The following information is based on a response to a survey carried out by the International Transport Forum on innovative policy initiatives within member countries, and countries’ efforts to promote innovation.

Briefly describe innovative policy initiatives that your government has succeeded in implementing in the transport sector in recent years. Please take the widest possible definition of innovation, including innovative technologies (e.g. ITS), policies, practices (e.g. new pricing mechanisms), etc.

1. **Intelligent Access Program (IAP)**

   Australia has a long history of implementing innovative road transport solutions, to maximise the efficiency and productivity of moving freight very long-distances. Examples include the long-standing use of larger vehicle combinations, such as road trains and B-doubles.

   The Intelligent Access Program (IAP) seeks to extend these innovative solutions across other parts of the road network. The IAP is a voluntary program which provides heavy vehicles with enhanced access to Australia’s road network, allowing operation of larger dimension or mass heavy vehicles, in return for monitoring of compliance with specific access conditions by vehicle telematics solutions. Further details are available at: [www.iap.gov.au](http://www.iap.gov.au).

2. **Chain-of-responsibility legislation for heavy vehicles**

   The traditional approach to road transport law enforcement in Australia has applied legal liability for infringements to drivers only. Where other parties could be held accountable, this was only through legally cumbersome ‘cause or permit’ and ‘aid and abet’ laws. Prosecution of other parties in the transport chain was rare and tended only to proceed for serious offences. The weakness of this approach was that it ignored the actions of many other parties, including consignors, manufactures and loaders. Knowingly or not, the actions of these parties can have a major effect on driver fatigue, speeding, overloading and load restraint practices, and ultimately road safety. The traditional approach tended to have little impact on the safe practices of these other parties.

3. **Performance Based Standards (PBS)**

Performance Based Standards (PBS) represents a new approach to heavy vehicle regulation and network access in Australia. Under PBS, network access is contingent on how a vehicle behaves on the road rather than its mass and dimensions. Application of PBS offers the potential for heavy vehicle operators to achieve higher productivity and safety through innovative vehicle design, gains not otherwise possible under conventional ‘one size fits all’ prescriptive mass and dimension rules.

The PBS standards cover 14 aspects of heavy vehicle on-road performance across three broad categories:

- Low speed longitudinal performance—startability, gradeability, acceleration and straight-path tracking.
- Low speed directional performance—low speed swept path, frontal swing, tail swing, steer tyre friction, static rollover threshold, rearward amplification, high speed transient off-tracking and yaw damping.
- Infrastructure-related performance measures—pavement vertical loading and bridge loading.


4. **Advanced Train Management System (ATMS)**

Advanced Train Management System (ATMS) is a new generation communication-based train management system, which will provide significantly upgraded capabilities to the Australian rail industry. ATMS is designed to support the Australian Government-owned Australian Rail Track Corporation’s (ARTC) objectives of improving rail network capacity, operational flexibility, train service availability, transit times, rail safety and system reliability.

ATMS involves voice and data communication between the Network Control Centre(s) and locomotives operating on the ARTC National Network. ATMS will continuously update network clearance for drivers, replacing trackside signalling with in-locomotive authorisation, following automatic verification of switch positions and potential track conflicts. ATMS will provide network controllers and train drivers the capability to safely operate trains in closer proximity than previously. Further details are available at: [atms.artc.com.au](http://atms.artc.com.au).

Other potentially innovative Australian transport initiatives include:

- The establishment of National Guidelines for Transport System Management which provide a standard framework, covering processes, methods and tools, to assist and guide transport planning and decision-making across Australia.
- Adoption of a national approach to open system interoperability of electronic ticketing in transport.
What initiative(s) does your country have to promote innovation in the transport sector? Are these initiatives part of a larger effort to promote innovation across the economy? Please provide any additional material you have regarding these initiatives, including web sites, reports, etc.

The Australian Government operates a mix of economy-wide and sectoral specific innovation initiatives. The key economy-wide innovation measures include:

- Cooperative Research Centres (CRC) Program—aimed at transforming scientific innovations into successful new products, services and technologies. There are presently two transport-related CRCs:
  - CRC for Advanced Automotive Technology (www.autocrc.com)
  - CRC for Rail Innovation (www.railcrc.net.au).

- Australian Government’s Commercialising Emerging Technologies (COMET) program (www.ausindustry.gov.au)—a competitive, merit based program that supports individuals, early-growth stage and spin off companies to improve their potential for successful commercialisation of their innovation.

- R&D Tax Concession—a broad-based tax concession allowing companies to deduct up to 125 per cent of qualifying expenditure incurred on R&D activities from tax (to be replaced by R&D Tax Credit scheme from 2010-11.)

Key transport specific innovation measures include:

- Green Car Innovation Fund (GCIF)—encouraging the production of low-emission, fuel-efficient vehicles and components.

- Automotive Transformation Scheme (ATS)—encouraging the production of low-emission, fuel-efficient vehicles and components.

- Liquefied Petroleum Gas (LPG) Vehicle Scheme.

- Establishment of an Automotive Industry Innovation Council to advise the Australian Innovation Minister on industry innovation challenges like climate change, sustainability and industry competitiveness as well as issues such as regulatory reform, workforce capability, skills needs, access to new technologies and other priorities for industry.

- Transport development and innovation projects—transport development projects for planning, research and analysis of matters relating to the present or future development and use of the Australian National Land Transport Network, including the related use of technology.
As well as these initiatives, the various levels of Government in Australia also commission and fund research into transport related issues through:

- Austroads—which promotes improved road transport outcomes.
- ARRB Group (formerly Australian Road Research Board)—which undertakes research leading to development of high quality road safety, road construction and maintenance practices, and into other transport system issues.


What are the specific objectives of these initiatives? (e.g. Do they focus on certain challenges, such as climate change or safety, or on certain modes? Do they take a wider approach focusing on all of the challenges faced by transport?)

CRC for Rail Innovation has five broad themes/objectives:

1. Economic growth—developing new approaches to maximise the triple bottom line value of the Australian rail industry and its sustainability in response to growing freight demand, increased mineral exports and increased urban rail passenger patronage linked to rising fuel prices and urban population growth.
2. Operations & safety—maximising the operational efficiency of the rail value chain while simultaneously enhancing and promoting safety.
3. Engineering & safety—increasing the capacity and efficiency for bulk freight, intermodal freight and urban passenger traffic.
4. Education & training—improving the relevance and national consistency of education and training across the rail industry.
5. Commercialisation & utilisation—collaboration with industry and suppliers to achieve high levels of adoption/impact and commercialisation of research outcomes to deliver maximum benefit to participants, industry and the Australian economy.

CRC for Advanced Automotive Technology has four themes/objectives:

1. Materials and sustainable manufacturing—an investigation of technologies aimed at reducing manufacturing lead times and emissions.
2. Powertrains, fuels and emissions—improving the efficiency and emissions of internal combustion engine powered vehicles.
4. Virtual design & manufacturing—development of computer supported virtual design and engineering principles with modelling of products and processes to reduce vehicle development time.
The Green Car Innovation Fund (GCIF) is designed to encourage the production of low-emission, fuel-efficient vehicles and components and strengthen the local supply chain and international links.

The Automotive Transformation Scheme (ATS) is designed to encourage the production of low-emission, fuel-efficient vehicles and components.

The LPG Vehicle Scheme is designed to encourage the use of Liquefied Petroleum Gas (LPG) as a transport fuel, and to provide an incentive for prospective buyers of private use vehicles to purchase new LPG vehicles or to convert an existing petrol or diesel vehicle to LPG.

Please describe the funding arrangements associated with your efforts to promote innovation in transport:

Please see information above.

What is the lead ministry or agency for your efforts to promote innovation in transport?

The lead ministry for efforts to promote innovation in Australia is the Department of Innovation, Industry, Science and Research (DIISR, www.innovation.gov.au/Pages/default.aspx).

The lead transport ministry is the Australian Department of Infrastructure, Transport, Regional Development and Local Government (DITRDLG).

What other public entities are involved and what are their roles?

Other entities involved:

- Council of Australian Governments (COAG)
  The peak inter-governmental forum in Australia, comprising the Prime Minister, State Premiers, Territory Chief Ministers and the President of the Australian Local Government Association (ALGA). COAG initiates, develops and monitors the implementation of policy reforms that are of national significance and that require cooperative action by Australian governments.

- Australian Transport Council (ATC)
  The Ministerial forum for Australian Commonwealth, State and Territory Government consultation on transport issues, which provides advice to governments on the coordination and integration of all transport and road policy issues at a national level, including initiatives to promote innovation in the transport sector.

- Standing Committee on Transport (SCOT)
  Supports the ATC with a nominee of each ATC Minister, generally head of Department level.

- SCOT Committees
  SCOT is supported by a formal committee structure that provides advice on a range of policy and technical matters.
• National Transport Commission (NTC)
  The National Transport Commission (NTC) was formed by inter-governmental agreement to develop and coordinate regulatory reform for nationally consistent road, rail and intermodal transport policies and laws. NTC also provides advice to SCOT and ATC.

• State and Territory Transport agencies

What other partners are involved (e.g. the private sector, universities, states/provinces, etc.)?

• Australian Local Government Association (ALGA)
• Intelligent Transport Systems (ITS) Australia

What international partnerships are involved in this?

New Zealand is a full member of ATC and SCOT.

Please provide a summary of any results or outcomes already achieved as a result of your efforts to promote innovation in transport?

The IAP program has facilitated the safe use of larger heavy vehicle combinations in specific applications, including:

• Use of Super B-Doubles to and from Port Botany (Sydney), allowing movement of two 40-foot containers per trip, as opposed to a standard B-double which can carry only one 40-foot container.

• Use of AB-triples, with a gross combination mass (GCM) of 113 tonnes, to transport mineral sands from Wentworth (New South Wales) to a processing facility near Broken Hill. The AB-triples replace double road trains (GCM of 81 tonnes), yielding a significant increase in productivity.

The CRC for Rail Innovation successes include:

• Noise identification technology for detecting track and wheel maintenance needs
• ‘Train plan on demand’ software for scheduling and re-scheduling trains on the network
• Health Card project, which identifies maintenance requirements on track and vehicles
• Electronic brake system technology
• FreightMiser technology for optimising train fuel consumption.

The CRC for Advanced Automotive Technology successes include:

• Virtual Training software for Automotive General Assembly Operators
• VicTorii™—a web based management system for R&D organisations.
Please describe the performance indicators or measurements that you use to evaluate the outcomes of your efforts to promote innovation. Please attach more detailed documents on this issue, if they are available.

Refer to the Australian Department of Innovation, Industry, Science and Research (DIISR).

What are the principal means by which your agency keeps track of new innovations and trends in transport?

The principal means by which Department of Infrastructure, Transport, Regional Development and Local Government (DITRDLG) tracks new innovations and trends in transport include:

- Membership of the newly established Australian Government Coordination Committee on Innovation—the principal means by which the Australian Government will monitor and coordinate innovation across the economy.

- Involvement with the international transport community, through membership of the International Transport Forum (ITF), and contributing to international transport research through the Joint Transport Research Centre (JTRC).

- Membership of Austroads’ (the association of Australian and New Zealand road transport and traffic authorities) Cooperative Intelligent Transport Systems (ITS) Steering Group—a committee of senior government representatives established to guide and steer activity at the national level with respect to the development and introduction of cooperative ITS applications in Australia.

- Conduct of its own research, through the Bureau of Infrastructure, Transport and Regional Economics (BITRE).

- Commissioning of external research.

- Ongoing engagement with key domestic and international industry stakeholders, including:
  - Australian Trucking Association (ATA)
  - Australasian Rail Association (ARA)
  - Australian Shipowners Association (ASA)
  - Domestic aviation operators, International Air Transport Association (IATA) and Regional Aviation Association of Australia (RAAA)

- DITRDLG also produced, in 2005, a comprehensive report on transport innovation in Australia entitled: Transport Innovation: A new era for Australia, Philip Sayeg and Phil Charles (ed.).
Australia has long been a keen observer and early adopter of productivity and safety enhancing transport-related innovations. Examples of Australian transport innovations and/or early adoption include:

In aviation:
- Development of the ‘black box’ flight data recorder and cockpit voice recorder for civilian aircraft in the 1950s. Australia was the first country in the world to make cockpit-voice recording compulsory.
- Inflatable aircraft escape slides (1965)
- Microwave-based aircraft approach and landing guidance system
- The Australian Advanced Air Traffic System (TAAATS).

On road:
- Australia was first country to mandate seat belts (front and rear), child restraint anchorages and high-mounted stop lights.
- Sydney Coordinated Adaptive Traffic System (SCATS)—a sophisticated real-time traffic signal control system now in use in 80 cities around the world.
- Safe-T-Cam—a system for monitoring heavy vehicle speeds and driver hours.
- Innovation in trailer design, freight restraint, road-train vehicle configurations and ‘road-friendly’ suspension systems.

In rail:
- Operation of some of the world’s longest and heaviest trains with largely single track arrangements (moving iron ore to export ports from the Pilbara region of north west Western Australia).

In maritime:
- Australia is a market leader in the design and construction of high speed aluminium vessels.
- Fully automated straddle carrier development and testing (Port of Brisbane).
- Australian Dynamic Under-Keel Clearance (DUKC) system—software to enhance tidal prediction, enabling ships to enter or leave ports with increased drafts and widened tidal windows.