



# Setting the Standard of Real-Time Location

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# Quuppa Company Overview

- Founded in 2012, spin-off from Nokia Research Center
- Technology has been developed by the founding team since 2005
- HQ in Finland; offices in Washington DC, Shanghai, Shenzhen, Beijing, Sydney, Mumbai and Dubai
- 500+ customers, of which 160+ business partners (system integrators, service providers, tag vendors,...)
- 2000+ systems delivered to 50+ countries
- Key achievements in 2019;



Wisehockey wins  
Finnish Hockey League  
and KHL league deals



Orange  
Global Partnership



Bluetooth 5.1 Standard  
in-line with  
Quuppa AoD/AoD



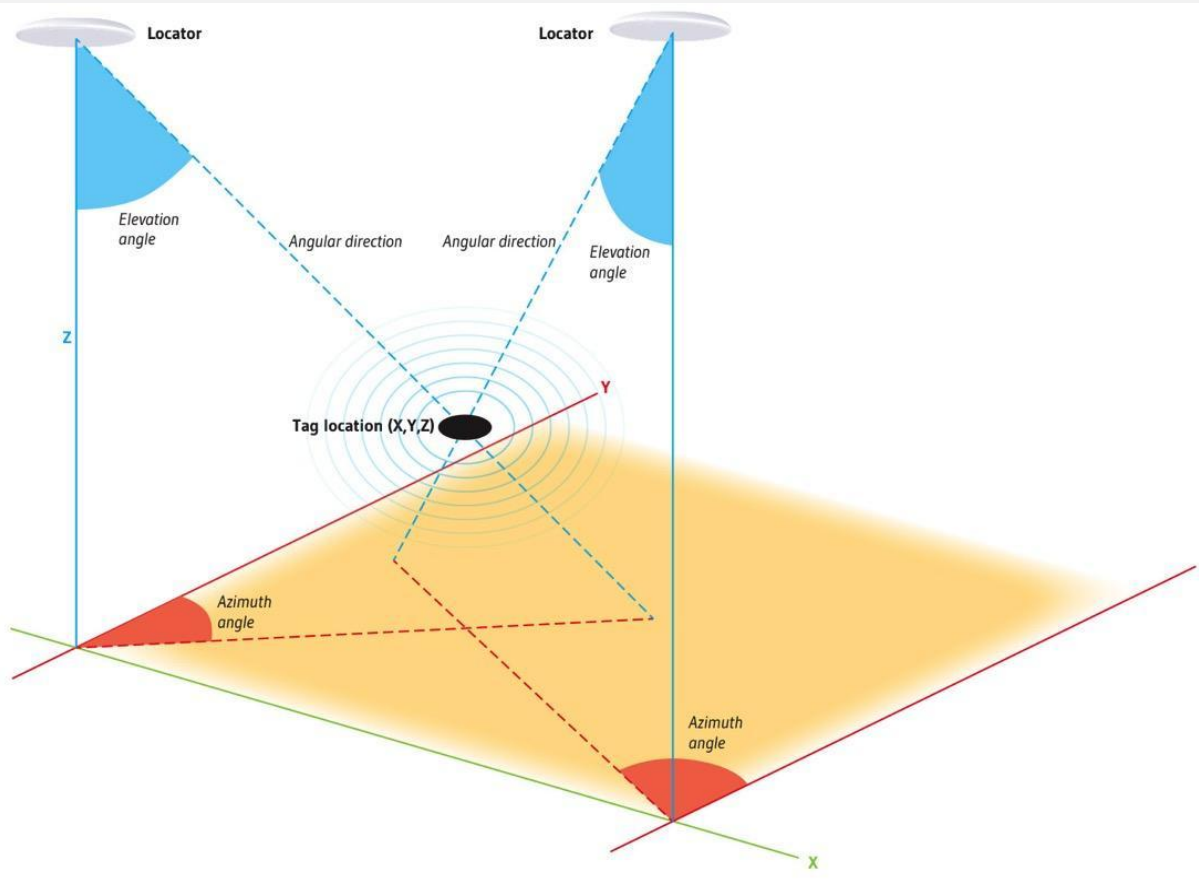
Nordic Semiconductor  
Global Partnership



# Quuppa Intelligent Locating System™

Offering & Main Benefits





## Quuppa Intelligent Locating System™

Standard Bluetooth Low Energy (Bluetooth LE) technology

Angle of Arrival (AoA) and Angle of Departure (AoD) methodologies

Advanced Positioning Engine

Advanced Software Tools

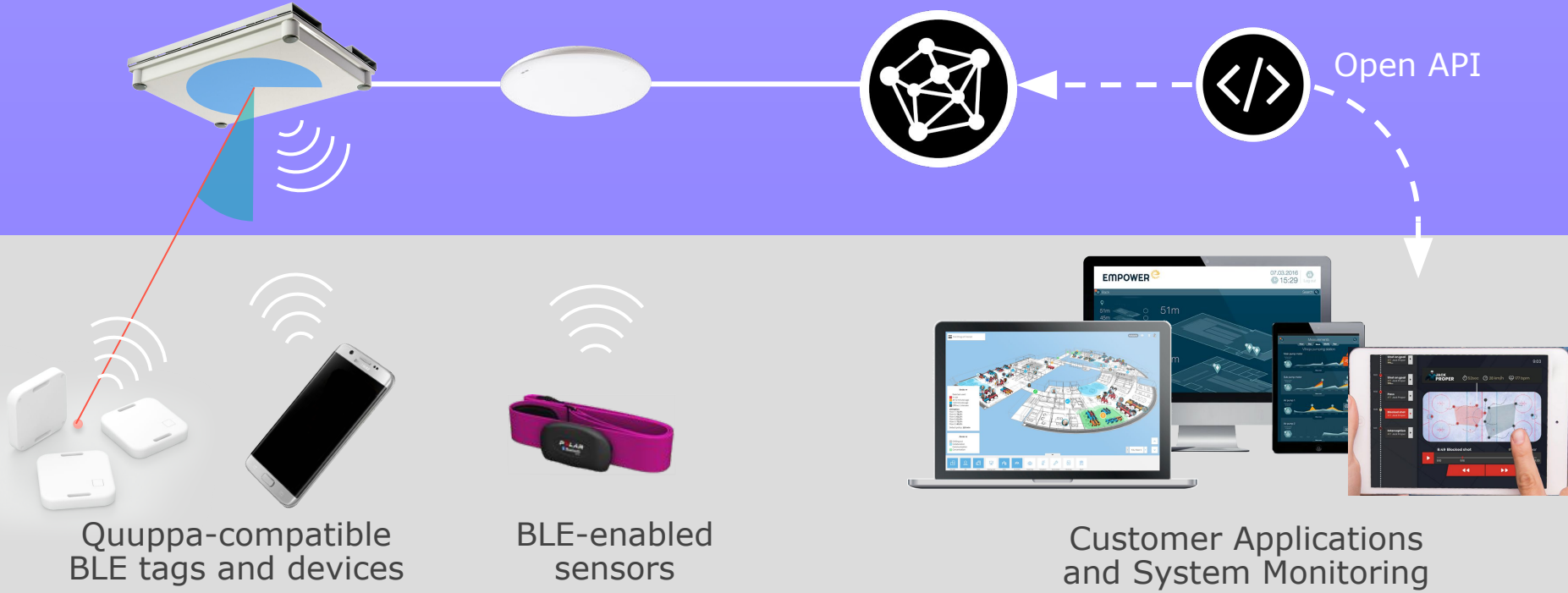


# Quuppa Intelligent Locating System™

Quuppa Locators

Quuppa Positioning Engine

Open API





# Key Features



Superior Accuracy



Open Tag Design



Long Battery Life



Real-time



IoT Gateway



Maintenance-free



Compatible



Open API

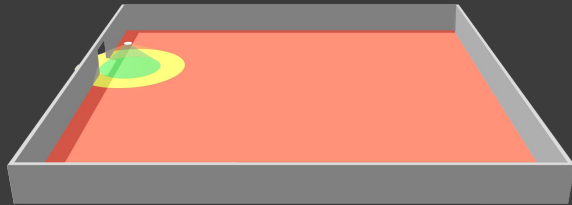


Interference-free



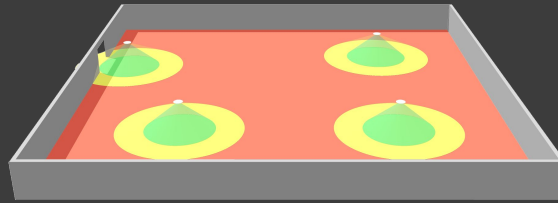
# A Versatile and Scalable Technology Solution Across Use Cases

**PRESENCE**  
"Building-level"



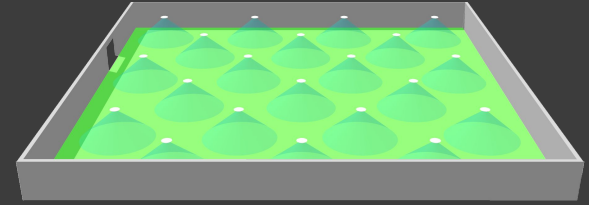
Inventory  
management

**PROXIMITY**  
"Zone-level"



Area/zone-level  
services

**POSITIONING**  
High-accuracy



Process optimisation,  
worker safety



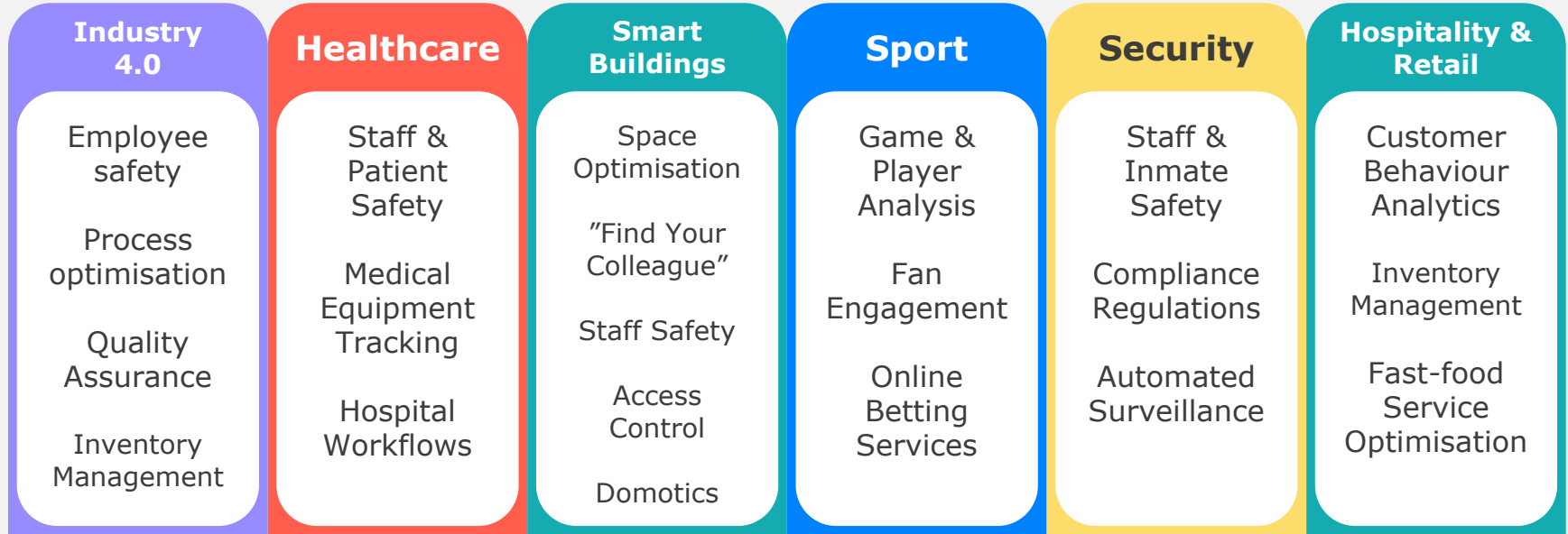
# Quuppa Partner Ecosystem







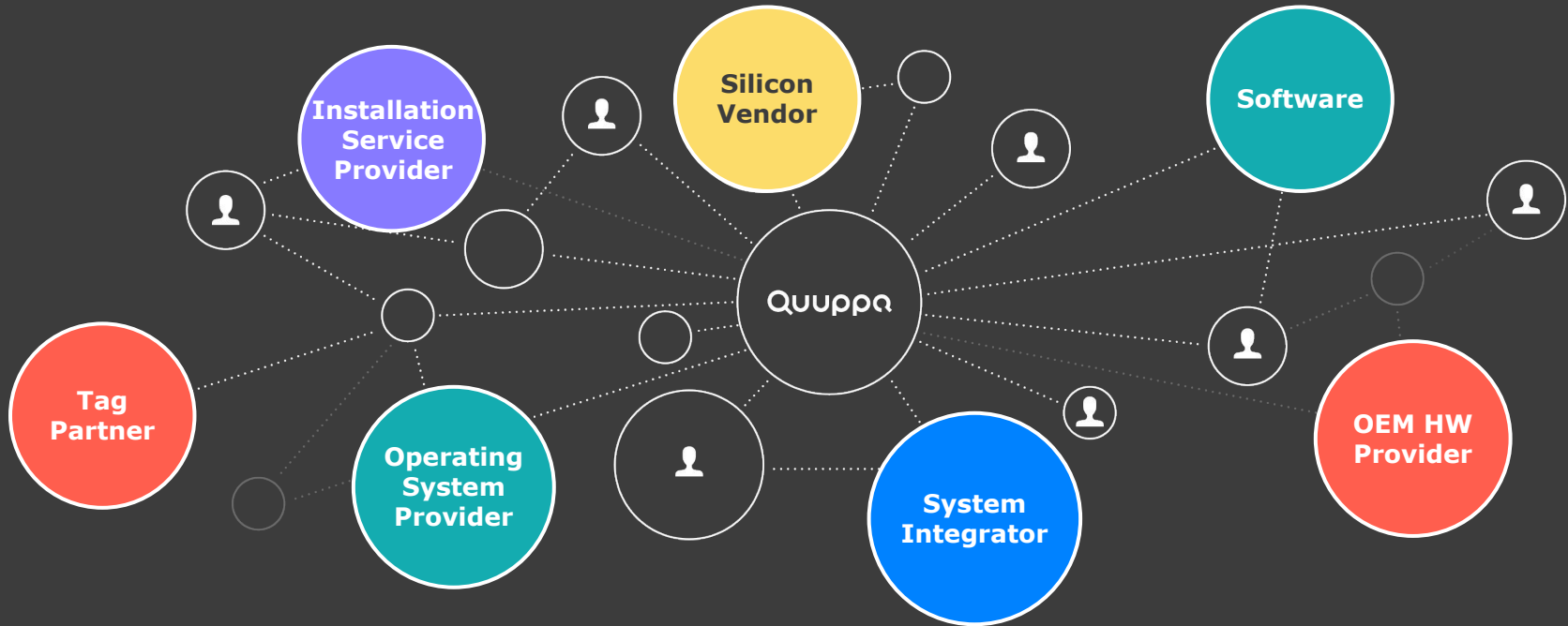
# Versatile Solution Across Industry Verticals



**Quuppa** Providing an open, versatile and scalable hardware and software platform for all industries



# Quuppa Partner Ecosystem - expanding across the whole value-chain





# Wide Range of Quuppa Compatible Tags, Sensors & Devices



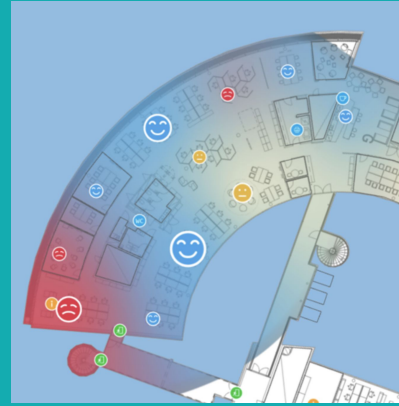


## Selected Reference Cases





# Smart Building Reference - Tieto Empathic Building



Tieto Empathic Building uses Quuppa's RTLS technology in office buildings to boost employee well-being, happiness, productivity and innovation. Find my workstation, colleague or a free meeting room are examples of just a few use cases that boosts happiness and increases the performance of the employees.

<https://www.tieto.com/en/what-we-do/data-and-ai/tieto-empathic-building/>





# Industry 4.0 Reference - worker safety in mines



Tagvance Mining System offers real-time location tracking of assets and miners. It has also the ability to carry environmental sensor data alongside the positioning data; temperature, humidity, pressure, air quality, sound, vibration, tilt, load, and stress sensor data types can be read via the Quuppa Locators.

<https://quuppa.com/case-study-dedeman-mining/>





# Smart hockey - Wisehockey deployed in 2 national leagues



Finnish Hockey League and Russian KHL League have selected Wisehockey solution to be used in all their arenas during season 2019/20. The Wisehockey solution is deployed in 40 arenas, providing real-time information like speed of the puck and players, distance covered, time on ice, puck possession and player trajectories.

In Finland, the local betting company Veikkaus and the TV broadcaster Telia are developing applications for the consumers based on the real-time player and match data.

<https://quuppa.com/finnish-hockey-league-and-wisehockey-sign-a-five-year-contract/>

<https://wisehockey.com/wisehockey-and-khl-sign-a-league-wide-contract-smart-pucks-and-chips-are-used-in-khl-every-day>





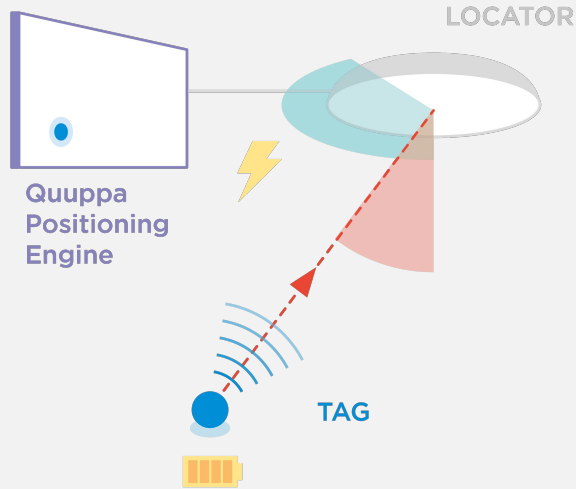
## Bluetooth 5.1 Standard

Direction Finding Feature launched using Angle of Arrival (AoA)  
& Angle of Departure (AoD) Methodologies

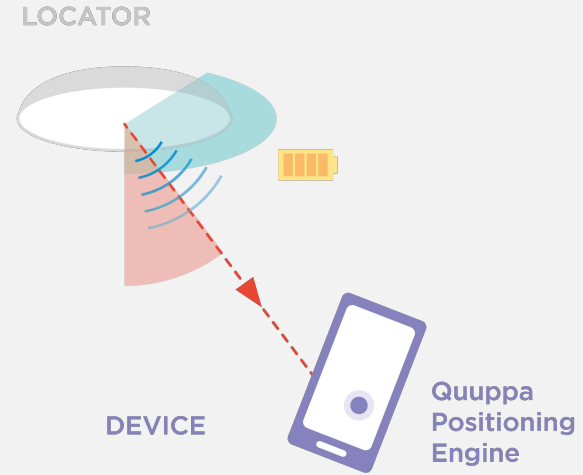




# Bluetooth Standard for Direction Finding Feature



**Angle of Arrival (AoA)**



**Angle of Departure (AoD)**



# Bluetooth Standard for Direction Finding Feature



Enhancing  
Bluetooth Location  
Services with  
Direction Finding

**KIRKLAND, Wash. – January 28, 2019** – The Bluetooth Special Interest Group (SIG) today announced a new direction finding feature that holds the potential to significantly enhance the performance of Bluetooth location services solutions. The new feature allows devices to determine the direction of a Bluetooth signal, thereby enabling the development of Bluetooth proximity solutions that can understand device direction as well as Bluetooth positioning systems that can achieve down to centimeter-level location accuracy.



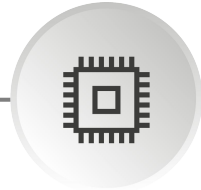


# Quuppa Technology Adoption Across the Ecosystem



## Bluetooth® Specification

Quuppa is closely following the development of **Bluetooth 5.1 Standard** (direction finding feature) to ensure alignment with Quuppa ILS roadmap.



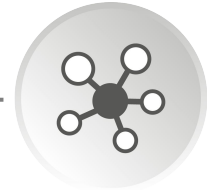
## Chips & Stacks

Partnership signed with **Nordic Semiconductor**. Ongoing discussions with several other silicon vendors.



## Locators & Tags

More than **20 tag vendors** have already or are developing Quuppa Compatible and Approved tags.



## Location Systems

Strongly growing Quuppa Partner Ecosystem, with **160+ partners** providing solutions powered by the Quuppa Intelligent Locating System to a wide range of industries.



## Summary

Quuppa unlocks the full potential of indoor location-based services without compromising accuracy, compatibility and cost.

Quuppa enables a Partner Ecosystem of infrastructure, devices and service providers to offer accurate indoor location services.

Quuppa is the pioneer of the Bluetooth AoA/AoD standard for global indoor location services, with the current products being already standard-ready.



# Thank You

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