

A portable belt propulsion solution
for VRU testing

SPT™



The Soft Pedestrian Target (SPT) system is a portable belt propulsion mechanism which uses our patented Synchro™ technology to accurately and consistently play out NCAP and custom-made test scenarios.

The SPT system uses a standard AB Dynamics controller and steering robot motor to power the drive unit. It is programmed using Robot Controller Software, which is common to our portfolio of track testing solutions. Customers can use an existing steering robot as the drive motor or alternatively, versions with dedicated built-in motors are available and capable of speeds of up to 40 km/h. The SPT system can be powered by a 12V car battery and for higher performance, a mains power pack can be supplied (115v and 230v versions available).



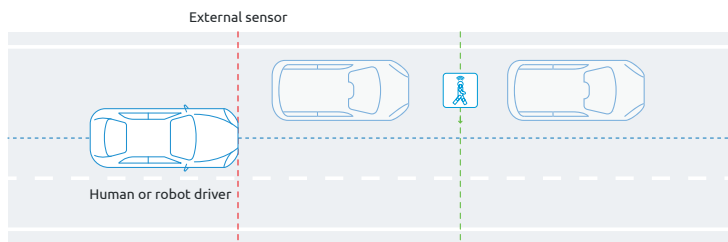
Specifications

| | SPT 20 | SPT 20 Standalone | SPT 40 Standalone |
|---------------------------|--|---|--------------------------------|
| External SR required | Yes - SR 60, SR 60 Torus | No, built in | |
| Maximum rated speed | 20 km/h with 15 kg payload | 20 km/h with 15 kg payload | 40km/h* |
| Maximum acceleration | 0.8 g with 15 kg payload | | |
| Position measurement | Uses motor encoder: Typical dynamic accuracy at platform better than 2 cm | | |
| Installation | Steering robot can be converted between SPT and steering use | No extra installation required other than belt setup | |
| Sled height | 25 mm | | |
| System protection | In built belt tension measurement system checks belt and stops motor if belt tension changes significantly | | |
| Water resistance | Can be used in rainy conditions; case acts as a rain cover for motor | Motor box sealed, suitable for wet and icy conditions | |
| Mains power pack required | Recommended for longer runs at maximum performance | | Yes - for maximum performance* |

*Optional mains power supply unit is recommended for high speed operation such as with a cyclist dummy

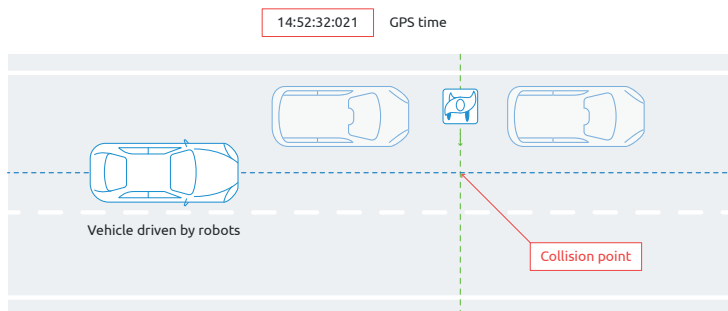
Control modes

The SPT can operate in three control modes, according to the test requirements and the other available hardware.



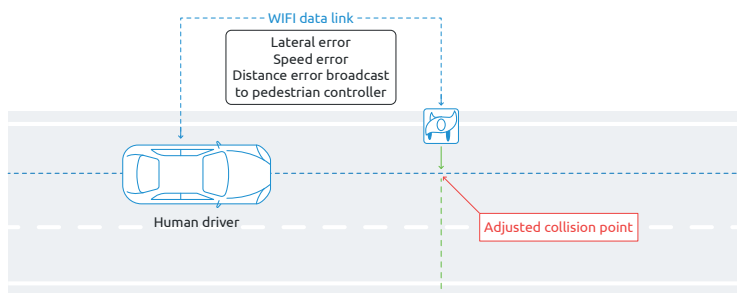
Mode 1: Triggered by external sensor

The target motion can be initiated by a digital, analogue or CAN signal fed into the SPT controller from an external sensor, such as a light gate. The target speed profile is pre-defined according to the test requirements.



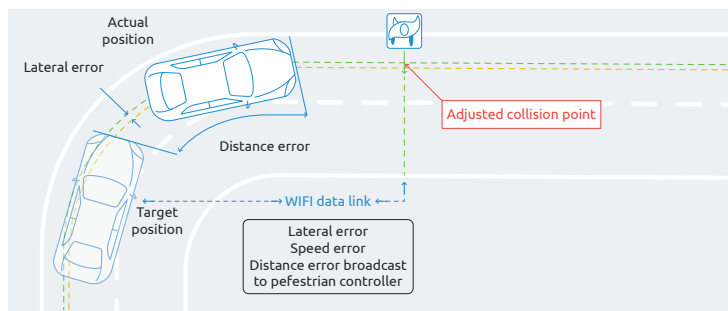
Mode 2: Coordinated with robots using GPS time synchronisation

Vehicle is driven using steering robot (with path-following) and pedal robots for accurate positioning and speed control. Vehicle and target motion is started using a GPS time trigger. Both trajectories and speed profiles are pre-defined to give the synchronisation between vehicle and target, according to test requirements.



Mode 3: Synchronised motion

Synchro sends GPS data from the vehicle to adjust the target speed and position in real-time. Thus, a human driver follows the approach path and the SPT controller adjusts to compensate for the vehicle's lateral and time error, ensuring the scenario takes place correctly.



Mode 4: Non-orthogonal synchronised motion

Synchro enables the subject vehicle to travel along a non-linear path and intercept the target at various impact angles. Synchronisation happens again to adjust the target to compensate for both vehicle's lateral and time error, making sure that the scenario takes place correctly.

About AB Dynamics

AB Dynamics is a leading global provider of automotive test and verification solutions that facilitate the development of vehicles that are safer, more efficient and sustainable. As part of the AB Dynamics Group of companies we enable customers to develop and test in virtual environments, validate on the track and then evaluate vehicles on public roads.

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