

CASE STUDY

# CREATING AN AUTOMATED TEST SYSTEM FOR WIRELESS CHARGING STANDARD

## SUMMARY OF COOPERATION BETWEEN COMARCH AND AIRFUEL ALLIANCE

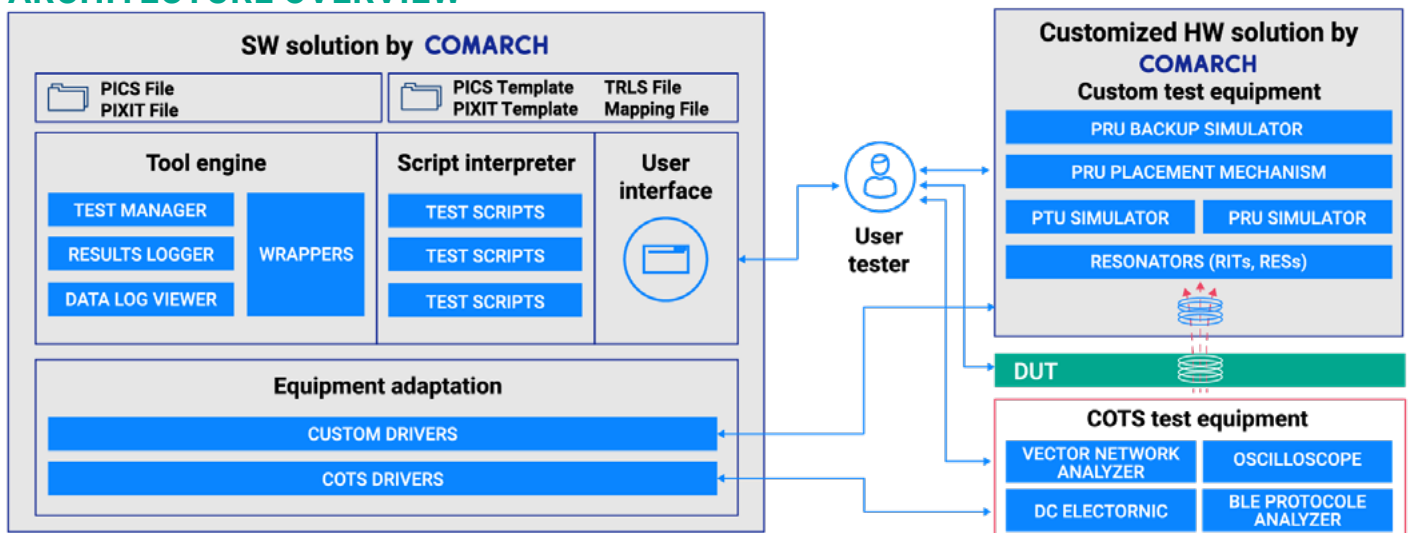


COMARCH HAS BUILT A PIONEERING `AUTOMATED TEST SYSTEM` THAT SUPPORTS THE DEVICE CERTIFICATION PROCESS, STANDARDIZATION OF WIRELESS POWER AND THE CONSTRUCTION OF A GLOBAL, INTEROPERABLE ECOSYSTEM BASED ON AIRFUEL RESONANT TECHNOLOGY.

### ABOUT AIRFUEL ATS

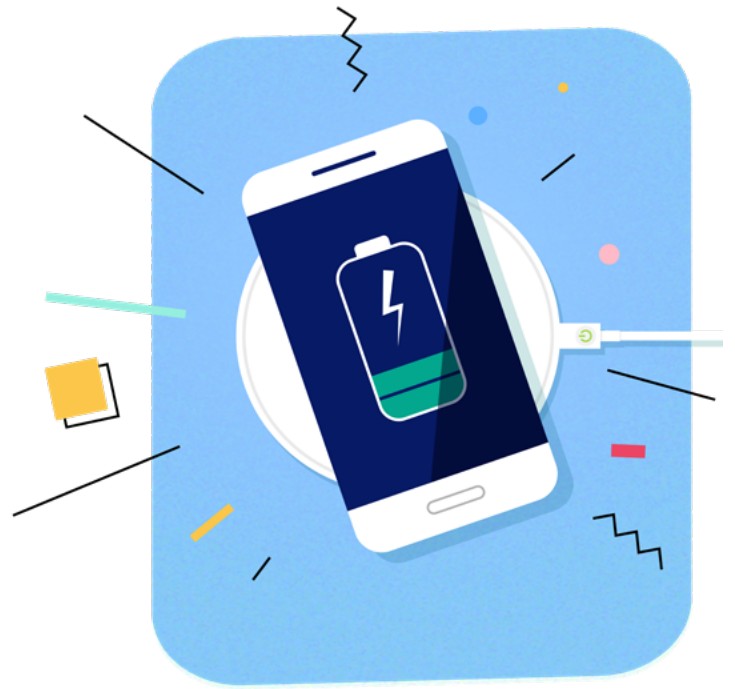
**Automated Test System (ATS)** is an innovative testing system for certification of wireless charging products, including both chargers and end devices. Test labs or device manufacturers can implement the hardware and software solutions of ATS to verify compliance with AirFuel Alliance’s magnetic resonant standard for wireless power transfer. The tests performed by the ATS system are essential for **AirFuel Resonant™** Certification, confirming global interoperability and thereby ensuring that consumers enjoy a consistent wireless charging experience across all certified products bearing the AirFuel brand.

### ARCHITECTURE OVERVIEW

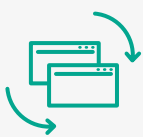


## MULTI-DIMENSIONAL COOPERATION

- Creation of **Automated Test System (ATS) version 1.0** – Comarch started supporting the AirFuel Alliance organization at the early stage of the resonant technology and entire standard adaptation
- Design of the complex test system: ATS is an innovative and **comprehensive combination of software and hardware** elements. Thanks to the Comarch's wide experience in both hardware production (e.g. creating system simulators or supporting tools from scratch and manufacturing them in our own **IoT Plant**) and software development (e.g. developing the test engine, synchronization algorithms, and automation of CTS, RAT & IOP test cases)
- Comarch's **quality assurance** and **embedded hardware expertise**, gained during years of cooperation with large certification bodies, allowed to support AirFuel Alliance's requirements for its Automated Test System
- Development of **ATS version 2.0** – adaptation of the test system to the latest AirFuel Magnetic Resonance Baseline System Specification
- Delivering **Automated Test System** to Airfuel Alliance **ATLs** (Authorized Testing Laboratories) to verify compliance with the Rezence™ standard. Cooperation also included system support and maintenance, as well as onsite trainings for ATL operators
- **AirFuel Alliance Members Meeting** hosted by Comarch – Three days of hands-on demos, case studies, and working sessions about existing and near-future deployments of AirFuel technology (September 2019, Krakow)



## CUSTOMER BENEFITS & HIGH VALUE FUNCTIONS OF AUTOMATED TEST SYSTEM PROVIDED BY COMARCH



Modular architecture that makes it easy to adjust and upgrade the test tool to latest standards updates



Comprehensive documentation and training for test system users



Lower test cases development and test tool maintenance costs



Opportunity to perform pre-certification test runs in development phase



Opportunity to write proprietary test cases using Python



Sophisticated and easy-to-use logs viewer and interpreter



Automatic versioning and common format for test scripts



Environment for IOP Testing

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## Recommendation of the AFA

*“Comarch is a valuable partner for our Testing and Certification Program, delivering innovative, scalable and cost effective solutions that are vital for certifying products under the AirFuel Resonant™ wireless power standard. The hardware and software they developed for our Automated Test System (ATS) was completed on-time and on-budget with great attention to quality.”*

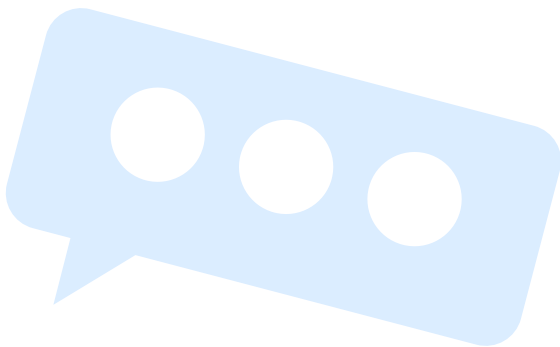
– Sanjay Gupta – President of AirFuel Alliance

## Recommendation of the TTA (AFA's Lead ATL)

*“Comarch developed a complex AirFuel Alliance Testing System which consists of the software and hardware parts and allows testing and certification of products that use the Rezence™ standard. Comarch has also provided TTA with a professional training program on our premises in Korea. The training helped TTA understand key aspects of relevant technologies and processes from the perspective of the AirFuel Alliance ATL role.”*

– Dongho Kim - Department Director, TTA

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## PARTNERS OVERVIEW



AirFuel Alliance is a global coalition of innovative companies which are committed to a world where we can power up without plugging in. The Alliance was established in 2015 and is governed by a board of directors from leading wireless companies to develop universal standards for leading-edge wireless power technologies and to accelerate their adoption by building a global, interoperable wireless power ecosystem supported by eco-friendly infrastructure through approved specifications and testing protocols. AirFuel Resonant and AirFuel RF technologies enable rapid charging of multiple devices simultaneously and wirelessly.

## COMARCH

Comarch is the leading global IT company with a portfolio of thousands of complex and successful IT projects and implementations of software development in more than 40,000 companies worldwide. We have wide knowledge of IT systems and solutions including cloud services, IoT ecosystem and embedded software. Comarch has been a reliable partner for the global IT standard organizations since 2007, in which we have 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 its members in technology adoption.

## OVER 13 YEARS OF COMARCH EXPERIENCE IN COOPERATION WITH LEADING STANDARD ORGANIZATIONS AT A GLANCE

