

## Heavy duty services

**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'.

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

- **Turnkey projects**, including road definition, equipment instrumentation, road testing, data processing and 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 service**

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 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 high-speed track of IDIADA's proving ground in Zhaoyuan, (Shandong Province) has full capability to perform the E-SORT test.

- **IDIADA China Proving Ground:**
  - Length of straight: 1500 m
  - Total length: 5290 m
  - Longitudinal gradient: 0.75%
  - 4 lanes and 4 parking areas
  
- **IDIADA Spain Proving Ground**
  - Length of straight: 1950 m
  - Longitudinal gradient: 0.0%
  - 2 lanes and 1 parking area

## Equipment Instrumentation:

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

## Road Testing:

- Test preparation
- Vehicle setup
- Test execution



- Data recording

## Data Processing and Validation:

- Data assessment
- Test validation

## Reporting:

- According to UITP test protocol
- Customised format

## An international engineering company:

IDIADA, with over 2,500 professionals, provides product development services to the automotive industry worldwide, with presence in 22 countries, including China (Shanghai, Beijing, Changchun, Chongqing, Guangzhou, Hefei, Qingdao, Zhaoyuan). The company has been present in China since 2004 where it provides engineering, design, testing and certification services.

Find more information about the Standardised On-Road Test Cycles, at the [UITP website](#).