The E-ZPass Group

17 Years of successful interoperability
Origins

- E-ZPass Interagency Group was established in 1993 in order to coordinate an interoperable ETC system within a highly traveled region
  - Seven Agencies in three states
    - New York State Thruway
    - MTA Bridges & Tunnels
    - Port Authority New York & New Jersey
    - New Jersey Turnpike Authority
    - New Jersey Highway Authority
    - South Jersey Transportation Authority
    - Pennsylvania Turnpike Commission
Origins

- Conducted a joint procurement for ETC equipment.
  - MARK IV IVHS was selected

- First roadway was operational in 1995

- Immediately accepted and enjoyed by travelers in the region
The Growth of E-ZPass

- E-ZPass has grown to include 24 toll agencies in 14 states, reaching from Maine to Virginia, and west to Illinois.
E-ZPass Today
13.7 million accounts
E-ZPass Today

- 22.8 million transponders deployed throughout the system
  - 2.4 billion ETC transactions annually
  - 72% E-ZPass utilization rate.
E-ZPass Today

- Revenue
  - Member agencies collect over $8 billion in total revenue annually
  - $5.6 billion collected through E-ZPass
  - 73.5% revenue collected through E-ZPass

- Reciprocity - $2.6 billion exchanged between agencies in 2011
  - 46% of all revenue is interoperable
E-ZPass Today

- The largest, most successful interoperable system in the world, and the only interoperable system that crosses state lines and into Canada
- Extremely high brand recognition and customer satisfaction - e.g., 95% of MTA customers surveyed are satisfied or very satisfied with the overall performance of E-ZPass.
- Adding a million transponders each year
- Unequalled brand recognition and customer satisfaction – (100 best things in the USA)
Diverse Tolling Requirements

- E-ZPass agencies cover the full spectrum of tolling applications
  - Open Road Tolling
  - Traditional Plaza Tolling
  - Closed Ticket Systems
  - Gated Facilities

- Some agencies require read/write, while others require feedback devices
Why Does E-ZPass Work?

- The technology used by E-ZPass meets the diverse requirements of ALL the members
  - A common technology that operates at very high accuracy rates under all conditions found at our member facilities
  - Very high in-lane toll revenue collection rates that minimizes risk to revenue
What Have We Learned?

- A nationally interoperable toll system is feasible and achievable......the E-ZPass Group has had an operational model for 17 years!
- Any national interoperability system MUST be technology based, (including I-Tolls for misreads), and be able to meet the various requirements of the diverse tolling systems of each of the operators.
- Video tolling should be a local decision, and NOT part of the national interoperability model due to its inherent difficulties and revenue collection risk
The E-ZPass Procurement

- The E-ZPass Group completed the industry’s largest ever technology procurement in July 2011.
- Chosen equipment had to meet strict specifications and be highly accurate in all aspects of the various tolling schemes.
- Equipment had to pass validation testing to ensure specifications were achieved.
Validation Testing

• Testing was conducted for both highway speed Open Road Tolling, as well as traditional Plaza tolling environments.
  • Included testing of conditions typically found at operational toll facilities
  • Various speed profiles, vehicle spacing profiles, toll lane straddling, cross lane reads
  • Mix of vehicles to include trucks, cars, motorcycles, buses
  • 88,000 transactions under rigorous conditions
The Requirements

- Equipment undergoing validation testing had to satisfy the following accuracy rates:

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<thead>
<tr>
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<th>Read Performance</th>
<th>Write Performance</th>
<th>Lane Assignment</th>
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<tbody>
<tr>
<td>Toll Plaza</td>
<td>99.90%</td>
<td>99.90%</td>
<td>99.98%</td>
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<tr>
<td>Open Road</td>
<td>99.90%</td>
<td>99.80%</td>
<td>99.90%</td>
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Success

- Both Vendors successfully completed validation testing of their proposed equipment.
- All equipment met the requirements of the E-ZPass Group
- Thorough testing ensured all operational requirements would be met.
What Does It Mean?

- Multiple Vendors offer equipment that is highly accurate and satisfies the industry’s toughest standards.
- The equipment is highly accurate under all operational conditions and ensures minimal risk to revenue and high reliability for the customer.
- Our functional requirements and test plan are available for all toll operators to assist in advancing national interoperability.
Back Office Operations

- E-ZPass Group has clearly defined file specifications and business rules that all agencies follow.
  - Specifies what data must be transmitted
    - Transponder status files
    - Transaction files
    - Reconciliation files
    - License plate files
  - Files are sent each night between each CSC over a managed frame relay system
Back Office Operations

- Files are reconciled and settlement between agencies occurs on a regularly scheduled basis
  - $2.6 billion exchanged in 2011
  - 2.4+ billion ETC transactions processed in 2011

- Our functional file specifications and business rules are available for all toll operators to assist in advancing national interoperability.
E-ZPass Group Membership

- E-ZPass has several membership opportunities
  - Full Member
    - May operate CSC, full voting member
  - Associate Member
    - No vote, must use existing CSC
  - Sponsored Affiliate
    - No vote, must use existing CSC, acts as lane on sponsor agency system
  - National Affiliate
    - May use dissimilar but compatible equipment
National Affiliate Program

- Established February 2012
- For first time opens E-ZPass membership to agencies using different equipment
  - Must be determined to be compatible & meet strict E-ZPass accuracy rates
  - Utilize IAG file specifications and business rules
- Provides instant interoperability with all IAG agency facilities
Conclusion

- Any interoperable system must meet the needs of ALL toll operators
- The E-ZPass model works, and has been successfully interoperable for 17 years
- Membership opportunities exist that allow for rapid expansion of the interoperable system.
- Highly accurate equipment and proven processes in place already that work well. No need to reinvent the wheel.
Conclusion

- E-ZPass is not the ONLY path to interoperability, but is the only proven system that meets the needs of the various operators, with proven success of interoperability on a large scale across state boundaries, that can be implemented within the time constraint mandated by congress.

- The sharing of our file specifications, business rules, test plans and other materials may be helpful to other agencies in advancing interoperability.