs. A new project within an existing group is typically developed by a Sub-Group or Task Group, while a new independent project can lead to the creation of a completely new WG.

Membership in LMSC is earned in the WG/TAG, with voting rights gained by attending two of the last four WG plenary sessions. Interim sessions of a WG/TAG may be counted under some circumstances. Attendance means you must be present for at least 75% of each meeting and attend at least 75% of the meetings in a WG/TAG session. Attendance is tracked by a sign-in procedure. Credit is given for attendance at only one WG per plenary meeting.

The working style of each WG/TAG depends on the number of members and the subject at hand, with some topics decided informally, while others are subject to letter ballots. The Chair of each group is given some latitude to set the procedures for the group as long as those procedures comply with the IEEE 802 Working Group Policies and Procedures. In all cases, approval of a draft standard by the WG/TAG requires Working Group and Sponsor balloting and an effort to resolve any “No” votes.

In addition to the volunteer members of LMSC, there is a professional staff at the IEEE Standards Association (IEEE-SA) office that supports our work and gets standards published. The IEEE Standards Board and IEEE-SA staff are responsible for a wide range of standards activities beyond the LAN/MAN standards in LMSC. The IEEE Standards Office can be contacted at (732) 562-3800 or on the web at: <http://standards.ieee.org/>.

LMSC also relies on a meeting management firm (802info@ieee.org) to administer the arrangements for each meeting, including registration. They can be contacted for hotel and transportation information and meeting pre-registration via <http://www.ieee802.org/meeting/>.

STANDARDS PROCESS:

Each standard, recommended practice, or guide begins as a group of people with an interest in developing the standard. A Project Authorization Request (PAR) is normally submitted for approval within 6 months of the start of work. In LMSC, new projects require supporting material in the form of 5-Criteria to show that they meet the charter of LMSC. The draft PAR is voted on by the EC, and then it goes to the IEEE Standards Board New Standards Committee (NesCom) which recommends it for approval as an official IEEE Standards Project.

Proposals are evaluated by the WG, and a draft standard is written and voted on by the WG. The work progresses from choosing general technical approach to editorial, refining technical details and procedural as the draft matures. When the WG reaches enough consensus on the draft standard, a WG Letter Ballot is done to release it from the WG. It is next approved by the EC and then goes for Sponsor Letter Ballot.

After the Sponsor Letter Ballot has passed and “No” votes are resolved, the draft Standard is sent to the IEEE Standards Board Standards Review Committee (RevCom). Once it is recommended by RevCom and approved by the Standards Board, it can then be published as an IEEE standard. Some draft standards in LMSC are also sent to ISO at the time they go to Sponsor Letter Ballot. Parallel approval in ISO JTC1/SC6 (Joint Technical Committee 1, Subcommittee 6 - responsible for LANs) may lead to publication as an ISO standard. The process from start to finish can take several years for new standards, and less for revisions or addenda to existing standards.

DOCUMENTS:

The main work in LMSC sometimes appears to be generating documents, and it is certainly true that we generate a lot of text to create a standard. In the early stages, a WG will have a number of proposals and drafts, and these will be posted to the WG for their review. You can get copies of most other WG's documents via the web at www.ieee802.org.

To reduce paper use and speed the process, the WGs use E-mail and the Internet for distribution of proposals, discussions, minutes, and drafts. Check the WG website for information on what is available and how to use it. Also, a central LMSC web site is maintained at www.ieee802.org. This web site includes meeting information and other general info, as well as specific WG areas.

Once a standard has been published, you may order it in electronic (PDF) or hardcopy format from IEEE Sales for the first six months after publication. After the document has been published for six months, it is available in electronic form (PDF download) at no charge through the **Get IEEE 802** program at: <http://standards.ieee.org/getieee802/>.