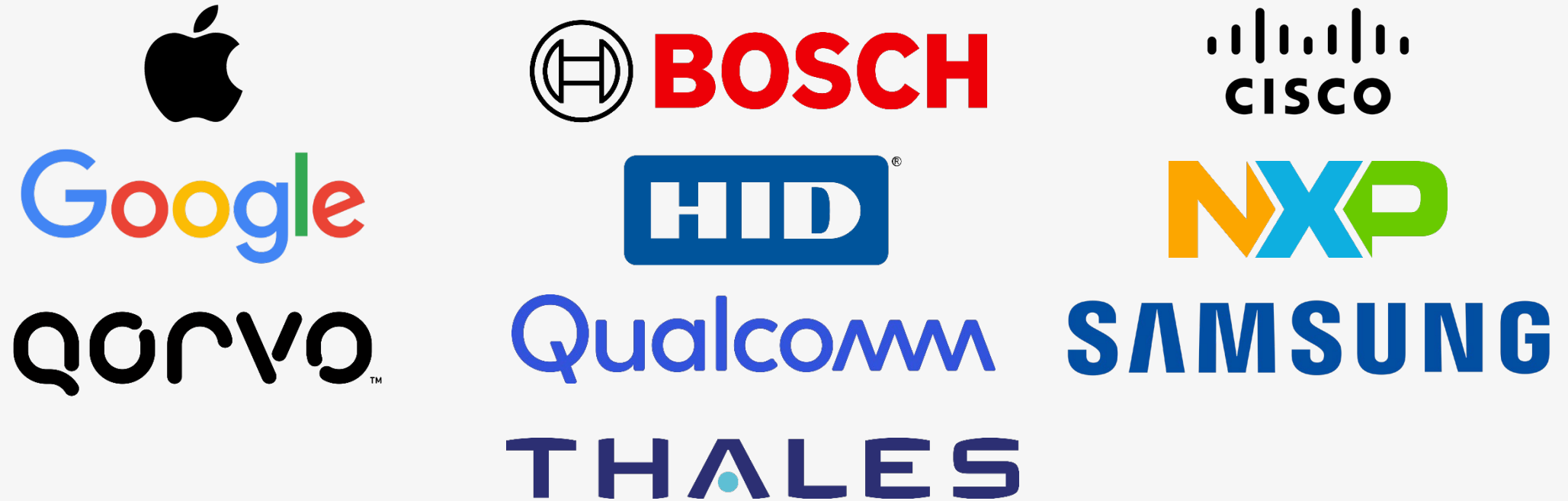# Introduction to the FiRa Consortium

July 18, 2024

Our Vision

Our **vision** is to transform the way we interact with our environment by enabling **precise location awareness** for people and devices.

Our Members are Industry Leaders

Over 108[*] industry leaders with a commitment to supporting UWB have already joined FiRa®

Current Sponsor Members

FiRa Consortium Goals

Foster a framework to facilitate broad adoption of UWB and its fine-ranging and positioning capabilities

Spur Innovation

- Support the development of compelling use cases across broad business domains
- Provide a unique opportunity to explore and define transformative uses for UWB technology

Ease Adoption

- Enable member companies to work together to deliver the building blocks, tools, and technologies needed to integrate UWB quickly and seamlessly
- Foster a robust and reliable UWB ecosystem to enable rapid technology deployment

Support Interoperability

- Define and drive specifications intended to support interoperability between UWB-enabled products
- Develop a certification program to ensure interoperability and consistent performance

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UWB Positively Impacts User Experiences

Transforming the connectivity experience

firaconsortium.org/discover/use-cases

FiRa's Commitment to Collaboration

To create a stronger ecosystem for UWB technology as a whole

FiRa is committed to collaborating with other consortia and industry stakeholders to develop a stronger UWB ecosystem. They include:

ETSI
- Involved with the Harmonized Standards and other regulatory bodies in Europe

CAR CONNECTIVITY consortium®
- Formed the Joint UWB MAC PHY Working Group (JUMPWG) to advance UWB technology specs used in the CCC Digital Key

EMVCo.
- Work together to enable the implementation and deployment of UWB-enabled secure wireless payment systems

UWB ALLIANCE
- Partner to interact with regulatory authorities to ensure global deployment of UWB technology.

csa connectivity standards alliance
- Collaborate to promote and grow an interoperable UWB ecosystem and certification program.

COLLABORATION

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ADOPTION

FiRa Works to Grow the UWB Market
To build widespread adoption of UWB technology

FiRa drives market adoption of UWB by:

- Creating compelling use cases across multiple markets and applications

- Evangelizing the capability of UWB technology

  - Through FiRa Presents videos, webinars, blog articles, social media, and other digital assets

- Advocating for UWB with government and regulatory bodies to drive fair spectrum rulings for UWB deployments

- Fostering an interoperable UWB ecosystem across chipset, device and service infrastructure through standards and certifications

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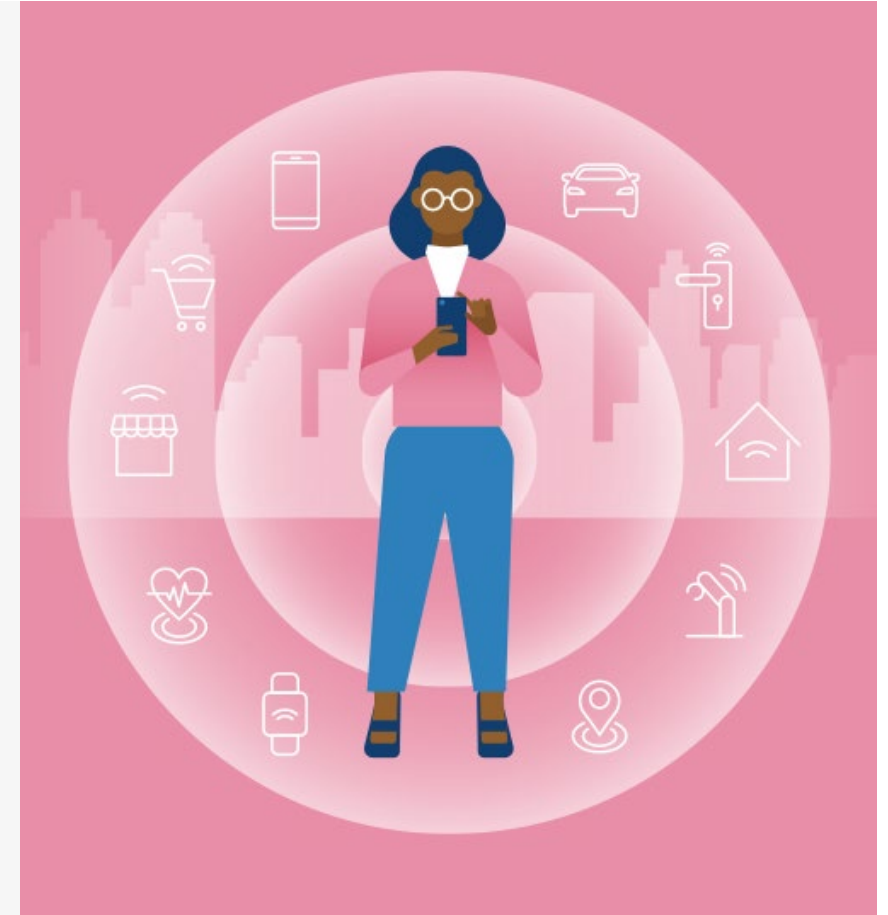
FiRa Certification Program

Aimed at driving UWB interoperability among UWB devices

FiRa's Certification Program:

- Offers defined processes for verifying that candidate devices conform to FiRa requirements and Test Specifications

- For Core Certification, the device must meet the FiRa-specified MAC/PHY Conformance and Interoperability Test Specifications

- The FiRa Certified logo can be used by FiRa members who have devices that fulfill the criteria of the Certification Program

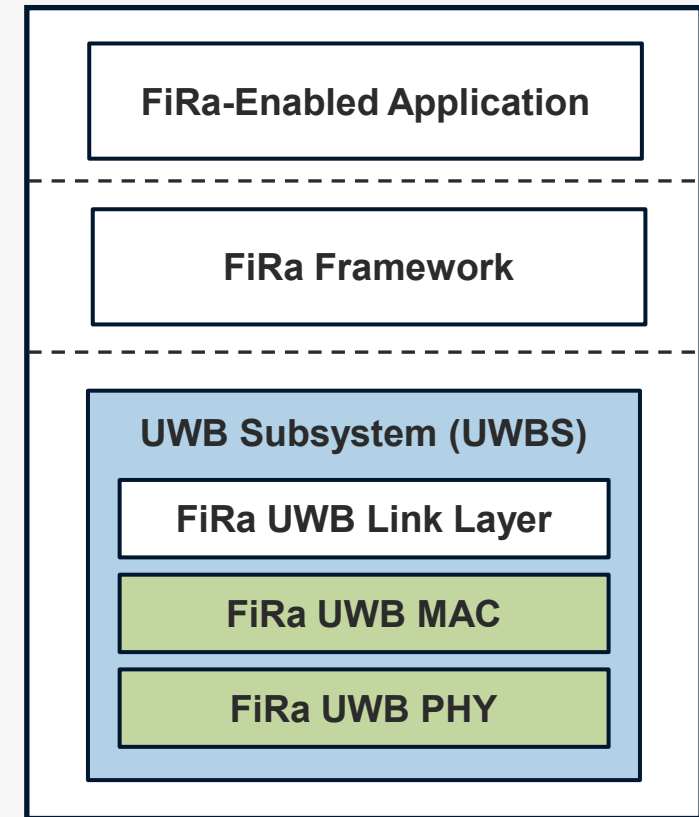**Learn more about the FiRa Certification Program at**
https://www.firaconsortium.org/certifications

FiRa's Core Certification Architecture

Builds on the foundation of the IEEE 802.15.4/4z standard

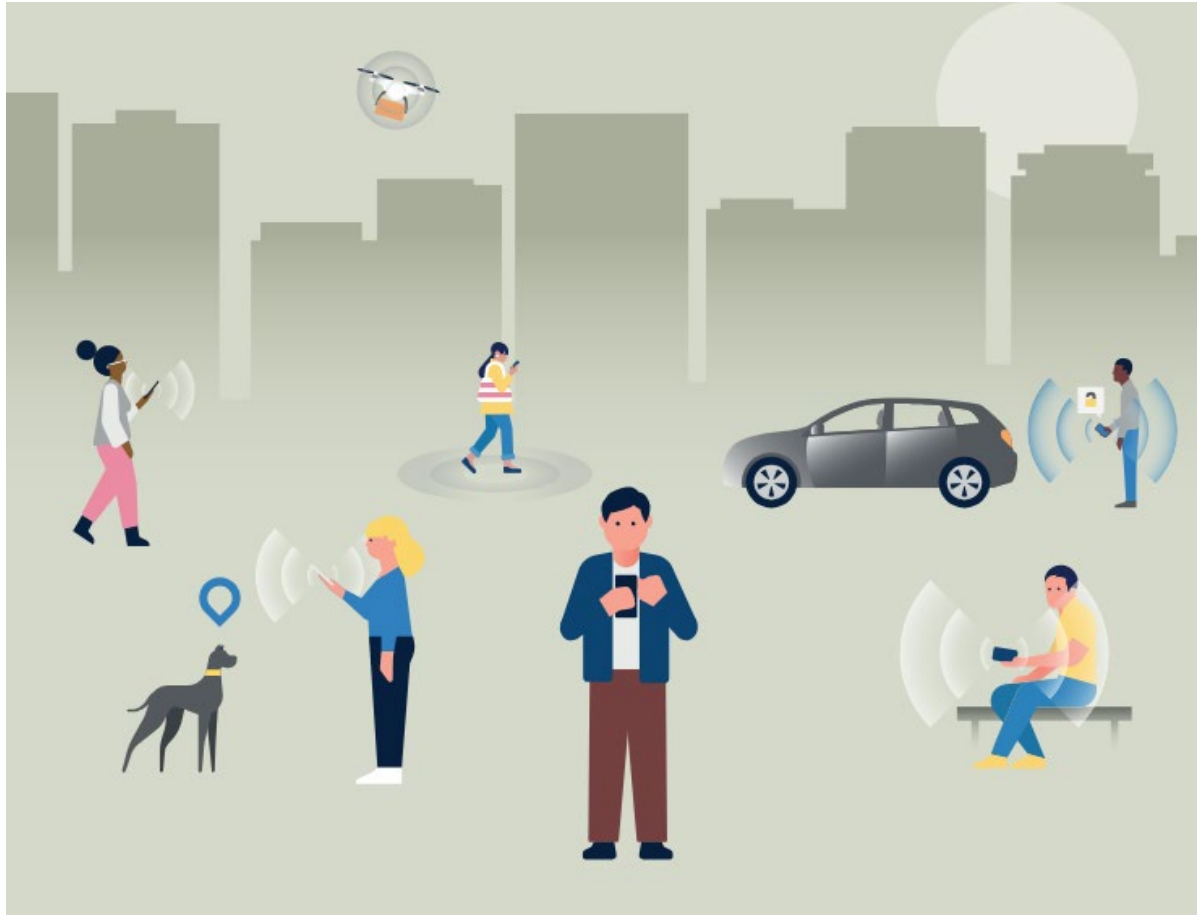**FiRa's Core Certification Program focuses on the UWB Subsystem (UWBS) functionality which consists of three different layers:**

- FiRa UWB Physical (PHY)
- FiRa UWB Media Access Control (MAC)
- FiRa UWB Link Layer

Diagram boxes:
- FiRa-Enabled Application
- FiRa Framework
- UWB Subsystem (UWBS)
  - FiRa UWB Link Layer
  - FiRa UWB MAC
  - FiRa UWB PHY

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FiRa's Core Certification Program Use Cases

Everyday possibilities using UWB

Currently, the FiRa Core Certification Program v2.0 is available for the following use cases:

- Untracked Indoor Navigation

- Find Someone/Something

- Point-and-Trigger Control

- Secure Ranging

The FiRa Framework and application interoperability testing program is currently being defined.
FiRa's 2.0 Test and Technical Specifications are available: https://www.firaconsortium.org/resource-hub/specifications

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Focusing on UWB Security

The FiRa Security Working Group

FiRa's Security Working Group (SWG) addresses security-related topics within FiRa with a current focus on:

- Analyzing use cases with regards to security needs

- Identifying assets to be protected

- Defining security mechanisms to protect the assets

- Defining security requirements products must meet

- Defining a security certification scheme for products

SECURITY

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UWB Security in the Market
FiRa's Security Working Group (SWG)

Security Benefits

How does the SWG impact the market?

- Trustworthy components due to security evaluations and certification by independent bodies
- UWB applications are robust against relay attacks
- Unprecedented convenience in use cases with security needs such as:

    o Tap-free corporate access
    o Hands-free public transport fare collection
    o Passive vehicle entry and start capabilities
    o Tap-free mobile payment

(These are upcoming use cases that will be enabled by the security assurance resulting from the SWG activities.)

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FiRa Working Groups
Defining the UWB ecosystem

Working Groups (WGs) and Task Groups (TGs) are member driven and collaborate to address the various needs of the Consortium. FiRa's Working Groups include:

Working Group Steering Committee
- Inter-Working Group Communication and Coordination
- Specification Release Program Mgmt.

Requirements WG
- New Use Cases and Scenarios
- Functional Requirements
- Liaise with Partner Organizations

Technical WG
- Overall Tech Discussion/Decision
- Tech. Spec. Architecture & Maintenance
- Use Case Analysis and Technical Req.

Compliance & Certification WG
- Test Specification Development
- Plugfests, Interoperability, and Validation Test Events
- Certification Program Management
- Test Tool and Authorized Test Lab (ATL) Management

Marketing WG
- Marketing Communications/ PR/Website
- Go-to-Market Tactics, Strategy, and Promotion
- Brand & Logo Management
- Events Management

Regulatory WG
- Coexistence
- Spectrum and Regulatory Advice
- Monitor Global Regulations
- Advocate for UWB with Regulatory Bodies

Security WG
- Security Requirements Roadmap
- Security Recommendations for Specifications
- Analyze Security Requirements of Use Cases
- Support Profile Security Architecture Development
- Methodology to Address Security Certification Process

Core Sub Group
- UWB Subsystem (UWBS) Technical Specifications
- New UWBS Features

Framework & Profiles Sub Group
- Profile Technical Specification Development
- Development of Technical Specifications outside UWBS

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The Benefits of Joining FiRa
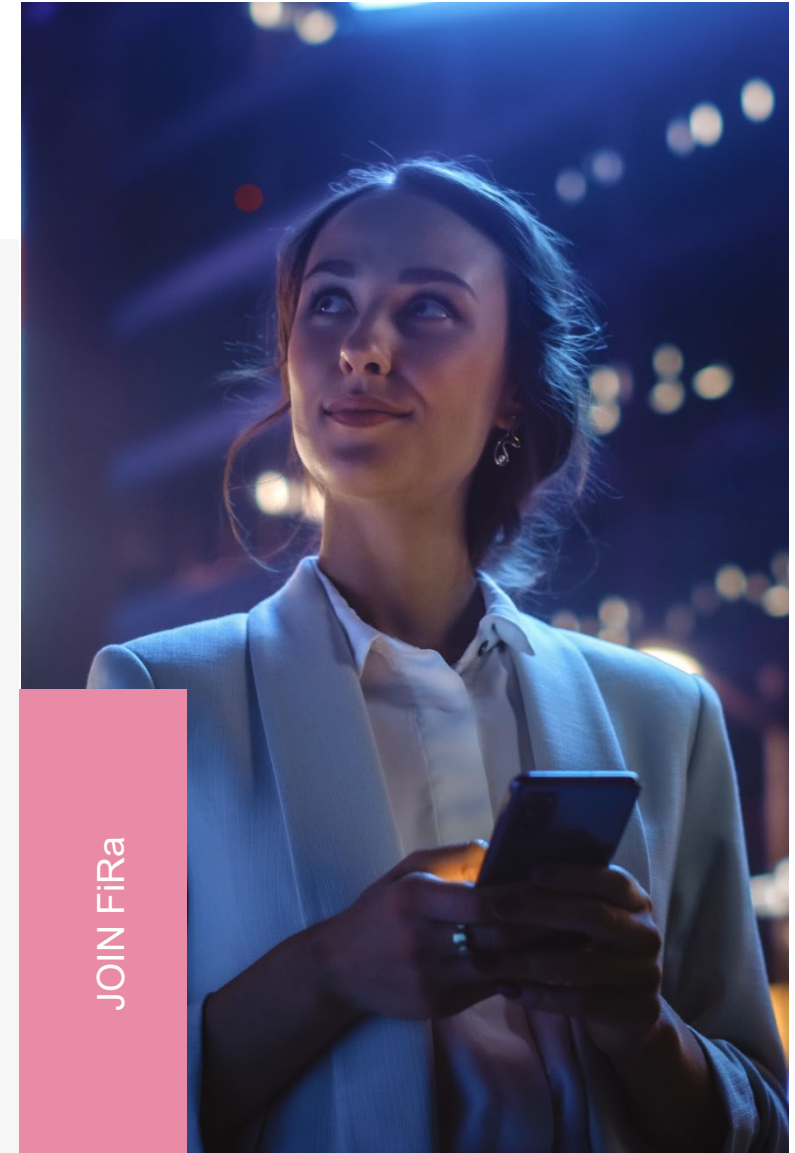
Maximize the benefits of UWB for your brand

The FiRa Consortium provides a way for a wide range of product and solution companies to create a broad UWB ecosystem for combined future success.

As a FiRa Consortium member, your company will be able to:

- Collaborate with UWB market leaders in semiconductors, devices, and systems
- Build a network of connections in the UWB ecosystem
- Explore and ensure interoperability of your UWB products
- Get your products certified
  - **The FiRa Certification Program requires FiRa membership**

Apply Today

JOIN FiRa

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Contact Us

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Clint Chaplin   boardchair@firaconsortium.org
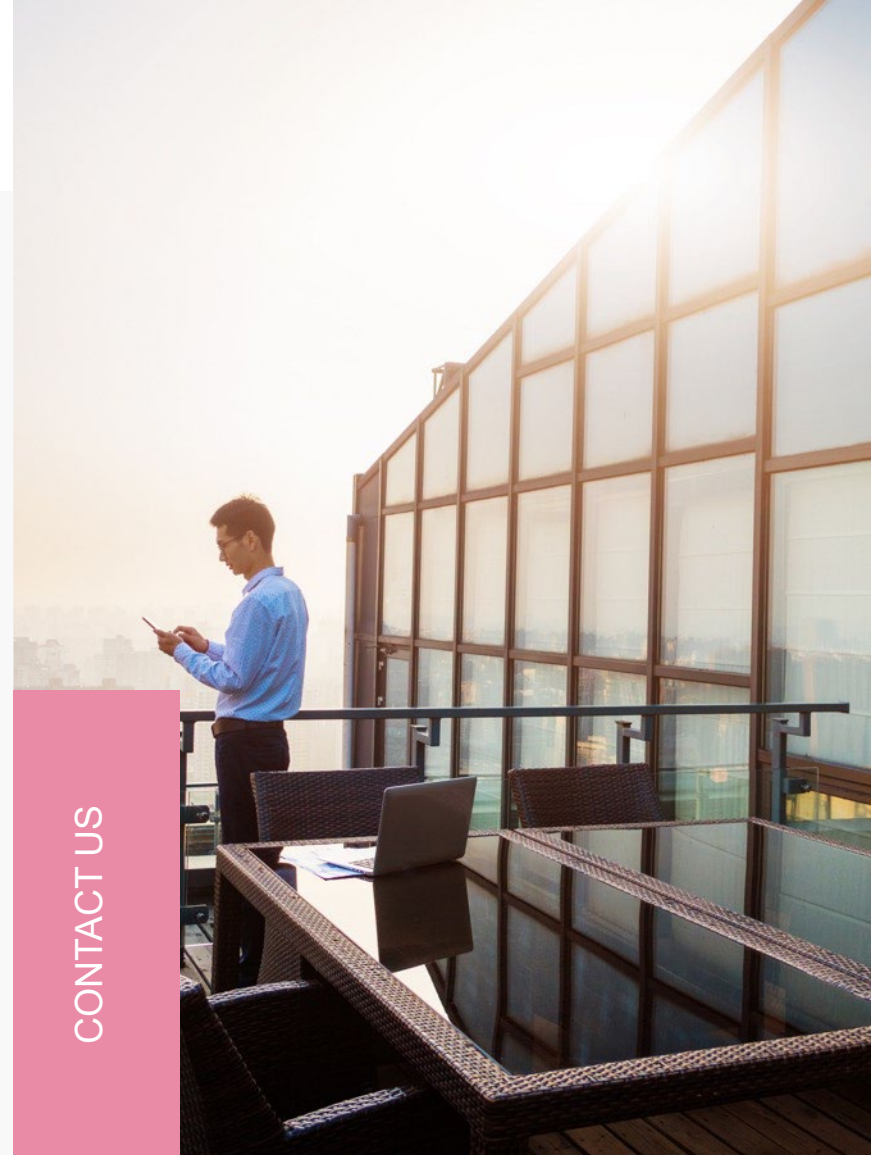Board Chair

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Board Vice-Chair

Ramesh Songukrishnasamy treasurer@firaconsortium.org
Director and Treasurer

CONTACT US

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Appendix

LEARN MORE

01.

Membership

Learn about membership

in the FiRa Consortium

02.

FiRa IPR Policy

High level overview of

FiRa Consortium IPR Policy

03.

FiRa Bylaws

High level overview of

FiRa Consortium Bylaws

04.

Stakeholders

High level overview of the industries

our stakeholders participate in

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01. Membership

	Sponsor[1]	Contributor	Associate	Adopter	Test Lab	Academic and Educational	Affiliate[2]
Board of Directors	✓						
Working Group Steering Committee Participation	✓	✓					
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)	No charge

[1]As part of the Sponsor Member application review and approval process, a presentation to the FiRa Consortium Board of Directors ("Board") may be requested, and the Board may, on a reasonable and non-discriminatory basis, take into account the impact that the admission of an applicant may have on the balance of representation on the Board (e.g., with reference to industry segments and geography).
[2]Affiliate Membership is limited to companies related by majority ownership to a current Sponsor or Contributor Member of FiRa Consortium.
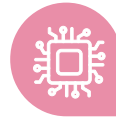
02. Overview of FiRa IPR Policy

- Applicable to all Members and Member Representatives, and others bound by separate written agreement

- 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) participating in FiRa Consortium Working Groups commit to license Necessary Claims on RAND (Reasonable and Non-Discriminatory) or RAND-Z (RAND with Zero royalty) terms, and may withhold Necessary Claims, by submitting a timely written declaration form

    - Members that did not participate in the applicable development group may (but are not obligated to) make RAND or RAND-Z commitments, or withhold licenses to Necessary Claims by submitting a written declaration form

    - New incoming members are not obligated to make license commitments with respect to Standards approved prior to the start of membership

- Patent calls before technical meetings

- No obligation to conduct patent searches for Necessary Claims

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03. Overview of FiRa 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, confidentiality, and other matters

- Delaware non-profit corporation with 8 classes of membership
    - Sponsor, Contributor, Associate, Adopter, Test Lab, Academic & Educational, Affiliate, and JUMPWG

- **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 Working Groups, Task Groups, member committees, sub-committees, special interest groups, etc.

- Indemnification and insurance possible for directors, officers, employees and agents

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04. Key Stakeholders Represented in the FiRa Consortium

- Semi-Conductor Manufacturers
- Device Manufacturers
- System Integrators
- Service Providers

- Technology Providers
- Test Tool Developers
- Test Labs
- Academic and Educational Providers

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