COMARCH
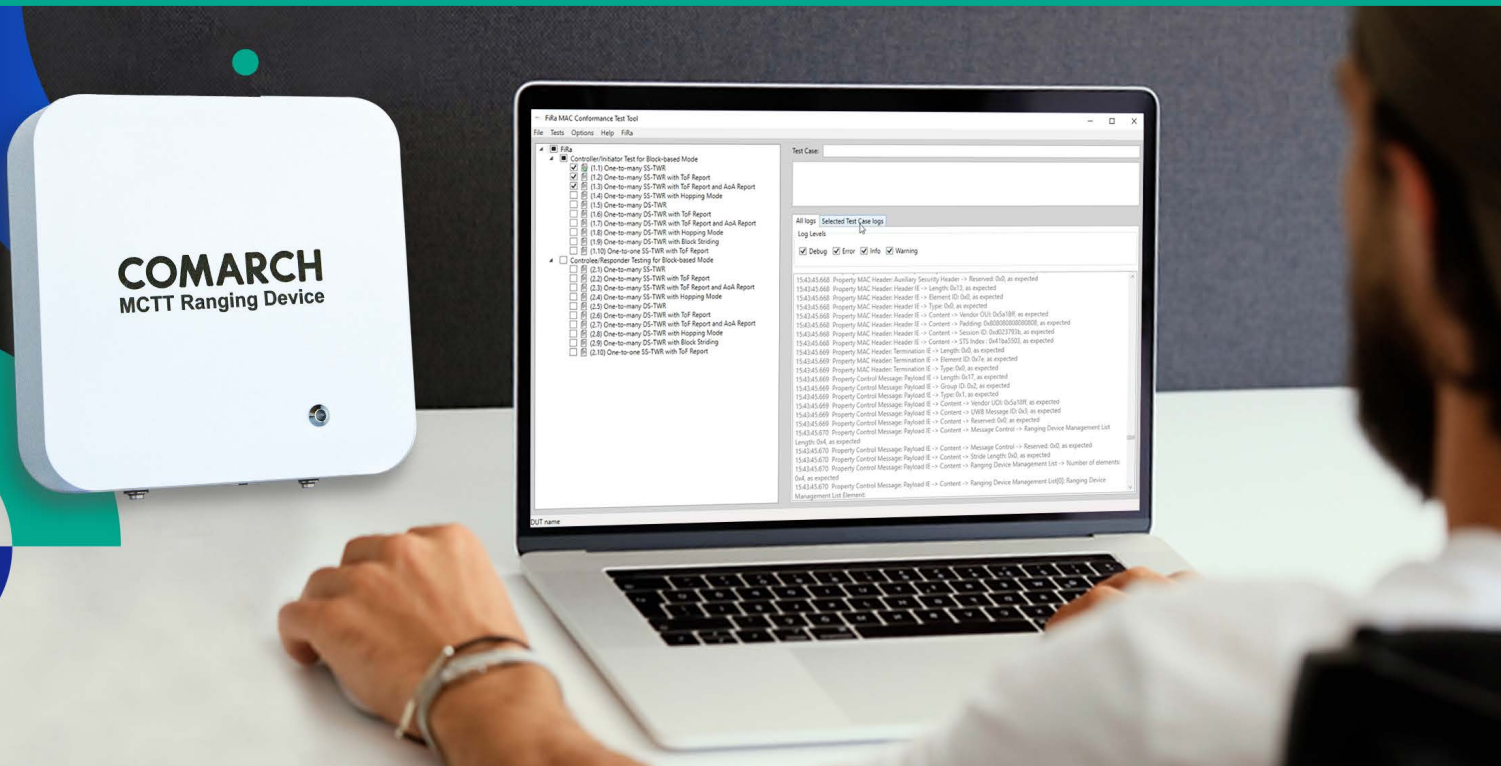
COMARCH`S CONTRIBUTION TO SHAPING THE FUTURE OF UWB TECHNOLOGY

MAC CONFORMANCE TEST TOOL FOR FIRA™ CONSORTIUM

1. PROJECT OVERVIEW:

1. Project goal – develop **Conformance Test Tool for implementation of FiRa MAC specification** to help launch FiRa™ Consortium certification program (based on specification IEEE 802.15.4z HRP block-based mode-ranging technologies)

2. Why is the FiRa UWB standard so important?

- It is a game changer: secure, reliable, accurate, low-energy and co-exists with BLE and WiFi
- Disruptive technology for many interesting use cases:
    - Smart Cities & Mobility
    - Smart Building & Industrial
    - Smart Retail
    - Smart Home & Consumer
    - Healthcare
- Will deliver to promises unfulfilled by other location technologies
- Offers unprecedented accuracy and security when measuring the distance to a target or determining position

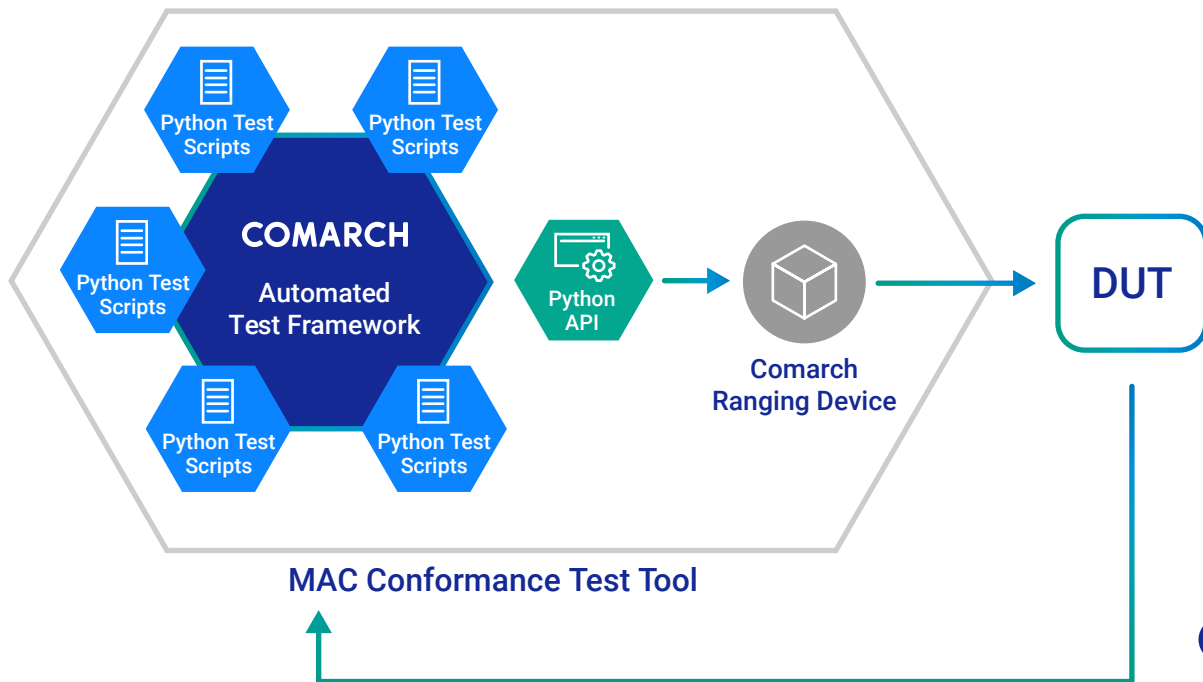## 3. What project challenges were addressed by Comarch?

- There was a requirement for efficient and rapid implementation of a solution compliant with standards to enable the launch of certification programs in the shortest possible time
- Technical requirements - Conformance Test Tool has to be:
    - compliant with the FiRa requirements
    - reliable and user friendly
    - easy and fast to deploy
- Development challenge – despite the early stage of UWB standard development and limitations from hardware vendors, Comarch created a complete MCTT solution (consisting of HW and SW) as well as the sample device acting as a DUT

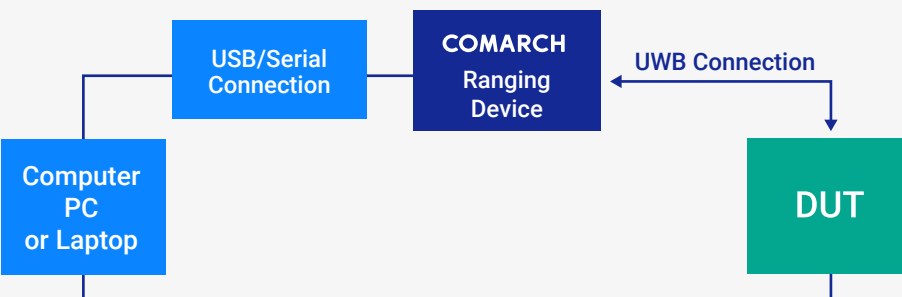## 4. What were the main success factors of the project?

- Fruitful and substantive cooperation with the FiRa™ Consortium
- Experienced and flexible teams of technical specialists on both sides
- A well-prepared and thought-out certification program

2. SOLUTION:

▪ Architecture

MAC Conformance Test Tool

Python Test Scripts · Python Test Scripts · Python Test Scripts · Python Test Scripts · Python Test Scripts

COMARCH Automated Test Framework

Python API

Comarch Ranging Device

DUT

▪ The physical connection scheme

Computer PC or Laptop — USB/Serial Connection — COMARCH Ranging Device — UWB Connection — DUT

This is a plug and play solution. MCTT works on a traditional PC with a USB connection to a Comarch ranging device. Communication is done over UWB. For the purpose of development and preparation of ATL (Authorized Test Lab) for certification, we also deliver sample devices. Ask our sales rep for more details.

MCTT is composed of three parts:

- ▪ **Software:** built on top of Comarch Automated Test Framework (our own product)
- ▪ **Hardware:** with dedicated firmware to fulfill FiRa UWB requirements
- ▪ **Python test scripts:** implemented for the purpose of the certification program

DESCRIPTION

MCTT is Windows®-based and works with Python scripts, connecting over USB/serial connection with a Comarch ranging device.

The main features of MCTT are:

- Provides all functionalities needed to execute testing (configure, perform tests and present results)
- Includes a sequencer which is responsible for managing, selecting, and running test cases written in Python 3 scripts and allows single tests, groups of selected tests and all tests
- Modular architecture allows further segments to be added easily

- Provides console access
- Guarantees that none of the input files are changed, by verifying input file signatures. Additionally, test cases can be modified or even added (Python scripts) by the end users
- Provides separate interface connection to the DUT, which can be used for configuration or automation (for example, turn on/ turn off DUT)
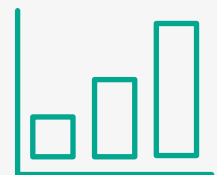
3. BENEFITS FOR USERS:

Easy and reliable certification of your device by using MCTT

Reduce time-to-market for your products

Assistance for your engineers via a support package from Comarch

Gain competitive advantage by early access to MCTT

4. BENEFITS FOR AUTHORIZED TEST LABS (ATLs):

- Become one of the first Authorized Test Labs for the popular FiRa UWB standard
- Gain knowledge from the early stages of the FiRa certification process
- Readiness for on-site assessment while becoming an Authorized Test Lab for the FiRa standard
- Support from Comarch, the test tool vendor
- Provide a sample device to allow an Authorized Test Lab to have the ability to pre-test the standard

FiRa

5. ABOUT FIRA AND COMARCH:

The FiRa Consortium (headquartered in Oregon) is a member-driven organization dedicated to the development and widespread adoption of seamless user experiences using the secured fine-ranging and positioning capabilities of ultra-wideband (UWB) technologies for use cases such as hands-free access control, location-based services, and device-to-device services. The Consortium was founded by HID, NXP, Samsung and Bosch, and aims to develop specifications and a standardization program to certify UWB products to ensure they conform to defined standards of interoperability in terms of chipsets, devices and solutions.

Comarch (headquartered in Kraków) is a leading global IT company with a portfolio of thousands of complex and successful IT projects and implementations of software development for more than 40,000 companies worldwide. We have wide knowledge of IT systems and solutions including cloud services, IoT ecosystems and embedded software. Comarch has been a reliable partner for global IT standards organizations since 2007, and has created a new version of the UPnP certification tool. Over the years, we've worked with various organizations and gained knowledge and expertise in how to support certification bodies at each step of the creation of certification programs, and aid their members in technology adoption.

Get in touch!
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