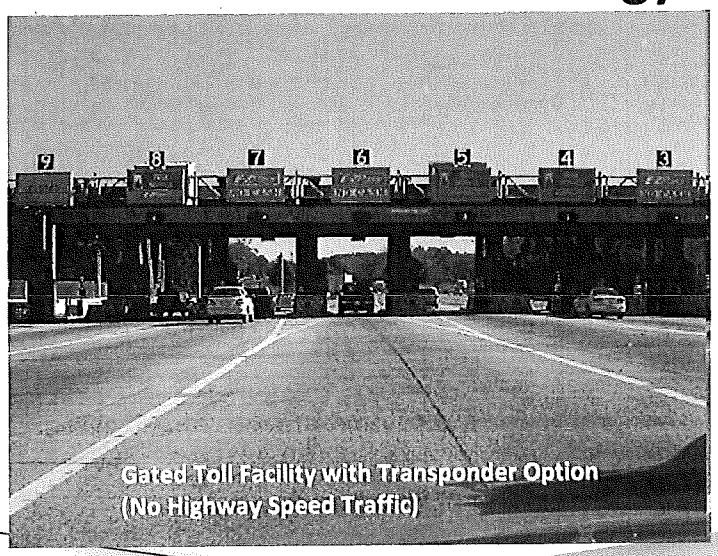
Toll Technology & Interoperability

North American Interoperability in Progress

NORTH CAROLINA Turnpike Authority

J.R. Fenske, Interoperability Manager

Toll Collection Technology



Gated Toll Facility with Transponder Option
(No Highway Speed Traffic)

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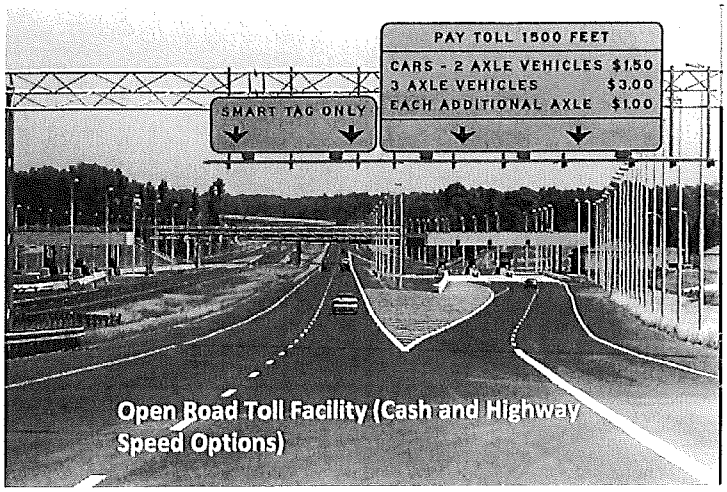
Toll Collection Technology



Open Road Toll Facility (Cash and Highway Speed Options)

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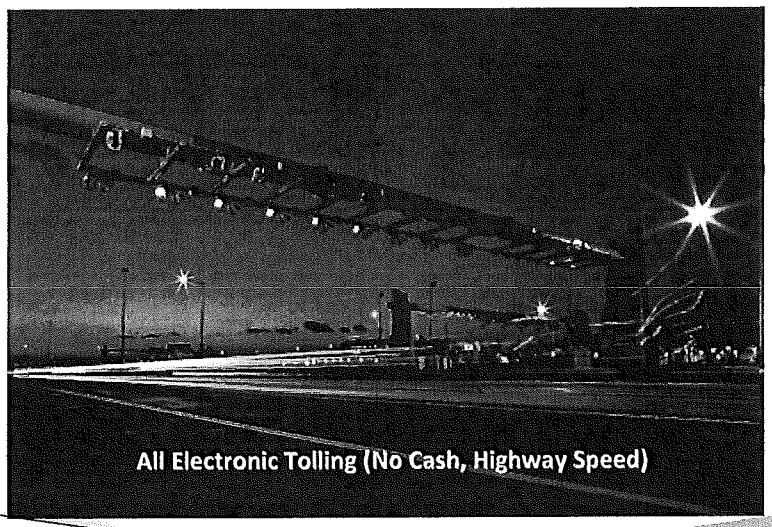
Toll Collection Technology



All Electronic Tolling (No Cash, Highway Speed)

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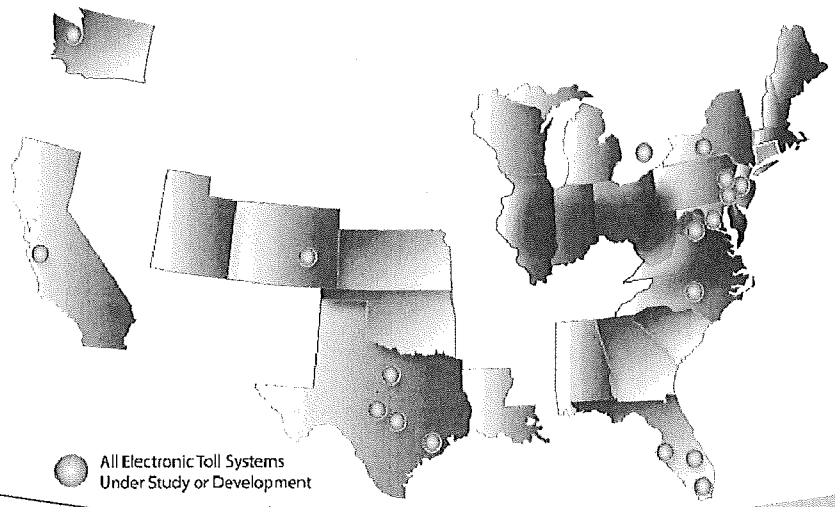
All Electronic Toll Roads



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Tolling Evolution

- **All Electronic Tolling (AET)**
  - Payment Options
    - No cash option on roadside
    - RFID/transponder or license plate
  - Current toll programs do not allow for full national interoperability
    - Technology restrictions
    - New dual and multi-protocol tag and readers may allow for broader interoperability in the future
    - Business rules/legislative restrictions
  - Changes the definition of 'violator' dramatically
  - Sharing current customer or violator information
  - Cooperation with Motor Vehicle Administrators

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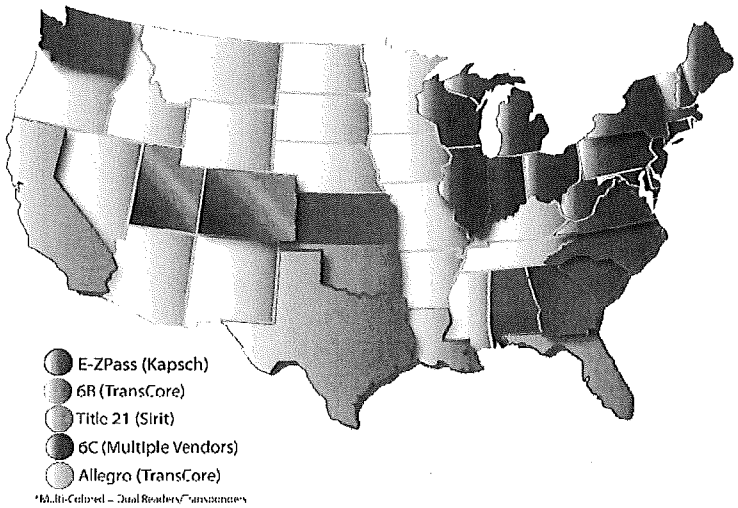
Technology Snapshot



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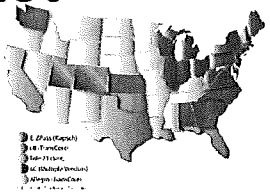
Technology Snapshot



- **Five RFID technologies deployed in the US**
  - -- E-ZPass Protocol (Kapsh)
  - -- Title 21 (Sirit)
  - -- 6B (TransCore)
  - -- Allegro (TransCore)
  - -- 6C (Multiple Vendors)
- **Title 21 is being phased out in all states except California**
- **6B technology is not interoperable outside state boundaries due to proprietary vendor technology**
- **6C technology is open-architecture, however, to date is untested in an interoperable atmosphere**
  - –6C Consortium formed: North Carolina, Washington, Colorado, Texas, Florida and Georgia
- **E-ZPass interoperability requires adhering to strict reciprocity agreements**
- **Dual Protocol Readers allow for two technologies to be read**
- **Multi-Protocol readers are under development**

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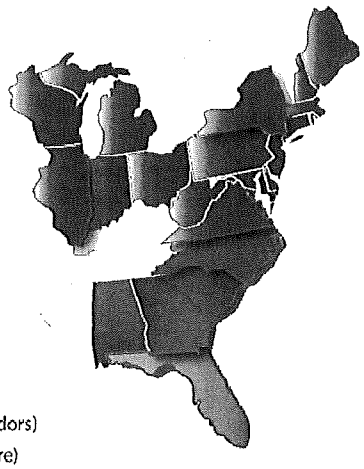
East Coast Deployments



- E-ZPass (Kapsch)
- 6B (TransCore)
- Title 21 (Sirit)
- 6C (Multiple Vendors)
- Allegro (TransCore)

*Multi-Colored – Dual Readers/Transponders

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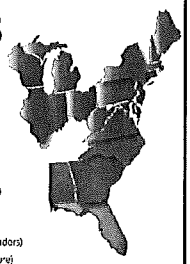
East Coast Deployments



- E-ZPass (Kapsch)
- 6B (TransCore)
- Title 21 (Sirit)
- 6C (Multiple Vendors)
- Allegro (TransCore)

*Multi-Colored – Dual Readers/Transponders

- **E-ZPass Group/E-ZPass**
  - Largest interoperable region in the US (14 States, 24 agencies)
  - Over 22 Million Accounts
- **North Carolina/NC Quick Pass**
  - First road opening in December 2011
  - Dual protocol readers utilizing EZG and 6B protocols
- **South Carolina/Palmetto Pass**
  - Not part of the EZG agreement
  - Two Toll Programs
    - Hilton Head, state-run toll road (tourist and locals)
    - Southern Connector, a private toll road preparing to release 6B

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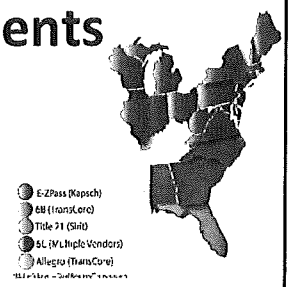
East Coast Deployments



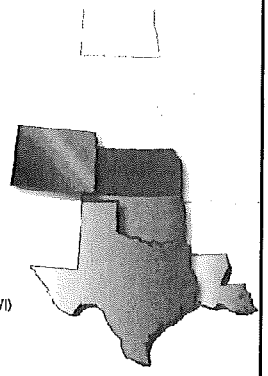
- **Georgia/Peach Pass**
  - State toll roads and HOT lanes
  - Currently uses 6B, but switching to 6C
- **Alabama/Freedom Pass**
  - Private toll program
  - Dual protocol readers utilizing 6B and 6C
  - All roads are gated bridges
- **Florida/SunPass/EPass**
  - Five toll authorities (Florida Turnpike, Miami-Dade, Lee County, Orlando-Orange County and Tampa-Hillsborough)
  - Utilizing 6B and Allegro
  - Researching 6C deployment

East Coast Interoperability

- **Potential Federal Mandate could spur quick movement of national interoperability**
  - ATI, E-ZPass, and IBTTA provided draft language to legislative staff
  - Proposed interoperability within the I-95 Corridor
- **New 'Agreements' from E-ZPass Group**
  - Associate Membership
    - Provides non-EZG members access to all full EZG customer database
    - Ability to read EZG protocol in lanes
    - Discounted cost, no voting rights
    - Strong interest from East Coast Agencies

Mid-West Deployments

- **Louisiana/Gauex Pass State toll program**
  - 6B Technology
- **Texas/TxTag/TollTag/EZTag**
  - Five state toll programs (Central Texas Regional Mobility Authority, North Texas Tollway Authority, Texas DOT, Harris County Toll Road Authority, and Central Texas Turnpike System)
  - Interoperable between authorities
  - Utilize 6B Technology
- **Oklahoma/PikePass**
  - State toll program
  - Utilize 6B and Allegro Technologies (Allegro transponders are being phased out)
- **Kansas/K-Tag**
  - State toll program
  - Utilize 6B Technology
- **Colorado/Express Toll**
  - State toll program - E-470
  - Private toll program – Northwest Parkway
  - Utilize Title 21 with recent 6C deployment



Kapsch (Mark VI)
6B (TransCore)
Title 21 (Sirit)
6C (Multiple Vendors)
Allegro (TransCore)

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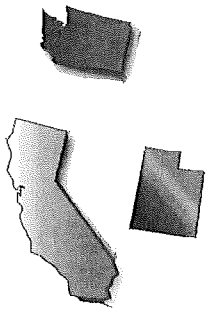
West Coast Deployments



E-ZPass (Kapsch)
6B (TransCore)
Title 21 (Sirit)
6C (Multiple Vendors)
Allegro (TransCore)

- **Washington/GoodToGo**
  - State toll program
  - Utilizing 6B and 6C
  - Plans to switch to 6C only
- **Utah/ExpressPass**
  - State HOT lane program
  - Switching from Title 21 to 6C
- **California/FasTrack**
  - Five toll programs (BATA, Orange County, TCA, South Bay and Golden Gate)
  - Interoperable between agencies
  - Utilize Title 21 technology

NORTH CAROLINA Turnpike Authority

QUESTIONS?

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