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Transportation Council Briefing

Smart Card Alliance
July 22, 2005

The briefing will begin shortly.

To join the teleconference, call: 1-866-337-9164 (US toll-free) or
+1-416-640-3404 (International callers)



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❖ **Smart Card Alliance mission**

To stimulate the understanding, adoption, use and widespread acceptance of single and multi-application smart card technology

❖ **The “voice” of the U.S. smart card industry**

❖ **Transportation Council**

- ❖ Forum to promoting the adoption of interoperable contactless smart card payment systems for transit and other transportation services
- ❖ Active cross-industry steering committee: APTA, Booz Allen Hamilton, Cubic, ERG Group, IBM, Infineon Technologies, MasterCard, Northrop Grumman, PANYNJ, US DOT/Volpe Center, WMATA



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Today's Speakers & Topics

- ❖ **Welcome and smart card industry overview - Randy Vanderhoof, Smart Card Alliance**
- ❖ **Smart cards in transportation in the U.S. - Greg Garback, WMATA**
- ❖ **Transportation Council goals and objectives - Greg Garback, WMATA**
- ❖ **Transportation Council operating principles - Mike Dinning, US DOT/Volpe Center**
- ❖ **Transportation Council projects**
 - ❖ **Smart cards and parking - David deKozan (Cubic)**
 - ❖ **Payment trust model for transit - Willy Dommen (BAH)**
 - ❖ **Transit and financial payments - Michael Laezza (ERG), Adam Gluck & Burt Wilhelm (MasterCard International)**
 - ❖ **APTA/Transportation Council collaboration - Tim Weisenberger (US DOT)**
- ❖ **Conclusions and next steps – Greg Garback & Mike Dinning**
- **Discussion / Q&A**



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Smart Cards and Transportation in the US

**Greg Garback, WMATA & Transportation
Council Interim Co-Chair**



Overview of US Transportation Marketplace...

❖ Transit ridership

- ❖ Nationally, over 9.6 billion transit trips in 2004
 - ❖ Over 2% growth on year-to-year basis
 - ❖ Higher growth rate expected in 2005
- ❖ Transaction volume between \$15 and \$20 billion annually

❖ Highway tolling

- ❖ Nationally, 27 of 30 major toll roads collect fees electronically
 - ❖ Two-thirds of all tolls are collected electronically; >\$1B
 - ❖ Over 10 million transponders in I-95 market alone
 - ❖ Continued growth expected; transit – toll account next?

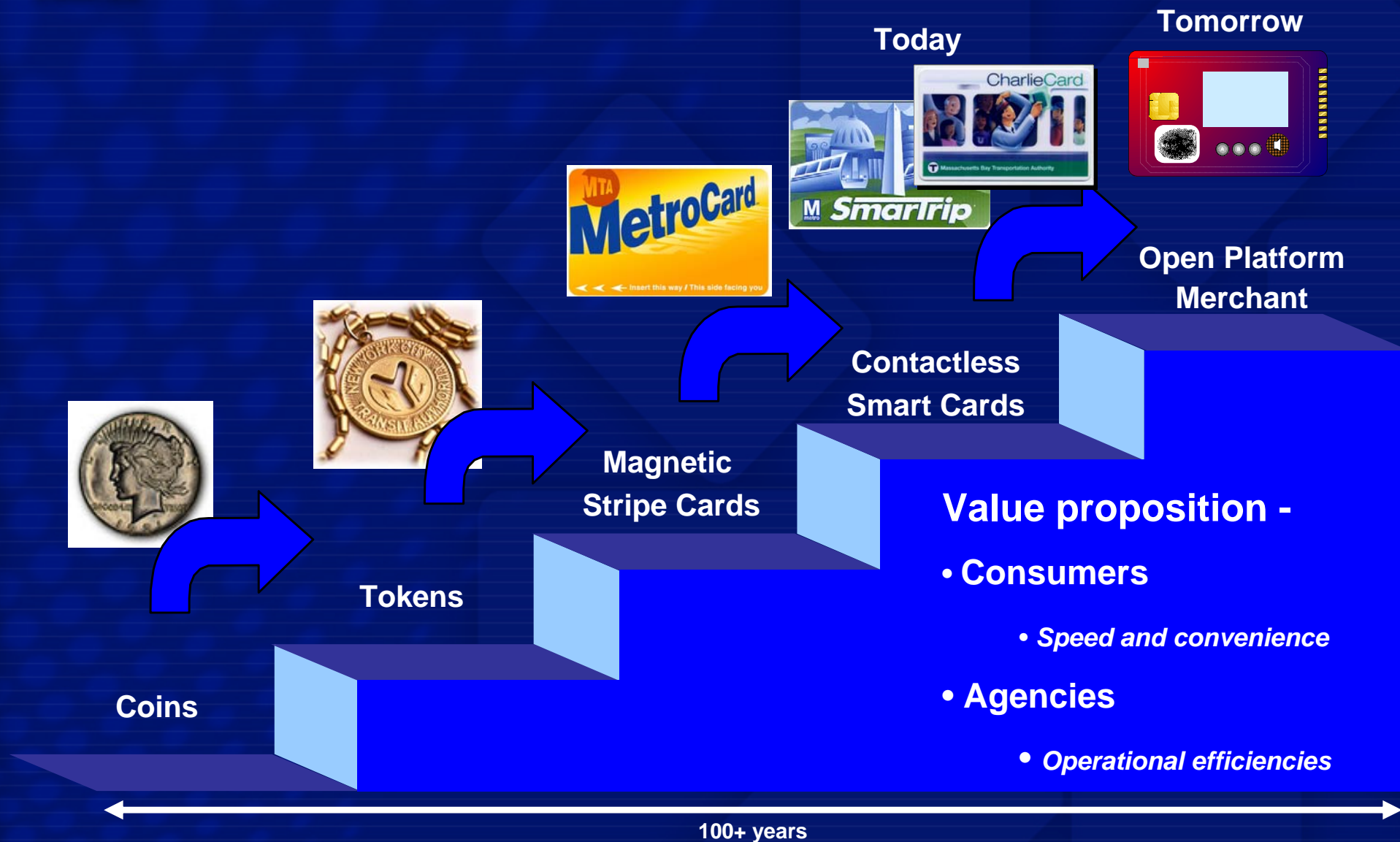
❖ Parking

- ❖ Nationally, a \$19 billion marketplace
 - ❖ Publicly and privately operated facilities nation-wide
 - ❖ Controlled and uncontrolled lots and garages; metered
 - ❖ Market is moving to electronic payments



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Evolution of Transit Fare Payment in US...





Overview of US Public Transit Marketplace...

❖ Fare collection systems for public transport

- ❖ Nationally, once in a generation re-investment underway
- ❖ Well over \$1 billion in new systems deployed or under contract
- ❖ Replacing aging and obsolete systems
- ❖ All include state-of-the-art contactless smart cards
- ❖ Push toward all-electronic systems; easy to use, manage, repair
- ❖ Effective and efficient systems

Provides speed and convenience for customer



Overview of US Public Transit Marketplace...

❖ San Francisco Bay Area, California – TransLink

- ❖ Deployment in progress – 20+ agencies
- ❖ Bus, rail, ferry and metro



❖ Chicago, Illinois – Chicago card

- ❖ Launched in 1999, approximately 150,000 cards issued
- ❖ Expansion to PACE underway



❖ Boston, Massachusetts – Charlie card

- ❖ System for bus, light, heavy and commuter rail
- ❖ Phased deployment underway 2005 – 2006



❖ Seattle, Washington

- ❖ Links 7 regional transit agencies – bus, rail and ferry
- ❖ Final design review cycle



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Overview of US Public Transit Marketplace...

❖ Los Angeles, California – TAP

- ❖ System for bus, light rail and metro; phased deployment 05 - 06
- ❖ Clearinghouse procurement underway

❖ New York City

- ❖ Development phase; regionally coordinated initiative
- ❖ Press release from June 30, 2005.... <http://www.panynj.gov/>

❖ Atlanta, Georgia – Breeze

- ❖ Smart card only system, no magnetic tickets
- ❖ Under design, deployment in 2006

❖ San Diego, California

- ❖ Regional AFC system for bus, trolley and commuter rail
- ❖ Pre-deployment phase



Overview of US Public Transit Marketplace...

❖ Washington, DC – SmarTrip

- ❖ 1,200,000 contactless smart cards issued since 1999
 - ❖ Used for rail and bus fares; parking fees
 - ❖ Regional system under development
- ❖ Market penetration
 - ❖ Rail – 54% overall; higher in peak periods
 - ❖ Bus – 16% and growing 1% per month; some >85%
 - ❖ Parking – 100%, exclusive method to pay



❖ Nation-wide

- ❖ Many others under consideration or in development
 - ❖ South Florida, Denver, Philadelphia
 - ❖ Salt Lake City, Portland, OR
 - ❖ Minneapolis, Portland, ME
 - ❖ Houston, Phoenix



Opportunities for Collaboration and Convergence...

❖ US financial market going contactless

- ❖ Recognition that speed and convenience are key
- ❖ Target markets – QSR, convenience stores, mass transit
- ❖ Announcements made in WSJ May 19, 2005

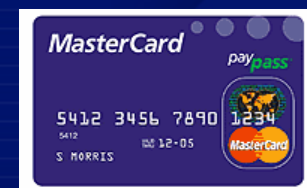
❖ American Express - ExpressPay

- ❖ National launch initiated June 2005
- ❖ Alternative form factors - card and key fob



❖ MasterCard – PayPass – JP Morgan – Chase & Co.

- ❖ National launch initiated June 2005
- ❖ Alternative form factors - card, phone



❖ VISA Contactless

- ❖ Interoperable with PayPass specification
- ❖ National launch planned



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Transportation Council Goals & Objectives

**Greg Garback, WMATA & Transportation
Council Interim Co-Chair**



Transportation Council Values, Goals and Objectives...

❖ Guiding principles established by TC steering committee include

- ❖ Core values
- ❖ Goals and objectives
- ❖ Organization and membership

❖ Core values

- ❖ Shared need between all transportation services exists
 - ❖ Convenient, efficient and economical payment systems
 - ❖ Shift to electronic micro-payments; cash alternative
- ❖ Transportation Council advocates for...
 - ❖ Smart card solutions offer best alternative
 - ❖ Multi-modal and multi-functional capacity
 - ❖ Innovation and collaboration to advance adoption
 - ❖ Open payment platforms; technology agnostic



Transportation Council Values, Goals and Objectives...

- ❖ **Goals and objectives – high level overview**
 - ❖ For smart card-based systems....
 - ❖ Stimulate understanding, adoption and acceptance
 - ❖ Facilitate demonstration programs advancing the market
 - ❖ Identify evolving challenges and opportunities
 - ❖ Serve as technical resource for marketplace
 - ❖ Provide educational and research resources for industry
 - ❖ Participate in other councils for cross-over of concepts

- ❖ **Initial projects identified**
 - ❖ Smart cards and parking
 - ❖ Transit payment system trust model
 - ❖ Transit and financial payment system linkages
 - ❖ APTA and Transportation Council collaboration



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Transportation Council Operating Principles

**Mike Dinning, US DOT/Volpe Center &
Transportation Council Interim Co-Chair**



Transportation Council Operating Principles

- ❖ **Membership**
- ❖ **Organization**
 - ❖ Officers
 - ❖ Project Managers
 - ❖ Steering Committee



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Council Membership

- ❖ **Open to all Alliance members**
- ❖ **Multi-modal**
- ❖ **Diverse perspectives desired**
 - ❖ Technology
 - ❖ Services
 - ❖ Research
 - ❖ Government
- ❖ **Encourage participation from other sectors**
- ❖ **Opportunities for new players**



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Council Organization: Officers

- ❖ **Elected annually by Council**
- ❖ **Chairman**
- ❖ **Three Vice-chairmen**
 - ❖ Transit
 - ❖ Tolls
 - ❖ Parking
- ❖ **Manage activities**
- ❖ **Develop membership**



Council Organization: Project Managers

- ❖ Officers approve projects and assign manager
- ❖ Manager is project champion
- ❖ Manager responsible for deliverables
- ❖ Individual can serve as manager on multiple projects



Council Organization: Steering Committee

- ❖ Provide advice to counsel officers, establish strategy, outline work
- ❖ Provide liaison with other councils
- ❖ 5 to 10 members
- ❖ One year terms (staggered)
- ❖ Diverse representation desired
- ❖ Two members selected by Alliance Board



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Smart Cards and Parking

David deKozan

**Vice President, General Manager
Cubic Parking Systems**



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The Parking Industry

- ❖ **\$19B market consisting of entry and exit controlled lots/garages, non-barriered surface lots, and on-street spaces**
- ❖ **40,000 public and private facilities employing over 100K people across 2,800 enterprises**
- ❖ **Facilities and revenue management are often outsourced**
- ❖ **Cash is still a major payment medium with many facilities still lacking any automation whatsoever**
- ❖ **Security is becoming an ever greater concern particularly for public venues such as airports, public transport centers, and event facilities**



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Parking Industry Trends

- ❖ **Parking management firms and municipal parking authorities are increasingly looking to find operational efficiencies and increased security through improved automation**
- ❖ **Conventional systems utilize**
 - ❖ Mechanical coin/currency processing
 - ❖ Bar code scanning technology
 - ❖ Magnetic stripe ticket validation for entry and exit
 - ❖ Many systems process credit cards in an off-line manner
- ❖ **For many, fraud is still a significant issue**
 - ❖ Fraudulent credit card usage
 - ❖ Employee theft
 - ❖ Vandalism
 - ❖ Lack of adequate audit controls
- ❖ **Advances in information technology are providing solutions to these problems**



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Parking Industry Trends

- ❖ **Municipalities are moving from single space off-line coin meters to multi-space, multi-media, on-line meters**
- ❖ **Automated enforcement and citation management systems are being utilized**
- ❖ **New approaches to communications networks are being pursued such as city wide WiFi**
- ❖ **Issues remain with regards to low dollar transactions generating high discount rates for credit card processing**



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Parking Industry Trends

- ❖ **Increasing use of monthly permits, pre-tax benefit vouchers, and other non-cash payment types are increasing the need for electronic payment media and web based customer management systems**
- ❖ **These trends exhibit striking similarity to challenges the transit industry is looking to contactless smart card systems to solve**



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The Parking Project

- ❖ **Contactless smart cards are being used in mass transit to facilitate passes, stored value, benefit vouchers, and electronic distribution strategies**
- ❖ **Compatible technologies are being used by banks in support of new contactless credit card products**
- ❖ **Regional payment infrastructure and customer service utilities are being put in place to support these systems**
- ❖ **These developments create opportunities for the parking industry**



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The Parking Project

- ❖ **Contactless smart card technology is an ideal payment medium for parking applications**
- ❖ **Cards being deployed for transit and banking applications could be leveraged for a variety of parking functions as could the back office services**
- ❖ **The group paper will explore the history of smart cards in parking, current trends in the transit and banking sectors, and the potential benefits available to the parking industry for embracing common solutions**



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Project Status

- ❖ Teams formed to develop five primary topic areas
- ❖ Participants include ACS, Cubic, First Data, Giesecke and Devrient, MBTA, Parsons, PBS&J, JJ McKay, TRIMET, ViVOtech, WMATA
- ❖ First draft due 8/5, final paper 10/1
- ❖ *We need Parking Operator participation!!*



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“Trust Model” Project

Willy Dommen
Principal
Booz Allen Hamilton



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Objective

**Develop a “Trust Model” for
clearing transactions
between
closed payment systems**



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Project Overview

❖ Potential members

- ❖ Transportation agency
 - Public transit
 - Toll collection
 - Parking
- ❖ Financial institutions
- ❖ Retail merchants

❖ Build a set of rules and processes

- ❖ Accept existing payment technologies
- ❖ Settle without significant investment in transaction processing systems



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Status

- ❖ **Scope document - completed and discussed**

- ❖ **Outline of deliverables - completed**
 - ❖ Policy Document
 - ❖ Trust Statement
 - ❖ Technical Architecture
 - ❖ Operating Rules



Deliverables

Trust Statement

- ❖ Introduction
- ❖ Definition of Entities
- ❖ Participation Rules
- ❖ Definition of Documents
- ❖ Applicable Standards
- ❖ Technical Specifications
- ❖ Applicable Agreements

Policy Document

- ❖ Introduction
- ❖ Governance
- ❖ Participant Responsibilities
- ❖ Requirements for Participation
- ❖ Customer Service Requirements
- ❖ Branding
- ❖ Applicable Guidance

Technical Architecture

- ❖ System Architecture
- ❖ Component Requirements
- ❖ Data Exchange Requirements
- ❖ Security Requirements

Operating Rules

- ❖ General Requirements
- ❖ Card Issuer
- ❖ Merchant
- ❖ Transn. Broker
- ❖ Clear-Settlmnt
- ❖ Dispute Res.
- ❖ Cust. Service
- ❖ Syst. Admin.
- ❖ Security
- ❖ Privacy



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Next Steps

- ❖ **Finalize deliverable outlines**
- ❖ **Develop project plan**
- ❖ **Establish budget**
- ❖ **Generate project schedule**
- ❖ **Organize resources**

Do the work



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Transit and Financial Payments

Michael Laezza, ERG Group

Burt Wilhelm & Adam Gluck, MasterCard International



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Objective

**Integration of
payment systems
for Public Transportation**



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Project Overview

❖ Potential members

- ❖ Transportation agencies
 - Public transit
 - Toll collection
 - Parking
- ❖ Financial institutions
- ❖ Payments systems
- ❖ Suppliers and consultants to the transportation industry

❖ Build a case study and set of best practices

- ❖ Look at current developing solutions
- ❖ Accepting existing payment infrastructure, analyze how payment system cards can be integrated into transit systems



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Status

- ❖ **Scope document – drafted and circulated**
- ❖ **Develop a series of documents**
 - ❖ White paper analyzing current situation
 - ❖ Other work products TBD based on white paper findings



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Draft White Paper Outline

1. Background

1. Current Asian examples
2. Payment system(s) status and plans

2. Objectives

3. Scope

4. Business Models

1. Direct bank card use
2. Indirect bank card use

5. Challenges

1. Different fare models
 - Transfers
2. Cost
3. Working with transit standards

6. Solutions

1. Open bank card (with / without transit application)
 1. Benefits and shortcoming of this approach
 2. Benefits and shortcoming of the alternative approaches

7. Phase II work – scope to be determined based on findings



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Next Steps

- ❖ **Finalize white paper outline**
- ❖ **Develop project plan**
- ❖ **Establish budget**
- ❖ **Enlist resources**



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APTA UTFS Security White Paper

Tim Weisenberger

**Electronic Payments and Transportation
Analyst**

USDOT Volpe Center



Smart Card Alliance- APTA Partnership Project Overview

- ❖ **Support of APTA Universal Transit Farecard Standards program (UTFS)**
- ❖ **Cooperative relationship emphasizing individual competencies**
 - ❖ SCA: Smart card technical expertise - both technology and related services; membership from varied industries
 - ❖ APTA: Transportation industry association; UTFS program; market ripe for expansion
- ❖ **Attempt to proliferate smart card applications**
 - ❖ SCA to assist APTA to develop guidelines and specifications to achieve interoperability of transit payment systems
 - ❖ APTA provides access to transit industry payment application for SCA members



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Project Specifics

- ❖ **SCA-TC to provide expert assistance to APTA UTFS program**
- ❖ **First project is a white paper regarding security approach**
 - ❖ UTFS has created payment system security guidelines
 - ❖ UTFS technical groups do not have the resources to attempt security specifications
 - ❖ The paper will examine approach(es) to bridging gap between security guidelines and a specification
- ❖ **Anticipate 3-4 month project schedule**



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Security White Paper Benefits

❖ **Benefits to the transit Industry**

- ❖ Detail an approach to an industry-wide security specification
- ❖ Help achieve interoperability among closed smart card fare payment systems
- ❖ Potentially expand transit industry network of technology and service providers
- ❖ Help move industry to partner with non-transportation payment programs

❖ **Benefits to the smart card industry**

- ❖ Achieve a higher understanding of transportation industry business case
- ❖ Expand the marketplace for smart card technology
- ❖ Spread the adoption of smart cards in transportation
- ❖ Expand the transportation marketplace to include smaller agencies



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Call for Volunteers

We need your help!

We will schedule our first teleconference soon.

To volunteer contact:

Tim Weisenberger

Volpe Center

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Martin Schroeder

APTA

202.496.4885

mschroeder@apta.com



Thank You Very Much....Wrap-Up

❖ Next steps

- ❖ Develop membership and participation to support council activities
 - ❖ Broad-based membership
 - ❖ Across all disciplines and vertical markets
 - ❖ Public, private, academic
- ❖ Finalize organization with election of officers
 - ❖ Report to SCA Board at October 2005 annual meeting
- ❖ Continue development of projects toward finalization
 - ❖ Identify and advance new projects
- ❖ Follow-up resource
 - ❖ info@smartcardalliance.org

Thank You Very Much....Wrap-Up

❖ Comments and questions?

❖ Open discussion

Parting thought - aligning unaligned markets requires creative thinking and innovative action.....

The Dutch have set the bar, literally
...mass transit, entertainment and
health care, *all in one*

