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Senator Glenn Sterle
Chair, References Committee
Senate Standing Committees on Rural
and Regional Affairs and Transport
Parliament House
Canberra ACT 2600

26 June 2017

Dear Senator

Re: Inquiry into Australia's Rail Industry

Thank you for your letter received on 22 June 2017, on behalf of the Senate and Rural and Regional Affairs and Transport References Committee, to the Australian Rail Track Corporation (ARTC) regarding the public hearing on the state of Australia's rail industry.

Unfortunately, I am unable to attend the public hearing inquiry; however, a senior representative from ARTC will be able to attend in early August 2017 if a hearing was scheduled at this time. Again, I would like to commend the Committee's work to achieve better outcomes for the rail industry and look forward to continuing to engage with the Senate Committee on this subject. Please find enclosed responses to the questions raised in your letter. I note that while ARTC works closely with a range of stakeholders in the rail sector, rolling stock is largely a commercial matter for above rail operators.

ARTC's suggestion that the Committee may consider the inclusion of a section on how the adoption of technology could lead to better transport outcomes was in reference to the additional section included on 'Shaping the Future'. ARTC believes technology will continue to play a key role to improve freight rail efficiencies and believes that support for automated rail technology should be considered as a means to ensure rail freight is able to modernise and as such remain competitive. As indicated in ARTC's February 2017 submission, we are developing a new communications based safeworking system, the Advanced Train Management System that is now in a field trial. Further information on this project has been included for the Committee's consideration.

As you may be aware, the Australian Government through the Transport and Infrastructure Council is progressing a National Rail Vision as well as a National Freight and Supply Chain Strategy. Many of the items discussed, as part of this inquiry will be relevant to these strategies. ARTC suggests it may be useful to cross-analyse any work undertaken as part of this process to ensure that there is no duplication or conflict.

Yours sincerely

John Fullerton
Chief Executive Officer

Enc.

1. What scrutiny of standards in rolling stock does ARTC undertake for rolling stock running on its network?

ARTC works closely with above rail operators to ensure adequate rolling stock is being utilised on rail tracks, which ARTC operates and maintains through ARTC Interface Standards. ARTC's Interface Standard, known as Route Access Standards (RAS), describes the infrastructure standard trains must comply with to run on the ARTC network. For example, these standards define clearance from structures, axle loads and speed combinations allowed, train lengths for operation into crossing loops and train braking performance to meet signal spacing.

To avoid damage to ARTC infrastructure and to prevent operational delays, ARTC has wayside monitoring devices that measure a number of rolling stock features, such as wheel, bearing, brake, bogie and loading conditions. ARTC works with operators through a steering committee to develop methods to monitor and address any conditions identified through this system.

ARTC actively participates in the Rail Industry Safety and Standards Board Committees (RISSB) for Track and Civil Infrastructure, Train Control Systems, Rolling Stock, Operations, Safety and Interface committees. These committees oversee the preparation of Railway Standards and ensure above rail and the below rail standards are compatible. ARTC has been involved in both the Standing Committee and Development Committees for the standards in all of the above mentioned categories. Any further details on the Standards Committee can be best addressed through RISSB.

The rail industry has significantly matured in the last five years and the establishment of the independent Office of the National Rail Safety Regulator and RISSB has been important harmonising standards.

2. What impact would harmonising standards for rolling stock have on becoming accredited rail operator on the network.?

The independent Office of the National Rail Safety Regulator (ONRSR) accredits operators in accordance with the Rail Safety Acts and AS4292. Importantly, ARTC does not accredit rail operators.

To operate on the ARTC network, a train operator must be accredited by ONRSR and have an access agreement with ARTC. The access agreement requires that the operator must present a train fit for purpose. ARTC interface documents (RAS) define the infrastructure and interface requirements for trains.

RISSB Standing and Development Committees oversee the development of standards, guidelines, codes and rules. These committees are made up of rail infrastructure owners, rolling stock operators, rolling stock manufacturers, infrastructure component manufacturers, union representatives, and maintenance companies. This diversity promotes industry harmonisation in the development of these standards and consistency for below and above rail operators.

3. How is ARTC currently managing standards on a national system with multiple operators?

ARTC's infrastructure, safety and operations comply with the Australian Standard prepared by RISSB. The RISSB committee and development processes ensure the rolling stock and operational standards are compatible with infrastructure standards.

4. What does ARTC see as the obstacles to innovation in the rail manufacturing sector?

From ARTC's point of view, the challenges and barriers to innovation in the rail manufacturing sector relate largely to the high investment required to support the commercialisation of innovation and implementation. Innovation in rail is often associated with high capital outlay and has no guarantee on a returned efficiency or productivity gain for the manufacture. This is further complicated by the need to ensure interoperability of new innovation within the supply chain.

ARTC provides advice to above rail operators on constraints, for example by providing tools and solutions to support the most productive management of rolling stock.

Innovation is built into most RISSB standards and allows for the development of new rolling stock / rail components and systems as long as they meet interface requirements and are appropriately tested.

5. How could whole of life costings be applied to the rail sector?

ARTC and most operators apply whole of life costing to infrastructure design, manufacture, installation, operation, maintenance, and decommissioning.

For new infrastructure, ARTC identifies future trends in consultation with train operators to ensure new infrastructure not only meets current requirements but is 'future proofed'. For example, the Melbourne to Brisbane Inland Rail route will allow for longer trains, for heavier axle loads and speeds, and double stacked containers.

6. What changes, if any, would ARTC recommend to rail procurement with regard to rolling stock and / or steel?

ARTC does not operate above rail and as such does not procure rolling stock for these purposes. ARTC does procure steel for rail track and considers the current practices remain appropriate for the level of procurement required.

Changes to rolling stock / steel would be managed in consultation with the rail industry through RISSB by reviewing the Australian Standards.

7. Does ARTC believe there should be a national approach to rail manufacturing and does it have suggestions for how it would work?

As indicated in ARTC's February 2017 submission to the Senate Inquiry, ARTC is supportive of a nationally coordinated approach to rail manufacturing standards subject to it being based on the principle that it be economically sound, practically feasible and does not inhibit innovation. ARTC acknowledges the potential safety and efficiency benefits from standardisation and harmonisation of practices.

Given a nationally coordinated approach requires buy-in from the rail industry, in particular above rail operators, ARTC suggests the Australian Government and states consider this matter via the National Rail Vision and National Freight and Supply Chain Strategy process currently underway.

8. The rail manufacturing CRC states in its submission that tenders for rolling stock should "mandate a level of innovation in the procurement sought, in exchange for supportive government procurement policies and local content requirements, as well as significant investment through grant programs". Does the ARTC agree and, if so, could it describe how this would work?

Given ARTC is not an above rail operator it is not in an appropriate position to make an informed decision on the tender of rolling stock. This matter is best addressed by above rail operators in Australia. In general, ARTC considers that any tendering of rail freight should be fit for purpose, economically sound, support safety, practically feasible and should not inhibit innovation.

ARTC has been working with above rail operators to support innovation by testing new rolling stock performance over ARTC's network and helping companies to identify how new rolling stock will contribute to future innovation.



ADVANCED TRAIN MANAGEMENT SYSTEM (ATMS) MOVES TO IMPLEMENTATION

The Advanced Train Management System (ATMS) project, developed by ARTC in partnership with Lockheed Martin Australia, is continuing to progress positively and is now in its first 'Implementation Stage'.

About ATMS

ATMS is a modern communications based train management system. Rather than using the traditional train management system of 'fixed', physical trackside infrastructure like signals, it instead relies on a digitally-controlled network.

The system uses wireless, broadband communications, a centralised and on-board computer control system and GPS-based train tracking and control devices to manage train operations (see schematic).

How ATMS works

With ATMS, train drivers are able to view the appropriate authorities¹ for their train through an in-cab based display rather than lineside signals or paper-based information. It shows the exact position of the train (at front and rear), advice of the train authorities that must be followed, and the proximity of other trains on the network and trackside workers.

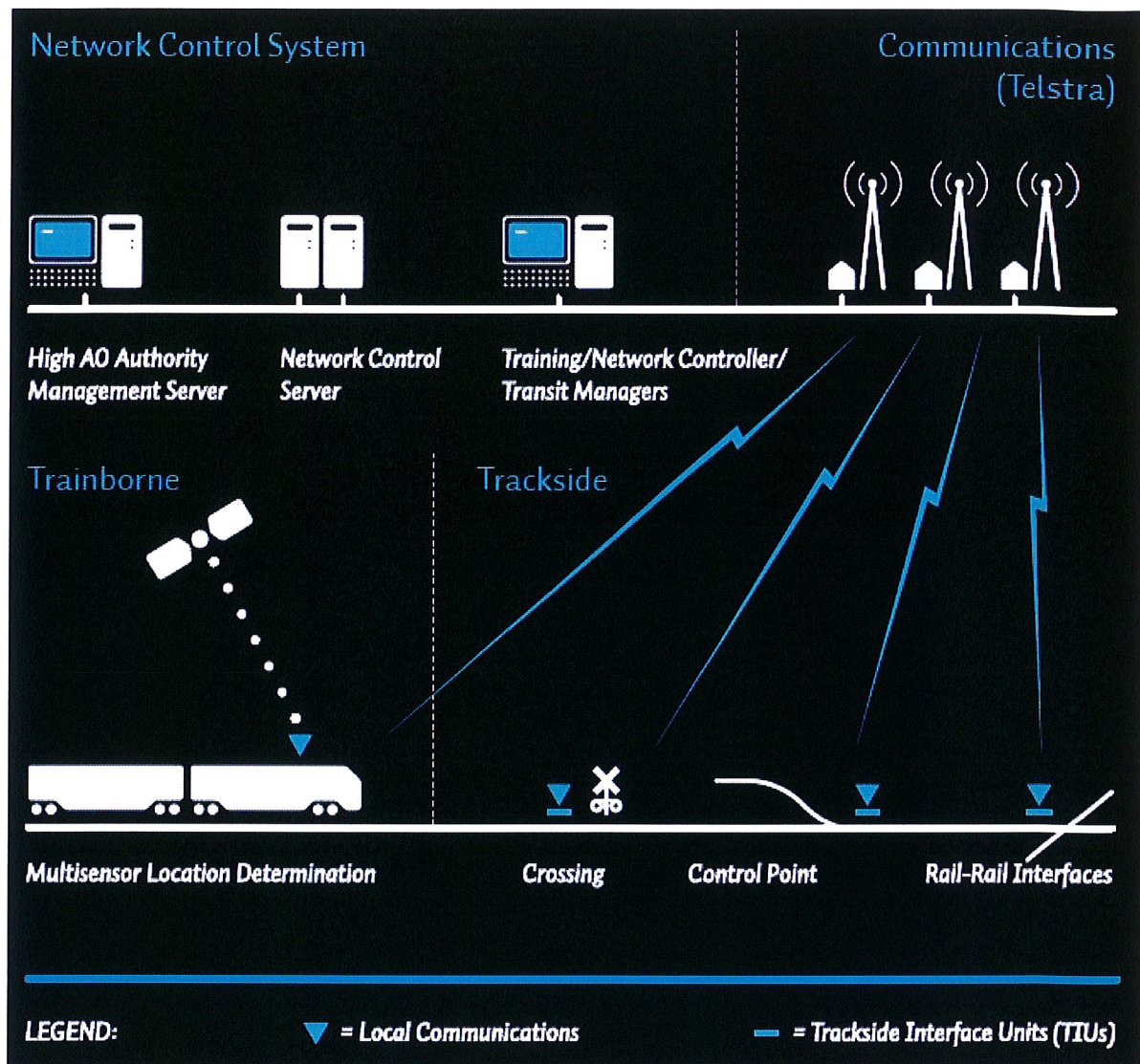
ATMS also provides new capability to network control centres, each able to digitally locate and control all traffic on the ARTC network as well as deliver information (both voice and data) to locomotives and provide a backup capability to other network control centres in the event of a failure.

The system also includes collision avoidance capability providing a 'fail safe' mechanism to apply the brakes of the train if the train has exceeded its limit of authority. This feature will dramatically improve safety by maintaining safe train separation and will protect workers maintaining the track.

ATMS provides the control, location accuracy and intervention ability to allow trains to work in closer proximity than is possible today. Network Controllers are able to schedule more trains on the same area of track and will also be able to 'fleet trains' heading in the same direction by spacing them behind each other at a safe stopping distance.

ATMS continuously updates the train driver's display and authority to proceed by verifying that all turnouts are in the proper position and confirming that there is no conflicting traffic on the track. If the system identifies conflicting movement authorities, then parts of the planned authorities will be held back by the system until they are safe to be issued. Once safe, the system will send the authority to the locomotive to proceed on its planned route to the next control point.

¹ An authority is the permission provided by a network controller to a train allowing it to operate on a certain section of the rail network.



At a maintenance level - infrastructure staff will apply for track possessions and have track reserved for them in accordance with existing safeworking rules. In future, this might be conducted via a data terminal. The use of ATMS will provide an additional level of protection for trackside workers by preventing trains being able to enter areas protected by the electronic block.

Benefits

The advantages of ATMS is that it increases the capacity, safety and reliability of the rail network by enabling more trains to safely travel closer together, significantly improving efficiency and enables remote train safety features.

ATMS also promises to lower costs for rail operators through reduced fuel consumption, less wear on wheels and brakes, fewer train crew hours and enhance ARTC's operations by reducing trackside infrastructure maintenance requirements.