

LonMark Channel Standardization Committee Charter (LCSC)

A. PURPOSE

The primary function of the LonMark Channel Standardization Committee (LCSC) is to assist LMI in creating the technical specification for new LON transport channels.

This Charter addresses the composition, leadership, responsibilities and duties of this committee unless otherwise directed by the Board of Directors.

B. OVERVIEW

Additional LONMARK International-approved channel types can be added as market requirements demand. The general criteria used in adopting a channel as a standard include the following:

- Has a transceiver for the channel been thoroughly tested?
- Is channel design open and publicly available?
- Does this channel type have long-term, widespread applicability?

LONMARK International approval of additional channel types is handled separately from the LONMARK product certification. LONMARK International will approve “standards-body” channel types only. Existing LONMARK channel types are exempt from this requirement. By “standards-body,” this means one that has become an official standard, or part of an official standard, by a formal standards-making body; or meets the requirements of formal industry regulations. Examples include, but are not limited to ISO/IEC, ANSI, DIN, IEEE, and EIA. Known-compliant transceivers for specified/referenced channels are listed in this document as examples only. Any transceiver meeting the specifications can be used.

C. OBJECTIVES

The objectives of the LCSC are:

- To create the technical specification for any new channel
- Write specification that can be used for the LonMark Layer 1-6 Interoperability Guidelines
- Help updating the LonMark Layer 1-6 Interoperability Guidelines with any new channel definitions
- Write and define the physical test case specification for the new channel. The Test Case Specification should include the following:
 - describes the purpose of a specific test;



- identifies the required inputs and expected results;
- provides step-by-step procedures (test scripts) for executing the test, and
- outlines the pass/fail criteria for determining acceptance
- Help to setup the physical test environment to perform test and to ensure interoperability

D. COMPOSITION

Membership in the LCSC is open to all LonMark Members in good standing. The LonMark Technical Director or Committee Chairman may invite other interested persons to attend a particular meeting or to participate in the specification development.

The committee chairman schedules committee meetings, at times and locations agreed on by the committee members. Notification of LCSC meetings will be delivered in by email not less than 10 days before the date of the meeting. The meeting notice shall specify the date, time, place and purpose of the meeting and provide sufficient information so that Members can form a reasonable judgment as to the business to be transacted at this meeting.

A quorum shall be a simple majority of participating LonMark members in good standing. Each member company has one vote. All matters are decided by a simple-majority vote. A record of any voting shall be included in the published meeting minutes.

E. LEADERSHIP

The LSSC shall have a Chairperson (Chair) who shall lead the process to get any new channel standardized. The Chairperson shall work with the LonMark Technical Director to support the efforts of the committee. The Chair may be asked to provide a report to the LonMark Board of Directors periodically.

F. CONFIDENTIALITY

Each Member shall be responsible for preserving the confidentiality of its own proprietary information and shall, to the extent reasonably possible, refrain from exchanging confidential information and trade secrets while participating in meetings and activities. Each member shall be required to observe the confidentiality of other members.

F. ANTITRUST POLICY

LONMARK International activities and communications shall not include any discussion or action that may be construed as an attempt to:

- Raise, lower, or stabilize prices;
- Allocate markets, territories, or product lines;
- Prevent any person or business entity from gaining access to any market or to any customer for goods or services;



- Prevent or boycott any person or business entity, including specific manufacturers or customers, from obtaining products or services freely in the market;
- Foster unfair trade practices;
- Assist in monopolization or attempts to monopolize; or
- In any way violate applicable federal or state antitrust laws and trade regulations.

G. COMMITTEE WORK PRODUCT OWNERSHIP, PARTICIPATION, AND AUTHORITY

It is understood that all work products developed by the committee are the property of LonMark International on behalf of the membership.

All work products produced are to be available to all LonMark International members equally. Any LonMark International member in good standing may participate in the committee activities or gain access to the work items produced by the committee.

The committee or its leaders shall not enter into any binding commitments on behalf of LonMark International.

The LonMark International Board retains the authority to cease any activity of the committee not in alignment of the organizations objectives.

LonMark Channel Standardization Committee

Working Group Objectives

1. HD-PLC Working Group

- a. The HD-PLC working group is established to standardize a new powerline transceiver and media type for LonWorks with the intent to be fully interoperable with any and all other LonMark Media Types
- b. The following are the objectives of this working group:
 - i. Develop the channel parameters for a new high speed, global power line channel
 - ii. Develop, test and evaluate the conformance testing requirements for LonMark Certification of devices
 - iii. Develop the standards documentation required to bring the new HD-PLC Channel to CEN, ANSI, and ISO as a new EN 14908-x, ANSI/CTA-709.x and ISO/IEC 14908-x international standard
 - iv. Develop market applicaitons, demonstrations, education, and promotional activities

2. High Perfomance RF Working Group

- a. The HP-RF working group is established to standardize a new RF transceiver and media type for LonWorks with the intent to be fully interoperable with any and all other LonMark Media Types
- b. The following are the objectives of this working group:
 - i. Develop the channel parameters for a new high speed, global RF channel
 - ii. Develop, test and evaluate the conformance testing requirements for LonMark Certification of devices
 - iii. Develop the standards documentation required to bring the new RF Channel to CEN, ANSI, and ISO as a new EN 14908-x, ANSI/CTA-709.x and ISO/IEC 14908-x international standard
 - iv. Develop market applicaitons, demonstrations, education, and promotional activities

3. LON IP Working Group

- a. The LON IP working group is established to standardize a new LON over IP/Ethernet media type for LonWorks with the intent to be fully interoperable with any and all other LonMark Media Types
- b. The following are the objectives of this working group:
 - i. Develop the channel parameters for IP channel type using standard Ethernet transcievers



- ii. Document the requirements for interfacing to a LON IP channel from IoT applications
- iii. Develop, test and evaluate the conformance testing requirements for LonMark Certification of devices
- iv. Develop the standards documentation required to bring the new IP Channel to CEN, ANSI, and ISO as a new EN 14908-x, ANSI/CTA-709.x and ISO/IEC 14908-x international standard
- v. Develop market applications, demonstrations, education, and promotional activities
- vi. Liaison with the LonMark Web Services working group to ensure interoperability

4. LonMark Web Services Working Group

- a. While not specifically a new channel type, this working group is established to support the new LON IP channel and other channels that require a suite of web services to enable host applicaiton interoperability with interfaces to LonMark certified devices.
- b. This working group has the following key objectives:
 - i. Identify the key web services required to enable seamless interoperability of LonMark field devices and IP enabled applicaitons
 - ii. Develop web service profile models for the standard LonMark suite of interoperable profiles (~150 currently)
 - iii. Ensure cross platform support for all new web services
 - iv. Engage with LonMark member companies developing solutions requiring a LonMark suite of web services
 - v. Establish the requirements for an ISO/ANSI/CEN standard for web services as an extension to the EN 14908-x, ANSI/CTA-709.x and ISO/IEC 14908-x international standards
 - vi. Advise other working groups on cross over items to ensure LonMark Interoperability Guidelines are consistant