





**In Committee**

<b>Board Paper No.</b>	08/10/0066
<b>Date</b>	22 October 2008
<b>Prepared by</b>	Nick Hunter Senior Evaluation Analyst 
<b>Recommended by</b>	Richard Braae, Acting Group Manager, Partnerships and Planning 
<b>Subject</b>	<b>AUCKLAND REGIONAL TRANSPORT AUTHORITY (ARTA) INTEGRATED FARE SYSTEM IMPLEMENTATION FUNDING</b>

**Purpose**

- 1 To seek the Board's approval for construction funding for the implementation of ARTA's integrated fare system project across public transport bus, rail and ferry operations in Auckland.

**Recommendations**

- 2 That the NZ Transport Agency Board:
  - a. **approves** funding for the construction phase of ARTA's integrated fare system project at an estimated capital cost of \$70.0 million and annual operating costs estimated at \$6.5 million over ten years at a financial assistance rate of 60% (New Zealand Transport Agency's share \$42.0 million capex and \$3.9 million per year opex), from N funds, subject to:
    - i. ARTA obtaining funding support for local share for this project from the Auckland Regional Council;

- b. **notes** that the 95<sup>th</sup> percentile capital cost is estimated at \$85 million and the 5<sup>th</sup> percentile cost at \$59 million;
- c. **notes** the reasons for this decision are as set out in the Reasons for recommendation section;
- d. **notes** the project's costs are subject to any movement of exchange rate between now and the contract being awarded;
- e. **agrees** to keep Board paper 08/10/0066 In Committee until the contract for the implementation of an integrated ticketing system has been awarded by ARTA and local funding approval is secured.

## **Background**

### **Problem definition**

- 3 ARTA identified the lack of integrated fares across Auckland's public transport network (bus, rail and ferry) as a major barrier to more people using public transport in the region. The authority also identified the introduction of an integrated ticketing system being integral to addressing this barrier. The Auckland Integrated Fare System (AIFS) was derived from this.

### **Project objective**

- 4 There are two key objectives of this project:
- 5 To help make public transport an attractive, simple-to-use and viable alternative to the private car for an increasing number of people through the provision of seamless integrated travel across the Auckland public transport network.
- 6 To design the AIFS so it can provide the mechanism for a national integrated ticketing solution via a smart card approach.

### **Strategic Context**

- 7 The proposal is a significant component of ARTA's plans to meet the goals of the NZ Transport Strategy. Following its formation, ARTA developed the Auckland Transport Plan (ATP) out to 2016 and under this released its Passenger Transport Network Plan (PTNP).
- 8 The AIFS is integral to the development of public transport in the Auckland region. Integrated fares and ticketing forms a critical component of ARTA's network development and is consistent with the strategy for public transport development. Implementing an easy to use electronic, integrated fare system will remove one of the major barriers for new PT users, making PT an attractive and viable alternative and contributing to public transport growth and increased modal share. Timing of this implementation is critical to optimise the delivery of its network plan.

- 9 In a wider context, the implementation of this project, and developing a national approach to automated fare collection system procurement from it, are of national significance. We expect this will form a key part in not only Auckland achieving public transport growth, but also will form part of a wider system of intervention across the country to make public transport more attractive and easier to use.

#### **Integrated ticketing and Integrated fares**

- 10 An integrated ticketing approach (be it via an electronic smart card or a paper based system) is a method of delivering integration of fares across a network of different operators, modes and ticketing approaches.
- 11 In Wellington for instance NZ Bus has recently installed a smart card system. The smaller Mana Coach Services, also of Wellington, already has its own smart card system. There is no integration of fares or ticketing approach across the Wellington network however.
- 12 In Christchurch, Environment Canterbury oversaw the implementation of a simple, integrated fare system approach across all operators. It uses its smart card ticketing system to deliver this.
- 13 Auckland is now proposing to take the Christchurch approach but across a much larger, complex and multi-modal network.

#### **Previous funding applications and conditions of funding**

- 14 At its October 2007 meeting the Land Transport NZ Board approved funding for the design phase of the project specifications (Board paper 07/10/2074 refers). As part of conditions of funding for the construction phase, ARTA was asked to provide a Monte Carlo risk assessment report updated economic evaluation, peer review and cost breakdown. This information has been made available and assessed as part of this application.
- 15 At the same meeting the Land Transport NZ Board gave approval to design a national approach to smart card ticketing (Board paper 07/10/2090 refers).
- 16 Previously the Land Transport NZ Board had expressed its view that central government should more actively control the design of (ARTA's) integrated fare system so that it could provide the mechanism for a national integrated ticketing solution via a smart card approach. This decision was made following an assessment that the development of smart card systems in other centres in New Zealand would be improved through one single design specification and through regions working together, where possible, to share knowledge, information, specifications, designs and, perhaps, components of automated fare collection systems eg a back office or clearinghouse. A national approach will allow the Agency to assist regional authorities in achieving better procurement outcomes through interoperability, synergies and economies of scale benefits across the country as a whole.

- 17 At the August 2007 meeting the Board resolved (resolution 07/08/2047) that it would use its funding and procurement powers to achieve five principles relating to achieving a national approach to the procurement of automated fare collection systems in New Zealand, within which any region can introduce its own automated fare collection system. It is also considered options for designing and potentially controlling a national smartcard system. Further detail around this and these five principles can be found in Attachment 1.
- 18 From this Board paper, conditions of funding were sought from ARTA to support the principles and to extend the design specification for the AIFS into a national system. These conditions of funding and the subsequent actions to these from ARTA are contained in Attachment 1.
- 19 As part of agreeing to this, ARTA has been asked to sign an MOU with the NZTA regarding the design specifications for the system. This forms the basis for the contract negotiations and project agreement to be signed with the eventual supplier.
- 20 The MOU will be signed by both parties by 30 October 2008. A copy of the MoU is attached (Attachment 2). The procurement procedure itself was approved by the Board at its August 2007 meeting (Board paper 07/08/2047 refers).
- 21 NZTA staff have participated in the tender evaluation process and a senior NZTA representative has been on the tenders review committee for the project. ARTA has agreed to collaborate with NZTA on the AIFS design to ensure NZTA is able to develop the national approach to automated fare collection procurement, and ensure the design will be able to be implemented by other New Zealand regions, thus contributing to an interoperable national network.
- 22 As part of the RFT process, tender information will be kept confidential between ARTA and each tenderer, given its commercial sensitivity. The costs of the project are based on ARTA's best estimate at this stage. Final confirmation of the implementation cost will not be known until the successful tenderer is selected. This is expected very soon.

### **Risk analysis and mitigation**

- 23 This is a complex project with a significant technology component. As such, it has a high degree of cost and performance risk.
- 24 Much of the risks associated with the project were discussed in Board paper 07/10/2074, as were the mitigation measures. Design specification and data ownership risks have been covered off under the conditions of funding imposed on and fulfilled by ARTA.

- 25 Risks around increases in cost/scope are high, as evidenced by the increase in capital cost from design to implementation. Reasons for this cost increase are discussed in detail in paragraph 48.
- 26 As part of the construction funding application, ARTA has compiled a risk register and carried out Monte Carlo risk analysis and sensitivity testing. This piece of work, as well as a review of the updated economic evaluation, have been independently peer reviewed.
- 27 Implementation of the project will follow a project plan, which has been developed based on Australian experience. The project is being implemented by experienced managers who, nevertheless, acknowledge that a lack of operational experience amongst ARTA staff is a substantial risk to delivering the expected outcomes of the project. Recruitment of competent operations managers is a high priority and will help mitigate this risk.
- 28 Timing of the bus procurement strategy implementation, retendering and negotiations over services, and implementing the network fare review are crucial to the success of this project. ARTA is intending to move to a fully contracted urban bus system based upon incentivised gross contracts through its Bus Procurement Strategy. The strategy is intended to achieve full gross contracts (either by retendering or negotiations over existing contracts), by the second half of 2009. Should there be delays or problems achieving this then this will impact the delivery of the AIFS itself. The design of the AIFS is now being progressed by ARTA around a simplified approach for a system that only needs to handle gross contracts (i.e. it does away with the need for a central clearing house and much of the complexity associated with this). The intended approach of delivering the procurement strategy is being carried out in such a way to minimise the potential for service disruption during the procurement reform and impacting on delivery of the AIFS. This issue is covered in more detail as part of Board paper 08/10/0061.
- 29 Downward movement of the New Zealand exchange rate against the US dollar has been a threat to maintaining the project's costs at a reasonable level. An added risk centres around the potential for further downward pressure on the exchange rate between now and the point of time of the contract being awarded.
- 30 Another risk is any subsequent reaction from unsuccessful tenderers. Overseas experience has shown that many projects such as this have involved litigation. The ARTA procurement process has been robust. ARTA assure NZTA that they have adequately followed our procedures from a probity perspective and have obtained legal advice that should a legal challenge be attempted it will not delay the immediate development of the project.

## Comparison with other Systems

- 31 The cost of implementing the AIFS is significant at \$70 million. As part of the construction application, ARTA was asked compare the construction cost to other similar systems. A full copy of the report on this is available to Board members on request.
- 32 The comparison focused on systems recently implemented in Brisbane, Perth, Hobart and Toronto.
- 33 The Melbourne smartcard procurement was not included in the comparison due to the much larger scale and complexity of the project. The Wellington smartcard project was not included because no pricing details are available, however Hobart provided a guide to Wellington's cost.
- 34 A relatively simplistic comparator of measuring the unit price by dividing the standardised project costs by the number of installed was used in order to have a standard measure to compare the five systems. Findings from this analysis showed that the standardised unit price for Auckland, Brisbane and Perth are similar. The Tasmanian system is significantly cheaper than Auckland, reflecting the project's relative simplicity whereas the Toronto system is significantly more expensive, possibly reflecting the requirements of a very difficult procurement process and the associated risk pricing.
- 35 Of note, no two projects are ever completely comparable due to things like complexity of system and devices, the need for a clearing house and type of contract structure, the number of scheme participants and project ownership, the amount of competition in the market/ tender bids and, as part of this, how much "risk pricing" is involved.
- 36 Likewise, it is difficult to compare the AIFS to Wellington's recently implemented smart card system "Snapper", on NZ Buses. The systems are quite different, and at this stage no direct costs have been passed on to government for Wellington's smartcard system.
- 37 The table below shows a comparison between the two systems:

System specification	Auckland	Wellington
Type of system	Integrated fare solution through smart card system technology	Smart card system
PT Modes	Bus, rail, ferry, all operators	Bus only, one operator (rail a possibility, costs involved)

<b>Card application/ design</b>	Designed firstly for PT only, flexibility for future add-ons	Designed as a basic smartcard to replace paper tickets replacement with retail use included
<b>Capex cost</b>	\$70M	Unknown, however likely to be significant, possibly inbuilt into future service contract prices, extension beyond bus and against other systems
<b>Opex cost</b>	\$5.6M p/a	

## Assessment

- 38 The funding profile is assessed as HHM.
- 39 The project was fully assessed at the design phase. A summary of our assessment of the funding allocation profile is as follows:

<b>Seriousness and urgency</b>	<p><b>High</b></p> <ul style="list-style-type: none"> <li>• ARTA's objective is to deliver an effective integrated fare system by 2010 via a smart card ticketing.</li> <li>• Auckland suffers from a high level of congestion, affecting the economic wellbeing of the region. Rather than simply building a larger roading network ARTA views a successful public transport system as a key approach to relieving this congestion problem.</li> <li>• In achieving an effective public transport system moving forward integrated fares and ticketing forms a critical component of ARTA's network development, timing of this is critical to optimise the delivery of its plan.</li> <li>• The urgency has also been highlighted by the Minister of Transport's direction to NZTA to work with stakeholders towards the successful implementation of this project.</li> </ul>
<b>Effectiveness</b>	<p><b>High</b></p> <ul style="list-style-type: none"> <li>• Based on consultation and overseas experience, implementing integrated fares and smartcard ticketing is expected to considerably increase patronage in the Auckland network and assist reducing a continual increase in road traffic and congestion.</li> <li>• Integrated fares and ticketing are critical to integrating the 3 public transport modes, which will make public transport more accessible and attractive for both new and existing users through seamless, integrated travel across modes and trips made.</li> <li>• A strong public transport network will integrate with predicted land use, as PT becomes a viable alternative for more people.</li> <li>• Encouraging alternative modes of transport is a key part of creating a sustainable transport network and implementing an easy to use electronic, integrated fare system will remove one of the major barriers for new PT users, making PT an attractive and viable alternative.</li> </ul>

<b>Efficiency</b>	<p><b>Medium</b></p> <ul style="list-style-type: none"> <li>• As supplied by ARTA the BCR would be denoted as 99, based on our economic evaluation procedures, where the do minimum costs exceed the project costs</li> <li>• Further analysis has been undertaken to provide a better indication of the efficiency of the project by simply considering the ratio of project benefits to project costs (ignoring the do minimum) – this conservative application of the ratio equates to a BCR of 1.85 which suggests a reasonably efficient project</li> <li>• A peer review has been undertaken, which supports ARTA’s economic evaluation and risk assessment</li> <li>• Sensitivity analysis has been undertaken which indicates that the project’s economic efficiency is quite robust</li> </ul>
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40 For the benefit cost ratio we have some reservations regarding the validity in how the “do minimum” has been applied to this project, We have therefore simply measured the incremental project benefits over the project costs (ignoring the do minimum). A BCR below 2 would normally be shown as “low” for efficiency, however we believe in this instance “medium” is more appropriate due to our conservative approach to measuring the BCR.

41 The peer reviewer concludes that the analysis of the economic benefits appears well founded, applying appropriate values and approaches available in the Economic Evaluation Manual. The peer reviewer believes however that in some instances the approach taken leads to underestimates of the benefits likely to be achieved (although small).

42 There are risks around both costs and time of delivery with this project. Questions around affordability and the risks identified are apparent. A series of sensitivity tests have been undertaken to examine the downside risks It has been identified it would take a further increase in cost of \$84 million before the project costs exceed the project’s benefits. Should forecast patronage growth projections attributable to the AIFS itself be “minimal” at 1% rather than the expected 2.5% per annum above the base case attributable to the project, the BCR will still remain above 1.0. It would take a “worst case scenario” of both of these before the BCR falls below 1.

## Cost estimate and cash-flow

### Phase cash-flow

43 The construction phase is planned to commence in the current financial year.



44 The cash-flow for the phase is forecast as below:

<b>Year</b>	<b>Total cost (\$ million)</b>	<b>NZ Transport Agency cost (\$ million)</b>
<b>2008/2009</b>	15.0	9.0
<b>2009/2010</b>	35.0	21.0
<b>2010/2011</b>	20.0	12.0
<b>TOTAL</b>	<b>70.0</b>	<b>42.0</b>

#### **Construction/implementation phase estimate**

- 45 At the time of preparing the business case for design funding ARTA had not carried out a Monte Carlo risk assessment regarding the project cost therefore the 95<sup>th</sup> percentile and 5<sup>th</sup> percentile changes are unknown. As part of the applying for construction funding we asked for this analysis to be completed and peer reviewed.
- 46 The 95<sup>th</sup> percentile capital cost is estimated at \$85 million and the 5<sup>th</sup> percentile cost at \$59 million.
- 47 The capital cost has gone up from \$30 million at the time of design funding approval to the now estimated \$70 million.
- 48 Key reasons for this increase are as follows:
- At the time of preparing previous estimates, ARTA had not received any tender applications, ARTA believe the three preferred tenderers have factored in a large “risk price” to their submissions based on their previous experience with other ticketing solutions. As part of this, a large component of the increase in cost is based on \$18 million in tender normalisation;
  - Falls in the exchange rate, in particular a reduction in the NZD of over 25% against the US dollar following highs in May, much of which has recently occurred, has further exacerbated cost pressures on the project; and
  - The compliance with interoperability provisions in the RFT to meet Land Transport NZ’s vision for a system that can be used nationally has increased the cost of the AIFS project, we view this was not adequately factored in at the time of design submission.

- 49 Although costs have risen significantly, the passing of the Public Transport Management Act and ARTA's planned utilisation of its provisions means that a complex clearinghouse is now unnecessary. This should assist in final negotiations with the preferred tenders in maintaining some of the float in the risk cost and help offset in things like any further drops in our exchange rate.

### **Funding source**

- 50 Funding for ARTA's integrated ticketing project implementation is incorporated in the 2008/09 NLTP with an indicative funding source of N funds.
- 51 Based on the funding profile of HHM, and the national significance of the project we recommend that the project be funded from N funds.
- 52 We confirm that there are sufficient funds available from the recommended source to allocate to this activity.

### **Reasons for recommendation**

- 53 The aim of AIFS is to use a smart card ticketing solution to deliver integrated fares across the Auckland public transport network. The project plays a key role in making public transport more attractive, simple-to-use and a viable alternative to private car trips through the provision of seamless integrated travel.
- 54 The funding profile has been assessed as HHM.

### **Conclusion**

- 55 The delivery of this project is integral to the development of public transport in the Auckland region and from a national context. Implementing an easy to use electronic, integrated fare system will assist making public transport an attractive and viable alternative and contributing to public transport growth and increased modal share.
- 56 It plays a key role in contributing to both regional and national GPS targets for public transport and in the purpose and objectives of the LTMA.
- 57 Previous Board conditions have been met including the adherence to and support of the NZTA principles of smartcard ticketing, the ability to extend the design to a national system, and NZTA involvement in the tender review.

- 58 The project has increased in cost since design funding approval, however still represents value for money as demonstrated by the BCR and a comparison of similar systems recently implemented in other city centres.
- 59 We confirm that the matters in sections 20(2) and 20(5) of the LTMA have been satisfied, and that the matters in section 20(3) have been taken into account.
- 60 Funding for ARTA's integrated fares project is viewed as a key component in its plans to grow passenger transport patronage in the Auckland region. We concur with this view and, based on the profile of HHM, recommend that the Board approve funding of the project from N funds.

### **Communications plan**

- 61 A communications plan will be developed with ARTA once the conditions of funding have been met.

### **In Committee status**

- 62 Board paper 08/10/0066 is In-Committee to allow the following:
- a. free and frank discussion of the issues highlighted in this paper and any subsequent issues by the Board;
  - b. the contract for the implementation of an integrated fares system in Auckland to be awarded by ARTA and communicated out to the winning and losing consortiums; and
  - c. local funding approval being secured.

### **Attachments**

- 63 There are two attachments to this paper:

Attachment 1: Further background information to the National approach to Smartcard ticketing

Attachment 2: Memorandum of Understanding

## Further background to the National approach to Smartcard ticketing

### Five principles to Smartcard ticketing

The Land Transport NZ Board determined five key principles for a national approach to Smartcard integrated ticketing. At the August 2007 meeting the Board resolved (resolution 07/08/2047) that it would use its funding and procurement powers to achieve the following principles relating to integrated ticketing:

- i. Regional councils to specify smartcard systems requirements, including requirements for ensuring confidentiality in relation to access to, and use of commercial data;
- ii. Smartcard system operation not to be run by a public transport operator;
- iii. Regional councils to use open procurement procedures (compliant with Section 25 of the Land Transport Management Act 2003) to select smartcard system contractors;
- iv. Regional councils to be encouraged to seek economies of scale by sharing clearinghouses and other elements of smartcard systems; and
- v. Regional councils and their smartcard system contractors ensure that their systems are developed to achieve interoperability as opportunities arise.

### Options for implementing a national approach

A key part of Board paper 07/10/2090 was to determine to what extent central government should play both designing and potentially controlling a national smartcard system. Two options were considered to achieve this:

- i. Option (A): Setting up a project to design and procure a single national integrated ticketing system
- ii. Option (B): Work with (ARTA) to design a system that can be 'cloned' by other approved organisations, and enable interoperability.

Option (B) was chosen over option (A). Reasons for this included:

Developing, implementing and managing a smartcard system is both time consuming and complex. Involving more than one of the major metropolitan areas (Auckland, Wellington and Christchurch) into a single national system would add to the complexity of the system, including the number of local authorities each with their own fare policies, business requirements, contract structures and operators.

The complexity of fare policy makes a customised proprietary system very difficult to implement. Sydney for example, has had considerable problems implementing a smartcard system because of the number of operators and fare products. Regions would have to forego much of their power in terms of fare policy and approach to contracting for a system to deliver a national system under this option. The legal framework for the provision of contracted public transport services is delegated to a regional level.

Option (B) allows the NZTA to meet the five principles to a national approach. Progress can be achieved incrementally, risk around complexity and cost scope increase can be minimised, and it also gives ARTA the ability to proceed with its integrated ticketing system on time. The AIFS is expected to be in operation by 2010. This option also allows approved organisations to retain their control over the public transport solutions applied in their regions, including integrated ticketing.

The approval of the design approach to a national smart card system allowed for work led by ARTA (and delegated authority to the NLTP Review Group), for Land Transport NZ and ARTA to design reusable system design elements and system interface specifications for a integrated ticketing system so that can be 'cloned' by other approved organisations, and enable interoperability.

As part of this approval Board paper the 07/10/2009 Chief Executive was requested to consult approved organisations about the establishment of a Land Transport NZ controlled central unit which would operate and control common integrated ticketing system elements needed for interoperability between integrated ticketing systems applying in each region. The Chief Executive was also requested to scope a project to establish the central unit.

Although initial work foresaw the creation of a central unit, technical advice – from a contractor employed by the Agency to provide advice on the national approach and the AIFS – suggested it was premature to set this unit up until there was more clarity on the deliverables from the AIFS project, and subsequent consultation with regional councils had taken place. It was also clear that the Agency needed to hire new staff with the necessary skills and technical knowledge to make the national approach a reality. Job descriptions have been developed for a Programme Manager (Integrated ticketing) and a Senior Technical Advisor. The former position has been advertised and the recruitment of the Programme Manager is underway. In the meantime the Agency has been receiving advice from a technical contractor. It is expected this contractor will continue to be employed for specialist advice on an ad hoc basis, and also until staffing requirements are finalised.

In addition to the contractor, two Agency staff have been directly involved in the AIFS tender evaluation process as members of the technical and commercial evaluation teams. This was a demanding and lengthy process, which began in early April 2008 and was completed in mid-July 2008. Since this time ARTA has been negotiating with the three preferred tenderers. It is now in the final stages of evaluating each proposal.

Parallel to the evaluation and negotiation process, the Agency and ARTA have been developing a Memorandum of Understanding (MOU) to govern their responsibilities and relationship with respect to the national approach going forward. The MOU further formalises that the Agency will utilise the AIFS to gain access to an interoperability standard and the subsequent design of the AIFS solution, both of which will be used as key inputs into the national approach. The MOU is attached as Attachment 2.

### **Conditions of funding for Board Paper 07/10 2074**

As part of the design funding approval for the AIFS the following conditions of funding were sort:

*a. adhere to the amended principles endorsed by the Land Transport NZ Board at its August 2007 meeting for a national approach to integrated smartcard ticketing systems in New Zealand (Board paper 07/08/2046 refers);*

*b. adhere to the resolutions 2 (b) and (c) of board paper 07/10/2090;*

*(2(b) - making reusable parts of (ARTA's) integrated ticketing system design available to other approved organisations to achieve a national integrated ticketing system;*

*2(c) - (ARTA) requests in its tender documentation that an open standard be applied between the smartcard and device (levels 0 & 1) and between the central system and clearinghouse (levels 4 & 5), so that interoperability can be achieved between integrated ticketing systems in each region);*

*c. enable Land Transport NZ staff full participation in the design specification, including the review of tenders and the selection of the successful provider for the Integrated Ticketing Contract;*

*d. provide, prior to applying for any construction funding:*

- an updated economic evaluation of the project;*
- a Monte Carlo risk assessment report;*
- a peer review of both the updated economic evaluation and the Monte Carlo risk simulation assessment; and*
- an updated detailed breakdown of the funding application; and*

*e. transfer the appropriate rights to the 'National Integrated Ticketing system' [Note: the rights relate to the AIFS not the 'national system'] specification on to Land Transport NZ as part of this (the design of reusable system design elements and system interface specifications) process;*

ARTA has confirmed in writing its commitment to the principles agreed by the Board.

With the exception of c. and e. above ARTA incorporated these conditions into its RFT documentation, which went out to the market in late 2007. ARTA has since agreed to e. and has made allowance for this in its contract negotiations and project agreement to be signed with the eventual supplier. This is also confirmed in an MOU with ARTA, which we intend to have signed by 30 October 2008. A copy of the MoU is attached (Attachment 2). The procurement procedure was approved by the Board at its August 2007 meeting (Board paper 07/08/2047 refers).

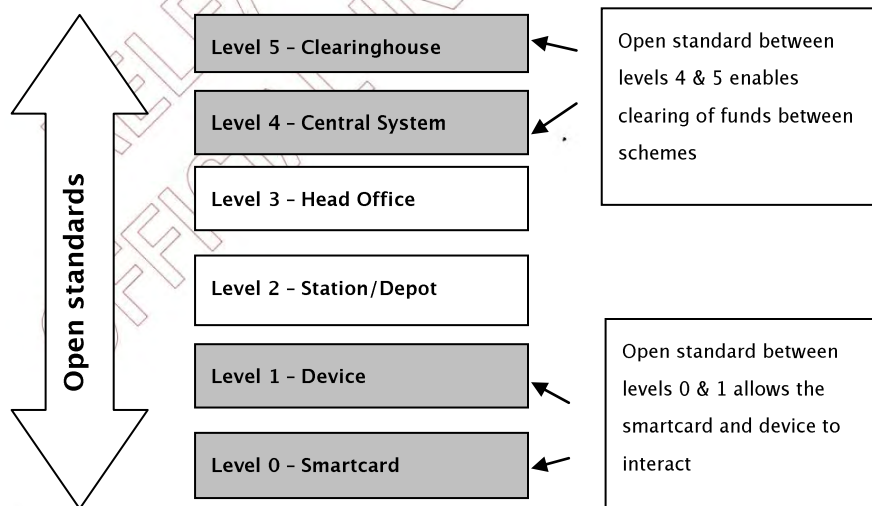
The second condition, b. above, also has been fulfilled with ARTA confirming that reusable parts of the integrated ticketing system design will be made available to other approved organisations to achieve a national integrated ticketing system. It has requested the open standard in its tender documentation.

For condition c., NZTA staff have participated in the tender evaluation process and a senior NZTA representative has been on the tenders review committee for the project. ARTA has agreed to collaborate with NZTA on the AIFS design to ensure NZTA is able to develop the national approach to automated fare collection procurement, and ensure the design will be able to be implemented by other New Zealand regions, thus contributing to an interoperable national network.

ARTA has formally agreed that it will transfer the appropriate rights to agreed parts of the AIFS design specification on to NZTA mentioned in condition e. above.

### Smartcard levels and interoperability

Smartcard systems can be characterised as a hierarchy of six levels of business requirements, as set out in the table below:



As there are currently no mature examples around the world that demonstrate interoperability between all six levels, (ARTA's) RFT documentation lists the open standards that can be applied at levels 0 and 1 and 4 and 5 only. Standard interfaces at these levels are essential to support interoperability between schemes. Other levels do not necessarily have to comply with open standards to achieve interoperability between schemes. This is important to minimise (ARTA's) – and also Land Transport New Zealand's – exposure to risk, particularly financial risk from developing and implementing a system which is based entirely on open standards. Open standards have been developed in Australia, the United States of America, Europe and the United Kingdom that could be used as a basis for interoperability at the required levels.

### **Reusable system design elements**

Certain parts of (ARTA's) integrated ticketing system design, for example, the equipment installation standards, software development and user interface design standards and central system interfaces specifications, can be reused by other approved organisations to achieve economies of scale and interoperability.

It is expected that other approved organisations will be required to make some modifications and customisations to their designs and systems so they can meet their own requirements, and ensure interoperability with other schemes.

### **Common interoperable system elements**

There are some common system elements that must be coordinated from a national perspective to achieve interoperability between regional schemes, for example, coordination of policy for inter-regional operation of smartcards and verification of equipment suppliers for conformance with national standards.





# **MEMORANDUM OF UNDERSTANDING**

**for**

## **Automated Fare Collection**

between

**New Zealand Transport Agency**

and

**Auckland Regional Transport Authority**

**August 2008**

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RELEASED UNDER THE OFFICIAL INFORMATION ACT

## **PARTIES**

New Zealand Transport Agency (**NZTA**) of Victoria Arcade, 44 Victoria Street, Wellington;

and

Auckland Regional Transport Authority (**ARTA**) of Regional House, 21 Pitt Street, Auckland.

## **1 INTERPRETATION**

1.1 For the purpose of the interpretation or construction of this Memorandum of Understanding, unless the context provides otherwise:

- (a) References to sections and clauses are references to sections and clauses in this Memorandum of Understanding and references to parties are references to the parties to this Memorandum of Understanding.
- (b) References to Schedules, if used, are references to Schedules of this Memorandum of Understanding and any terms and conditions set out in the Schedules shall form part of this Memorandum of Understanding.
- (c) Any reference in this Memorandum of Understanding to any statute is deemed to include all amendments, revisions, substitutions or consolidations made from time to time to that statute.
- (d) Any reference to this Memorandum of Understanding includes all variations made in accordance with this Memorandum of Understanding.
- (e) The invalidity of any part or provision of this Memorandum of Understanding shall not affect the enforceability of any other part or provision thereof.

## **2 PURPOSE**

2.1 The purpose of this Memorandum of Understanding is to record the agreement between NZTA and ARTA for the development of a national approach for automated fare collection and the implementation of the Auckland Integrated Fares System (**AIFS**).

2.2 This Memorandum of Understanding defines the roles, relationships, responsibilities and expectations of ARTA and NZTA with regard to the development of the national automated fare collection approach and the AIFS.

### 3 BACKGROUND

- 3.1 NZTA is charged with, among other things, approving procurement procedures designed to obtain the best value for money in public transport spending having regard to the purposes of the Land Transport Management Act 2003 and, since 2006, has been investigating how to ensure that automated fare collection initiatives support public transport policy and identifying means by which value for money can be increased<sup>1</sup>. NZTA intends to create a national framework for automated fare collection within which any region can introduce its own automated fare collection system. NZTA is doing this to assist regional authorities to achieve better procurement outcomes through interoperability synergies and economies of scale benefits across the country as a whole.
- 3.2 In 2006 ARTA commenced planning for the acquisition of a smartcard-enabled automated fare collection system for the Auckland region and it was realised that this impacted and could be impacted by any national approach developed by NZTA. Subsequently in November 2007 ARTA released a RFT for the AIFS.
- 3.3 Accordingly it was agreed that NZTA will utilise the AIFS to gain access to an international interoperability standard and the subsequent design of the AIFS solution, as described in section 5, Schedule 2 of the draft AIFS project agreement (together, the **Design**), both of which will be used as key inputs into the definition of the national framework. As a result NZTA took a greater financial interest in the design phase of the AIFS programme and participated in the evaluation of the tender responses.

#### THE PARTIES AGREE AS FOLLOWS:

### 4 OBJECTIVES

- 4.1 ARTA and NZTA wish to define the relationship between the parties in respect of the implementation of the AIFS, and seek to maximise co-ordination, co-operation and collaboration so as to achieve the development of a national approach to automated fare collection and any standards or guidelines that may result, and to ensure that the implementation of the AIFS is consistent with this approach where possible and practicable.
- 4.2 In order to achieve a sustainable and interoperable automated fare collection environment across New Zealand which provides benefits for consumers and funders of these systems, the parties agree that they need to work together to ensure that ARTA's AIFS is conducted in a manner that is consistent with ARTA's statutory objective/functions and principles and the national outcome, wherever practicable.
- 4.3 The parties agree that in order to achieve this shared goal they must work collaboratively with each other and accordingly will, in relation to all matters arising out of or under this Memorandum of Understanding:

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<sup>1</sup> This work was initiated by Land Transport New Zealand, which merged with Transit New Zealand to become NZTA on 1 August 2008.

- (a) Communicate in an open, honest and timely manner;
  - (b) Respond promptly to requests by the other;
  - (c) Exchange information and ideas to improve the development of the AIFS and the national approach in a supportive manner;
  - (d) Work together, so far as practicable, to avoid duplication;
  - (e) Forewarn each other of actions taken, or proposed to be taken, of which the other might reasonably expect to be advised;
  - (f) Provide feedback.
- 4.4 ARTA and NZTA acknowledge that each has powers, functions and obligations under law. The performance by each party of its obligations under this Memorandum of Understanding is subject to such powers, functions and obligations under law.

## 5 SPECIFIC RESPONSIBILITIES

- 5.1 Both parties will cooperate in the formation of a national approach for automated fare collection that may include the delivery of one or more national standards, designs and perhaps shared operational services. Within this work there will be specific responsibilities required of each party which will be supported, to the extent reasonable, by the other party.

### ARTA Responsibilities

- 5.2 It has been previously agreed that ARTA will act in concert with NZTA in the way that it procures the Design so as to meet both its own purposes as well as making the Design available to NZTA for the purposes of being an input to the national framework as described in this Memorandum of Understanding. Arising from this agreed position, ARTA specifically will, unless otherwise agreed by NZTA in writing:
- (a) Ensure, as far as is reasonably practicable, including at reasonable cost, that the Design is based upon an appropriate international open standard for Layers 0–1 and 4–5 of the agreed ARTA architecture (i.e. the smart cards/card readers and inter–regional central system/clearing house levels);
  - (b) Use its best endeavours to secure ownership of all non–proprietary elements of the Design and at the least obtain full New Zealand licensing rights to such non–proprietary elements of the Design;
  - (c) Transfer ownership or licensing rights (when received) of all non–proprietary elements of the Design to NZTA;
  - (d) Use its best endeavours to obtain full New Zealand licensing rights of all proprietary elements of the Design;
  - (e) Transfer (sub–licence) any such licensing rights of all proprietary elements of the Design to NZTA;

- (f) Ensure that ownership of AIFS public transport smartcards is vested with ARTA such that ARTA retains management and configuration control of the smartcards. Operators and commercial entities will not be entitled to issue their own cards for use on public transport within the Auckland region unless agreed by NZTA;
- (g) Ensure that changes to the card/card reader maintain compliance with the Design;
- (h) Use its best endeavours to ensure that the Design will, as at the date of entry into the AIFS project agreement, be of a type that is able to be implemented by other New Zealand regions, thus contributing to the development of an interoperable national network connecting the regional systems at Levels 0–1 and 4–5. For the avoidance of doubt, ARTA will not be required to undertake any work in relation to any future implementation of an automated fare collection system by any other New Zealand region.

### **NZTA Responsibilities**

5.3 NZTA will accept the Design from ARTA and use this as a major input into the development of any specific NZ-wide automated fare collection standards and guidance. The development of the national approach to automated fare collection will take cognisance of the Design and implementation so as to ensure a high degree of compliance with the AIFS wherever practicable.

5.4 NZTA will specifically:

- (a) consider a request from ARTA to pay its identifiable and reasonable additional costs in developing the Design under the AIFS project agreement due to the requirements under this Memorandum of Understanding;
- (b) Use the Design as input into the formation of a national standard for Levels/Layers 0–1 and 4–5 in accordance with clause 5.3;
- (c) Make the Design available to regional councils in other regions, to assist those regions to adapt the Design to their needs, and to facilitate interoperability between regional systems;
- (d) Implement a repository of automated fare collection and transport smartcard information and make this available to regions to assist in their own automated fare collection programmes. It is intended that this repository will be managed by knowledgeable staff who will be able to directly assist in the retrieval and storage of information and who will be conversant with any standards and guidelines developed at the national level;
- (e) Develop and implement, in consultation with regions, a governance arrangement for any national integrated standards or guidance;
- (f) Assess future funding applications for the AIFS improvements and changes against compliance with any national integrated ticketing standards and guidelines in order to identify their ability to contribute to the national approach and benefits.

- 5.5 In managing the development of a national approach and in assessing any funding requests NZTA will base its work on the already agreed Integrated Ticketing 5 Principles until such time as the national approach and any resultant standards or guidelines are agreed. The Integrated Ticketing 5 Principles are:
- (a) Regional councils to specify smartcard systems requirements, including requirements for ensuring confidentiality in relation to access to, and use of commercial data;
  - (b) Smartcard system operation not to be run by a public transport operator;
  - (c) Regional councils to use open procurement procedures (compliant with section 25 of the Land Transport Management Act 2003);
  - (d) Regional councils to be encouraged to seek economies of scale by sharing clearinghouses and other elements of smartcard systems; and
  - (e) Regional councils and their smartcard system contractors ensure that their systems are developed to achieve interoperability as opportunities arise.

## 6 REPRESENTATIVES

6.1 The Representatives under this Memorandum of Understanding are:

	<b>ARTA</b>	<b>NZTA</b>
Name:	Greg Ellis	Simon Whiteley
Position:	Programme Director, AIFS	General Manager, Policy & Planning
Telephone:	09 379 4422 extn. 9023	04 894 6361
Email:	greg.ellis@arta.co.nz	simon.whiteley@nzta.govt.nz

6.2 Changes to Representatives must be notified in writing to the other party.

6.3 The Representatives are responsible for:

- (a) Dealing with day-to-day matters relating to the administration and operation of this Memorandum of Understanding;
- (b) Keeping the Memorandum of Understanding and any operational agreements current;
- (c) Monitoring the application of the provisions of this Memorandum of Understanding;
- (d) Managing any review and/or variation process under section 9 of this Memorandum of Understanding; and
- (e) Working together to settle any disputes and differences in accordance with section 11 of this Memorandum of Understanding.

## **7 MEETING OF PARTIES**

- 7.1 The Representatives will meet on a quarterly basis, and additionally where reasonably requested by either party, to review progress under this Memorandum of Understanding and to discuss any matters of and incidental to this Memorandum of Understanding that either party may raise.
- 7.2 Meetings under clause 7.1 may involve other staff members from either party.

## **8 COSTS**

- 8.1 Unless the parties agree otherwise, each party shall bear all of its own costs and expenses in relation to carrying out its responsibilities under this Memorandum of Understanding.

## **9 REVIEW AND VARIATION**

- 9.1 The parties shall review this Memorandum of Understanding on ARTA's entry into the AIFS project agreement and at least annually on the anniversary of signing, and at any other time where either party notifies the other that it considers the Memorandum of Understanding is not achieving its stated aim.
- 9.2 Either party may bring forward recommended changes or enhancements to the Memorandum of Understanding that, in the opinion of that party, will lead to an improved understanding between the parties and the practical implementation of the intent of this Memorandum of Understanding.
- 9.3 Requests to amend this Memorandum of Understanding must be made in writing to the other party.
- 9.4 Amendments to this Memorandum of Understanding must be in writing and signed by the Chief Executive of each party.

## **10 REPRESENTATION AND STATUS**

- 10.1 Neither party shall have the authority to act for, or incur any obligation on behalf of the other party, except as expressly provided for in this Memorandum of Understanding.
- 10.2 Neither party shall constitute or be deemed or construed to be a partner, agent or representative of the other party or be deemed to create any trust, commercial partnership or joint venture.

## **11 RESOLUTION OF DISPUTES**

- 11.1 The parties' staff will work together in good faith with a view to resolving any disputes or differences between the parties in relation to the interpretation and operation of this Memorandum of Understanding.



- 11.2 If a dispute or difference cannot be settled by the parties' staff, then it will be referred to the Representatives referred to in clause 6.1 above. The Representatives will in good faith meet and negotiate with a view to resolving or settling the dispute or difference within 10 working days of referral.
- 11.3 Referral to Chief Executive Officers:
- (a) If the Representatives are unable to resolve the Dispute or make material progress towards its resolution within 10 working days following referral, then the dispute shall be referred to the Chief Executive Officers of the parties for discussions and agreement.
  - (b) The Chief Executive Officers shall make every reasonable effort to resolve the dispute within 20 working days of referral.
  - (c) If either Chief Executive Officer is not available, he or she may appoint a senior manager to meet in their place pursuant to this clause, provided that any senior manager appointed has not previously been involved in the dispute.
- 11.4 For the avoidance of doubt, if the parties are unable to resolve the dispute using the techniques in clauses 11.1 to 11.3, the parties shall continue to perform their obligations under this Memorandum of Understanding to the extent reasonable and proper in the circumstances as if no dispute had arisen pending the final settlement or determination of any matter.

## **12 TERM**

- 12.1 This Memorandum of Understanding comes into force on the day that it is signed by both parties and will continue in force until both parties agree in writing to terminate the Memorandum of Understanding.
- 12.2 Unless otherwise stated, any operational arrangements developed under this Memorandum of Understanding come into force on the day on which they are signed and continue in force until such time as the signatories to them agree in writing to terminate them.
- 12.3 Upon termination of the Memorandum of Understanding all operational agreements developed under it will also be terminated, unless the parties otherwise agree in writing.

## **13 TRANSFER**

- 13.1 The parties may not assign any of their rights and obligations under this Memorandum of Understanding without the prior written consent of the other party.

## **14 TERMINATION**

- 14.1 This Memorandum of Understanding can be terminated by written agreement of both parties only.

- 14.2 A party wishing to terminate this Memorandum of Understanding must notify the other party in writing of its intention to terminate. The written notification must contain valid reasons for the party wanting to terminate.
- 14.3 Where reasonably practicable, the requesting party is to work in good faith with the other party to resolve the reason for the termination prior to seeking termination.
- 14.4 The termination of the Memorandum of Understanding and any operational agreements made under it will occur on a date agreed upon by the parties.

**15 EXECUTION**

Signed for and on behalf of  
New Zealand Transport Agency

By:

.....  
Date Geoff Dangerfield  
Chief Executive

Signed for and on behalf of  
Auckland Regional Transport Authority

By:

.....  
Date Fergus Gammie  
Chief Executive