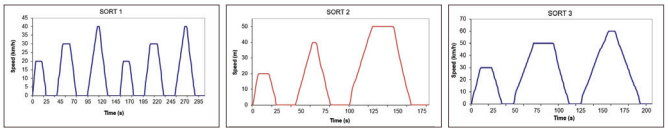
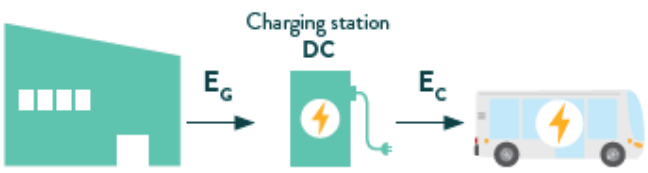
Applus IDIADA

Standardised On-Road Test Cycles, E-SORT

E-SORT is a measurement protocol applicable to Full Electric as well as Plug-in Hybrid buses which was developed by the International Association of Public Transport* to standardise the energy consumption results of various buses. According to the UITP 2014 standard, E-SORT testing mainly includes the three test cycles and charger efficiency tests, where SORT cycle 1 is 'urban', SORT cycle 2 is 'mixed' and SORT cycle 3 is 'suburban'.



E-SORT test cycles



Charger efficiency test. (Picture from UITP 2014 standard)

If various urban buses are being considered for purchase or sale, the result of E-SORT is one of the most important benchmarking factors for comparing similar types but different brands of buses. It also plays a key role in commercial bidding for bus manufacturers.

IDIADA facilitates comprehensive, cost effective and efficient solutions to fully satisfy our clients' requirements related to Pure Electrical Vehicle Benchmarking in Spain, with the following characteristics:

- Turnkey projects, including road definition, equipment instrumentation, road testing, data processing & validation and reporting. With IDIADA's full participation, it takes only 4 to 7 days to finish all these activities with good weather and road conditions.
- Test guidance and witness, for either homologation or training purposes.
- Consultancy services.

IDIADA has participated in the UITP Bus Committee for E-SORT standard definition, and has a broad range of expertise worldwide, not only focusing on passenger cars, but also providing services to bus manufacturers.

ROAD DEFINITION

IDIADA helps its clients to define and adapt the most suitable road for testing. Also, the dynamic platform test track of IDIADA's proving ground in Spain, (near Barcelona) has ideal capabilities to perform the E-SORT test.

TRACK TEST CHARACTERISTICS

Length of straight: 2000 m

- Total length: 7500 m
- Posibility to perform the test in the dynamic platform
- Longitudinal gradient in the PDA: 0%

EQUIPMENT INSTRUMENTATIONT

- GPS speed recording
- BUS e-Powertrain high-voltage system
- BUS low-voltage system
- BUS CAN message
- Charger input/output voltage, current & power (i.e. CCS, GBT standards)

ROAD TESTING

- Test preparation
- Vehicle setup
- Test execution
- Data recording

DATA PROCESSING & VALIDATION

- Data assessment
- Test validation

REPORTING

- According to UITP test protocol
- Customised format

AN INTERNATIONAL ENGINEERING COMPANY

IDIADA, with over 3,100 professionals, provides product development services to the automotive industry worldwide, with presence in 22 countries.

The company has been present in China since 2004, where it provides engineering, design, testing and certification services.

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