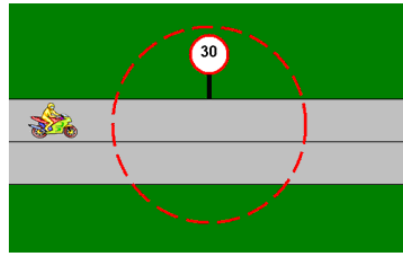




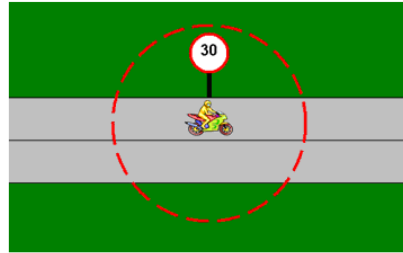
BP5: PTW Design and Protective Equipment

Reference: BP5 008	Title of Project:	Intelligent Speed Adaptation (ISA)
Version: 1	Website:	DfT ISA Report: http://www.dft.gov.uk/pgr/roads/vehicles/intelligentspeedadaptation/fullreport.pdf
Brief Description of Project:	<p>These systems function in one of two ways:</p> <ol style="list-style-type: none"> 1. Warning systems alert the rider that they are exceeding the speed limit or travelling too fast. These alerts can be aural or visual with increasing intensity if ignored by the rider. 2. Speed limiting systems actively reduce the vehicle speed if it becomes 'excessive' and/or illegal. <p>Trials of ISA on a motorcycle have been undertaken in the UK by the University of Leeds (<i>ISA. The results of a motorcycle trial. Simpkin, Lai, Chorlton and Fowkes 2007</i>)</p> <p>The PTW selected for the trial was a Suzuki Bandit 650S.</p> <p>The system used roadside 'virtual beacons' to provide the on-vehicle system with speed limit information and GPS location to provide geographic positioning.</p> <p>The illustration below, taken from the report, illustrates ISA in operation.</p>	

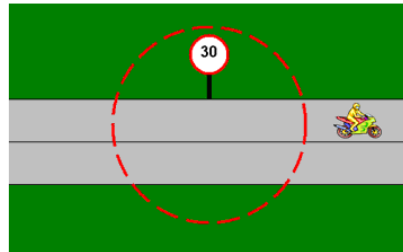




The motorcycle is travelling along the road approaching a new speed limit.



The motorcycle enters the virtual beacon and identifies the new speed limit.



The motorcycle is limited to 30 mph until it enters another virtual beacon with a different speed limit.

The ISA system could operate in several modes, providing first a warning of excess speed then an active intervention to reduce the speed. An opt-out facility allowed the rider to disable the system.



The warning was provided by visual display, flashing warning lights on the upper edge of the screen and by an audible warning through headphones worn by the rider.

Active intervention was through a electro-mechanical linkage to the carburettors providing gradual deceleration. This could be over-ridden using the emergency disable switch.

The vdu could also provide navigation information and junction warnings.

The trails were undertaken on a test track and vehicle speed and compliance with posted speed limits in each mode of ISA operation were monitored.

Monitoring Data:	The trails showed that the active 'assisted' ISA when operating did effectively reduce speed limit violation. The advisory ISA did not appear to significantly alter rider behaviour.
Results:	It would appear that the ISA system as trialled would not control violation or reduce risk significantly due to the 'opt-out' facility and high resistance amongst riders.
Key Effective Conclusions:	<p>A paragraph from the concluding section of the report is reproduced below.</p> <p>Overall, this ISA motorcycle trial has identified that there is a possible disjuncture between on the one hand the technical possibilities with concepts such as ISA and on the other hand the perceptions and attitudes of the current users of motorcycles. This may be because little emphasis has been placed upon how new assistive technologies pioneered in the passenger car and commercial field may migrate into the motorcycle sector and have an impact upon the perceived and actual safety, efficiency and marketability of motorcycles. It may also be influenced by the perceptions of motorcycle users with regard to the advantages or positive features of these vehicles, where the "freedom" and "independence" aspects of riding are valued highly by users and advisory and/or assisting technologies are perceived to be negative factors.</p> <p>Whilst the assisted ISA, which controls speed limit violation, is clearly technologically feasible and would reduce collisions caused principally by excess PTW speed, the report found considerable resistance to its installation and use.</p> <p>Many riders in the trial gave negative comments relating to their feelings when riding the trial PTW. It appears that this technology, however effective, currently has a high level of resistance from riders.</p>
Projects for Comparison:	None.
Justification:	<p>Due to the nature of the emerging technology and lack of operational ISA systems on PTWs, there is no casualty based monitoring data available. The trail undertaken by the University of Leeds demonstrates both the technical feasibility of ISA on motorcycles and the potential for controlling excessive speed. However it is this 'speed limiting' function which appears to provoke most resistance amongst riders.</p> <p>At this stage of development and with apparent disabling rider resistance this project would not appear to meet eSUM WP3, BP5 objectives.</p>