

KPIT



# End to End Digital Key Validation Solution



Digital Key Solution is a complex area requiring deep system understanding and cross-component validation experience.

## Digital Key Validation encompasses Functional Validation and Certifications

### Features and Functions



Lock/Unlock



Start/Stop



Hands-free Unlock/Lock



Key Sharing



Maintenance Service

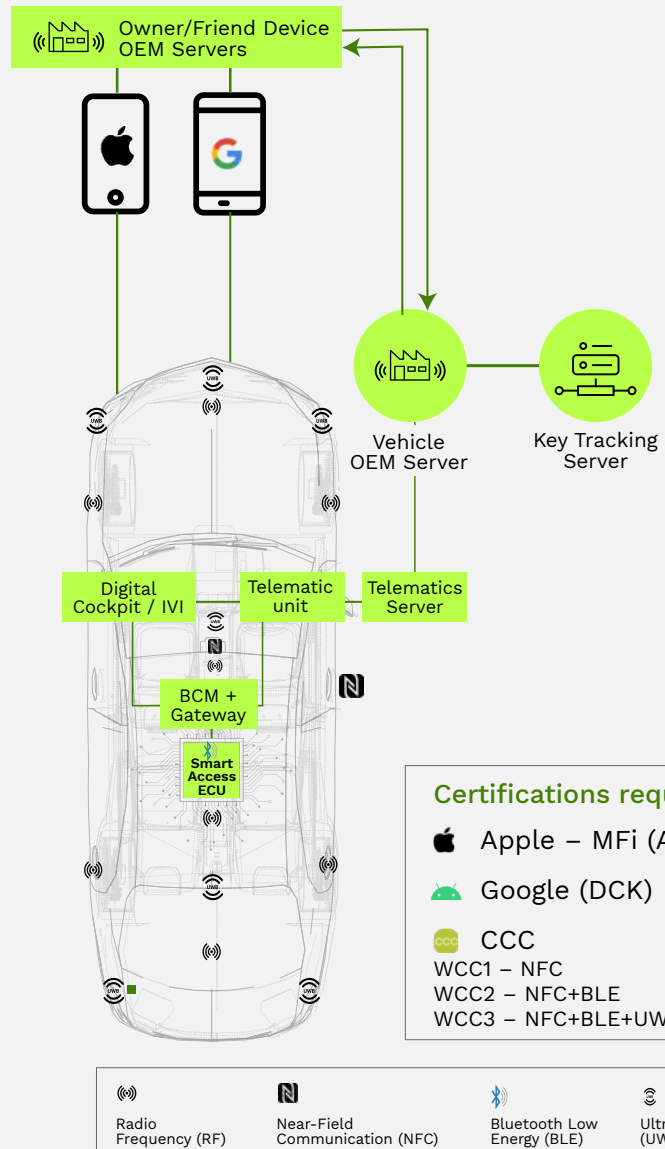


Auto Valet Parking



Charging Service

### Architecture & Certifications



## The key challenges of Digital Key Validation are:



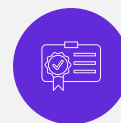
Availability of a Test Infrastructure.



Interoperable solution to multiple phones (e.g., iPhones, Google/Android).



A Scalable and Modular Test Solution.



Certification know how (CCC Certification).



## An end-to-end validation solution

A one stop solution with a combination of expert engineering services and state of the art test automation and frameworks.



### Validation and Test Automation Services

- Execute pre-certification testing for :



- Test Frameworks and Automation to execute functional validation and regression testing.

### Ready modular and scalable Test Benches

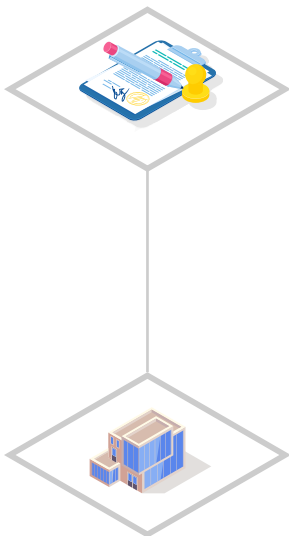
- Executes interoperability testing for multiple phones.
- Test automation with Robotic Arm and Linear Axis setup.
- Integrates CCC authorized tools for NFC and BLE.
- A simulation framework for ECUs, System and Backend Servers for component testing.

The solution ensures comprehensive testing and functional validation before going for Certification testing from CCC Authorized Laboratories.



## KPIT Technologies and Technica Engineering GmbH have partnered with 5 Global OEMs

The solution deployed includes:



### Test infrastructure for End-to-End Digital Key validation i.e.

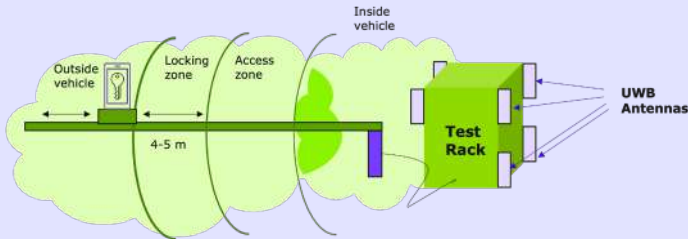
- Simulation of Test environment
- Manual and Automated testing
- Integration testing & support
- Test specification Development

### Supporting Chinese and South Korean Device OEM Integration with Smart Access.



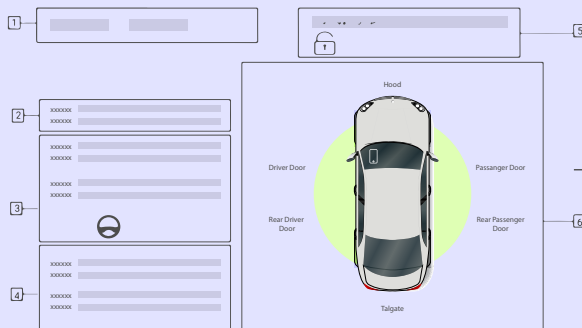
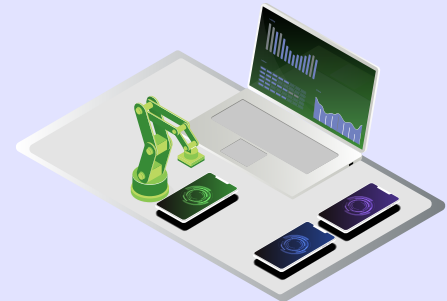
## Customised Test Benches for Digital Key validation

- Scalable modular test bench.
- Integrates multiple ECUs, Sensors, HMI etc.
- Allows for remote access.
- Enables manual, semi-automated and automated testing



- Simulate proximity of the phone to validate, UWB, BLE and NFC functionality.

- Test multiple mobile phone models (Android / Apple).
- Use of real ECUs or simulations of ECUs.



- GUI (Graphical User Interface) enables easy bench testing with monitoring of multiple vehicle status.
- Smartphone OEMs can conduct manual test executions.



## Key Benefits of our solution are:



A Test Automation Framework.



Functional, Communication and System testing.



Authorized Test Lab of Car Connectivity Consortium.



Certification support for CCC, MFi (Apple) & Google (Android).

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