TESTIMONY SUBMITTED FOR THE RECORD

OVERSIGHT AND GOVERNMENT REFORM COMMITTEE

SUBCOMMITTEE ON TRANSPORTATION AND PUBLIC ASSETS

UNITED STATES HOUSE OF REPRESENTATIVES

STATUS OF TOLL INTEROPERABILITY

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Oversight and Government Reform Committee
Subcommittee on Transportation and Public Assets
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Introduction

Chairman Mica, Ranking Member Duckworth, and members of the subcommittee. Good afternoon. My name is Patrick Jones. I am the Executive Director and CEO of the International Bridge, Tunnel and Turnpike Association (IBTTA). IBTTA is the worldwide association for the owners and operators of toll facilities and the businesses that provide products and services to the industry. Our mission is to advance transportation solutions through tolling. Founded in 1932, IBTTA has more than 60 toll agency members in the United States and hundreds more in 20 countries on six continents.

We commend you, Chairman Mica, for your work on this committee as well as for your leadership and vision on the Transportation and Infrastructure Committee in this Congress and in previous Congresses.

We are pleased to have the opportunity to testify today on the important subject of interoperability (IOP) and to outline the full extent of progress that our industry has made to achieve it. ***IBTTA and its members are absolutely committed to the MAP-21 goal of achieving nationwide interoperability of electronic toll collection programs.***

Since the introduction of electronic toll collection (ETC) in the United States in 1989, toll agencies have made substantial investments in ETC technology and millions of customers have enrolled in ETC programs. Each year, toll agencies in the U.S. collect billions of dollars in tolls through ETC transactions.

ETC systems developed "organically." In other words, most individual toll agencies adopted ETC systems to serve their own customers and satisfy their own toll collection needs. As more and more agencies adopted ETC systems and more motorists came to rely on them, we saw regions of interoperability develop in which two or more neighboring agencies began to use compatible ETC systems that talked to each other and recognized one another's customers.

Today, there are dozens of ETC systems operated by scores of toll agencies. Some of these ETC systems talk to one another and recognize one another's customers; others do not. In addition, there are several large regions of interoperability (e.g. E-ZPass and SunPass) in which groups of toll agencies have banded together to adopt common standards so that all of the agencies within that region have ETC systems that talk to each other and recognize one other's customers.

The goal of **nationwide ETC interoperability** is a system in which customers have the choice of opting in and are able to pay tolls on any participating toll facility in the country using a single account. The immediate goal is to achieve nationwide interoperability for valid pre-paid toll customers – in essence, registered toll customers. The plan does not include un-registered toll customers.

Efforts to establish national interoperability must recognize and address the established base of technologies and systems already in use, the capital investment expended on these systems, and the institutional and business agreements that must exist among toll operators to recognize a given customer and properly process a transaction to that customer's account - thus ensuring that each toll operator is properly paid for the use of its facilities.

Because different devices are used in the different regions, asking all toll operators to read all varieties of transponders in use would reduce both the reliability and accuracy of reading tags, and would force greater reliance on the more complicated, less accurate imaging of vehicle license plates to identify the account for the purposes of national interoperability.

To address this issue, the IBTTA IOP Committee has analyzed the different transponder protocols in use with the intent of recommending a single protocol that could function as a select set of common national standards.

IBTTA's goal has been to plan and implement technologies and business practices leading to electronic toll collection (ETC) interoperability within North America in a manner that fosters open competition and minimizes legal and financial barriers to anyone wishing to provide products and services to toll agencies and customers.

The Law under MAP-21.
MAP-21, the Moving Ahead for Progress in the 21st Century Act (PL 112-141), enacted in July 2012, established new Federal legislative language regarding Electronic Toll Collection (ETC) interoperability as follows;

> *Section 1512(b) Electronic Toll Collection Interoperability Requirements -- Not later than 4 years after the date of enactment of this Act, all toll facilities on the Federal-aid highways shall implement technologies or business practices that provide for the interoperability of electronic toll collection programs.*

While MAP-21 does not provide specific direction for achieving this goal, we interpret this language to be a reflection of our request to Congress that the toll industry be allowed to resolve this issue without any specific mandates on the technologies or business rules to be used.

Aware of Congressional interest in this subject, IBTTA established an Interoperability Committee in 2010 – prior to enactment of MAP-21 – that has devoted considerable effort to formulating the following conceptual framework for achieving national toll interoperability. We are working systematically with numerous industry groups to forge the understandings and

agreements necessary to establish a national interoperable toll payment system. The interoperability provisions included in MAP-21 have been a further catalyst to industry action.

Current Electronic Tolling Situation.
US toll agencies in 35 states already operate hundreds of millions of dollars' worth of installed electronic toll collection (ETC) equipment (i.e., roadside infrastructure, toll tags and related systems) that generate more than $13 billion in annual toll revenue while serving almost 45 million toll accounts across the country.

Efforts to establish national interoperability must recognize and address the established base of technologies and systems already in use, the capital investment expended on these systems, and the institutional and business agreements that must exist among toll operators to recognize a given customer and properly process a transaction to that customer's account - thus ensuring that each toll operator is properly paid for the use of its facilities. Additionally, many toll facilities have bond covenants that cannot be jeopardized or adversely impacted by new legislation without putting their bond ratings and their fundamental business operations at risk.

Definition of Nationwide Electronic Tolling Interoperability
IBTTA envisions the "interoperable" toll system as one that allows drivers to establish a single toll account that would allow for payments on all US toll facilities. We envision that a driver who has a valid registered account with any electronic toll collection (ETC) system (i.e. E-ZPass, SunPass, TxTag, FasTrak, etc.) can have their vehicle identified seamlessly in the electronic toll lanes of any other ETC system using a required National Toll Tag (which would also be associated with their existing account) and have the appropriate fees deducted from their account.

The Foundation of Nationwide Interoperability: Connecting Regions with a National Standard
Current ETC operations require the use of a computerized toll transaction processing and customer account management system, commonly known as the "back office," serving either a single or multiple toll facility operators. The "back office" manages the posting of debits and payments to individual customer accounts within those systems and the transfer of funds among toll operators.

IBTTA's Interoperability (IOP) Committee envisions a nationally interoperable ETC system using regional service centers (hubs) which would offer a central information exchange for identifying an ETC tag in an "away" location and matching that tag to the customer's pre-paid "home" account, similar to the process used in processing credit card and cell phone transactions.

Toll operators that are not already part of the four major regional programs (E-ZPass in the Northeast US, SunPass in Florida, TxTag in Texas and FasTrak in California) might elect either to join a regional program or submit their interoperable transactions directly to a central exchange hub. Toll road customers could then drive on any participating toll facility and be accurately identified by a transponder. Once properly identified, their toll transaction would be applied to their existing account, and all transactions would be managed through a single account.

The Cornerstone: Accurate Identification
Critical to the above process is correctly identifying the specific vehicle and linking it to a valid account registered in a different tolling system. The major regional toll systems today use different types of transponder tags. Each region's hardware was originally designed to meet the business requirements and performance criteria of the members of that regional toll system. Achieving widespread interoperability requires that a toll operator can read both its "local" customers' tags as well as those being used by travelers from other systems, without reducing reliability or accuracy or jeopardizing revenue collections.

To address this issue, the IBTTA IOP Committee has analyzed the different transponder protocols in use with the intention of recommending either a single protocol or a limited number of protocols that could function as a select set of common national standards.

To be <u>considered</u> for the national standard, a transponder protocol must meet the following two requirements:

(1) The candidate protocol(s) must employ "open" technical and design standards – i.e. non-proprietary protocols available for use in devices and related equipment that can be built and sold by <u>any</u> entity that meets testing and certification requirements. This will promote market competition while ensuring interoperability.

(2) The candidate protocol(s) must meet a minimum set of operating requirements and message data formats that have been established by the IBTTA IOP Committee.

A Guiding Interoperability Principle: Freedom of Choice.
The foundation for national electronic toll interoperability should establish multiple choices for both toll operators and US motorists in how to collect/pay tolls and achieve interoperability. This matter of choice should facilitate implementation and adoption of interoperable standards and practices.

(1) **National Toll Tag**: The identified national protocol would initially be offered as a "second or alternate" tag within regions that do not use the selected protocol as their primary transponder. Toll operators in regions already employing the "national" protocol would not have to issue a second tag. The changes required for these operators would be making the institutional and technical enhancements required to submit the interoperable transactions to the exchange hubs, along with updates to their back office and customer service processes if they don't already collect the "universal" data fields identified by the National Interoperability Protocol Requirements Document, and have the transaction properly billed to the correct account and receive payment in return. Therefore, a customer would still only need one tag in their vehicle

(2) **Multi-Protocol Readers or Image-Based Tolling**: Toll operators and/or regions that do not have the "national" toll tag as their local device would have the <u>choice</u> of employing multi-protocol readers in their electronic toll lanes to read the National Toll Tag as the mechanisms for identifying all toll customers (in-region and out-of-region). Electronic

toll transactions would then be submitted to the agency's regional service center or a transaction exchange hub for clearance, account processing and payment.

(3) **Toll Tag Conversion**: Regions and/or toll operators that do not currently use the National Toll Tag would have the choice of; (A) adopting the national protocol and replacing their current system, (B) maintaining their current system and processes while augmenting their lane equipment to include the national transponder protocol and offering their customers an option for acquiring national protocol toll tags. Electronic and image-based toll transactions would then be submitted to the agency's regional service center or an exchange hub for clearance, account processing and payment.

(4) **New Toll Facility Deployments**: New toll agencies and facilities would be encouraged to deploy the national standard transponder protocol.

(5) **Third-Party Account Providers**: Third-party providers would be encouraged to use the national standard transponder protocol and settle their toll payments to participating agencies for which they have a certified service agreement through participation in regional service centers, or directly with a national exchange hub.

(6) **National Toll Tag Evolution**: The identification of national protocol(s) initially as a secondary/alternate protocol will allow regions and/or toll operators to evolve to a unified national standard as they procure replacement lane equipment and transponders from multiple suppliers in a more competitive market environment, on schedules that provide for reasonable amortization of their existing toll facility investments.

How Can Congress Help?

Our needs from the US Congress are:

(1) Assistance with the cost of the testing and certification leading to identification of the final candidate for the national transponder protocol.
(2) Financial assistance to help toll operators cover the cost of adding the hardware and software necessary to read multiple tag protocols.
(3) Continued recognition and support for IBTTA leadership in the development and implementation of the electronic toll interoperability plan.

Concerns about Migrating to Nationwide Interoperability.

While IBTTA and its members are committed to achieving nationwide interoperability, it is important to highlight two significant issues: (1) the costs of implementation and incremental operations, and (2) the potential for revenue loss.

(1) Increased Costs

This report establishes a set of choices toward achieving nationwide toll interoperability. All of them require toll operators and possibly customers to bear additional costs. The establishment of a National Toll Tag requires toll operators from regions that use other systems as their primary tags to bear the cost of purchasing and using a secondary tag.

There are three ways for toll operators and/or customers to acquire the secondary national tag:

- Toll operators could purchase the tags outright and distribute them to their customers.
- Toll operators could require customers to pay the full purchase cost of the tags.
- Toll operators could share the cost of the secondary tags with the customer by subsidizing the price of the equipment.

In addition to the cost of supplying alternate/secondary tags, toll operators that do not already use the National Toll Tag protocol in their current operations may have to incur the cost of new, multiprotocol lane equipment to read their own "home" tags and the alternate/secondary "national" tag to post tolls to valid accounts. Adoption of the secondary protocols may also require additional data collection and conversion of existing back office systems and user accounts to accommodate the technical requirements of the National Toll Tag.

The option of converting toll tags would allow agencies that do not already use the National Toll Tag protocol to switch out all existing tags and lane equipment and install the new protocol. While this may have only a modest effect on toll operators with small installed bases of equipment and toll tags, it will be more costly to toll operators with large established electronic tolling programs. National toll tag conversion would also entail new costs for toll operators, though some of these costs would occur normally if coordinated with agencies' routine replacement programs for aging equipment.

(2) Lost Revenue

Adopting new technologies, systems, processes, and/or business rules carries the risk that revenues may be lost, an unacceptable outcome for toll operators and their investors and bond-holders. Revenue loss means less money for necessary reinvestment in the maintenance and long-term capital refurbishment of the highways, bridges and tunnels. This revenue loss may happen because of:

- The inability to read the toll transponder on a vehicle from outside the home region;
- The inability to process the transaction in the back office (even after reading a valid transponder) because of incompatible business rules and account management practices between different regions of interoperability.

Any such revenue losses may adversely affect the bond agreements and revenue projections of the individual toll agencies. Thus, should Congress legislate a fixed and inflexible time frame for achieving regional and national interoperability, the agencies that participate in a conversion or evolution may need financial assistance to cover these potential losses.

Toll operators' tolerance for revenue risk may vary by the size of the revenue stream, the covenants with bond holders, and the commitment of funds for operations and

investment. In all cases, however, any erosion in revenues or decreased accuracy in toll collection systems will be unacceptable to toll operators.

Conclusion

As we said above, IBTTA and its members are absolutely committed to achieving nationwide interoperability of electronic toll collection systems. Over the last five years, hundreds of volunteers have invested thousands of hours of time valued at several million dollars – in volunteer roles on committees and subcommittees of IBTTA, separate and apart from their regular jobs in their companies and agencies – to make nationwide interoperability a reality. We are not finished and our investment is not complete.

I also want to emphasize the extremely complex nature of this undertaking. Achieving nationwide interoperability is not as simple as flipping a switch or getting all toll facilities to use the same transponder. It requires a huge effort to make sure that back office systems and business rules work together so that all of the tolling entities involved not only recognize a transponder but can also recognize a financial transaction.

Tolling is an essential tool to supplement revenues for transportation infrastructure. Creating the conditions for practical, nationwide interoperability of electronic tolling will open up new opportunities to fund and finance America's vital surface transportation network. IBTTA and its members are committed to this effort and we look forward to continuing to work with Congress and the wider industry to meet the requirements of the MAP-21 legislation.

Appendix 1: National Interoperability Achievements to Date

- Formation of the IBTTA Interoperability Committee in Fall, 2010
    - Multiple live and teleconference meetings
        - Forming consensus on a second-tag solution (local/national opt-in) and plan to develop a common set of business requirements and specifications for the national tag
- Formation of the National Interoperability Coordinating Group (NICG), Fall 2012, a cooperative effort of the Alliance for Toll Interoperability (ATI), the E-ZPass Group, IBTTA, OmniAir and others to: share information, coordinate and leverage the efforts of related organizations focused on interoperability, and steer a path toward nationwide interoperability by 2016
- ATI/E-ZPass outreach efforts to the American Association of Motor Vehicle Administrators (AAMVA), 2012 - present
- Formation of the ATI/AAMVA/E-ZPass Committee, Nov. 2012, coordinating communications between the toll industry and state motor vehicle administrations, seeking to facilitate development of toll violation enforcement reciprocity
- Pilot Toll Violation Enforcement Reciprocity Program agreement established August 2011 between Maine, New Hampshire and Massachusetts, now in fourth year of demonstration
- Alliance for Toll Interoperability conducted a successful Hub Pilot Program to prove the concept of a national exchange of transaction information for license plate tolling - which can also be applied to transponder transactions. Three vendors participated and all were able to deliver the desired operating and exchange process envisioned for the hub.
- The E-ZPass Group has created a public interoperability portal on its website that shares test plans, technology RFP and tech specs, business rules, policies, and agreements, etc.
- Kapsch, the manufacturer of the E-ZPass Group's tags and readers, which collect 75% of electronic toll revenue in the United States, opens its protocol and plans on publishing its TDM specs in the first quarter 2013.
- The E-ZPass Group establishes a national affiliate membership for toll agencies using E-ZPass compatible equipment. North Carolina is the first national affiliate, becoming interoperable with the 24 members of E-ZPass.
- Florida, North Carolina and Georgia announce their intent to be mutually interoperable by July 2013.
- OmniAir issues first certification of an ETC product (6C), which ensures tolling tag and reader interoperability (IOP) across equipment vendors and toll facilities that choose to deploy equipment certified as compliant to the "6C Requirements Document" defined by the 6C Toll Operators Committee.
- Between October and December 2013, Roadside Subcommittee conducts survey of over 130 public and private agencies via online survey tool with questions relating to interoperability.
- November 2013 – Issued Request for Information on definition of "open" protocol

- January 2014 – Issued Request for Information - National Toll Protocol Requirements Document for North American Interoperability
- August 2014 – Oklahoma and Texas agencies announce interoperability
- September 2014 – the IBTTA Board of Directors adopts the National Interoperability Protocol Requirements Document and the Business Rules for Nationwide Interoperability (both subject to further development), with the recommendation that all toll agencies in the United States shall, within a reasonable period of time not later than October 1, 2016, provided required resources and additional federal guidance is available, will make the national ETC protocol available to any customer that wishes to pay tolls electronically on any toll system in the United States.
- January 2015 – IBTTA Board of Directors adopts resolution approving expenditure of up to $250,000 from IBTTA reserves to support testing of candidate National Transponder Protocols and directs the Interoperability Committee to advance a competitive procurement of the firm or firms that would provide the certification services of firms to perform the testing of candidate National Transponder Protocols.
- March 2015 – IBTTA issues Request for Proposals for Assessment and certification services supporting selection of the National Interoperability Protocol – July 2015 engages OmniAir Certification Services, Inc.
- March 2015 – Roadside Subcommittee establishes Special Panel for review and evaluation of candidate protocols for conformance to requirements documentation.
- July 2015 – The IBTTA Interoperability Steering Committee advances the 6C and TDM/E-ZPass protocols into initial phases of testing.

Appendix 2: National Inventory of Electronic Toll Collection Hardware

One of the work products of our effort is a comprehensive national inventory of ETC hardware to help assess the potential costs to individual toll operators of becoming interoperable. Based on responses from 55 toll operators, we know:

- There are 5.1 billion ETC transactions accounting for roughly $9.5 billion in toll revenue annually.
- The average ETC utilization rate is 63%. In other words, across the 55 toll operators, ETC accounts for 63% of all transactions.
- There are more than 7,000 toll lanes and over 45 Million transponders in use.

Appendix 3: Expansion of Regional Interoperability

This testimony considers primarily the ways in which to comply with the MAP-21 mandate and achieve NIOP through our “national tag” or “second tag” approach. We should also consider the benefits that have *already happened* by the industry working *towards* the goal of NIOP, even though the end goal has not yet been achieved.

All the regions of interoperability have either expanded or gotten stronger over the last 5 years. For example, ***E-ZPass*** has added several agencies and states. Florida ***SunPass*** has consolidated the connections among the major toll agencies in Florida and expanded regional IOP to include Georgia and North Carolina, and will soon add South Carolina. The ***Texas*** agencies are working more closely together, achieving in-state IOP and extending their regional IOP to include Oklahoma and Kansas. The toll agencies in ***California*** are on the verge of modernizing their system by replacing their dated Title 21 ETC protocol in favor of adopting a more modern 6C protocol that will be compatible with devices in Washington State.

There has been a great sense of urgency in all of these regions to find ways to work together more cooperatively. In the process, regional IOP has now become a benefit for a larger and larger percentage of people who use toll facilities. To a large extent, this represents a huge victory for our NIOP efforts.

Biographical Information

Patrick Jones Is the Executive Director & CEO of the International Bridge, Tunnel and Turnpike Association. Since assuming this role in 2002, he has built IBTTA into the principal advocate for toll-financed transportation and the leader in producing high quality educational experiences for toll industry professionals. Under Jones's leadership, IBTTA launched the toll industry's public awareness campaign known as "Moving America Forward" and is working vigorously with members and industry partners to achieve nationwide interoperability of electronic toll collection systems. Before IBTTA, Pat held senior positions with the American Trucking Associations, the American Public Transportation Association, and the Health Insurance Association of America.