NZ TRANSPORT AGENCY
WAKA KOTAHI

MINISTERIAL BRIEFING NOTE

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NAME OF AGENCY	NZ Transport Agency
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SUBJECT	Auckland Integrated Ticketing Scheme

Purpose

Further to the 5 September briefing note on the Auckland Integrated Ticketing Scheme (attached) you have asked about the use of differently branded cards on the core system. This briefing note explains the current situation regarding public transport smart card branding and its use in integrated ticketing schemes.

The attached briefing note for the Honourable Bill English has also been updated to include information on smartcard branding.

Background

Smart card components

The electronic smart cards used for automated fare collection in integrated ticketing schemes have three components:

- One or more electronic purses, i.e. the money loaded on to the card. The card may have one e-purse for public transport (e.g. owned and managed by the regional council) and a separate e-purse for micropayments (e.g. owned and operated by a micropayment company such as Snapper).
- The fare medium, which coordinates all the relevant public transport information to automatically calculate and deduct a fare from the public transport e-purse.
- The components to allow near field communication (e.g. micro aerial) - so the card and card reader machine can communicate.

The branding on the outside of the card is designed by the issuer of the card.

Fare media

There are different types of fare media that can be used for public transport automated fare collection. DESfire is the public transport industry standard fare medium used throughout the world. It is optimised for public transport transactions, allowing complex fare information to be stored on cards, while minimising the time for each smartcard tag on-tag off transaction (approximately 200-300 milliseconds).

Java JCOP is a medium used commonly for micropayments and non-transport payments. Although it can be used in public transport, it is optimised to manage the monetary transactions rather than public transport automated fare information and collection. Other alternatives are emerging that will also allow public transport payments in the future, e.g. EMV, which is used for banking applications; embedded DESfire chips in mobile phones, and downloadable fare media applications for smart phones and i-pods.

The central system being built for the Auckland scheme (and for future use in other regions) can be adapted to process information from any of the fare media, so it is future proofed to work with any fare media that may be used in regional ticketing schemes in the future.

Fare media in the Auckland integrated ticketing scheme

The Auckland scheme was determined by an open tender that specified the use of a single fare medium. Regional ticketing schemes around the world use a single fare medium to maximise efficiency and reduce the complexity within the scheme. For example, if a scheme has multiple fare media, then all card readers would have to be configured to read multiple fare media, which would add considerable expense into the system for little added benefit in terms of effective public transport.

Thales, who won the tender for the Auckland scheme, use DESfire fare medium and this is the specified medium for the Auckland scheme. Snapper uses Java JCOP as the fare medium in its smartcards and ticketing equipment. NZ Bus has contracted with Snapper to use Snapper equipment for the NZBus tag on-tag off system and has negotiated with AT a co-branded Snapper-HOP card. This co-branded card is a Snapper card running Java JCOP fare medium and is being used in the interim until the core AT ticketing system is implemented from mid 2012.

Payment options in the Auckland scheme

The AT ticketing scheme is a unitary scheme with a single customer brand and processing capability. AT has designed the single HOP brand for is integrated ticketing scheme. This means a single branded card using the same fare medium (DESfire) across all AT public transport services. Such an approach is easy for the public to understand (a single HOP brand for public transport payments) and maximises technical efficiency within the system (a single fare medium).

There is future potential for other companies to issue their own branded cards, mobile phone embedded chips, or downloadable web applications, for public transport payments in Auckland. When introducing an integrated ticketing scheme a region needs to get the basics right first - the central system, fare medium, smart card, card readers and system integration. Adding multiple payment options to an integrated ticketing scheme adds significant technical complexity, so it is generally only done once a system is up and running.

In the short term AT's focus is on implementing their integrated ticketing scheme, which is a major technology and business process project. Integrating further public transport payment options for other smart cards and payment technologies will be possible in the future but is not part of the initial build and implementation of the Auckland scheme.

Snapper has reached an agreement with AT to be part of the Auckland scheme. This involves Snapper converting their on-bus card readers to operate with DESfire, so that HOP cards will tag on and off Snapper equipment. It also means that Snapper will be able to have their own e-purse (and associated Java JCOP) located on the HOP cards, so HOP cards will be able to be used for micropayments through Snapper's own system as well as for public transport payments through the AT system.

As the core Auckland scheme is implemented from mid 2012, the current co-branded Snapper-HOP cards will be replaced with the new full HOP cards, operating DESfire for public transport payments and including the Snapper e-purse for non-public transport micropayments. The new full HOP cards will also be co-branded with Snapper branding when the cards also carry the Snapper e-purse.

Other regional integrated ticketing schemes

As other regions implement or update their integrated ticketing schemes it is envisaged that they will have their own branded public transport payment cards. Provided regions' integrated ticketing schemes are compliant with the national interoperability standards then smartcards from one region will be able to be used in other regions for public transport payments. Similarly in the future, more ubiquitous payment options, such as embedded chips in mobile phones, will be able to be used for public transport payments in all regions with standards-compliant integrated ticketing schemes.