The Power to Be Precise

# Spectrum Position Statement

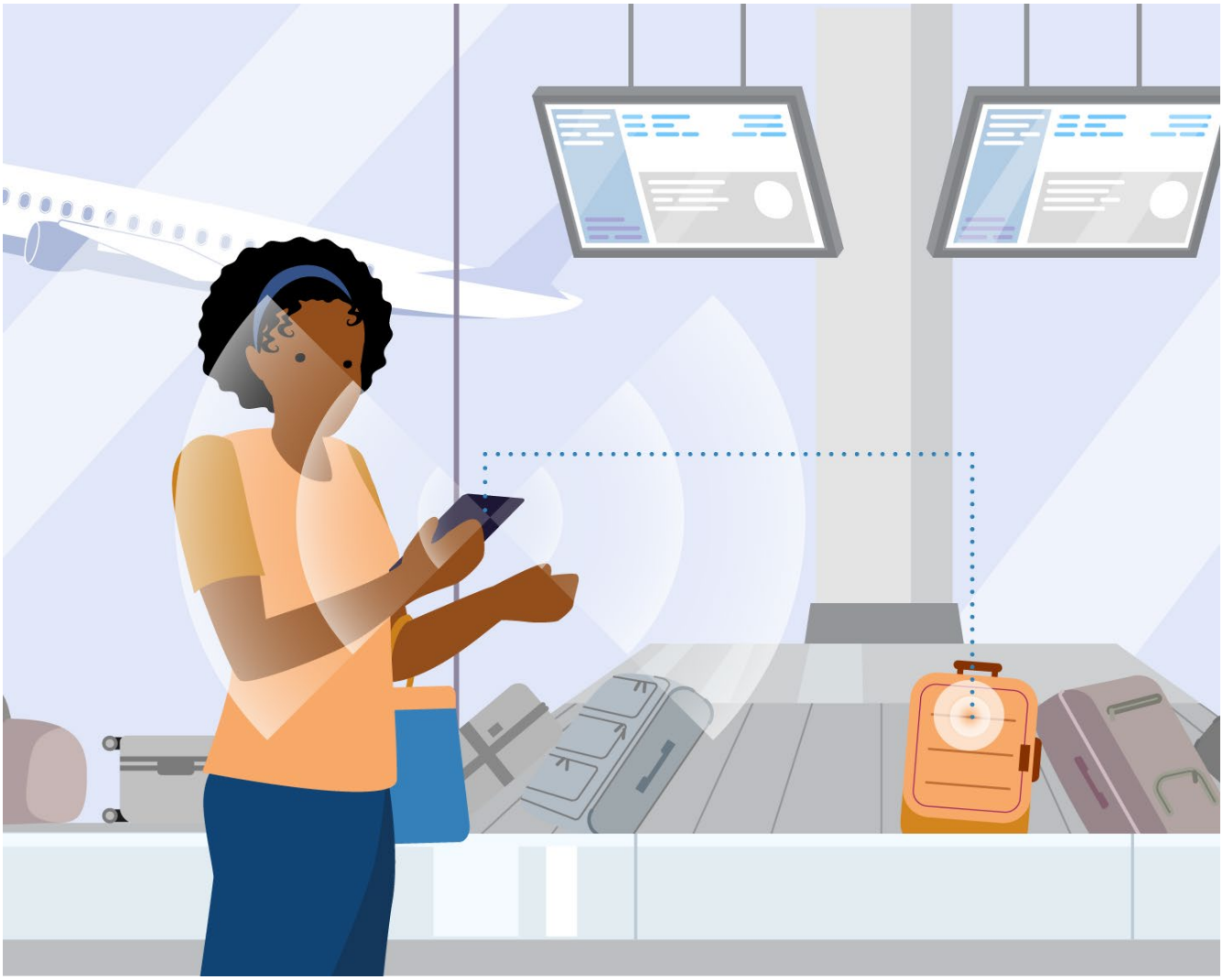
FiRa™ Consortium | Updated July 2025

# Introduction

Ultra-wideband (UWB) is a short-range, wireless technology that makes use of wideband radio waves. Compared to Wi-Fi or Bluetooth®, UWB operates in higher frequency bands and uses a wider bandwidth (500 megahertz or more). These special characteristics of UWB allow it to measure distance and to determine position much more accurately than other technologies, providing the basis for building more secure applications.

After decades of discussion and development, UWB technology is now demonstrating its potential and quickly becoming a vital mainstream wireless technology like Wi-Fi and Bluetooth®.

As such, FiRa™ Consortium recommends preserving the 7.7–8.3 GHz band for UWB and oppose an identification for International Mobile Telecommunications (IMT) in this band.



## Social and Economic Impact

One data point that supports the growth of UWB is from ABI Research. Figure 1 shows that UWB enabled devices shipped globally until 2023 which is a growth of 3600% since 2018 About 1.5 billion UWB enabled devices have been shipped through 2023.

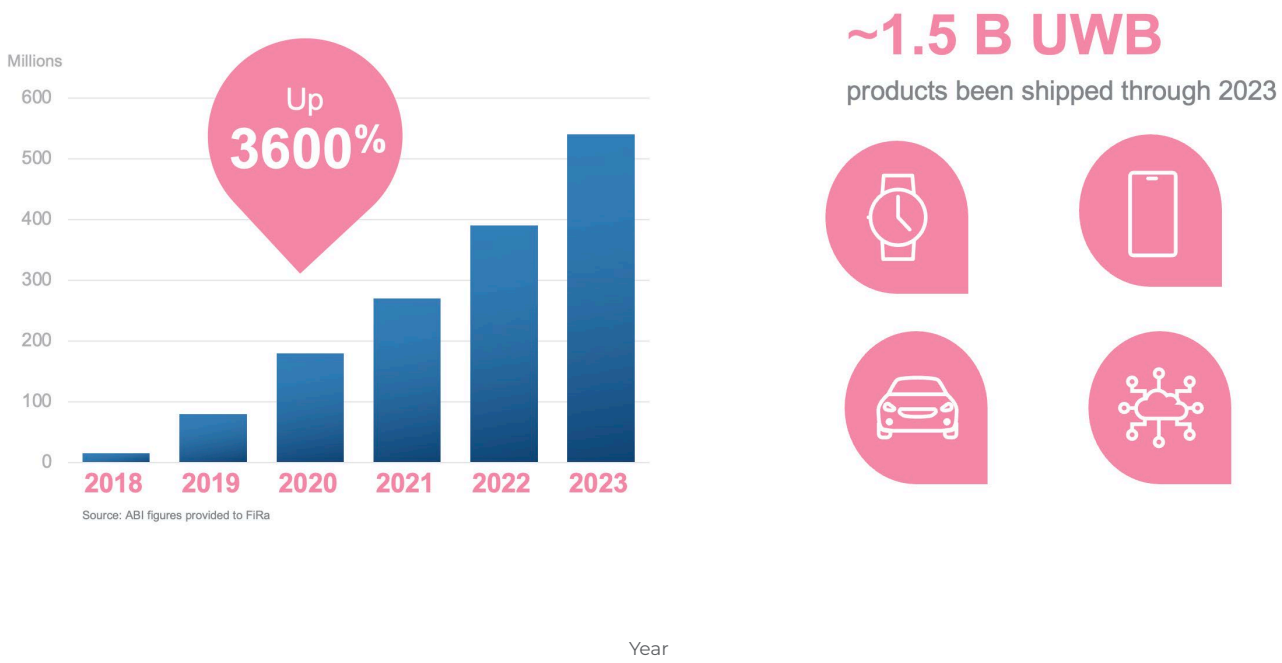



**Figure 1** UWB-Enabled Device Shipments, 2018 to 2023
*Source: ABI Research*

In fact, the UWB market is projected to significantly for the foreseeable future as shown in Figure 2. Close to 1.4 billion devices are projected to be shipped annually by 2029 in many applications.

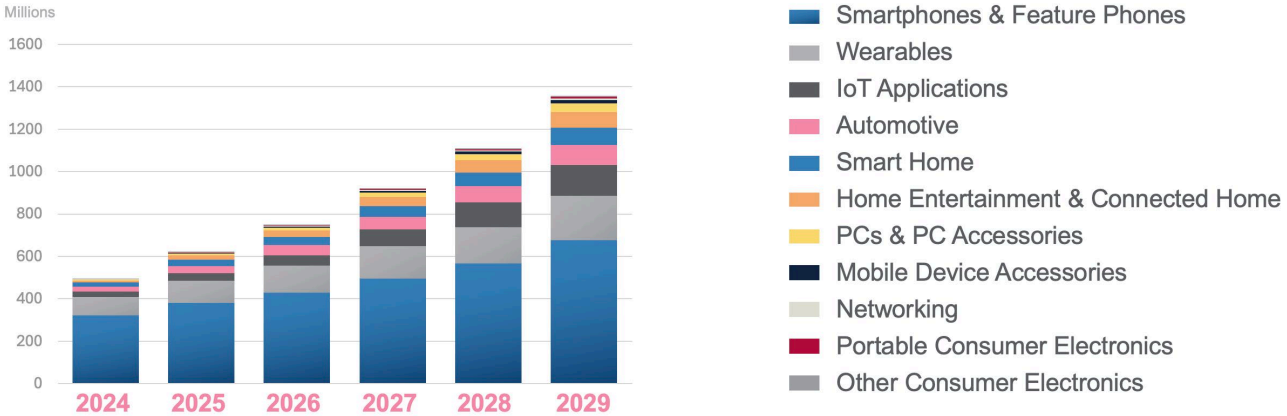



**Figure 2** UWB-Enabled Device Shipments, 2024 to 2029
*Source: ABI Research*

The socio-economic benefit was analyzed through a study commissioned by FiRa and can be summarized as in figure XX. The Total Economic Impact will reach almost 37 billion USD globally by 2030 as shown in Figure 3. The full report can be found here.



| World-Wide | 2024 | 2030 |
|---|---|---|
| Total Economic Impact | $10,491,890,000 | $36,756,020,000 |
| GDP Impact | $ 2,360,450,000 | $ 6,553,140,000 |
| Producer Surplus | $ 3,577,110,000 | $ 12,681,720,000 |
| Consumer Surplus | $ 4,554,330,000 | $ 14,944,240,000 |

**Figure 3** The Total Economic Impact of UWB
*Source: Telecom Advisors*

## UWB is a fast-growing ecosystem

Since 2019, the addition of the secure fine ranging feature (standardized in IEEE 802.15.4z) has led to adoption in mass market consumer products including devices such smartphones and smart watches.

Today, there are many real-world examples of UWB being used to address consumer needs for convenience, safety, health, or enjoyment.

Examples of use cases within each of the primary market segments are shown in Figure 4. Initial areas of focus for FiRa include IoT, secure access, tracking, and navigation. Select use cases detailed below include Access Control, RTLS, Personal and Consumer Device Tracking, and Smart Homes, driving personalized, position aware automation, and secure applications for the future automated society.

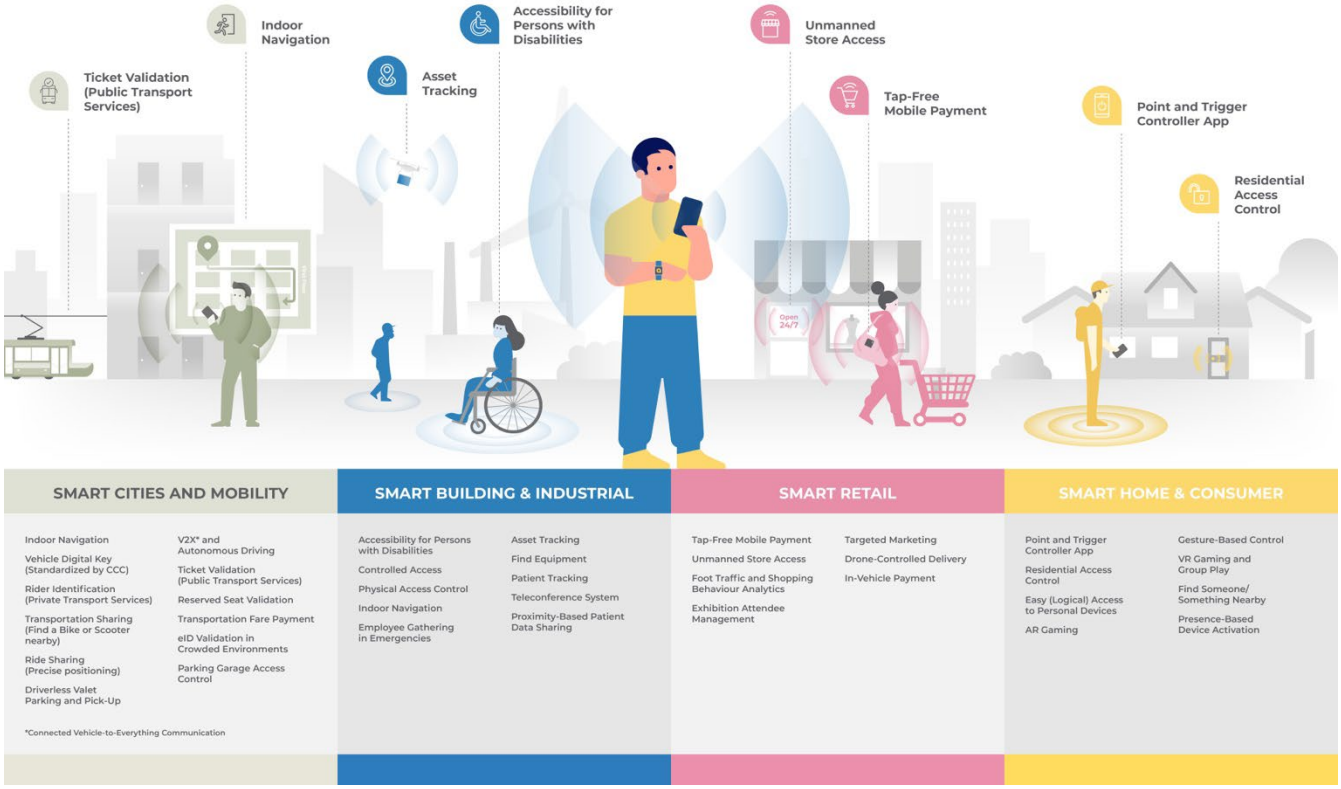



**Figure 4** UWB Market Segments and Applications
*Source: FiRa Consortium*

There is also interest and on-going work around child presence detection systems[1] using UWB in locked cars. This is clearly an important use case in the "safety" category.

[1] https://www.rfidjournal.com/vulnerable-child-presence-detection-with-uwb-radar

## Preserve Spectrum for UWB

### UWB and IMT in the same band do not coexist well

UWB applications can coexist extremely well with incumbent spectrum applications in the 6-8.5 GHz band. As incumbent transmitter deployment is highly localized and UWB transmissions have a very low power and duty cycle, there is no interference with incumbent receivers. However, UWB performance will be unreliable in an IMT band because ubiquitous higher-power IMT transmitters will cause interference to UWB receivers in many situations. Studies conducted by FiRa members show that interference from IMT causes more than 3 dB sensitivity reduction in UWB receivers for 75% and 95% of the events for outdoor macro urban and indoor small cells, respectively. Those events of 75% and 95% caused significant link coverage reduction (more than 30% loss) and significantly longer delay time (e.g., 0.1 s to 100 s for outdoor and beyond any practical usability for indoor). Further details are provided in the White Paper [XXX add link to FiRa study].

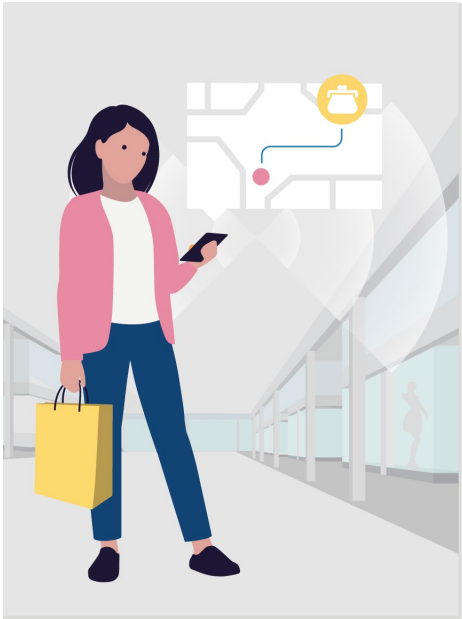
### IMT spectrum identification should recognize UWB market development

At WRC-23, the upper 6 GHz band (6.425 -7.125 GHz) was identified for IMT in specific regions. This overlaps with UWB channels 5 and 6 (6.2-7.3 GHz), which, as a consequence, can no longer be regarded as primary UWB channels. This means that UWB channel 9 (7.7 – 8.3 GHz) remains as the only channel world-wide where over a billion devices have already been deployed.

Furthermore, at WRC-23, new agenda item was agreed for WRC-27 to identify more bands for IMT. In particular the candidate band 7.75 – 8.4 GHz overlaps with UWB channels currently being put in use in the 7-8.5 GHz band, in particular UWB channel 9 (7.7 – 8.3 GHz).

### FiRa Consortium recommends preserving the 7.7–8.3 GHz band for UWB, and to opposes identification of this band for IMT

UWB requires a safe space in the spectrum to fully develop the growing palette of highly valuable UWB applications. The 7.75–8.4 GHz band covers UWB channel 9. This channel is deemed essential for the development of UWB's potential. UWB is a good neighbor and does not cause interference to the incumbent spectrum applications in the band.
Therefore, FiRa recommends preserving the 7.7–8.3 GHz band for UWB, and opposes identification of this band for IMT.



## About FiRa Consortium

*The FiRa Consortium is a member-driven organization dedicated to transforming the way we interact with our environment by enabling precise location awareness for people and devices using the secured fine ranging and positioning capabilities of ultra-wideband (UWB) technology. FiRa does this by driving the development of technical specifications and certification, advocating for effective regulations and by defining a broad set of use cases for UWB. To learn more about UWB and the FiRa Consortium, visit* www.firaconsortium.org*.*