AP-R223

INTELLIGENT ACCESS PROGRAM (IAP) — FEASIBILITY PROJECT

AUSTROADS

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INTELLIGENT ACCESS PROGRAM (IAP) — FEASIBILITY PROJECT

AUSTROADS
Sydney 2003

AUSTROADS PROFILE

Austroads is the association of Australian and New Zealand road transport and traffic authorities whose purpose is to contribute to the achievement of improved Australian and New Zealand transport related outcomes by:

- developing and promoting best practice for the safe and effective management and use of the road system
- providing professional support and advice to member organisations and national and international bodies
- acting as a common vehicle for national and international action
- fulfilling the role of the Australian Transport Council's Road Modal Group
- undertaking performance assessment and development of Australian and New Zealand standards
- developing and managing the National Strategic Research Program for roads and their use.

Within this ambit, Austroads aims to provide strategic direction for the integrated development, management and operation of the Australian and New Zealand road system — through the promotion of national uniformity and harmony, elimination of unnecessary duplication, and the identification and application of world best practice.

AUSTROADS MEMBERSHIP

Austroads membership comprises the six State and two Territory road transport and traffic authorities and the Commonwealth Department of Transport and Regional Services in Australia, the Australian Local Government Association and Transit New Zealand. It is governed by a council consisting of the chief executive officer (or an alternative senior executive officer) of each of its eleven member organisations:

- Roads and Traffic Authority New South Wales
- Roads Corporation Victoria
- Department of Main Roads Queensland
- Main Roads Western Australia
- Transport South Australia
- Department of Infrastructure, Energy and Resources Tasmania
- Department of Infrastructure, Planning and Environment Northern Territory
- Department of Urban Services Australian Capital Territory
- Commonwealth Department of Transport and Regional Services
- Australian Local Government Association
- Transit New Zealand

The success of Austroads is derived from the synergies of interest and participation of member organisations and others in the road industry.

FOREWORD

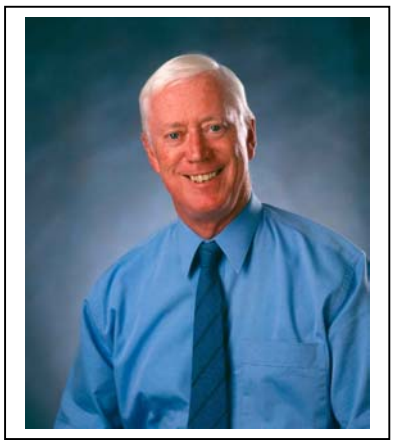
This report presents the conclusion and recommendation of the Austroads Intelligent Access Program (IAP) feasibility project. The objective of the IAP is the implementation of a voluntary system that would monitor freight vehicles using satellite based telematic services to ensure they are complying with their agreed conditions of operation.

The feasibility project identified the specific applications and assessed the IAP from a business, regulatory and technical perspective.

Explicitly, IAP is about providing alternatives to better manage the existing road transport compliance task. Implicitly, IAP has potential to go beyond the transport portfolio and to government as a whole. IAP is about exploring new ways to pursue important policy issues. Consequently, the IAP will have significant influence on subsequent uses and telematics in the transport sector.

The overall findings of the feasibility project were that the IAP is feasible. It also recognised that feasibility is reliant on a staged implementation.

As chair of the IAP Steering Committee, I thank my fellow committee members and the IAP Project Team for their successful delivery of the feasibility project.



Steve Golding
Chairman, Austroads IAP Steering Committee
Director-General,
Department of Main Roads Queensland

Intelligent Access Program (IAP)
Steering Committee Membership

Chairperson	Steve Golding (DMR Qld)
National Project Manager	Chris Koniditsiotis (Austroads)
ALGA	Allan Garcia (from July 2002) Peter Rufford (to June 2002)
Austroads	Murray Kidnie
DOTARS	Robert Hogan
DIPE NT	Ernie Wanka
DMR Qld	Allan Krosch
DUS ACT	Karl Cloos (from Oct. 2002) Leslie Leung (to Sept. 2002)
MR WA	Bob Peters
NRTC	Tony Wilson
Qld Transport	Tony Kursius
RTA NSW	Chris Walker
DIER Tasmania	David Spence
Transit NZ	Rod James
TSA	Trent Rusby (from July 2002) Hugh Levinson (to June 2002)
VicRoads	Ted Vincent (from Nov. 2002) Don Hogben (to Oct. 2002)

Intelligent Access Program (IAP)
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National Project Officer Administrative Assistant (part-time)	Andrew Collings (Austroads) Rose Slupek (Austroads)
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Regulatory Feasibility and Implications For Jurisdictions Sub-Project Team	John McCrae (Qld Transport) (to October 2002) Brian Edwards (Qld Transport) Jenice Jensen (Qld Transport) Graham Taylor (DMR Qld) Lloyd Davis (DMR Qld) Ian Manion (part-time contractor to DMR Qld) Barry Moore (NRTC) Kirsty McIntyre (NRTC)
Technical Feasibility and Standards Sub-Project Team	Dean Zabrieszach (VicRoads)
Proof of Concept Pilots, Demonstrations and Other Learning Sub-Project Team	Greg Lippiatt (RTA NSW)
Consulting Companies	ARRB Transport Research Ltd Economic Associates Pty Ltd Hyder Consulting (Australia) Pty Ltd TFG International Pty Ltd

ACKNOWLEDGMENT

The IAP feasibility project was delivered on time, within budget and to a quality standard permitting the assessment and quantification of feasibility. In total 12 Austroads Internal Reports were produced encompassing the gamut of the IAP feasibility project outputs as follow:

- IAP Work-to-Date Report (Internal Report – IAP1),
- Public Policy Framework (Internal Report – IAP2),
- Technical 'Snap-Shot' Review of Current Telematics Capabilities (Internal Report – IAP3),
- Technical and Standard Solutions (Internal Report – IAP4),
- Review of National and State Instruments (Internal Report – IAP5),
- Implications to Jurisdictions (Internal Report – IAP6),
- Proof of Concept, Pilots and Demonstrations (Internal Report – IAP7),
- Draft Certification and Auditing Rule Set (Internal Report – IAP8),
- Assessment of the Availability and Capacity of the Telematics Industry in Australia to become IAP Service Providers (Internal Report – IAP9),
- IAP Public Policy Analysis (Internal Report – IAP10),
- Draft Guidelines to Regulatory Responses (Internal Report – IAP11), and
- IAP Business Feasibility (Internal Report – IAP12).

The successful delivery of the project would not have been possible without the dedication and effort of the IAP Project Team and the commitment and direction of the IAP Steering Committee. I would like to sincerely thank all for responding to the challenge of delivering a cross-jurisdictional initiative, which effectively represents a major paradigm shift in the business of managing the road transport compliance task.

Finally, and very importantly I would like to acknowledge the significant contribution of two industry sectors, namely the road transport and telematics industries. Their input in assessing the feasibility of the IAP was invaluable.

Chris Koniditsiotis
National Manager – Intelligent Access Program
Austroads

EXECUTIVE SUMMARY

Vehicle telematics enables the provision of services to transport operators that can monitor the compliance of vehicles with respect to access conditions set by jurisdictions. Austroads initiated a feasibility project to investigate this capability. The purpose of the Austroads 'Intelligent Access Program (IAP) Feasibility Project' was to identify the applications to which jurisdictions could apply the IAP and to demonstrate the feasibility within the following sub-project components:

- intended applications and business feasibility,
- regulatory feasibility and implications for jurisdictions,
- technical feasibility and standards, and
- proof of concepts, pilots demonstrations and other learnings.

It was found that IAP can provide significant benefits to jurisdictions across all areas of activity including:

- improved road safety,
- reduction in infrastructure wear,
- reduction in environmental effects,
- better managing public perceptions and expectations of heavy vehicle movements, and
- optimisation of the road freight policy and operations tasks, including optimisation of the on – road enforcement activities.

Additionally the transport industry can benefit from improved productivity.

The overall findings of each of the above sub-project components were that the IAP is feasible. This was demonstrated within each of the four components, and whilst for different reasons each indicated a staged roll-out of IAP as the most appropriate implementation mechanism. Ultimately the success of the IAP is reliant on an appropriately designed and successfully managed implementation.

In-line with the findings, a staged IAP implementation is recommended. The first stage (ie. Stage 1) addresses the key elements identified in the sub-project components. It effectively minimises the impact to stakeholders and caters for the potential conflict areas that were identified. Stage 1 effectively permits a series of applications that can be delivered now. The second stage (ie. Stage 2) is defined as a fully implemented IAP, it is stressed that Stage 2 would only be considered after a successfully implemented and operationally sound Stage 1. Additionally it is not envisaged that Stage 2 would be implemented in one pass, rather rolled out in sub-stages over time.

The recommended specific IAP applications for implementation in Stage 1 are as follows (not in any priority order):

1. Dangerous goods vehicles (route compliance, freight consignment identification, gross speed violation and *possibly driver identification for security purposes* – Savings to dangerous goods incident costs*)*,
2. Specialised rigid vehicles (route compliance – Better utilisation of vehicles),
3. Low loaders (route compliance and gross speed violation – Better utilisation of vehicles),
4. Mass concession scheme (route compliance, mass management accreditation and gross speed violation- Operation of over-mass vehicles on an approved network, *niche level*),
5. Performance Based Standards/ Innovative Vehicles (route compliance, mass management accreditation and gross speed violation – *niche level*), and
6. Higher Mass Limits (route compliance, mass management accreditation and gross speed violation – Operation of HML over an expanded network, *niche level*).

It is recognised that other applications may be considered by jurisdictions, however they would need to be cognisant of possible limitations; for example, on-board mass monitoring is currently being trialed.

TABLE OF CONTENTS

1 INTRODUCTION

Vehicle telematics enables the provision of services to transport operators that can monitor the compliance of vehicles with respect to access conditions set by jurisdictions. This ability to accurately monitor compliance provides for a whole new set of opportunities for both jurisdictions and transport operators to optimise performance of their business in terms of both its efficiency and safety, and also maximise the performance of the road infrastructure.

Based on this capability, jurisdictions have a vision of a program whereby freight vehicle compliance is monitored via the tracking of vehicle location and reporting of associated other parameters.

Austroads initiated a feasibility project to investigate this program. The purpose of the Austroads 'Intelligent Access Program (IAP) Feasibility Project' was to:

- identify the applications to which jurisdictions would apply the IAP (in the short and long term), and
- demonstrate the feasibility of the IAP within the context of the above-identified applications.

The feasibility project was undertaken in four sub-project components as follow:

1. Intended Applications and Business Feasibility,
2. Regulatory Feasibility and Implications for Jurisdictions,
3. Technical Feasibility and Standards, and
4. Proof of Concept Pilots, Demonstrations and Other Learning's

This report presents the overall results of the IAP feasibility project and a recommended strategy for implementation.

2 LAYOUT OF REPORT

The purpose of this report is to present the results of the IAP feasibility project and the subsequent recommendations leading to implementation.

Section 3 provides an overview of the telematics industry and in particular the IAP purpose within the broader telematics framework. Additionally, the IAP feasibility project is presented including the governance and team structure.

Sections 4 to 7 document the results and specific recommendations of the four sub-project components of the IAP feasibility project (as identified above). The way forward or strategy for IAP implementation is detailed in Section 8. The strategy for implementation is cognisant of the individual sub-project component results and associated recommendations.

A 'Glossary of Terms' is included in Appendix A specific to the IAP.

3 BACKGROUND

3.1 Telematics

The uses of Intelligent Transport Systems (ITS) are varied, diverse and far from matured. They range from providing guidance and assistance to drivers in a variety of conditions to specifically detecting and tracking vehicles. Whilst the applications are numerous, many services revolve around the location in space and time of the vehicle, commonly referred to as 'telematics'.

Australia has seen significant investment by the private sector in telematics services over the past several years. This has been more than matched by advances internationally. The range of services being provided or explored include both domestic and commercial vehicular operations including:

- in-vehicle navigation,
- stolen vehicle recovery,
- automatic crash notification and may-day services,
- fleet management,
- logistics/supply chain management,
- hazardous goods management, and
- electronic toll collection.

3.2 Intelligent Access Program (IAP)

Over the last few years, there has been a growing awareness of possible public sector applications and associated benefits of telematics services. Transport operators are seeking improved access and concessions of jurisdictions in the use of the road network. Additionally, jurisdictions are faced with challenges in providing smarter compliance mechanisms and the introduction of alternative and differing freight vehicle types. Additionally with the freight task set to double over the next 15 to 20 years, the IAP provides an innovative mechanism for government as a whole to better manage the road network asset and its associated use.

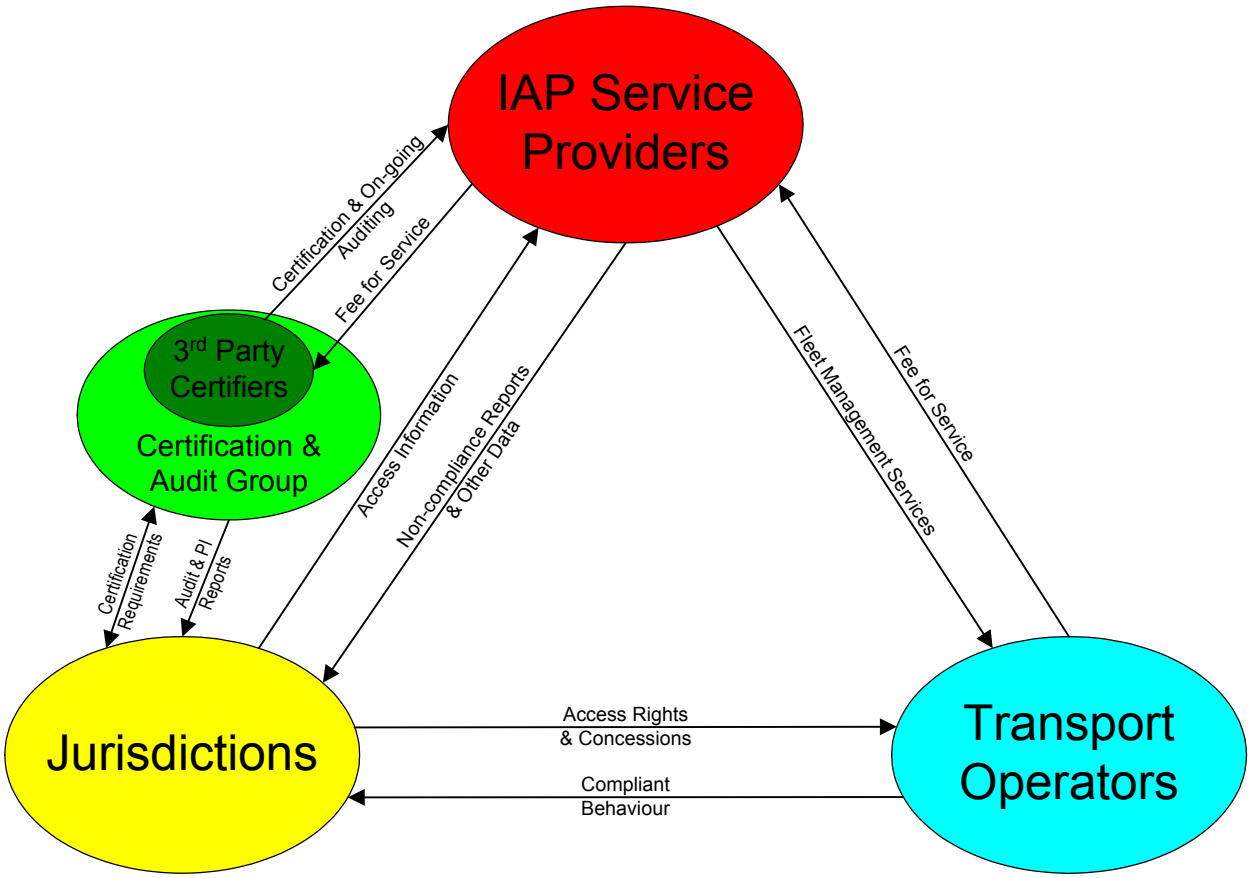
The Intelligent Access Program (IAP) objective is the implementation of a system that will remotely monitor freight vehicles to ensure they are complying with their agreed operating conditions, that is ensuring they operate how, where and when they should.

It is anticipated that private sector service providers would provide the services to underpin the IAP. These service providers would ideally combine these IAP services (ie. compliance monitoring) with other commercial services, some of which are already available. Further, there will need to be a certification and auditing regime established to ensure that private sector service providers meet jurisdictional requirements. It is expected transport operators would be prepared to use IAP on a fee-for-service basis to gain improved access to the road network. Under the IAP approach, jurisdictions will be informed of transport operator non-compliance by service providers. The IAP operating model is graphically shown in Figure 1.

The IAP will be a pre-requisite to entering schemes that would offer benefits to the transport operator to be signed-up for these types of service.

A not-infrequent held view of ITS outside the industry, is that it is exciting technology in search of a problem. IAP is a good example of matching technology to the transport objective and need.

Figure 1 — IAP Operating Model



3.3 IAP Feasibility Project

3.3.1 General

The IAP commenced in 1999 when the Tasmanian Department of Infrastructure, Energy and Resources approached other jurisdictions to initiate a national project. Tasmania had at that time just completed the Intelligent Vehicle Trial, which demonstrated the basic feasibility of monitoring the movements of freight vehicles. A number of jurisdictions joined Tasmania in this project, contributing staff and funds.

During this period, the project undertook a significant amount of work, setting the scene and exploring what was required from a technical, regulatory and functional perspective to enable the IAP to work. It also investigated various privacy and implementation issues and explored the policy and administrative framework necessary for it to operate nationally.

To enable the project to progress further, it was brought under the auspices of Austroads in November 2001.

3.3.2 Feasibility Project

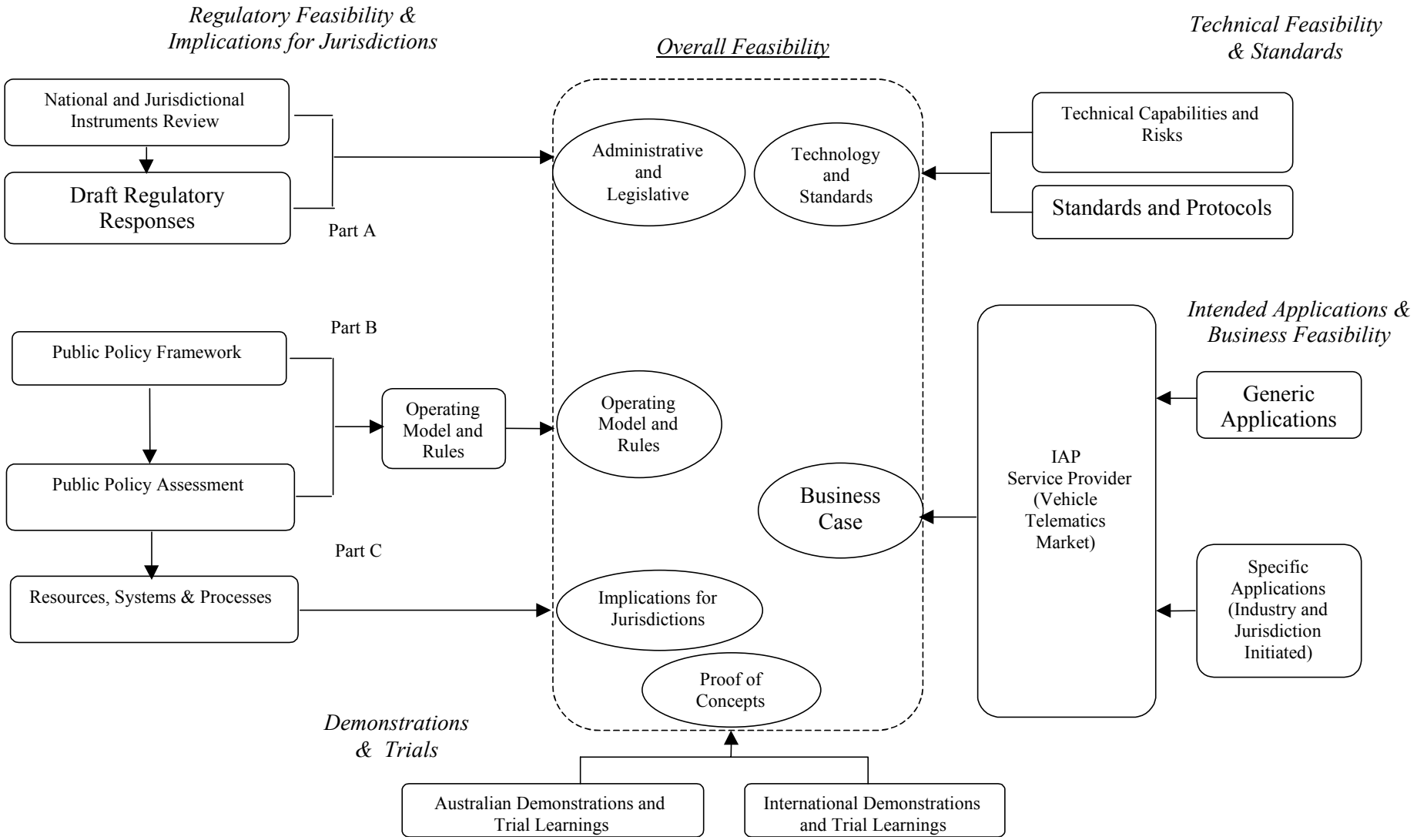
As an Austroads project, the IAP feasibility project reported to a Steering Committee made up of all Austroads member organisations, Queensland Transport and the National Road Transport Commission.

The four sub-project components (identified previously) of the IAP feasibility project are shown in Figure 2. The figure also shows the individual parts within the sub-projects and their interconnection. Each of the parts represents a separate package of works. Each sub-project component identified specific feasibility elements that contributed to determining overall feasibility.

The IAP feasibility project was delivered in the form of a dedicated project team. The delivery mechanism provided an example of a nationally coordinated cross-jurisdictional activity. The National Project Manager, reporting to the IAP Steering Committee, had overall direction and accountability for the project including dedicated resources and jurisdictional based working group participation. The detailed composition of the IAP Steering Committee, IAP feasibility project team and consultants used are presented in the Acknowledgement section of this report.

The IAP feasibility project has had detailed consultation with a suite of stakeholder groups including government road and transport jurisdictions (individually and through Austroads), transport industry (individual operators and peak bodies), private sector providers of telematics and communication services, privacy commissions of New South Wales and Victoria and interested research, consultancy and academic organisations.

Figure 2 — IAP Feasibility Project – Overview



4 TECHNICAL FEASIBILITY AND STANDARDS

4.1 General

From a technical and standards aspect the IAP is feasible. The sub-project has identified a number of:

- parameters that can be readily monitored and communicated forming the basis of applications in the short term, and
- items/issues that jurisdictions should prescribe and others best left for the telematics industry.

4.2 Technical Capabilities and Risks (Snapshot of Existing Telematics Industry)

The snapshot of the existing telematics industry identified a series of vehicular parameters that are readily available, and within an acceptable level of accuracy and tamper evidence, for the IAP as follows:

- Vehicle identification (prime mover / rigid vehicle),
- Vehicle location,
- Vehicle time,
- Vehicle distance travelled, and
- Vehicle speed.

Driver identification is also a parameter that can be accurately delivered for IAP purposes. However, there is no guarantee that the person driving the vehicle is the same person that has identified himself or herself via the system.

Importantly, other vehicular parameters such as trailer identification and vehicle mass (on-board) were identified as needing further trials. It should be noted that trials of these parameters are currently under way in Queensland and Victoria (Section 7).

The current communication technology and coverage in Australia provides a 'store – and - forward' IAP application capability. That is, near to real-time non-compliance reporting is currently not feasible. Again it should be noted that this capability has been prototyped in Australia and is expected to be deliverable at a feasible cost in the future.

4.3 Standards and Protocols

Hyder Consulting evaluated a range of possible technical and standards solutions ranging from jurisdictionally prescribed to an outcome-based solution with some options in between. After considering all the evaluation criteria, the preferred option was one that incorporated a low level of prescription, because it:

- provided the best overall balance between the standardisation required for interoperability and the flexibility that needs to be provided for innovation and meaningful competition,
- specified those aspects of the program that are considered to be essential to the operation of a coordinated, interoperable and credible system,

- assigned industry the flexibility to innovate and make technical developments, and take appropriate development risks, and
- minimised the standards and technology development timeframes, costs and risks for jurisdictions.

In particular the areas that should be prescribed by government so that interoperability and compliance are assured were as follows:

- Local communication link – (between in-vehicle unit and any enforcement monitoring sites). Designated Short-Range Communications (DSRC) is the most likely means for this communication link. The DSRC standard should follow the Australian standard that is currently evolved and it will be based on the CEN 278 standard at 5.8 Ghz.
- GIS map information and the updating required for the maps plus handling of the map data.
- Location and other parameter solutions – the use of satellite based solutions (ie. GPS) related to road segments with defined lengths and other parameters.
- Message formats for fetching common data calls from the in-vehicle equipment. These minimum calls would be common open commands for fetching location, time, sending and receiving a message. Equally important and necessary will be the format of an enforcement message and its contents. These calls would be common for all third party applications which could use the facilities of the on-board equipment yet be a separate and distinct application on-board the vehicle.
- Functional specification development - the approach being proposed is the use of the newly established IAP Focus Group, (ie. a cooperative approach between telematics service providers, IAP team and ITS Australia). The role of jurisdictions should be one of facilitating interoperability at least in the preliminary stages. This would achieve the best balance between innovation and interoperability, which is the core issue facing any government considering whether and how to standardise the development of ITS.

As a result, the Technical Feasibility and Standards Sub-Project recommend that:

- a staged roll-out of IAP applications be implemented, being cognisant of the currently available technology at the evidentiary level (parameters and communication processes),
- a low prescription functional specification be developed, with broad outcomes identified, to enable innovation to be included in the resultant solution, and
- the IAP Focus Group continue as the vehicle of communication and facilitation with telematics service providers. This group should be involved in the development of the functional specification and associated processes.

5 REGULATORY FEASIBILITY AND IMPLICATIONS FOR JURISDICTIONS

5.1 General

This sub-project comprised three distinct parts, namely A, B and C (Figure 2) that are summarised below. Overall the Regulatory Feasibility and Implications for Jurisdictions Sub-Project has determined that an implemented IAP is feasible.

5.2 National and Jurisdictional Instruments Review – Part A

The review of the National and Jurisdictional instruments concluded that:

- From a regulatory perspective an implemented IAP is feasible.
- The intent and objectives of the national compliance and enforcement reform law must underpin the deployment of an IAP application. The IAP would be better served by guidance from the proposed compliance and enforcement model law rather than a reliance on piecemeal amendments to existing current and dormant instruments.
- Significant learnings from existing Australian legislative based telematics applications (Queensland Fisheries and Western Australian Department of Environment) provide a sound base and guidance to legislation structure and potential pitfalls to avoid.
- To facilitate a nationally consistent IAP, jurisdictions must commit to provisions in the model laws that facilitate mutual recognition of certificates and other documentary evidence validly made and obtained in another jurisdiction. Foremost this will require a solid legislative basis for the program and robust certification for jurisdictional maps (ie. GIS Map data),
- A national body, such as the National Road Transport Commission should be charged with the task of producing subordinate model legislation to support an implemented IAP (ie. specific IAP applications).
- National (26 instruments) and jurisdictional (all State/Territories instruments by exception) instruments reviewed do not substantially hinder an implemented IAP.
- Privacy policy issues can be managed by the IAP. Consultation with both the New South Wales and Victorian Privacy Commissions have identified the Driver identification parameter as being the most sensitive, but manageable. Effectively, IAP Service Providers and jurisdictions need to ensure the collection, storage and security of information is protected against loss, unauthorised access, use, modification, disclosure or misuse.
- Further consideration should be given to model law provisions whose subject matter looks to cross-border and mutual recognition of administrative and judicial decisions necessary to support a feasible IAP.
- That regulatory concessions proposed under the IAP must be supported by a clear and unambiguous legislative head of power.
- A combination of existing regulatory sanctions should be applied against operators who breach program conditions along with an administrative regime aimed at standardising entry and exit criteria to the program, therefore effectively managing recidivist operators, appeal procedures and other administrative tasks.

- National consistency of processes, regulatory and administrative sanctions will only be achieved through the production of business rules and guidelines agreed by all participating jurisdictions. Additionally the IAP also poses sanction issues that need to be further investigated during implementation. For example the current sanctions on speed are fundamentally based on the probability of detection. Under the IAP the probability of detection is effectively 100 percent which poses a series of alternatives:
  - Retain sanctions for same breach levels,
  - Reduce sanctions for same breach levels, or
  - Retain sanctions for higher breach levels.

5.3 Public Policy Analysis and Certification and Auditing Regime – Part B

5.3.1 General

This section addressed the following areas:

- analysis of key public policy issues and overall IAP operating model structure and rules, and
- identification of draft certification and auditing rules.

5.3.2 Public Policy Analysis

To say that the use of vehicle telematics for determining freight vehicle compliance, that is, the IAP at an evidentiary level represents a paradigm shift would be an understatement. However, what might not be as evident is the scope and breadth of the paradigm shift, that is the 'implicit' issues (as opposed to the clearly recognised 'explicit' issues) that need to be considered. The explicit issues are represented by the primary purpose of the IAP, namely alternatives for managing the existing compliance regime. The implicit issues go well beyond a jurisdictional transport portfolio and to government as a whole. Implicitly, IAP is about exploring new ways to pursue important public policy goals. Consequently, the IAP will have a significant influence on subsequent uses of this telematics capability in the transport sector.

The analysis undertaken concluded that the IAP operating model (Section 3.2) is viable from a public policy perspective. It has the following positive features in terms of public policy:

- it provides a mix of private and public benefits,
- commercial advantage to operators, with spill over benefits to the broader economy,
- reduced regulatory burden on operators,
- more efficient use of the road network,
- better road safety,
- a more sustainable environment,
- the user pays approach ensures that ongoing costs are paid by the operators who gain direct benefits,
- the use of private sector service providers is best practice in terms of public policy in this type of situation when combined with a system of service provider certification,

- it generates significant benefits in efficiency, effectiveness and the potential for innovation compared to direct government provision or the use of a monopoly outsourced service provider,
- there are no grounds to support staging through a monopoly provider in moving to a fully competitive market,
- it provides a benchmark in the use of ubiquitous electronic technology in government applications, and
- there is significant scope to extend the model.

Potential public policy issues relating to service provision should be readily overcome by the rule architecture during implementation. These include:

- avoiding barriers to entry and market dominance,
- promoting competition,
- avoiding the creation of tradable property rights,
- assigning control of information assets,
- the exercise of pseudo-regulatory powers and functions, and
- reducing barriers to market innovation.

The rule architecture necessary to achieve the desired public policy objectives is relatively straightforward and should be sustainable.

The voluntary basis of the IAP reduces the increased complications involved with compulsion. Additionally, the analysis indicated that extending the model to make use compulsory or of a monitory purpose is also feasible.

5.3.3 Certification and Auditing Regime

The certification and auditing of IAP service providers is an essential element of a successful IAP. The key performance indicator (KPI) of the certification and auditing regime is to ensure that vehicles operating under IAP are monitored and any breach of 'intelligent access conditions' (IAC) are detected and forwarded to the appropriate jurisdiction(s) in the form of a 'non-compliance report' (NCR).

A detailed investigation of the certification and auditing regime has been undertaken resulting in the following:

- The established National Electricity Market and Queensland Fisheries - Vessel Monitoring System (VMS) certification and auditing regimes provide a sound basis for modelling the IAP. Collectively the two operations encapsulate the first order KPIs required by the IAP.

- Telematics service providers vary in their certification and auditing procedures. The more established providers appear to have better established quality systems and overall processes. The assessment indicated that for established providers, the effort required for them to achieve certification and auditing was reasonable.

- The derived IAP draft certification and auditing rule set forms the input to the future implementation team's effort to finalise a certification and auditing regime. In particular the regime comprises (over 200 specific rules):

  - certification rules addressing quality systems, operations (systems, hardware and software), testing, training and disaster recovery processes, and
  - auditing rules addressing adherence to quality systems and in-field assessment of vehicle monitoring and non-compliance detection and reporting.

5.4 Implications for Jurisdictions – Part C

Jurisdictions are comfortable with the idea of implementing the IAP and using IAP service providers, with the expectation of greater compliant operator behaviour, provided the finalised certification and auditing regime is adequately robust.

A central body reporting to jurisdictions would need to be established for the purpose of administering the IAP, referred to as the certification and auditing group. This body would be attached to an existing preferably national organisation such as Austroads or the National Road Transport Commission and would undertake the following:

- administer, on behalf of jurisdictions, the IAP providing the focus and consistency necessary to ensure adequate measures to deliver the IAP services are put in place on a timely basis, and ensure core requirements are met,
- provide a consistent and efficient line of communication between all stakeholders,
- ensure jurisdictions are kept abreast of advances in telematics, business issues, legislative changes and how they impact on the IAP,
- be responsible for overseeing the certification and auditing regime including the coordination of external parties (section 5.3.3), and
- be responsible for overseeing the IAP operating model structure and rule architecture (section 5.3.2).

It was found that the IAP has the potential to impact jurisdictions in three broad areas as follow:

1. Jurisdictions will need to enhance existing, and establish new, systems and processes (including the necessary culture change) to deal with the IAP. Jurisdictions acknowledged and accepted the reasons for cross-jurisdictional consistency and identified systems and processes to deal with:

   - providing IAP service providers with the necessary information to adequately monitor the freight vehicles operating under the IAP, including conditions of access (i.e. intelligent access conditions - IAC) and GIS map information (i.e. intelligent access maps – IAM) to ensure permitted routes/networks are adequately monitored, and
   - receiving from IAP service providers notification of events where an operator has breached condition of access, that is, non-compliance report (NCR).

2. Jurisdictions will have to participate in the certification and auditing regime for IAP. Some jurisdictions have welcomed this on the basis that it will facilitate in the culture change in providing ownership and confidence across all levels of IAP suitability.

3. Jurisdictions indicated concerns with their ability to resource the necessary changes to their systems and processes to accommodate the IAP. As such jurisdictions will have to roll-out the IAP in a staged manner, identifying and managing the implementation process within their resource capabilities.

6 INTENDED APPLICATIONS AND BUSINESS FEASIBILITY

6.1 General

The Intended Applications and Business Feasibility Sub-Project investigated the costs and benefits to jurisdictions; IAP service providers and road transport operators for IAP applications and determined that an implemented IAP is feasible.

6.2 IAP Applications

Consultation with jurisdictions and with elements of the transport industry lead to the identification of a suite of generic and specific IAP applications. The generic level applications are summarised in Table I. Of these applications, a subset was identified as feasible for implementation in the short term (ie. Stage 1) and is discussed in section 8.3.

Through the consultation process, other non- - IAP applications were identified as deliverable through telematics service provision, whilst noted, they have not been considered as part of this feasibility project.

Table I — Generic Level IAP Applications

Vehicle/Operative Type	Incentive/Concession
Increased mass operations – general access and restricted access vehicles	Ability to operate at higher mass limits on approved routes
Special purpose vehicle (cranes, controlled access buses, agricultural equipment etc.)	Ability to access a wider network and/or operate at higher mass
Restricted access vehicles (road trains, B-Doubles etc.)	Ability to access a wider network
Performance Based Standards/Innovative vehicles	Ability to operate tailored vehicles on approved routes/networks
Application to NHVAS	Alternative to auditable operator systems
Over-dimensional or Special load vehicles (container transport, over-dimensional loads not requiring escort)	Ability to access a wider network, some concession to over-mass and reduction of trip-based permits
Low loaders	Ability to access a wider network and a reduction of trip-based permits
Dangerous goods transport	Ability to access a wider network and provide an early warning system for incidents involving these vehicles
All vehicle types, including general access	Demonstration of compliance to driving hours and/or speed

6.3 Jurisdictional Business Feasibility

It was identified that the IAP can provide significant benefits to jurisdictions across all areas of activity including:

- improved road safety,
- reduction in infrastructure wear,
- reduction in environmental effects,
- better managing public perceptions and expectations of heavy vehicle movements, and
- optimisation of the road freight policy and operations tasks, including optimisation of the on – road enforcement activities.

ARRB Transport Research undertook a sensitivity analysis of benefits as a function of freight vehicle take-up. For a theoretical scenario of maximum take-up (ie. 100 percent) of IAP across applications, ARRB Transport Research identified the benefits in the form of improved road safety, reduction in infrastructure wear and environmental effects as $118 to $212 million per annum (Table II). The assumptions made in the analysis were as follows:

- the potential fleet size for IAP applications that contributed to benefits was the articulated fleet in Australia, estimated at 62,500 vehicles,
- vehicles/drivers being monitored by IAP would be compliant 95 percent of the time. (ie. a 5 percent non-compliance rate was assumed and compared with the current estimated levels of non-compliance for the particular parameter being monitored), and
- no account of penalties or fines as a result of the 5 percent non-compliant behaviour was made.

There is some risk in double counting some benefits in conjunction with the National compliance and enforcement reform law. However it is important to keep in mind that the IAP is a tool that will be available to jurisdiction to exercise the powers that are contained in the Bill.

Further analysis was undertaken on an application by application basis. The detailed results for the Stage 1 applications are in section 8.3.2

Table II — Benefits to Key Jurisdictional Areas as a Result of IAP

Annual Benefits ($M)			
Infrastructure (Pavements & Bridges)	Safety (Speed & Driving Hours)	Environmental Effects	Total
20 to 30	90 to 170	8 to 12	118 to 212

It was also identified that the benefits would not accrue linearly with take-up, as it is likely that the initial participants to the IAP would be complying operators.

Some important benefits arising from the use of IAP could not be easily evaluated in pure economic terms. Jurisdictions also stand to benefit from the IAP in the following ways:

- to gain 'unparalleled confidence' in terms of compliance to access conditions,
- as a 'tool' for jurisdictions to address access risks in dealing with access requests from transport operators,
- as a means to better manage the community concerns with respect to heavy vehicle movements, and
- stimulate further development and application of technology that provides opportunities for targeted, highly efficient deployment of enforcement resources, where the technology is appropriate for that purpose.

A very important and direct benefit resulting from IAP implementation is the ability for jurisdictions to optimise their road freight policy and operations activities. That is, through the IAP, jurisdictions can fundamentally change their business practices to meet challenges and expectations. For the purpose of identifying the costs of IAP (and the eventual benefit cost analysis), a series of future possible implementation and operational scenarios were identified, based on alternate levels of on-road enforcement. The key cost assumptions to jurisdictions with respect to a fully implemented IAP were as follows:

- internal information technology (IT) system developed to manage the flow of information between jurisdictions and IAP service providers,
- fixed costs (implementation) capitalised over five years,
- no change to the current road freight policy and operations resources (except on-road enforcement as per each scenario), and
- assumed that 33 percent of the road freight policy and operations resources (except on-road enforcement as per each scenario) would be needed for IAP provision (note: this is a conservative estimate of the effort).

Given the quantified benefits and assumptions above, the resulting jurisdictional benefit cost analysis for each scenario were as follows:

- IAP with on-road enforcement effort additional to existing – average benefit cost ratio 3.5:1, and
- IAP with no change to on-road enforcement effort – average benefit cost ratio 5.0:1.

6.4 Service Provider Business Feasibility

As a result of a detailed consultation with telematics service providers, a total of 12 companies indicated willingness to becoming providers of IAP services. In terms of the likely number of telematics providers being in a position ‘now’ to become certified for IAP service provision the following issues were identified:

- five companies are currently servicing more than 1,000 vehicles in Australia with two having in excess of 8,000,
- five companies have at least 10 full-time employees with two having in excess of 25,

- 10 companies are physically represented in more than two Australian States with six having physical representation in at least four states, and
- 10 companies have documented telematics strategies taking their business forward.

Assessment against a draft certification and auditing regime suggests that at least five companies are currently in a position to become certified for IAP service provision. Additionally and very importantly the volume of vehicles, indicates that the current capacity of the telematics industry is in the tens of thousands as opposed to the hundreds of thousands.

From the benchmarking of current telematics service providers, costs associated with tooling up, certification and ongoing auditing were estimated. The analysis suggested that the minimum vehicle volume that jurisdictions would collectively need to make available so as to stimulate at least three service providers to offer IAP services was 2,500 over a three-year period. Given the previous findings, the existing telematics market in Australia has the capacity to handle this minimum number with clear evidence of expansion capability.

The other implications to jurisdictions in using the private sector telematics industry for IAP service provision were identified as follows:

- provision of a clear, concise and consistent certification and auditing regime for all participating jurisdictions,
- provision of standards for accuracy and tamper evidence,
- provision of government GIS map data (ie. IAM) for route compliance monitoring purposes,
- provision of consistent report formats for inputs (IAC) and outputs (NCR) between jurisdictions and service providers,
- certainty in what jurisdictions will undertake,
- ensuring a stable regulatory environment including ensuring that NCR are tested in court and do not hold the spectra of being overthrown,
- ensuring that any overhanging public policy issues are capable of being settled and accommodated, and
- having clear communication arrangements and definition of roles between jurisdictions and service providers (eg, ensuring that there is a communication mechanism to facilitate the advances of technical and delivery innovation and regulatory progress).

6.5 Road Transport Industry Business Feasibility

The original BIS Shrapnel work on the predicted market take-up of telematics (undertaken by the initial Tasmanian led IAP project) is becoming reality. That is, the uptake of telematics for commercial vehicles is growing, irrespective of government influence. Additionally, the uptake of telematics is not restricted to large transport operators; rather small fleet operators are demonstrating savings.

As expected, when the IAP was presented to road transport industry representatives, the response was favourable in light of the potential commercial and productivity benefits that the industry envisaged becoming available. The response was one of willingness to participate (ie. engage an IAP service provider) provided the benefits from any incentive or concession was greater than the cost of the IAP services.

The industry also expressed concerns with the initiative, which can be interpreted as issues needing to be considered to ensure that the IAP remains feasible to transport operators. These issues were as follows:

- security and protection of commercial-in-confidence information held by IAP service providers,
- jurisdictions targeting non - IAP operators through enforcement and not viewing IAP operators as 'easy enforcement targets',
- consistency in the approach for application and enforcement of IAP operators across participating jurisdictions, and
- IAP not becoming a 'revenue raiser' through enforcement of minor breaches that would be more readily detected.

The industry recognised that it is likely that the better performing operators would take-up IAP but expressed the desire to bring the majority of operations into the IAP approach.

In terms of participation costs, the minimum volume of 2,500 vehicles (identified in section 6.4) means that for a transport operator already using telematics services the additional cost (to their existing commercial services) was estimated to be between $30 to $50 per month (for any or all of the parameters that can be monitored under Stage 1 implementation). For operators who do not already use telematics services, the estimated cost for both the commercial services and the IAP was between $110 to $190 per month. Thus, as a minimum the incentive or concession required to be offered to transport operators for them to participate in the IAP would represent at least these costs.

A suite of telematic service purchase options is available to transport operators as follows:

- the ability to deal with one service provider delivering the total package,
- the ability to purchase hardware from one company whilst having the versatility to acquire the data management services from others, and
- the ability to enter into a variety of contractual arrangements which caters for the specific needs of a transport operator.

7 PROOF OF CONCEPT PILOTS, DEMONSTRATIONS AND OTHER LEARNINGS

A series of Australian trials were assessed as part of the feasibility project as follow:

- VicRoads Category 3 Cranes (route compliance),
- RTA Mobile Crane Concessional Benefit Scheme (route and time compliance),
- Queensland Fisheries VMS (zone, time and speed compliance),
- WA Department of Environment Protection Liquid Waste Vehicle Tracking System (location and liquid volume compliance),
- WA Department of Transport Central Area Tracking (CAT) system (location tracking),
- RTA Mobile Crane Concessional Benefit Scheme (testing of draft auditing regime),
- Queensland Quad Axle Semi -Trailer Trial (route and mass (on-board) compliance), and
- Victorian based - Australia Post trailer/combination identification (trailer identification validation experiment).

Additionally existing schemes and systems operating in Switzerland, Canada, the United States of America and Japan were examined while planned applications for Britain, Germany, the Netherlands, the European Union and Sweden were considered.

The sub-project found that Australian and overseas experience had proved the effectiveness and reliability of telematics for monitoring vehicle identification, location (route/network compliance), time of travel, and speed. For these parameters at least, data security had been found to be adequate. The approach had also been legally proven by Queensland Fisheries in their VMS and the Department of Environment (Western Australia) in their Liquid Waste Vehicle Tracking system. The evidence from other regulatory applications was that take-up of the system by industry would only occur if sufficient commercial incentives were provided. Importantly a suite of learnings were documented including but not limited to the following:

- the necessity for a certification and auditing regime,
- need for a well managed implementation project for such ITS initiatives, and
- need to manage political and perception issues.

8 IMPLEMENTATION STRATEGY

8.1 Recommendation

The overall conclusion is that the IAP is feasible. This was demonstrated within each of the four sub-project components. For different reasons, each of the four sub-project components indicated a staged rollout of IAP as the most appropriate implementation mechanism. Ultimately, the success of the IAP is reliant on an appropriately designed and successfully managed implementation.

In line with the feasibility project findings, a staged IAP implementation is recommended. The first stage (Stage 1) addresses the key elements identified in the sub-project components. It effectively minimises the impact to stakeholders and caters for the potential conflict areas that were identified. Stage 1 effectively permits a series of applications that can be delivered now. The second stage (Stage 2) is defined as a fully implemented IAP. It is stressed, that Stage 2 would only be considered after a successfully implemented and operationally sound Stage 1. Additionally it is not envisaged that Stage 2 would be implemented in one pass, rather rolled-out in sub-stages over time.

8.2 Transitional Issues

Subject to approval, the period of transition between completion of the IAP feasibility project and implementation of Stage 1 needs to be properly managed to ensure key links with stakeholders are assured. In particular the key activities during this period are as follows:

- management and ongoing consultation of private sector telematics industry,
- management and reporting of on-going demonstration and trials driven by both industry and jurisdictions,
- maintain and facilitate the established IAP Focus Group,
- continue the review and consultation of the IAP components of the compliance and enforcement model legislation,
- provide a focal point for jurisdictional consultation and ensuring the necessary momentum of the IAP is maintained, and
- preparing as required reports and or presentations for Austroads, Australian Transport Council and other forums as necessary.

For jurisdictions considering or wanting to introduce an administrative scheme or approach to the IAP, they should be cognisant of the following:

- it should be transitional only, and
- committing participants (transport operators and service providers) to move-over to the certification and auditing regime of the IAP proper when implemented.

8.3 Stage 1 (First 3 to 5 years)

8.3.1 General

The recommended specific IAP applications along with a range of monitored parameters for implementation in Stage 1 are as follows (not in any priority order):

1. Dangerous goods vehicles (route compliance, freight consignment identification, gross speed violation and *possibly driver identification for security purposes* – Savings to dangerous goods incident costs*)*,
2. Specialised rigid vehicles (route compliance – Better utilisation of vehicles),
3. Low loaders (route compliance and gross speed violation – Better utilisation of vehicles),
4. Mass concession scheme (route compliance, mass management accreditation and gross speed violation- Operation of over-mass vehicles on an approved network, *niche level*),
5. Performance Based Standards/ Innovative vehicles (route compliance, mass management accreditation and gross speed violation – *niche level*), and
6. Higher mass limits (route compliance, mass management accreditation and gross speed violation – Operation of HML over an expanded network, *niche level*).

The Stage 1 applications comprise three (numbers 1 to 3) that are full generic level applications and three (numbers 4 to 6) that are effectively entry level (*niche*) approaches to potentially larger and broader applications.

Applications numbers 1 to 3 deal with segments of the road transport industry, which have either accepted telematics or are capable of affording the same. Additionally, the assessed total number of vehicles for these applications are such that the implications to jurisdictions and IAP service providers would be manageable.

Application numbers 4 to 6, provide additional applications for jurisdictions to consider. As a tool, if the infrastructure, safety, environmental and community considerations are satisfactorily managed, a jurisdiction may grant 'intelligent access' if it considers IAP based route compliance along with mass management accreditation (eg. the use of mass management accreditation under NHVAS) as acceptable. It is acknowledged that there will be many situations in which a mass management accreditation approach would not be acceptable to jurisdictions in managing risk. This is why these applications are considered a *niche* and influenced by jurisdictions.

It should be noted that other applications might be considered by jurisdictions, however they would need to be cognisant of possible limitations. For example, vehicle mass (on-board) monitoring is currently being trialed (section 4.2). Additionally, gross speed violation would not necessitate the need to re-visit the current speed sanctions regime (section 5.2).

8.3.2 Benefit Cost Analysis

A benefit and cost analysis of Stage 1 applications was undertaken by Economic Associates with the best available information in regard to total vehicle numbers, likely take-up of IAP and the level of benefits that are potentially available. The analysis has included the costs to jurisdictions and transport operators (under a Stage 1 implementation) but has only incorporated the benefits associated with operator productivity. The net present value is based on an initial year of operation followed by 5 operational years at a fixed take-up, using a discount rate of 7% real. The estimated numbers of vehicles likely to take-up IAP and the net present values of the applications on a national basis are shown in the Table III.

Table III — Stage 1 Implementation - National Benefit Cost Analysis Results

IAP Application	Potential Fleet Size	Estimated Stage 1 Take-up (%)	Estimated Stage 1 number of vehicles	Net present value ($m)	Benefit Cost Ratio	General Industry Benefits (incorporated in analysis)
Dangerous goods	6,000	20%	1,200	$0.948	1.9:1	Savings to dangerous goods incident costs
Special rigid vehicles (cranes)	78	100%	78	$6.807	7.5:1	Better utilisation of vehicles
Low loaders*	100	100%	100	$9.517	10.1:1	Better utilisation of vehicles
Mass concession scheme (overmass containers)	5,310	25%	1,330	$6.876	8.6:1	Operation of over-mass vehicles on an approved network to facilitate the movemement of over-mass containers or other loads
PBS/ Innovative vehicles	2,610	25%	655	$4.781	6.3:1	Operation on non-critical mass vehicles on an approved road network
Higher Mass Limits	25,000	5%	1,250	$3.622	5.0:1	Operation of HML over an expanded network

* Low loader vehicle numbers subject to further confirmation.

The general jurisdictional benefits from the implementation of Stage 1 are as follows (not quantified in benefit cost analysis):

- provision of an efficient means of responding to operator demand for operator route access and an efficient and effective means of controlling that improved access,
- improved confidence for jurisdictions in the granting of more permissive and flexible route access,
- improved community confidence in the compliance of freight vehicles to access conditions,
- encouragement of further take-up by the transport industry of telematics as a tool for enhanced fleet, vehicle and compliance management, and
- provision of an opportunity for jurisdictions to test the IAP concept through a set of applications which are expected to be generally of relatively low risk, and which should be attractive to transport operators in terms of the benefits offered.

8.3.3 Activities

The Stage 1 implementation activities encompass the actions that must be undertaken in any implementation of IAP (ie. irrespective of the number of vehicles) and the actions specific to the identified Stage 1 applications. Importantly, Stage 1 does not encompass the development of an internal jurisdictional IT system to manage the information flow between jurisdiction and IAP service providers and any change to the on-road enforcement task as may be envisaged under Stage 2. Additionally, the certification and auditing regime only addresses the parameters monitored under Stage 1, as opposed to any future parameters to be monitored in Stage 2.

The Stage 1 implementation, generic and IAP application specific activities are summarised in Tables IV and V respectively.

It is recommended that the Stage 1 implementation be delivered in the form of a dedicated project team. The Austroads IAP feasibility project delivery providing an example of a nationally coordinated cross-jurisdictional initiative. The project team should comprise a national manager with dedicated resource and jurisdictionally based working group participation. Additionally, during this stage, the project team could be responsible for certification and auditing activities. The generic Stage 1 implementation activities are expected to be undertaken in 18 months. It is stressed though that this assumes significant continuity in key human resources between the feasibility and implementation project teams.

Table IV — Stage 1 Implementation – Generic Activities (18-month period)

ACTIVITIES
Technology & Standards
• Development and testing of detailed functional specifications
Regulatory & Implications to Jurisdictions
• Finalisation of national compliance and enforcement model law from an IAP perspective • Finalisation of certification and auditing regime (general and specific conditions of contract) • Finalisation of certification and auditing regime (technical) • Development and testing of IAP common format reports (intelligent access conditions (IAC) and non-compliance reports (NCR))
Business
• Development of communications (risk management) strategy to manage stakeholder issues

Table V — Stage 1 Implementation – Specific IAP Application Activities (18-month period)

ACTIVITIES
Finalisation of Sections Regime for IAP (route compliance, mass management accreditation and freight consignment identification).
Training of Jurisdictional Staff
IAP Specific Applications Development/modification of sub-ordinate legislation and development of IAP operational guidelines. 1. Dangerous goods (route compliance, gross speed violation and freight consignment identification) 2. Specialised rigid vehicle (route compliance) 3. Low loader (route compliance and gross speed violation). 4. Mass concession scheme (route compliance, gross speed violation and mass management accreditation – niche). 5. PBS/Innovative vehicles (route compliance, gross speed violation and mass management accreditation – niche). 6. Higher Mass Limits (route compliance, gross speed violation and mass management accreditation – niche).

From an operational perspective, the nature of the Stage 1 applications, the number of vehicles and estimated occurrence of non-compliance are such that jurisdictional systems and processes are envisaged to incur minimal change and be accommodated within existing resources.

9 CONCLUSIONS

The overall conclusion is that the Intelligent Access Program (IAP) is feasible.

It was found that IAP can provide significant benefits to jurisdictions across all areas of activity including:

- improved road safety,
- reduction in infrastructure wear,
- reduction in environmental effects,
- better managing public perceptions and expectations of heavy vehicle movements, and
- optimisation of the road freight policy and operations tasks, including optimisation of the on – road enforcement activities.

Additionally the transport industry can benefit from improved productivity.

For different reasons, each of the four sub-project components indicated a staged rollout of IAP as the most appropriate implementation strategy. It was also recognised that the success of the IAP is reliant on an appropriately designed and successfully managed implementation.

The staged IAP implementation comprises in the first instance Stage 1 that addresses the key elements identified in the sub-project components. Stage 1 effectively minimises the impact to stakeholders and caters for the potential conflict areas that were identified. The Stage 1 implementation activities encompass the actions that must be undertaken in any implementation of IAP, irrespective of the number of applications or vehicles, and the actions specific to identified Stage 1 applications.

The recommended specific IAP applications along with a range of monitored parameters for implementation in Stage 1 are as follows (not in any priority order):

1. Dangerous goods vehicles (route compliance, freight consignment identification, gross speed violation and *possibly driver identification for security purposes* – Savings to dangerous goods incident costs*)*,
2. Specialised rigid vehicles (route compliance – Better utilisation of vehicles),
3. Low loaders (route compliance and gross speed violation – Better utilisation of vehicles),
4. Mass concession scheme (route compliance, mass management accreditation and gross speed violation- Operation of over-mass vehicles on an approved network, *niche level*),
5. Performance Based Standards/ Innovative vehicles (route compliance, mass management accreditation and gross speed violation – *niche level*), and
6. Higher mass limits (route compliance, mass management accreditation and gross speed violation – Operation of HML over an expanded network, *niche level*).

It is recognised that other applications may be considered by jurisdictions, however they would need to be cognisant of possible limitations as identified by the feasibility project.

APPENDIX A — GLOSSARY OF TERMS

Certification and Auditing Group	A group having responsibility to oversee the certification and auditing of IAP Service Providers and manage the overall administrative issues including rule architecture of the IAP.
In-vehicle Unit (IVU)	Certified hardware and software 'box' installed within a rigid vehicle or prime mover.
Intelligent Access	The collective term used to define concession, permission or condition gained by Transport Operator in participating in an IAP Application.
Intelligent Access Condition (IAC)	The conditions of access granted by a jurisdiction to a vehicle that has membership to an IAP Application. The IACs are issued to both the Transport Operator and IAP Service Provider. The IAC contain the following: • Overall IAP membership requirements, • Specific to IAP Application requirements, such as, route details, parameter monitored and non-compliance report requirements.
Intelligent Access Map (IAM)	The electronic map approved and issued by a jurisdiction as the 'reference' from which IAC are monitored. The IAM is issued to IAP Service Providers and made available to Transport Operators.
Intelligent Access Program (IAP)	The use of certified vehicular telematics hardware, software and associated processes to monitor heavy vehicles and report on any compliance breaches.
Intelligent Access Program (IAP) Application	A specific use of the IAP as defined by the jurisdiction via an Intelligent Access Condition (IAC).
Jurisdiction	The agency issuing the Intelligent Access Condition (IAC).

Non – compliance report	A report originating from the IAP Service Provider to the relevant jurisdiction(s) that identifies a non-compliant (or breach) occurrence as defined by the IAC. The following are the parameters that as a minimum will be required: • Vehicle identification, • Trailer(s) identification (if applicable), • Transport Operator details (or code for jurisdictional matching purposes), • Vehicle location when non – compliance occurred, • Vehicle date/time when non – compliance occurred, • Non – compliance details. Additionally, and as a function of the specific IAP Application, other monitored parameters may be required.
On-Board Unit (OBU)	See In-vehicle Unit.
Parameter	A vehicular, or consignment specific item being monitored as part of a granted IAC (see also Non – compliance report).
Service Provider	A provider of IAP services (ie. hardware, software and associated processes) certified and audited by the Certification and Auditing Group.
Transport Operator	An operator of one or more vehicles eligible for Intelligent Access Program (IAP) membership.

INFORMATION RETRIEVAL

Austroads (2003), **Intelligent Access Program (IAP) — Feasibility Project,** Sydney, A4, 39pp, AP-R223/03

KEYWORDS:

Telematics, compliance, regulation, freight transport, intelligent transport systems, road, public-private partnerships, safety, infrastructure, environment.

ABSTRACT:

Vehicle telematics enables the provision of services to transport operators that can monitor the compliance of vehicles with respect to access conditions set by jurisdictions. Austroads initiated a feasibility project to investigate this capability. The purpose of the Austroads 'Intelligent Access Program (IAP) Feasibility Project' was to identify the applications to which jurisdictions could apply the IAP and to demonstrate the feasibility within the following sub-project components:

It was found that IAP can provide significant benefits to jurisdictions across all areas of activity including:

- improved road safety,
- reduction in infrastructure wear,
- reduction in environmental effects,
- better managing public perceptions and expectations of heavy vehicle movements, and
- optimisation of the road freight policy and operations tasks, including optimisation of the on – road enforcement activities.

Additionally the transport industry can benefit from improved productivity.

In-line with the findings, a staged IAP implementation is recommended. The first stage (ie. Stage 1) addresses the key elements identified in the sub-project components. It effectively minimises the impact to stakeholders and caters for the potential conflict areas that were identified. Stage 1 effectively permits a series of applications that can be delivered now.

The recommended specific IAP applications for implementation in Stage 1 are as follows (not in any priority order):

1. Dangerous goods vehicles.
2. Specialised rigid vehicles.
3. Low loaders route.
4. Mass concession scheme.
5. Performance Based Standards/Innovative Vehicles.
6. Higher Mass Limits.

AUSTROADS PUBLICATIONS

Austroads publishes a large number of guides and reports. Some of its publications are:

AP-1/89	Rural Road Design
AP-8/87	Visual Assessment of Pavement Condition

Guide to Traffic Engineering Practice

AP-11.1/88	Traffic Flow	AP-11.9/88	Arterial Road Traffic Management
AP-11.2/88	Roadway Capacity	AP-11.10/88	Local Area Traffic Management
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AP-11.4/88	Road Crashes	AP-11.12/88	Roadway Lighting
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AP-11.8/88	Traffic Control Devices		

AP-12/91	Road Maintenance Practice
AP-13/91	Bridge Management Practice
AP-14/91	Guide to Bridge Construction Practice
AP-15/96	Australian Bridge Design Code
AP-17/92	Pavement Design
AP-18/00	RoadFacts 2000
AP-22/95	Strategy for Pavement Research and Development
AP-23/94	Waterway Design, A Guide to the Hydraulic Design of Bridges, Culverts & Floodways
AP-26/94	Strategy for Structures Research and Development
AP-C29/01	Austroads Strategic Plan 2001–2004
AP-30/02	Road Safety Audit (2nd edition)
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