COMARCH

PACKETCRAFT™
WORLD-LEADING WIRELESS

Partnering on the future of Bluetooth® Audio

About Packetcraft

Launched from ARM in 2019 and founded by veteran industry leaders, Packetcraft is located in the epicenter for wireless technology, San Diego, CA, USA. Packetcraft specializes in creating wireless solutions and leading-edge software for Bluetooth® and UWB, delivering highly efficient and developer-friendly solutions for wireless audio, low power sensor communication, and distance ranging. The company collaborates with some of the biggest names in tech, including ARM®, EM Microelectronic and Nordic Semiconductor, test suppliers Ellisys and Teledyne Lecroy, and is held in high regard with many of the world's most recognized semiconductor companies and product brands.

Project overview

What is **Bluetooth®** LE Audio?

Bluetooth® LE Audio is the planned evolution to Bluetooth® Classic which has been enabling the industry with wireless audio for decades. LE Audio utilizes the low power and low resource radio of Bluetooth® LE, significantly improves the sound quality with its updated standardized audio codec and delivers new broadcast capabilities enabling a trifecta of improvements and enablement of new use cases that truly is game-changing.

New Features in **Bluetooth®**

Bluetooth® LE Audio was first introduced in version 5.2 of the Bluetooth® specification. Now, new features such as Multi-Stream Audio Auracast™ and Broadcast Audio with Personal and Location-based Audio Sharing – not to mention a revolutionizing LC3 codec – allow consumer electronics manufacturers to develop attractive products for customers. All of those new features replace existing solutions with much better versions, and add more exciting use case opportunities to improve everyday life. The latest Bluetooth® 5.4 specification also introduces a new capability – Periodic Advertising with Responses (PAwR). That ultra-low power networking feature is expected to enable high-volume applications – including Electronic Shelf Labels (ESL) – for retail apps where thousands of connected end nodes are synchronized with infrastructure.

What is Packetcraft's goal?

Packetcraft's driving goal is to deliver leading-edge software stacks and solutions to help propel the market forward benefiting their semiconductor and product companies with advanced features, performance and differentiation. Packetcraft fulfills their objectives by investing in technology development as the specifications are being drafted, being early to market, and developing strategic initiatives with key customers and partners all while focusing on offering best-in-class performance and support.

Comarch's contribution

Introduction to the project

Comarch, a software company intensively involved in the world of IoT and consumer electronics solutions, is always looking for innovative partners to cooperate with. So, starting a project with Packetcraft was a natural move for us – as we wanted to enhance Bluetooth® audio technology alongside the industry leader. After a short time, the Comarch engineers team was established and introduced to the tasks.

What challenges did Comarch address?

Together with Packetcraft's engineers, we were working on optimization of the code to make sure that performance and space for new functions were there to use in the future. We implemented new profiles and services for clients' product needs and were responsible for new test case implementations for the automation and qualification processes.

What did Comarch bring to the project?

During our collaboration, we were able to show our technical skills regarding embedded systems, code analysis, and BLE protocol. We got to know Packetcraft's stack better, and expanded our practical knowledge of new BLE specs. Thanks to good planning and excellent communication on both sides, ramp-up time was efficient, and the project quickly gained momentum.

> ❞ Bluetooth® *has begun a third wave of innovation amongst which includes the planned evolution of* Bluetooth® *audio offering advanced capabilities and performance. Packetcraft values our collaboration with Comarch in complementing our mature software solutions with their engineering services for joint customer projects."*
>
> John Yi, Founder and CEO at Packetcraft, Inc.

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About Comarch

Comarch is a global provider, with 30 years of experience, of technologically advanced software designed to help enterprises improve their business efficiency, reduce operational costs, and build strong relationships with all of their partners and clients. Comarch has made its name by working with some of the most renowned brands and organizations in the world, including various airline holding companies, telecoms, financial institutions, retailers, and many others. Comarch's clients include ENOC, Enterprise Holdings Inc, JetBlue Airways, Exxon Mobil, BP, Heineken, Goodyear, and Vodafone.

technologies@comarch.com | https://www.comarch.com/sw-and-hw-services/