

INTELLIGENT SPEED MANAGEMENT (ISM)



WHAT IS ISM?

ISM is a set of operating requirements necessary to accurately measure vehicle speed using GPS.

GPS is the most common Global Navigation Satellite System (GNSS) used in telematics systems.

WHO NEEDS TO KNOW ABOUT INTELLIGENT SPEED MANAGEMENT (ISM)?

Any transport operator which utilises telematics systems that reference the Global Positioning System (GPS) to monitor vehicle speed can benefit from ISM.

DON'T ALL GPS-BASED TELEMATICS SYSTEMS MEASURE SPEED IN THE SAME WAY?

In short, no.

There can be significant differences in the way telematics systems measure and report speed.

Users may be relying on telematics systems to manage their speed compliance, without being aware that vehicle speeds may actually be under or over reported.

The implications of not being able to confidently rely on the information derived from telematics systems can be far reaching.

A SAFEGUARD TO MANAGE SPEED LIMITER MALFUNCTIONING AND TAMPERING

The use of ISM provides transport operators with a second line-of-defence to detect possible instances of speed limiter malfunctions and possible tampering.

MANAGING CHAIN OF RESPONSIBILITY (COR) OBLIGATIONS THROUGH ISM

Transport operators and other parties can utilise ISM as a way to assist in managing their CoR obligations, by gaining assurance through the accurate measurement of vehicle speed.

ABOUT TCA

Transport Certification Australia (TCA) is a national government body responsible for providing assurance in the use of telematics, Co-Operative Intelligent Transport Systems (C-ITS) and other Intelligent technologies.

The *TCA National Telematics Framework* provides a nationally agreed operating environment to support the current and future telematics needs of governments, end-users and industry sectors.

ISM OPERATING REQUIREMENTS FOR GPS-BASED TELEMATICS SYSTEMS

ISM SPECIFIES SIX OPERATING REQUIREMENTS THAT ENSURE TELEMATICS SYSTEMS ACCURATELY MEASURE AND REPORT VEHICLE SPEED USING GPS.

1

The resolution of the stored latitude/longitude position calculated by the In-Vehicle Unit (IVU) GPS receiver shall be to 0.00001 degrees or better.

This level of resolution is adequate for calculating a positional accuracy of 10 metres.

2

Vehicle speed shall be derived from GPS Doppler measurements.

Doppler is a method to calculate vehicle speed based on the change in frequency or timing of signals caused by movement of the difference GPS satellites relative to the IVU GPS receiver.

3

Vehicle speed shall be recorded to a resolution of at least 0.1km/h.

4

The IVU shall generate a Speed Record no less frequent than every 3.0 ± 0.1 seconds.

5

Vehicle speed, in excess of 60 km/h for heavy vehicles, should be accurate to within 3.0km/h for at least 99.9% of observations when using at least four GPS satellites and a Horizontal Dilution of Precision (HDOP) of <4 .

6

Reliance on a single GPS speed observation is not appropriate; owing to localised interferences which may not necessarily be identified and corrected by the IVU GPS receiver. An approach which analyses an array of speed observations for integrity is the most optimal.



CONTACT US

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