



September 8, 2023

HD-PLC Alliance Promotes International Standardization Technology Draft 1.0 of Next-Generation Communication Standards Approved by IEEE P1901c Working Group!

As the world's first^{(*)1}, wired, wireless, and subsea communications
can be realized in a single device!

September 8, 2023 (JST), Fukuoka, Japan – HD-PLC Alliance^{(*)2} (hereinafter referred to as the "Alliance") announced the IEEE Association for Standardization^{(*)3} at the IEEE P1901c Working Group Meeting (held in this August) that the technology proposed by Panasonic Holdings Corp., a member of the Alliance, has been approved as the Technical Draft 1.0 for IEEE P1901c.

IEEE P1901c standard is a next-generation communication standard as a communication method for the IoT era, based on the Wavelet OFDM method developed by Panasonic Holdings^{(*)4}. It is the world's first standard that allows users to use too much restricted, various communication media (or any media: including wired, wireless and subsea) on a single device.

Wavelet OFDM method is the basic technology of HD-PLC promoted by the Alliance^{(*)5}, and has already been adopted as the international standard IEEE 1901-2020. It has been widely introduced around the world as an IoT communication means for in-building, factory and social infrastructure.

IEEE P1901c standard enables wired communication over various communication media (power lines, coaxial lines, and dedicated communication lines) and further longer distances. Additionally, as wireless communication, short-range wireless communication^{(*)6} that can be secured and limited in communication range by using weak radio waves using antennas is possible, and furthermore IoT communication^{(*)7} under the sea, which was previously considered difficult, will be possible, too.

In addition to the 4th generation HD-PLC compliant with the international standard IEEE 1901-2020 currently being promoted, the Alliance will actively promote the IEEE P1901c standard as a next-generation IoT communication system for any media. Additionally, we will gradually build a communication compatibility certification system that supports this standard.

Moreover, we plan to introduce this method at the upcoming WSPLC to be held in Mannheim, Germany on September 27 28, 2023^{(*)8}.



Notes:

- *1: Communication technology that realizes wired communication (communication using power lines, dedicated communication lines, etc.), wireless communication, and subsea communication with common modulation and demodulation technology, and it is the first international standard in the world.
- *2: A voluntary organization established by Panasonic Holdings Corporation (then Panasonic Corporation) in 2007 for the purpose of communication compatibility certification between HD-PLC compatible devices, international standard activities, and dissemination activities.
- *3: IEEE is an abbreviation for Institute of Electrical and Electronics Engineers, U.S.A.
HD-PLC was adopted as a core technology in 2010 as a global standard for high-speed powerline communications. Its latest version IEEE 1901 std-2020 published in 2021.
<https://standards.ieee.org/standard/1901-2020.html>
- *4: Wavelet OFDM: Wavelet refers to a function of localized waves (waves of finite length that decay quickly). It is used for frequency analysis by applying Wavelet conversion to the data. In this technology, a type of discrete Wavelet transformation is used for OFDM.
- *5: HD-PLC™ or HD-PLC™ mark is a registered trademark or trademark of Panasonic Holdings Corporation in Japan and in other countries.
- *6: Panasonic Holdings Corporation announced Wavelet OFDM's short-range wireless communication technology as PaWalet link technology in November 2021.
<https://news.panasonic.com/global/press/en211110-2>
- *7: Optical wireless communication and acoustic wireless communication are conventionally known as subsea IoT communication technologies. Optical wireless communication is capable of high-speed communication, but there are problems with its use in environments where light does not reach, such as the deep sea, and acoustic wireless communication is capable of long-distance communication, but high-speed communication is an issue.
- *8: WSPLC MANNHEIM: 14th Workshop for Powerline Communications.
<https://hd-plc.org/media/event/wsplc2023>

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