



# Nessum Alliance

Dramatic Upgrade to your HVAC and Digital Building Network

President and Chairman

Mitch Aramaki



AHR Expo 2025

# About myself

## Michimasa (Mitch) Aramaki

- President and Chairman, Nesssum Alliance
- Chairman, High Speed Powerline Communication Promoters' Alliance Japan (PLC-J)
- Secretary, IEEE 1901 Working Group
- Belong to R&D Sector of Panasonic Holding Corporation

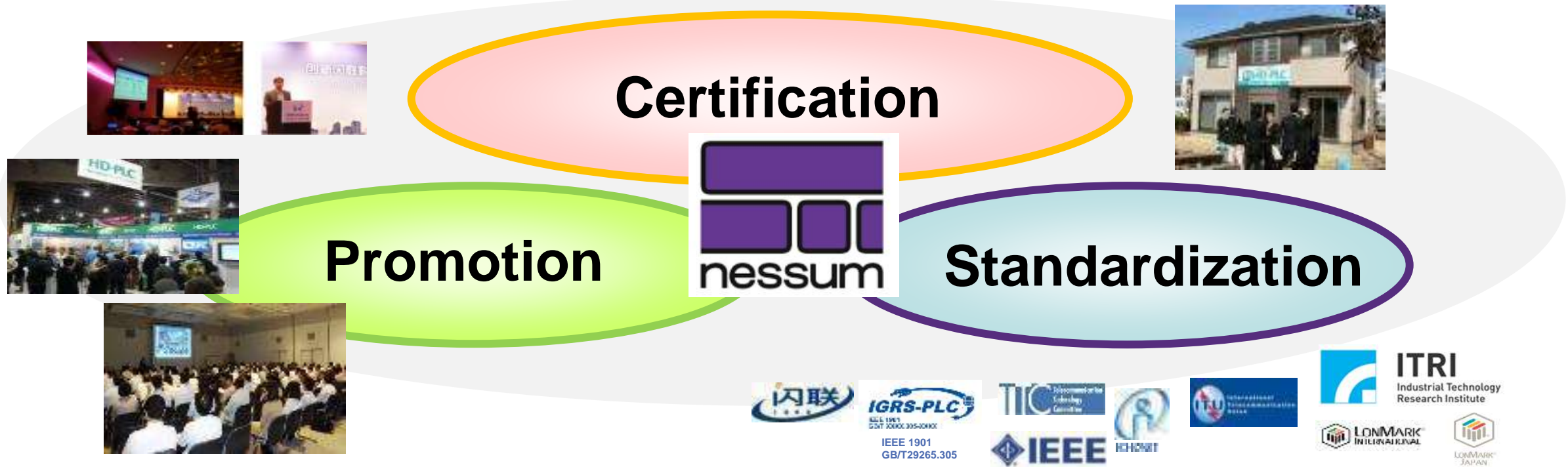
### Background

- Since 1990, responsible for the development of UNIX computers and mobile content distribution systems.
- Engaged in international standardization of IEEE 802.11 wireless and IEEE 1901 power line communication since 2001.



# Overview

Name	Nessum Alliance (former name HD-PLC Alliance)
Founder and Establish	Founded by Panasonic in 2007
Number of members	36 ( 31 companies, 5 organizations)
Placement	Fukuoka, Japan
WEB site	<a href="https://nessum.org">https://nessum.org</a>



# Mission and Goal of Nessum

We bridge the gaps in an IoT society and bring people's lives and industries to the next level.



# Members Roster : A global alliance with 40 members and partner

## Promoter



## Standard



KOITO ELECTRIC INDUSTRIES, LTD.



## Start-up



## Supporter

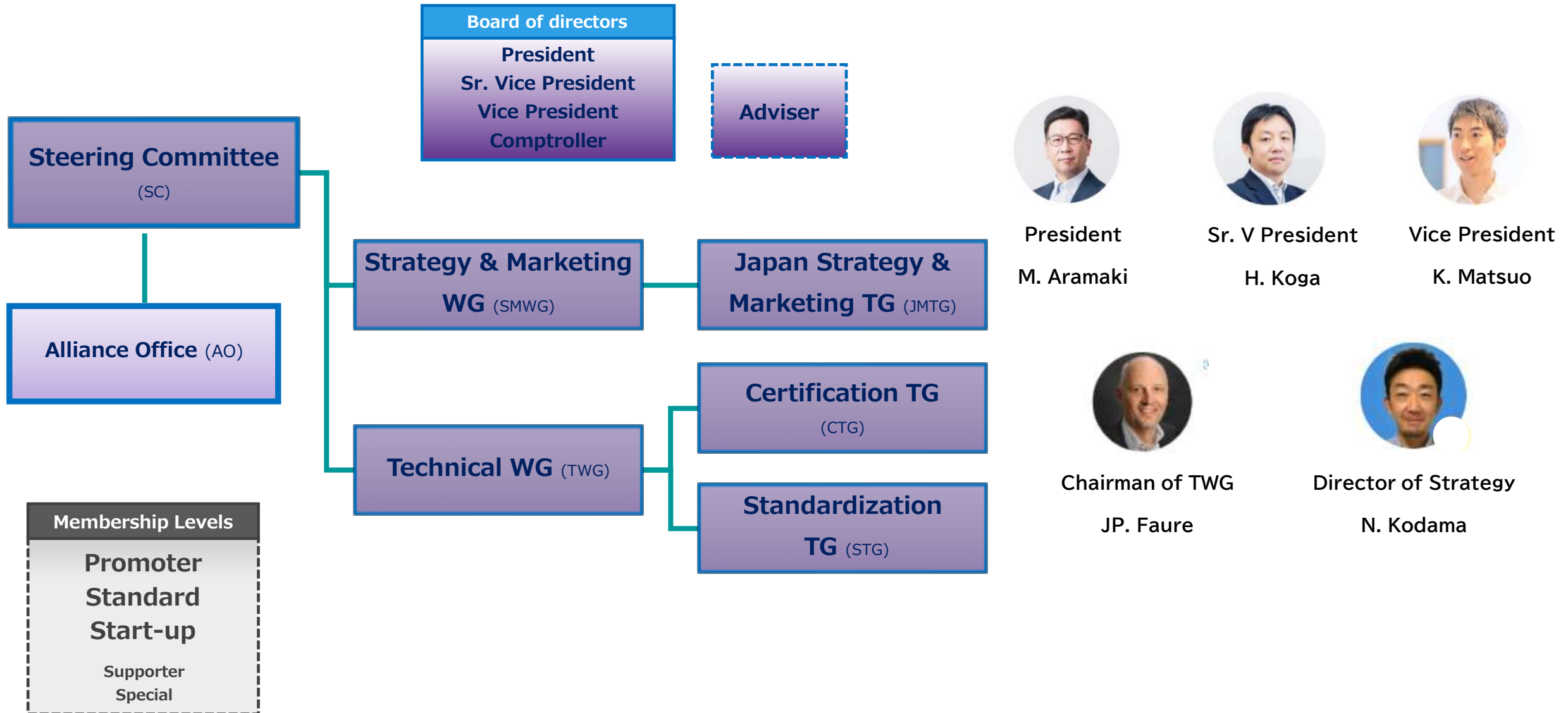


## Special Member



## Associate Partner

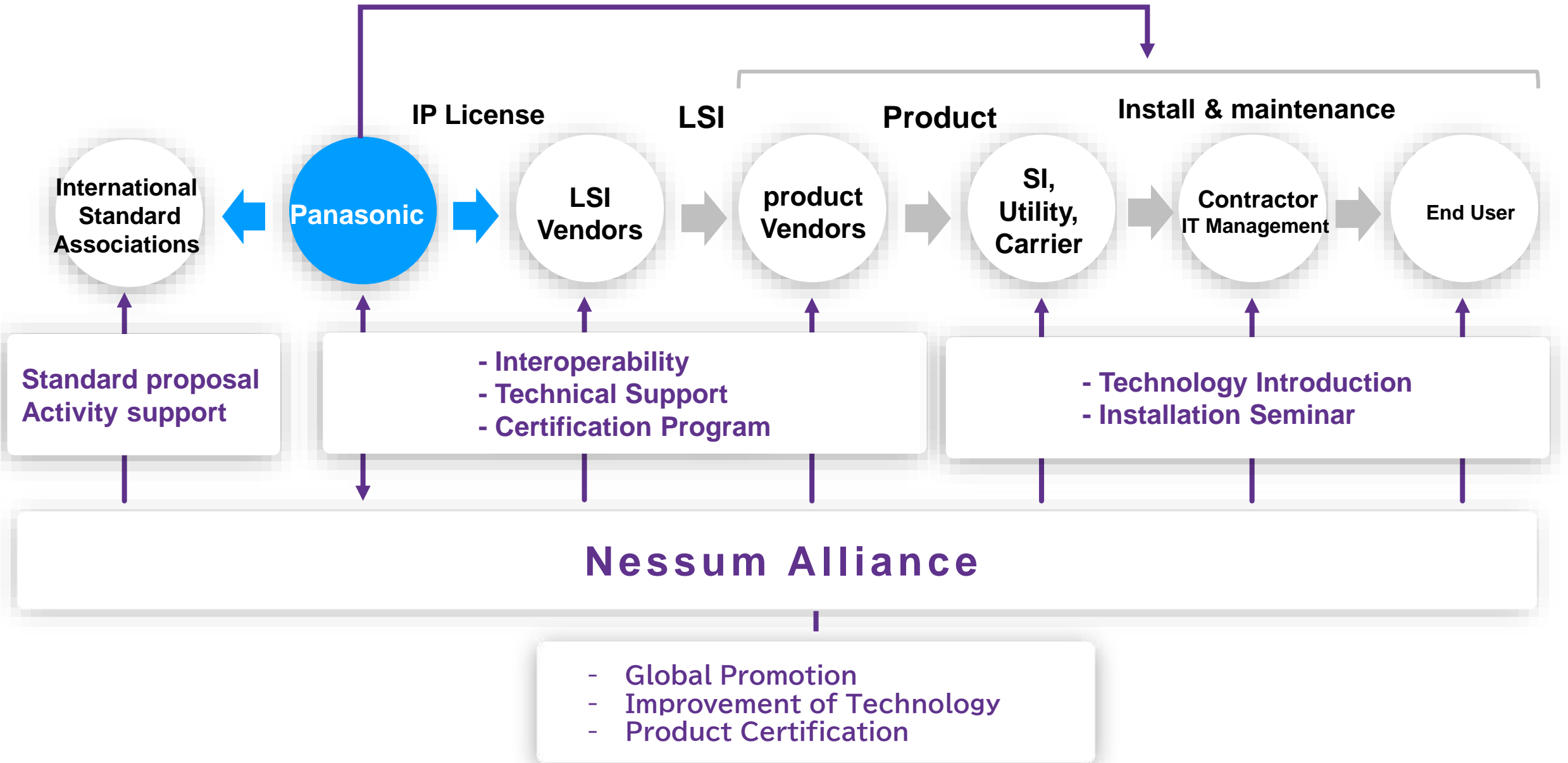




# History in 17 years

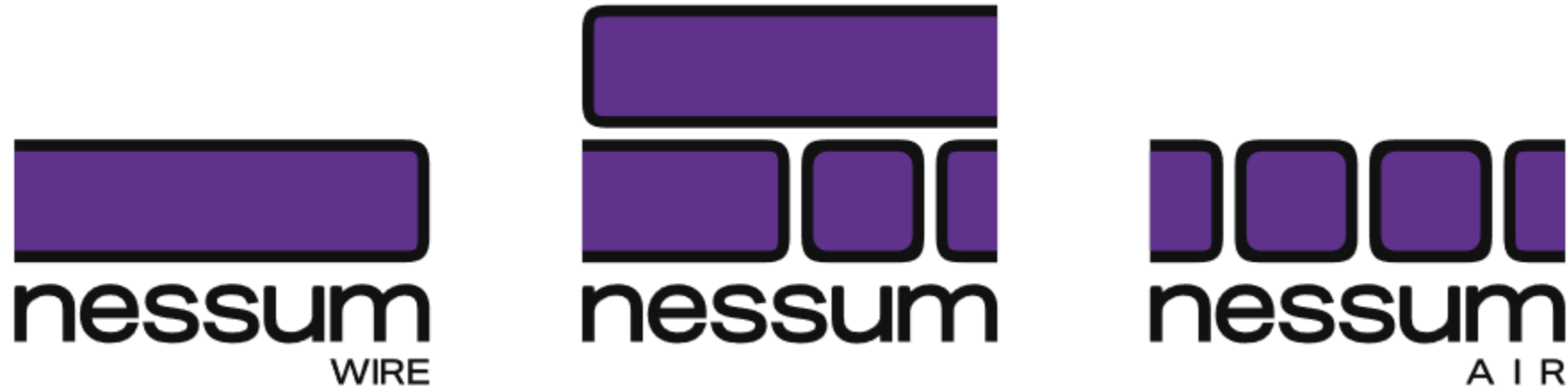
- 2007 **HD-PLC Alliance** was established in Japan
- 2011 IEEE 1901 wavelet OFDM certification program
- 2011 ITU-T G.9972, Coexistence mechanism for different BPL system
- 2013 Japanese Standard for Smart Meter JJ300.20&21 (echonet light)
- 2013 China National Standard for IGRS PLC GB/T 29265.305-2012
- 2015 ITU-T G.9905 MultiHops CMSR for BPL
- 2017 **LON ver HD-PLC approved as ISO/IEC 14908 (ANSI/CTA 709.8)**
- 2018 IEEE 1901-2020 released
- 2019 IEEE 1901a published
- 2022 IEEE 1901b published
- 2023 Renamed to **Nessum Alliance**
- 2024 IEEE 1901c was published

# Supported Total Value Chain





# Nessum certification logos



Nessum Core technology developed by Panasonic, available over various communication media such as wired, wireless, and underwater. It is standardized internationally as IEEE 1901.

# Reasons for Nessum WIRE adoption

1. Low-cost network construction



Camera



Video intercom



Street lights

2. Faster wired communication



PV



HVAC



Video intercom



Smart Meters

3. Higher security



Chemical plants

4. Wireless complements



Elevators



Underground and tunnel



Ship

5. Long distance



Smart Meters



Buildings



Factories

6. Reduce cables



Robots



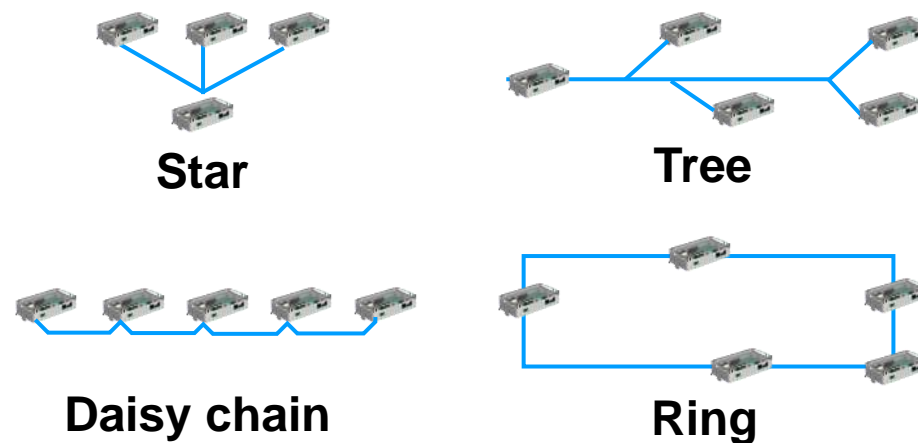
Underwater drone

# Important Features of Nessum WIRE

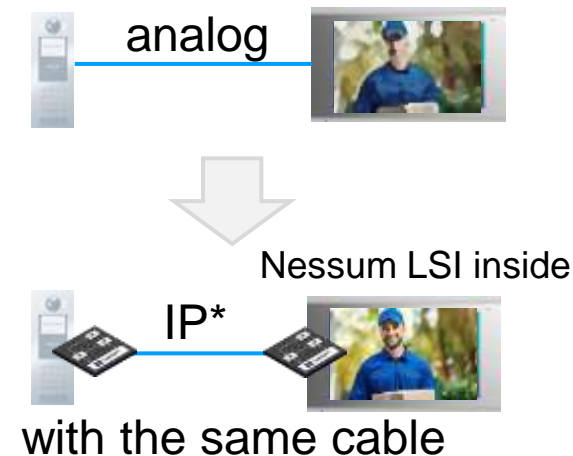
## Large Scale Network



## Free Topology



## IP Communication



## High Speed

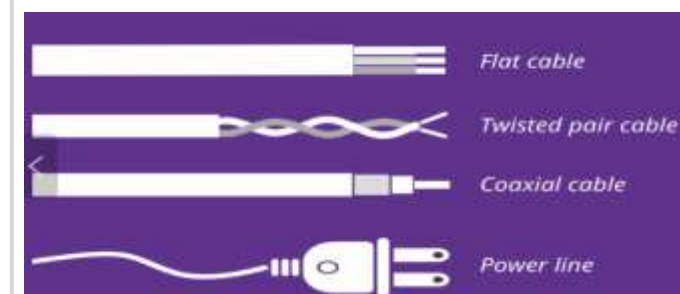
**Mbps class** translation

※ depend on cable types

## Secure

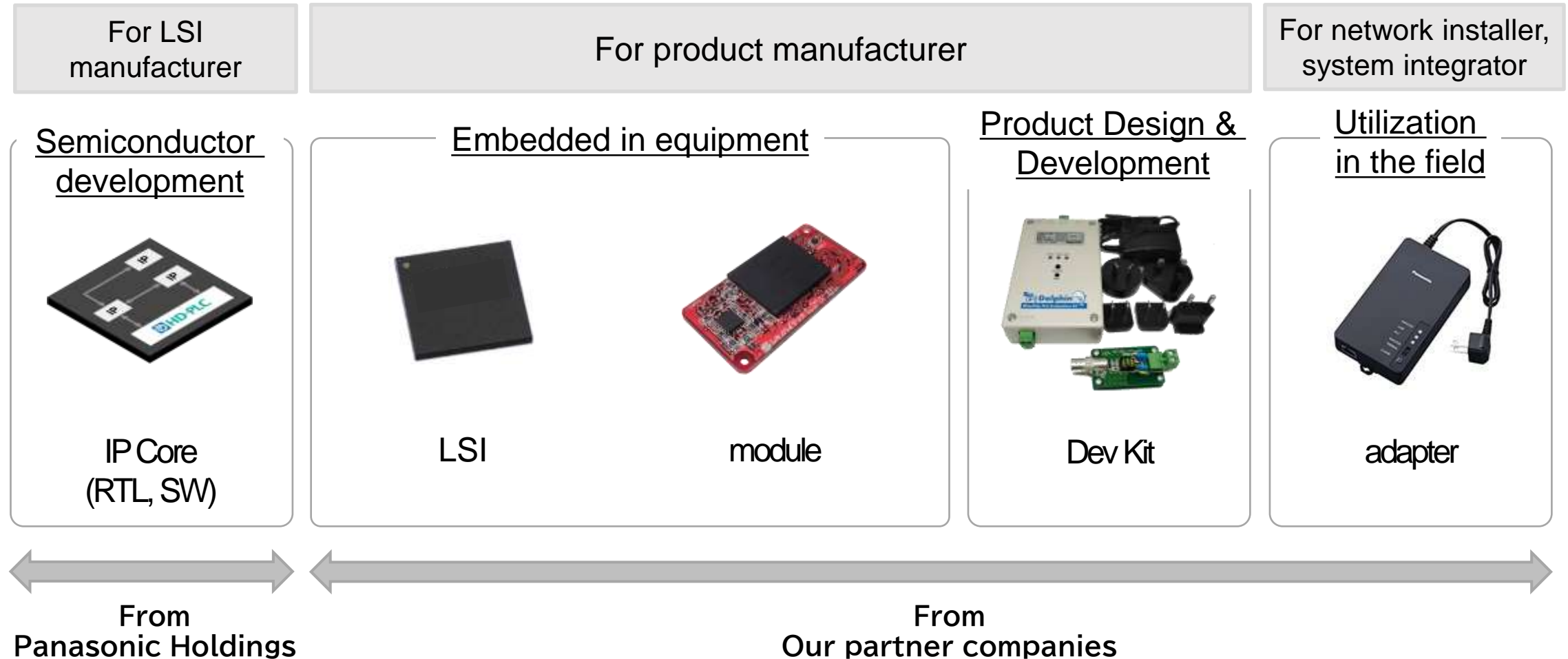
- Encryption with AES128bit
- IEEE 802.1x authentication with IEEE 1901b

## Any wire



\*Serial communication bridges are also possible.

## Products and expertise to suit your application



[Browse all Products | Nessum Alliance](#)






# Driving Innovation in Communication for the IoT Era!

<p>Wired communication prioritizes security</p>  <p>Plant security systems</p>	<p>Thorough monitoring with existing lines</p>  <p>Plant visualization systems</p>	<p>Fewer breakdowns, more production</p>  <p>Smart factories</p>	<p>Underwater wireless communication for IoT coastal works</p>  <p>Underwater drone systems</p>
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Smart Industry

<p>Confined spaces are our speciality</p>  <p>Wi-Fi environment in a tunnel</p>	<p>Reliable power supply based on one-on-one communication</p>  <p>e-Mobility power management systems</p>	<p>Close to perfect parking management system</p>  <p>Mobility sharing management systems</p>	<p>Traffic safety with leading technology</p>  <p>Smart traffic systems</p>
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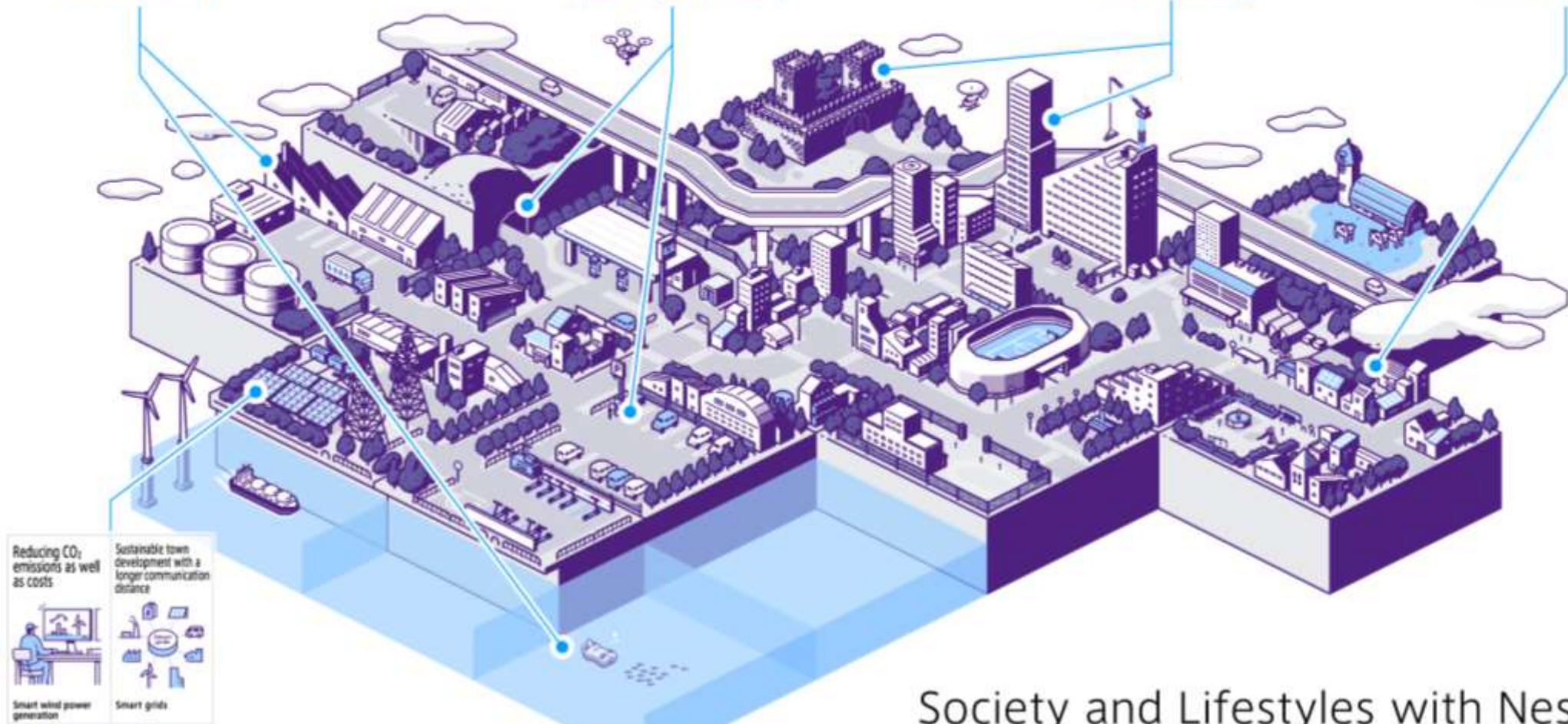
Smart City & Mobility

<p>Less damage to buildings, greater peace of mind</p>  <p>Surveillance systems for historic landmarks</p>	<p>Simple wiring, simple maintenance checks</p>  <p>Integrated elevators</p>	<p>Easy construction &amp; eco solutions for the entire building</p>  <p>Smart HVAC systems (commercial air conditioning)</p>
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Smart Building

<p>Even the installation time can be reduced</p>  <p>Smart locks</p>	<p>Higher-speed communication helps energy conservation</p>  <p>Home Energy Management System (HEMS)</p>
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Smart Home



<p>Reducing CO<sub>2</sub> emissions as well as costs</p>  <p>Smart wind power generation</p>	<p>Sustainable town development with a longer communication distance</p>  <p>Smart grids</p>
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Smart Energy

Society and Lifestyles with Nessum



An isometric illustration of a smart city. It features various buildings, including a stadium, a wind turbine, and data storage units. The scene is set against a light blue background with stylized clouds. The overall theme is modern urban infrastructure and digital technology.

Dramatic Upgrade to your HVAC and Digital Building Network

**Thank you**

