No. NSAD-P0082E-1
Scope of disclosure:
Open to public

Standardization of the Nessum technology - IEEE 1901

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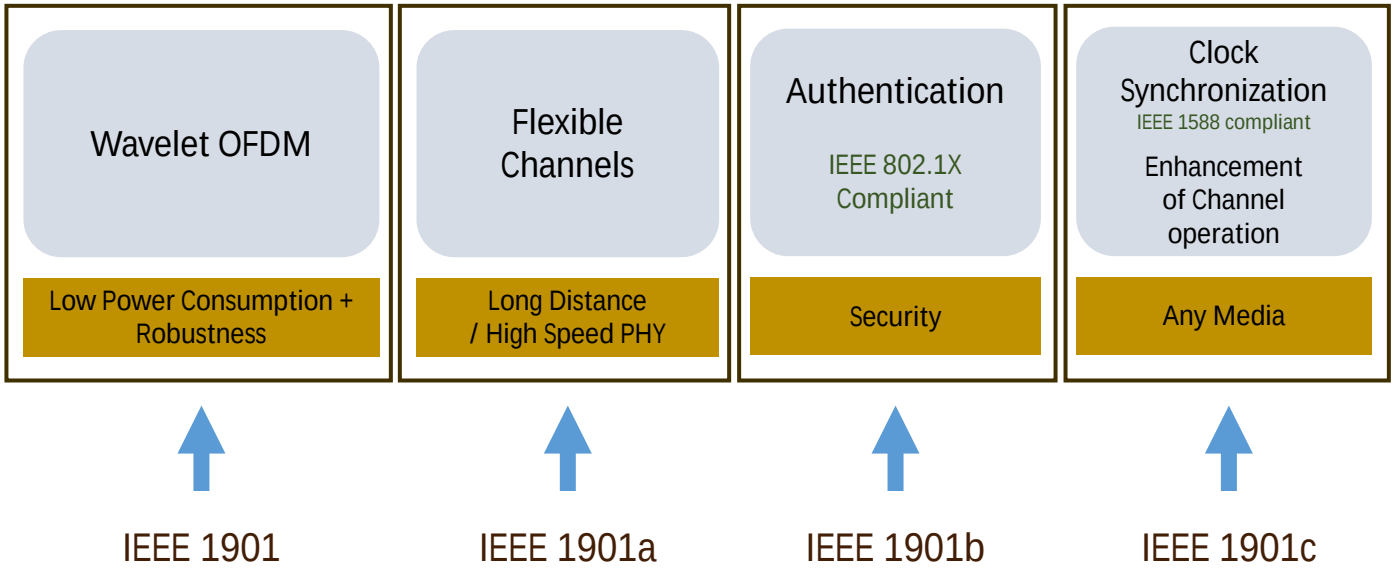
IEEE
Advancing Technology for Humanity

Standardization of the Nessum technology (IEEE 1901)



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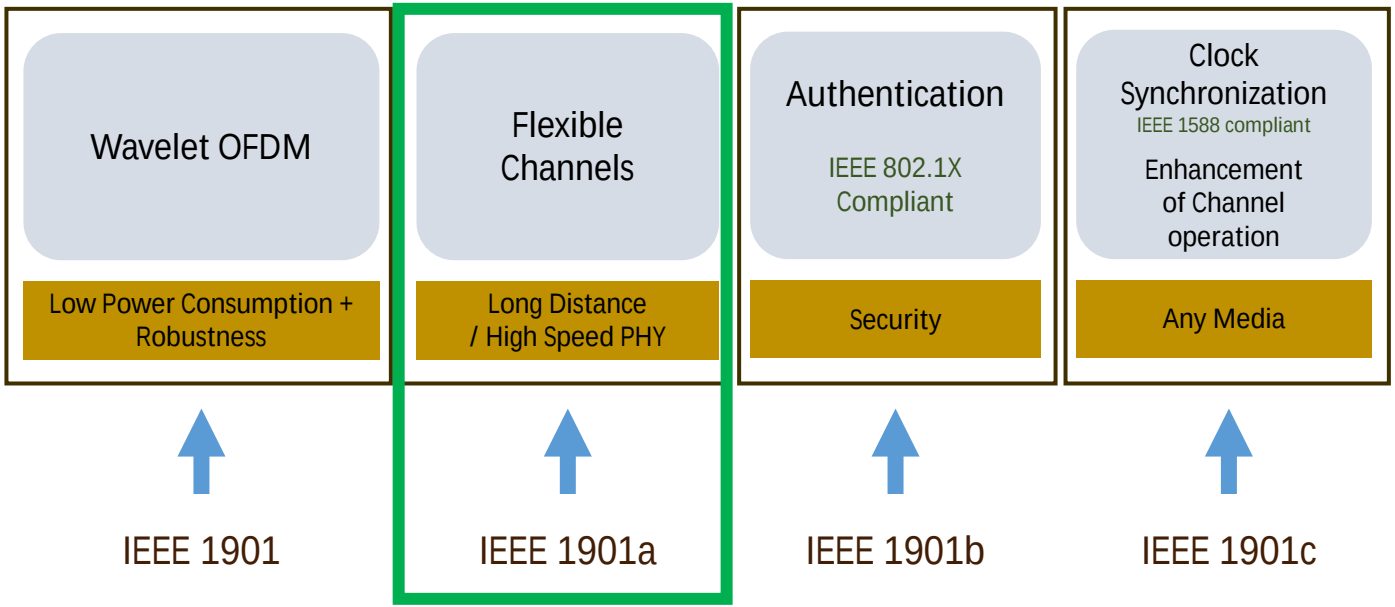
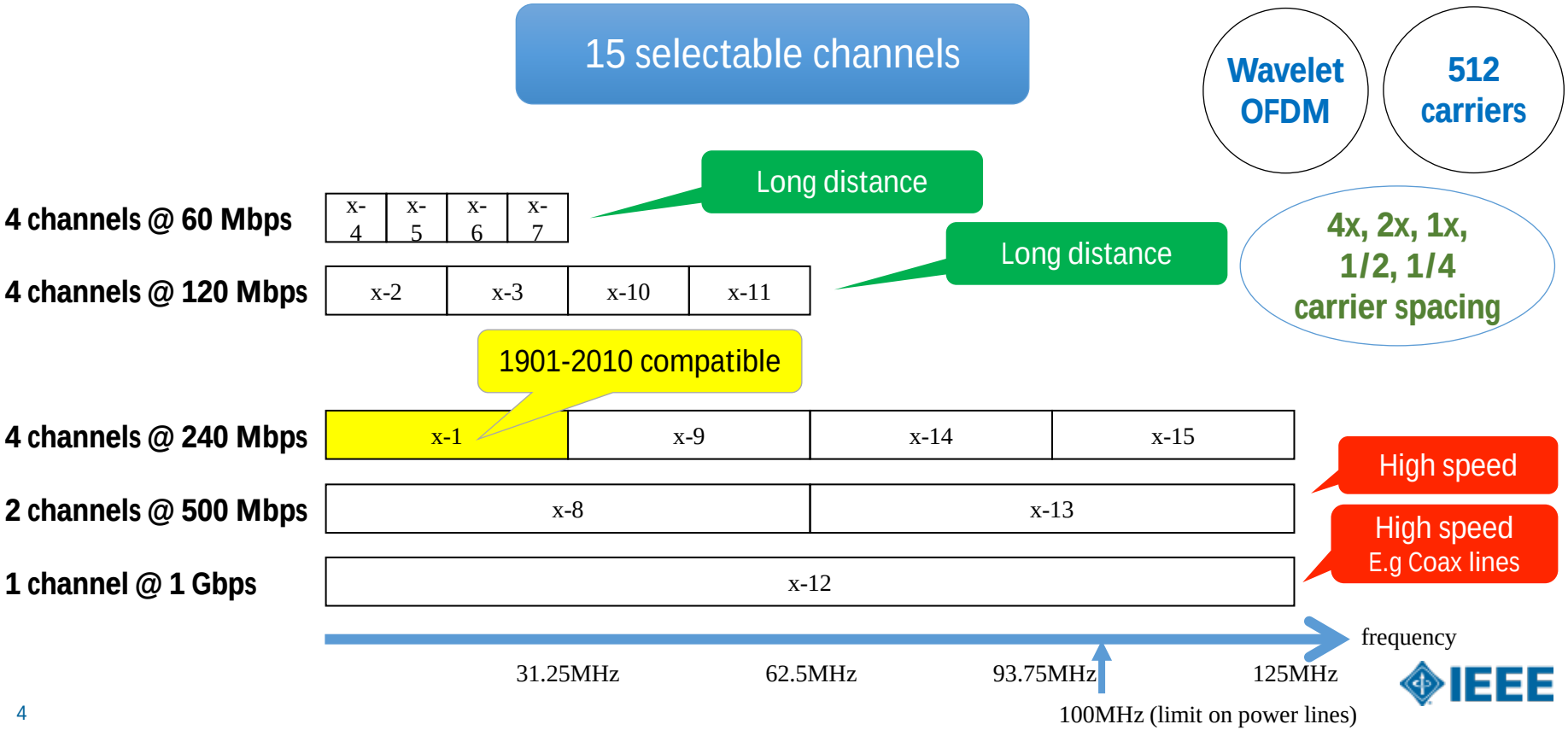
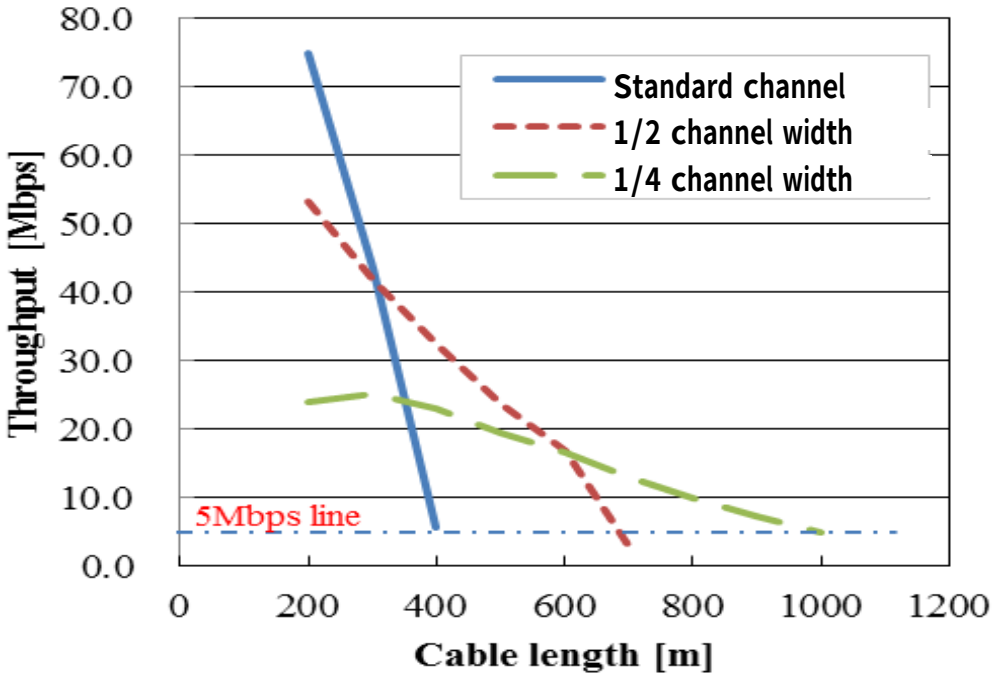


IEEE 1901a-2019 : Flexible Channel Wavelet physical layer



IEEE 1901a-2019 - Long range PHY

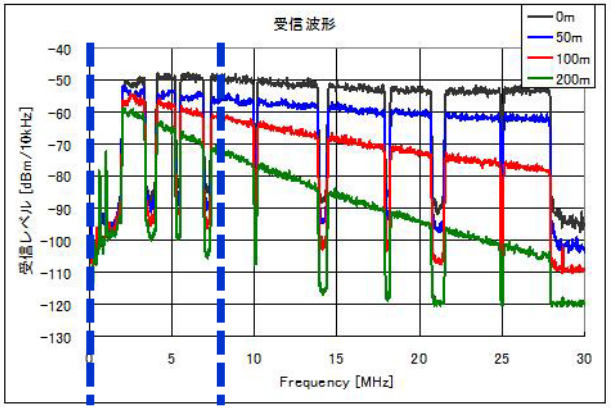
Distance can be increased by 2.5 times by using a ¼ channel width



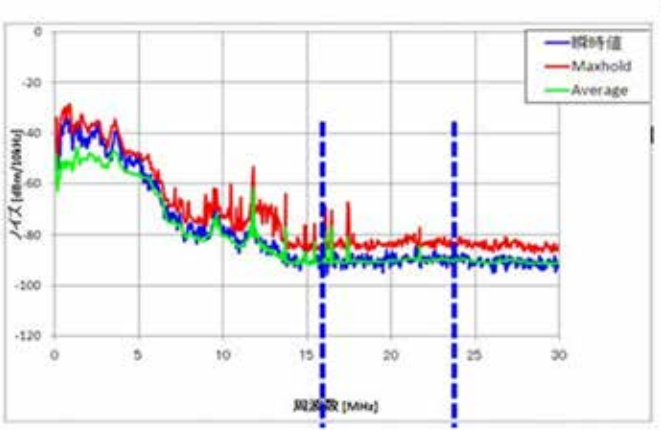
Simulation on VVF cable

IEEE 1901a-2019 - Channel Flexibility

If attenuation is an issue, select a channel in low frequencies



If noise is an issue, select a channel in a quiet frequency band



Frequency spectrum of noise

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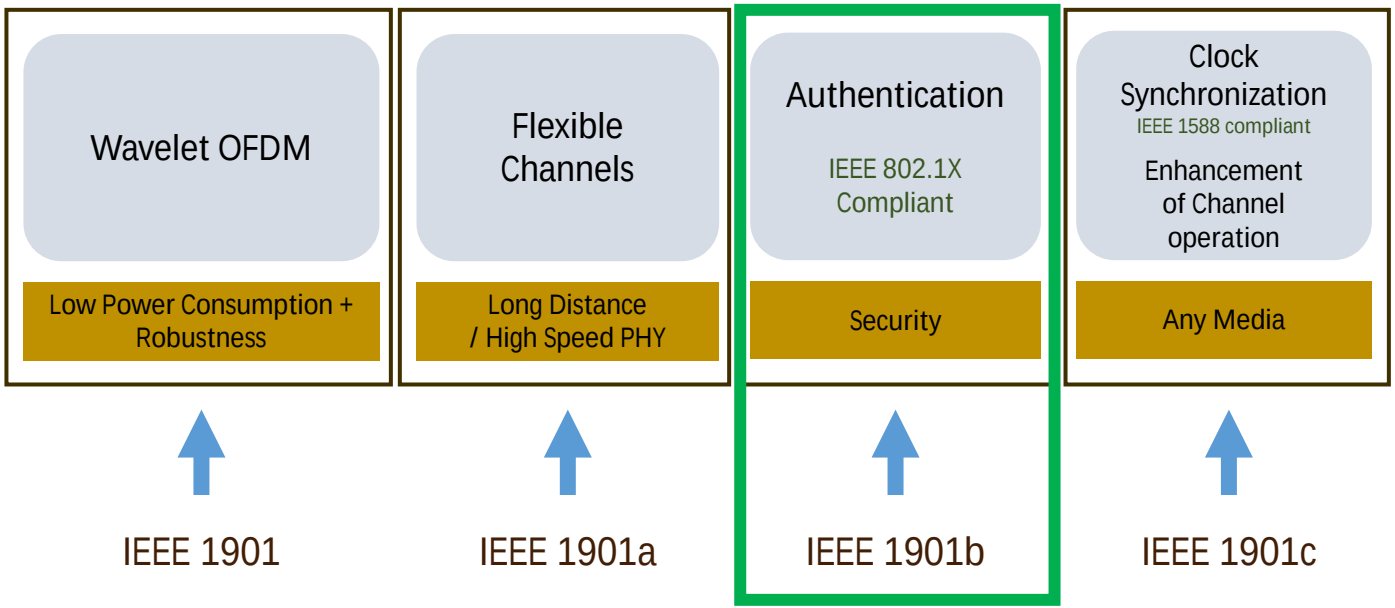
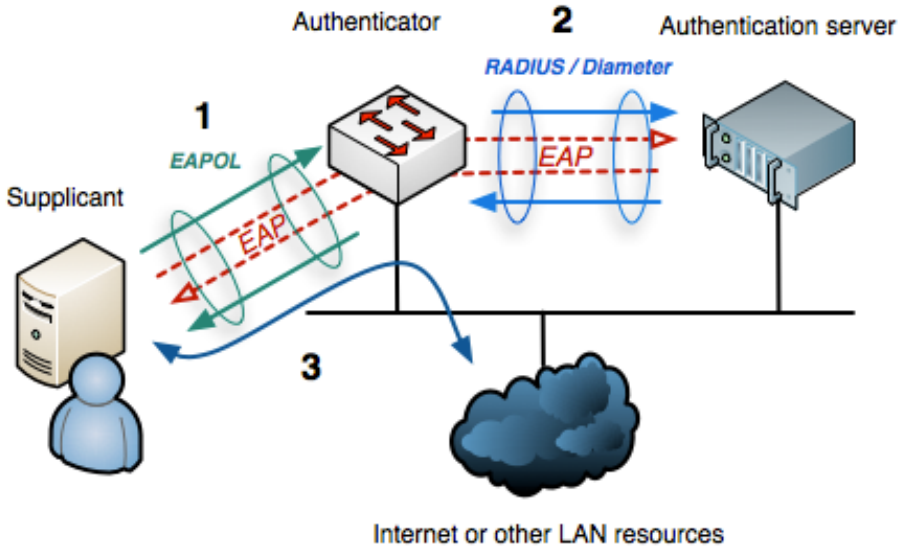


IEEE 1901b - 2021



Source: Wikipedia

Needed for Smart Grid and other markets

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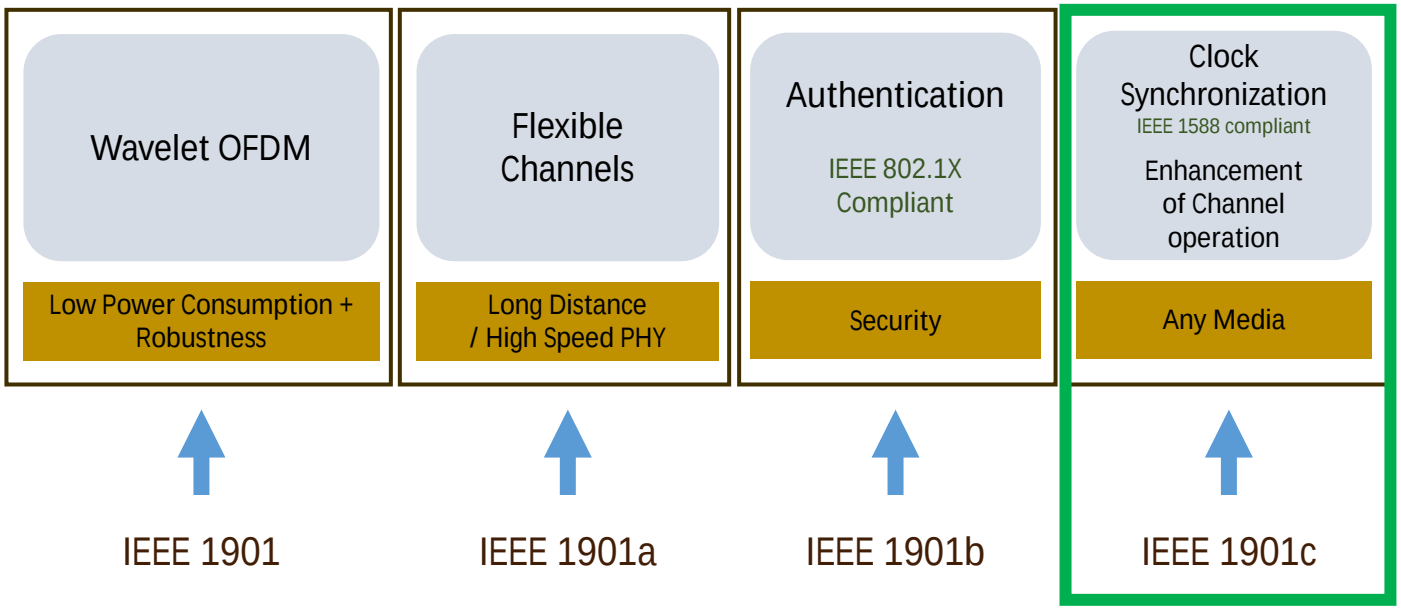


IEEE 1901c-2024

Usable for communications on any media

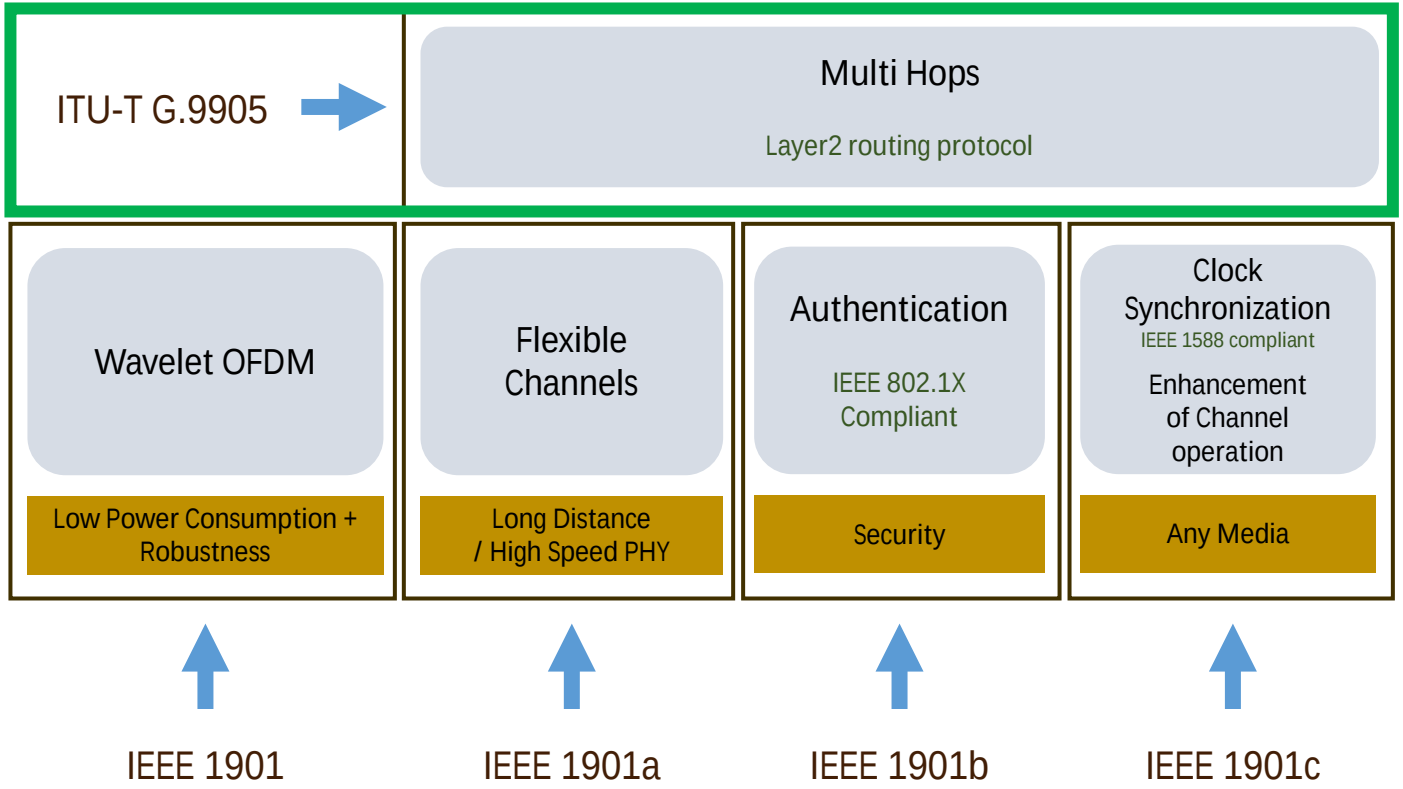
- Communications on power lines (AC or DC), coaxial cables, signal cables, optical fiber, and communications using light (visible, infrared), and radio waves

Supports IEEE 1588-2019 Precision Time Protocol (PTP version 2.1)

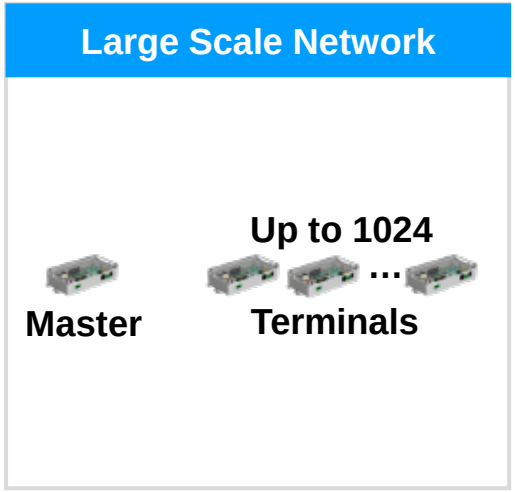
12 new channels in low frequencies DC – 15.625 MHz

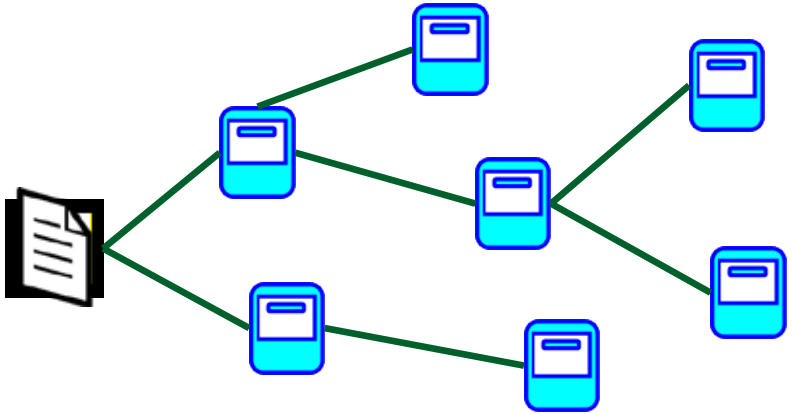
- Narrower channels: 3.9, 1.9 or 0.98 MHz width

Additional standardization



What is Multi-hop?





Up to 10 hops

Nessum certification

Interoperability and performance check is provided by Nessum certification

- Connectivity Verification Tests
- Tests performed with a golden device

Test labs

- Panasonic test house
- UL Taiwan