

### OPPORTUNITIES ADDRESSED

Lab-based framework for the validation of Electric Vehicle system such by plugging in the Device Under Test to fully functional Hardware in Loop Simulation

#### 40-50% Cost reduction by re-using HILS

Readily available components:

- Vehicle Supervisory Control
- On-board Charge Module
- DC-DC Converter
- Battery Pack
- BMS
- Inverter
- Motor Control Unit
- Motor
- AD/ ADAS Domain Controller
- Charges only as per usage
- In-house developed test automation framework with pre-written test cases

#### Access to expert advice and testing services for planning and execution completeness of test scenarios

- Functional Tests
- Diagnostics Tests
- Drive Scenarios
- Standards Verification
- Performance Analysis
- Drive Cycles
- Range Verification
- Electrical Compatibility
- Network Tests
- Load Tests

#### Scalable to component, system, and vehicle level validation



In-house lab-based framework for validation of EV systems such as Battery Management, Inverters, DC-DC Converters, etc.



## Service Offerings

Functional Tests

Diagnostics Tests

Drive Scenarios

Standards Verification

Performance Analysis

Drive Cycles

Range Verification

Electrical Compatibility

Network Tests

Load Tests

### Validation As A Service

Significant investments enabling ready-to-use facility, tools, and resources

### Complete Interconnected Vehicle Level HILS

Scalable validation test bench to support AD/ ADAS, Infotainment & Telematics ECUs

The HILS setup capable to perform **Signal level and Power level** validation

**Simulated Environments, Drive Scenarios, and Vehicle Dynamics**

Access to Tata Elxsi's **Test Scenario** database and **100% Automated** Test execution