



The National Telematics Framework & Intelligent Access Program

allows all participants to trust data obtained using telematic equipment and to understand the limits to data access that exist. In other words, to establish consistency and trust between participants. These participants are fleet operators, telematics equipment manufacturers, service providers and regulators.

The Australian National Telematics Framework is internationally recognised as world's best practice and is the basis for International Standard ISO 15638. The significance of this is that a competitive advantage has been established for Australian manufactures and software developers of telematics equipment. Just as PBS provides a competitive advantage to Australian vehicle manufacturers, so does the NTF. In summary, the TCA has developed procedures that allow government to rely upon the data that comes from telematic equipment in trucks. Therefore, government can have confidence that agreements that it makes with transport operators can be substantiated. Consequently, Australian operators can argue for and establish agreements with government for road access and operating conditions that provide a competitive advantage.

The NTF is the basis for operation of the Intelligent Access Program (IAP), Intelligent Speed Compliance (ISC) and Speed Management (ISM) and Intelligent Mass Management. Fatigue Management is being added to the NTF. The TCA has developed a draft technical specification for the Electronic Work Diary. Refer to the TCA website for detailed information.

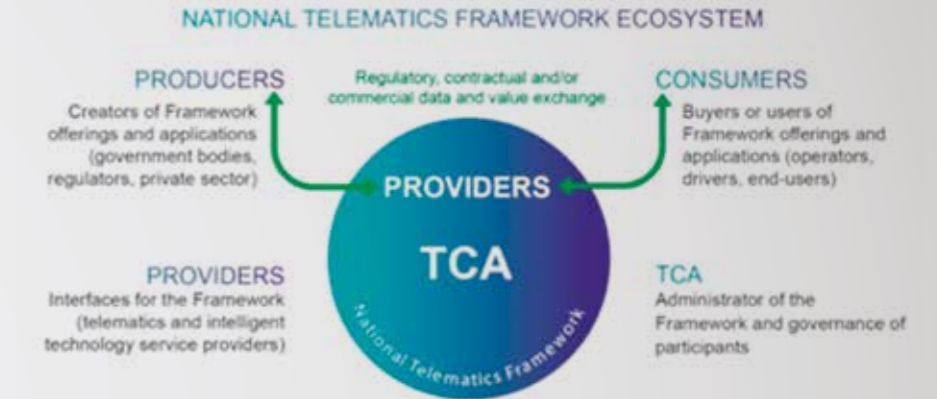
The Intelligent Access Program (IAP)

can be imposed as a condition of a permit or notice by a state and territory road manager. IAP is administered by the NHVR. In a nutshell, an IAP vehicle must have an In-Vehicle Unit (IVU) that monitors (at least) time, speed, and location. Most IAP vehicles also monitor mass. An independent service provider, who must be accredited by the TCA, obtains the data via the airwaves and determines whether the vehicle has complied with the agreed operating conditions. The service provider is obliged to provide compliance reports, which are usually an exception report, to government according to the operator's agreement with government. The operator can also contract for provision of operating reports from the provider that are useful to the business and of no regulatory interest to government.

Heavy vehicles that operate on heavy mass limits (HML) routes at HML axle limits are required to operate under IAP (with Mass Management) in NSW and Queensland. Other states and territories do not mandate IAP for HML vehicles. They may require it for individual heavy applications depending upon the routes nominated and the bridges to be crossed. In October 2018 the TCA announced there were 5,000 vehicles enrolled in IAP. This is a minute fraction of heavy-duty vehicles registered in Australia. Perhaps twenty times this number have mass monitoring equipment in place outside the IAP scheme. Vehicles that operate in HML jurisdictions outside NSW and Queensland must be in the national mass management scheme (NHVAS), which requires mass measurement. New South Wales also has an access program for heavy construction

vehicles called SPECTS. The available SPECTS routes stretch from Kiama to Newcastle to Penrith. The maximum published laden weight is 57.5t for a 4-axle truck towing a 4-axle dog trailer. For comparison, this configuration can legally travel at 43.5 t under Concessional Mass Limits. HML is only available via SPECTS in NSW. The SPECTS vehicle requirements are: 1. PBS approval. 2. Road Friendly Suspensions on non-steering axles. 3. Electronic Stability Control (ESC) on motive vehicles manufactured after 1 January 2017. 4. Roll over control on trailers manufactured after 1 Jan 2017. 5. Blind spot mirrors. 6. Reversing lights on both the truck and the trailer. 7. Retro-reflective tape to provide a vehicle contour outline. 8. A 'smart' reversing alarm that adjusts noise level appropriate for the environment on both truck and trailer. 9. At least Euro 5 engine emissions. 10. Operation under IAP in NSW. 11. On-board mass management linked to IAP. All this is sounding onerous however, most of these features are routine on new vehicles. Many operators go out of their way to avoid signing up for IAP.

The Australian Standard for road traffic bridge strength, AS 5100.7:2017 is used by road managers to assess the structural risk to road bridges of vehicle fleets. The latest revision incorporates reduced traffic load factors for vehicles monitored through IAP, which includes mass management. Consequently, IAP operators can argue that higher axle loads can be applied to IAP vehicles. This remains unfinished business. That is, there is a case for reviewing the HML limits for vehicles that operate



under IAP. The road owners would probably disagree because they assume a 'fourth-power relationship' between truck weight and road damage. For example, a five per cent overload causes a 22 per cent increase in road damage. There is some controversy about pavement damage models. Mass measurement is a key aspect of IAP. There are several accredited weighing systems that can be found on the TCA website. A module is required on each vehicle in a combination. Weight is calculated based upon a surrogate measurement on each suspension. This is either airbag suspension pressures or axle beam deflection (strain). The TCA specification requires no worse than two per cent accuracy, which can only be achieved with great care for detail. A two-point calibration is advisable so that (at least) two load points are accurately calibrated when setting up the system. Airbag suspension pressures are relatively easy to measure using precision air pressure transducers. Air bag pressures are common on one side of the axle group and one sensor is needed to measure the pressure. If the truck or trailer has two levelling valves, two

pressure transducers will be needed. Changing the ride height of the vehicle after calibration is a no-no because this changes the shape of the airbags under a given load and will affect the accuracy. Inaccuracies may also arise when measurements are made on slopes. The technology needed to achieve IAP status is significant and costly. At present many operators regard the productivity benefits as marginal considering the outlay and on-going monitoring costs. However, there are good business reasons for embracing telematics into fleet operation. Knowing where vehicles are, how long they have been driving and what is on board are now fundamental to efficient business operation. Therefore, operators should have a telematics plan and then decide how road access allowances from governments can also be achieved. Government should always be conscious of both the carrot and the stick. There has to be a clear benefit to the operator community to take up telematics technology. It's not just about enforcement!

Dr Peter Hart
 Chairman, ARTSA