Soft Pedestrian Target SP-6030

Controllable pedestrian target which can be synchronised to test vehicle for ADAS testing

From 2016, EuroNCAP tests include Autonomous Emergency Braking (AEB) testing with pedestrian dummies. This requires the use of a controllable pedestrian dummy which can be synchronised with the test vehicle. AB Dynamics SPT (Soft Pedestrian Target) uses a flat belt propulsion system, thus not requiring an overhead gantry (in accordance with the EuroNCAP view that a gantry could interfere with the test results). This also results in a portable system which can be quickly installed on any test track.

The SPT system can be used with a standard steering robot motor and controller as a drive unit, whilst programming is done using the easy-to-use RC software which will be familiar to existing robot users. Customers can use their existing steering robot (SR60 or SR60 Torus) to reduce the cost of an SPT system; the steering robot can be quickly and easily installed and removed from the system. Alternatively, a version with a dedicated built-in motor is available.

Precise synchronisation with the test vehicle is possible

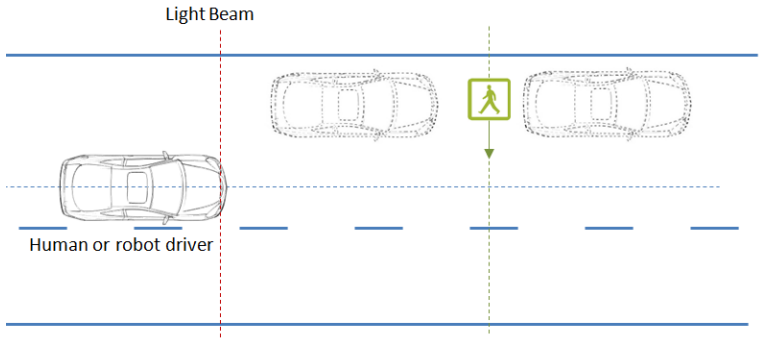
SPT20 used with existing steering robot

SPT systems

	SPT20	SPT20S
SR required	Yes – SR60 / SR60 Torus	None – built-in (SR60 equivalent)
Maximum speed	20 kph with 15 kg payload	20 kph with 15 kg payload
Maximum acceleration	> 1 g with 15 kg payload	> 1 g with 15 kg payload
Position measurement accuracy	Uses motor encoder: accuracy at motor better than 0.01 mm, typical dynamic accuracy at platform better than 2 cm	
Drive power	3.2 kW	3.2 kW
Installation	Steering robot can be quickly converted between use as pedestrian drive and steering robot	No extra installation required other than belt
Sled height	25 mm	25 mm
System protection	In built belt tension measurement system checks belt and stops motor if belt tension changes significantly	
Water resistance	Yes, can be used in rainy conditions – but motor box not totally sealed	

Software control modes

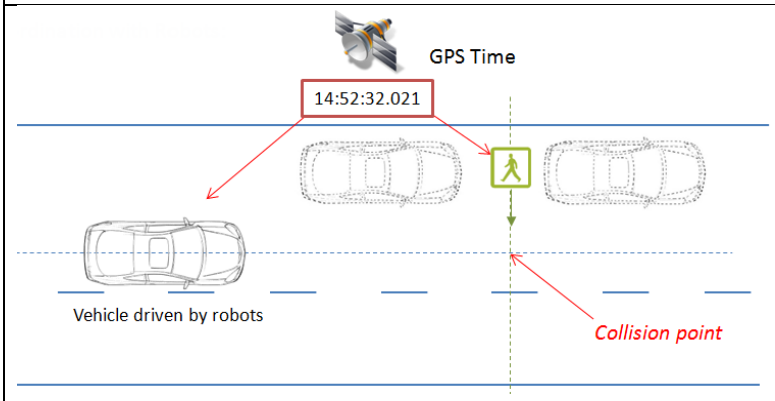
The soft pedestrian target can operate in four control modes, according to the test requirements and the other available hardware.



Mode 1: Triggered by light-beam

Pedestrian target motion is started when the vehicle breaks a light-beam. The vehicle under test can be human-driven or controlled by robots (for improved accuracy).

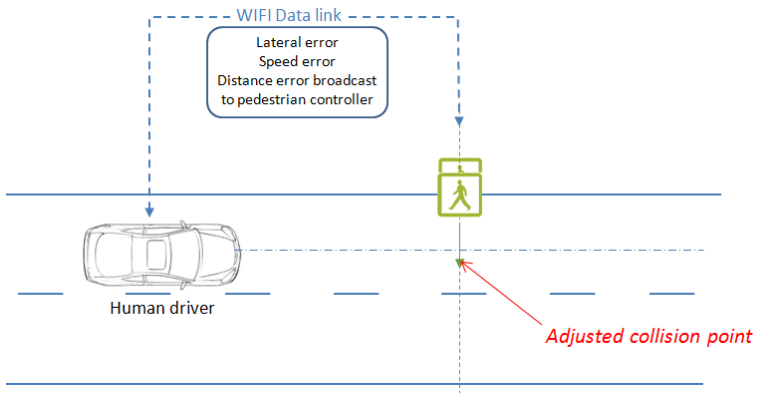
The pedestrian speed profile is pre-defined according to the test requirements.



Mode 2: Co-ordinated with robots using GPS time synchronisation

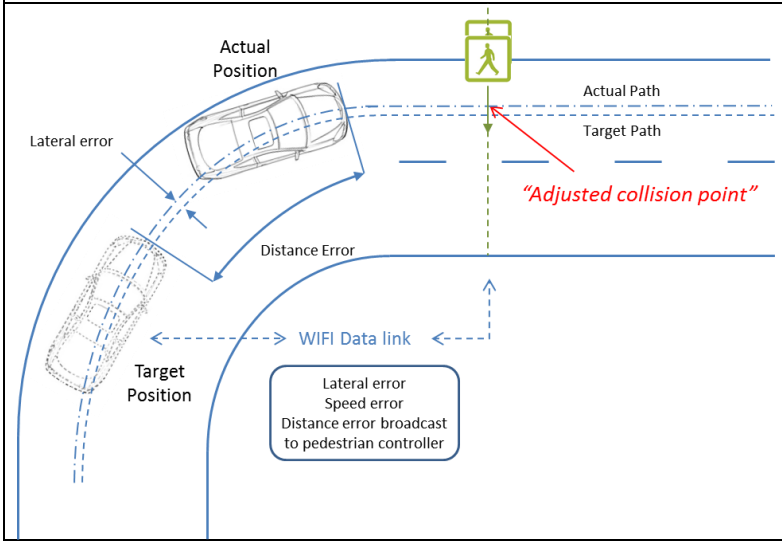
Vehicle is driven using steering robot (with path-following) and pedal robots for accurate positioning and speed control.

Vehicle and pedestrian motion is started using a GPS time trigger. Both trajectories and speed profiles are pre-defined to give the synchronisation between vehicle and pedestrian, according to test requirements.



Mode 3: Synchronised motion

Using AB Dynamics' Synchro system, which sends GPS data from the vehicle to adjust the pedestrian 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

AB Dynamics' Synchro system enables the subject vehicle to travel along a non-linear path and also intersect the pedestrian in a non-orthogonal manner.

Synchronisation happens again to adjust the pedestrian to compensate for both vehicle's lateral and time error, making sure that the scenario takes place correctly.

GET IN TOUCH

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RELEASE DATE 2nd November 2017

ISSUE No. 07