

Introduction to the FiRa Consortium

July 28, 2020



UWB TECHNOLOGY

Our vision is to provide seamless user experiences using secured fine ranging and positioning capabilities of interoperable UWB technologies.

Our
Vision

UWB Transforms Connectivity Experiences

With superior sensing and positioning capabilities

	Smart Home and Consumer	Smart Cities and Mobility	Smart Retail	Smart Building and Industrial
Hands-Free Access Control	<ul style="list-style-type: none"> Residential access control Logical access to personal devices 	<ul style="list-style-type: none"> Parking garage access control Vehicle digital key (standardized by CCC) Rider identification (private transport services) 	<ul style="list-style-type: none"> Unmanned store access 	<ul style="list-style-type: none"> Physical access control Logical access control
Location-Based Services	<ul style="list-style-type: none"> AR gaming 	<ul style="list-style-type: none"> Indoor navigation Bike sharing (find a bike nearby) Ride sharing (precise positioning) Driverless valet parking and pick-up 	<ul style="list-style-type: none"> Foot traffic and shopping behavior analytics Exhibition attendee management Targeted marketing Drone-controlled delivery 	<ul style="list-style-type: none"> Employee indoor navigation Employee mustering in emergencies Asset tracking Find equipment Patient tracking
Device-to-Device (Peer-to-Peer) Applications	<ul style="list-style-type: none"> Point and trigger controller app Gesture-based control VR gaming and group play Find someone/something nearby Presence-based device activation 	<ul style="list-style-type: none"> V2X* and autonomous driving Ticket validation (public transport services) Reserved seat validation Transportation fare payment eID validation in crowded environments 	<ul style="list-style-type: none"> Tap-free mobile payment In-vehicle payment 	<ul style="list-style-type: none"> Teleconference system Proximity-based patient data sharing Social distancing

*Connected Vehicle-to-Everything Communication

UWB Differentiators

Secure

Integrity of distance result due to PHY layer encryption

Real Time

Refresh rate of 200~1000 times/second

Co-Existent

Support bands different from Bluetooth/Wi-Fi



Reliable

Immune to narrowband fading or jamming

Accurate

Centimeter resolution in dense multipath environments

Low Energy

Ultra short air time

Interoperability and Ecosystem Matter

“Developing an open ecosystem is essential to providing enhanced user experiences”.

“Market adoption of UWB technology will propagate only through standards-based interoperability”.

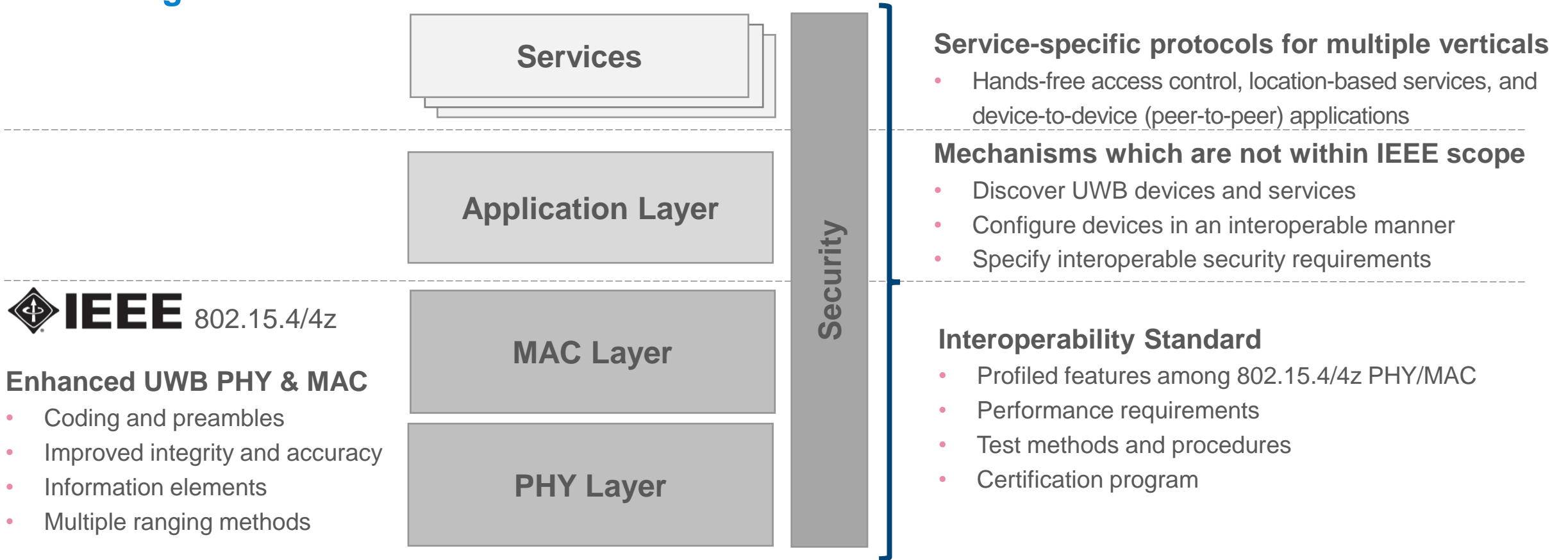
APPLICATIONS



Drive For Interoperability At All Levels

Existing Standards

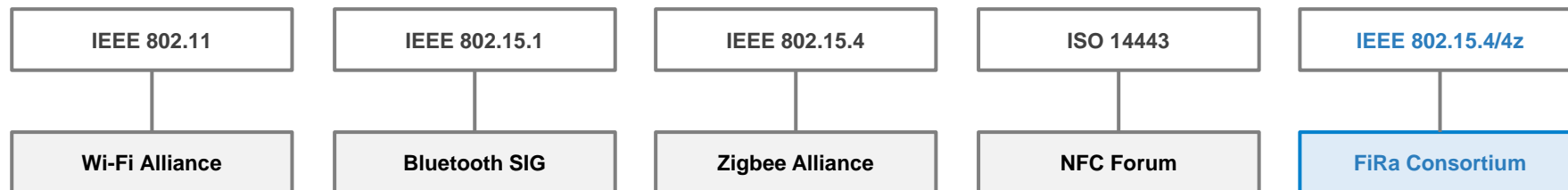
FiRa Consortium



Mission: Develop Use Cases and Guarantee Interoperability

Provide the missing blocks for a broad UWB ecosystem deployment

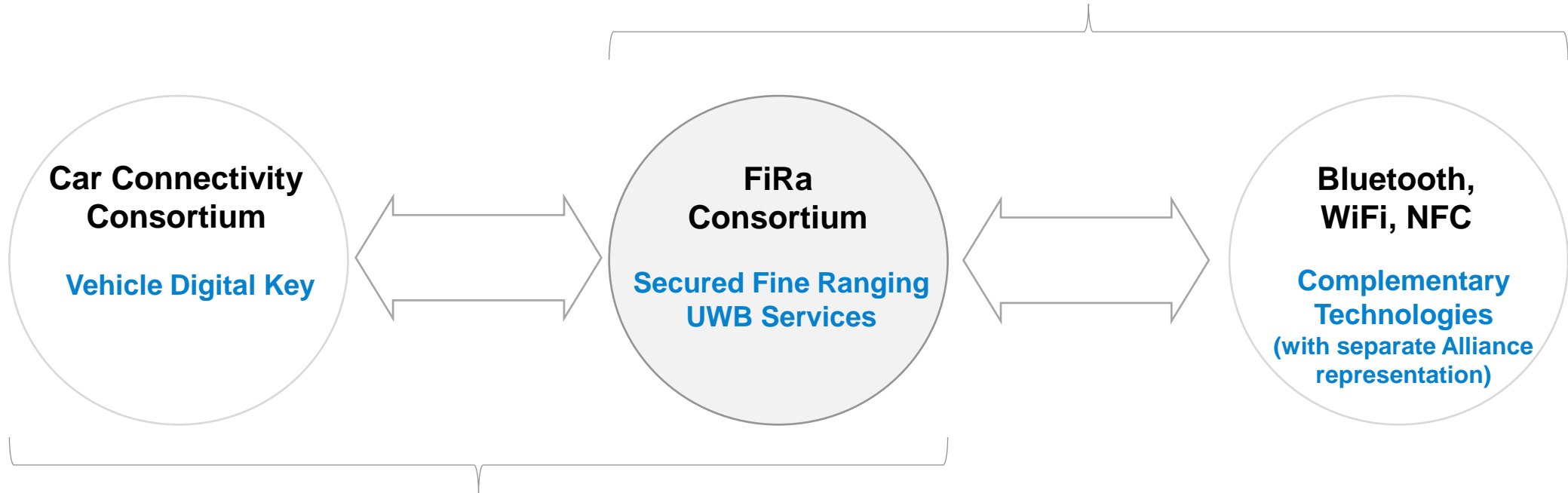
- Develop use cases based on IEEE 802.15.4 enhanced ranging technologies;
- Develop specifications and a certification program to ensure interoperability among chipsets, devices and solutions;
- Promote UWB ecosystems and enable new business opportunities delivering better user experiences; and
- Establish the FiRa Consortium as the reliable and trusted UWB technology brand that is adopted by the market.



Ready to Collaborate With Other Consortia

Providing Full Framework for UWB-Based Services

(Other connectivity complements IEEE 802.15.4)



Providing Full Coverage of Vertical Services

(FiRa Consortium complements Car Connectivity Consortium)

Why Join the FiRa Consortium?

Participation in the Consortium provides Member Companies the opportunities to directly engage in creating a broad UWB ecosystem that will benefit all members.

As a FiRa Consortium member, your company will have an opportunity to:

- Influence industry trends around the use of UWB technology for a variety of applications
- Be actively involved in defining UWB technology standards
- Enable products / solutions with UWB technology via early access to technical details
- Certify products as interoperable, providing customers with confidence in their choice of products and/or solutions
- Exhibit thought leadership in the expansion of the UWB ecosystem
- Participate in a variety of marketing related activities, helping to promote your company
- Develop new sources of revenue from the sale of FiRa Consortium certified UWB technology enabled products

Join the Initiative and Create An Open Ecosystem

**Current
Sponsor Members**



New Members

See Full List at

www.firaconsortium.org/about/members

**Key
Stakeholders**

Chip Manufacturers

Device Manufacturers

System Integrators

Service Providers

Technology Providers

Test Tool Developers

Test Labs

Contact Us

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Charles Dachs

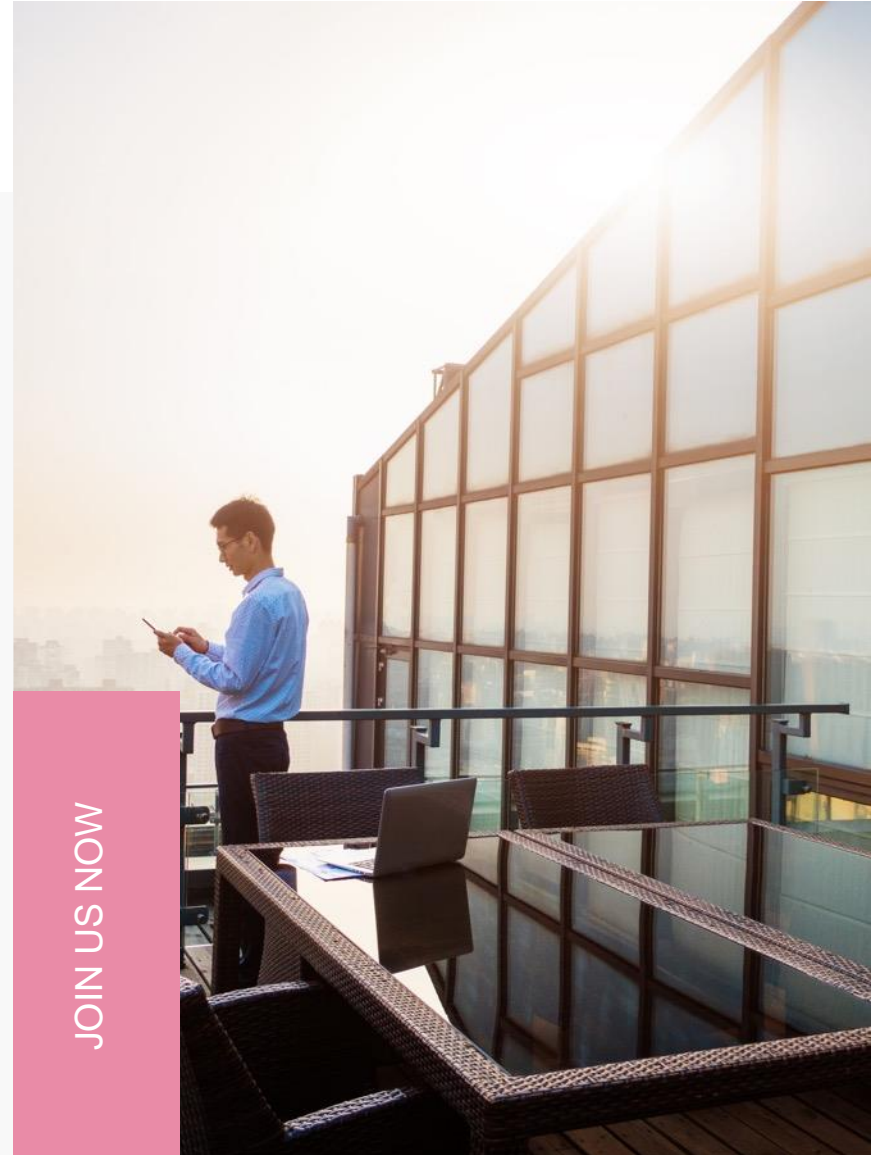
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Director and Treasurer



JOIN US NOW

Appendix



01.

VISION, MISSION AND GOALS

Understand the vision, mission and goals of the FiRa Consortium

03.

MEMBERSHIP

Learn about membership in the FiRa Consortium

02.

LEGAL INFORMATION

Review high level overview of FiRa Consortium Bylaws and IPR Policy

04.

ORGANIZATION STRUCTURE

See how the FiRa Consortium is organized

01. Vision, Mission and Goals

Vision

- Provide seamless user experiences using secured fine ranging and positioning capabilities of interoperable UWB technologies

Mission

- Develop use cases based on IEEE 802.15.4 UWB ranging technologies
- Develop specifications and certification program to ensure interoperability among chipsets, devices and solutions
- Promote UWB ecosystems and enable new business opportunities delivering elevated user experiences
- Establish FiRa Consortium as the reliable and trusted UWB brand that is adopted by the ecosystems

Goals

- Develop UWB use case scenarios across various vertical business domains
- Develop Test Specifications for UWB PHY/MAC based on IEEE 802.15.4 standards
- Develop Technical and Test Specifications for UWB Services (apart from and complementary to digital key for car access)
- Liaise and collaborate with related consortia working on complementary technologies to enable UWB use cases
- Organize interoperability test events
- Develop and operate Certification programs for UWB PHY/MAC and Services
- Develop and promote a Brand and Logo for Certified products and solutions
- Collaborate with Government and Regulatory bodies to encourage UWB deployments
- Promote UWB technology to industry players
- Promote UWB use cases to end users

02. Overview of IPR Policy

- Applicable to all Members and Member Representatives
- Governs the ownership, licensing, and treatment of intellectual property that is contributed to, generated by, or necessary for the implementation of standards developed as part of the FiRa Consortium activities
- Subject to the specific terms of the IPR Policy, in general:
 - Members (and their Related Parties) commit to license their Necessary Claims on RAND (Reasonable and Non-Discriminatory) terms, but may opt to provide RAND-Z (RAND with Zero royalty) terms by submitting a written declaration form
 - Members that did not participate in the applicable development group may withhold a license to Necessary Claims by submitting a written declaration form
 - New incoming members must agree to license Necessary Claims for all final Standards, and have 60 days to decide if they will do so for draft Standards
- Patent calls before technical meetings
- No obligation to conduct patent searches for Necessary Claims

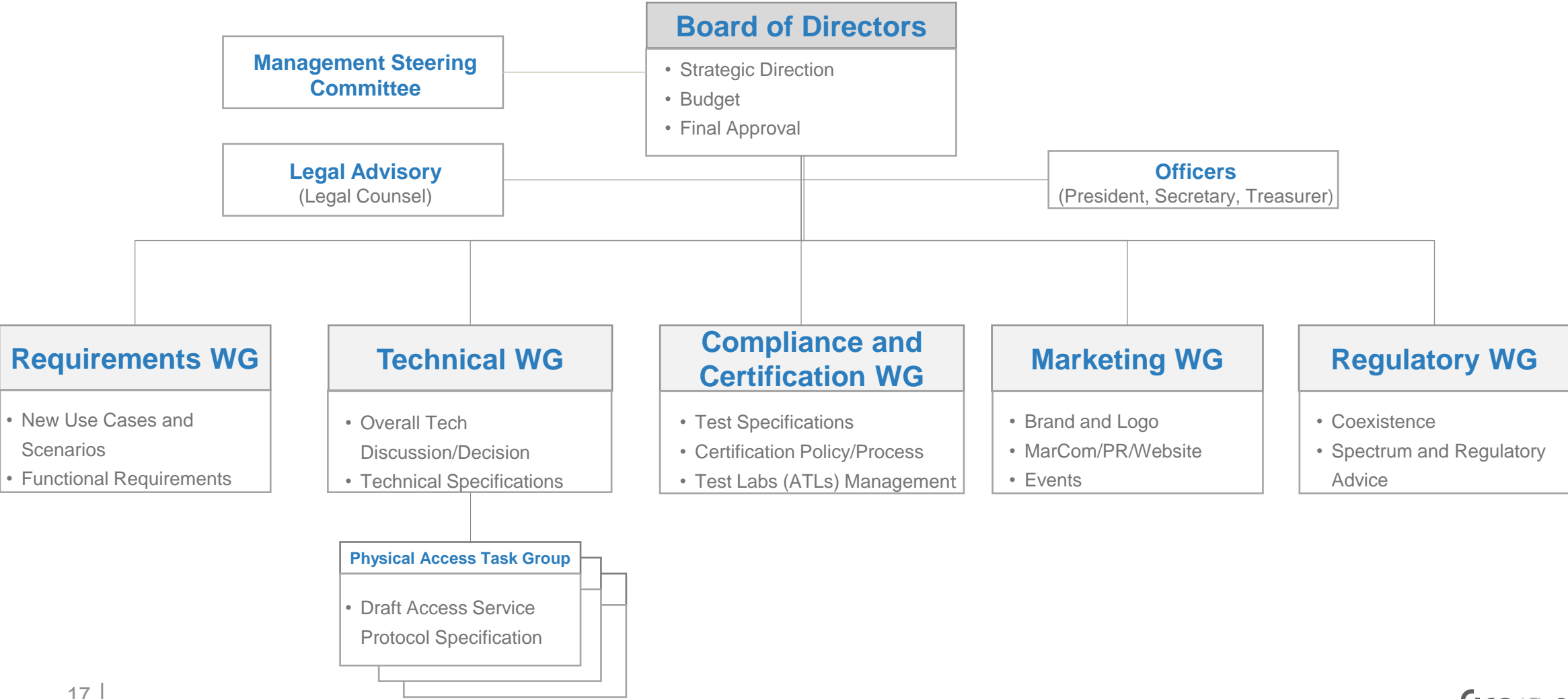
02. Overview of Bylaws

- The Bylaws establish the rules governing the operations of the organization, including the rights of members, rules for meetings and corporate actions, voting and quorum requirements, and other matters
- Delaware non-profit corporation with 6 classes of membership
 - Sponsor, Contributor, Associate, Adopter, Test Lab and Academic & Educational
- Directors: Sponsor members each designate 1 Director and up to 2 alternates
- Officers: 2 year term, elected by Board of Directors, compensation possible
- Board of Directors establishes Member Committees, Working Groups, Task Groups, sub-committees, special interest groups, etc.
- Indemnification and insurance possible for Directors, Officers, employees and agents

03. Membership

	Sponsor	Contributor	Associate	Adopter	Test Lab	Academic and Educational
Board of Directors	√					
Working Group Leadership	√	√				
Working Group Voting Rights	√	√				
Working Group Participation	√	√	√		Compliance & Certification WG only	√
Access to Final Specifications	√	√	√	√	√	√
Certify Products	√	√	√	√		
Apply for Authorized Test Lab					√	
Annual Membership Fee (USD)	\$80K	\$50K	\$30k	\$15K (if revenue ≥ \$50M) or \$5K (if revenue < \$50M)	\$5K	\$2.5K (one time only)

04. Organization Structure





THANKS