

The Maintenance Decision Support System (MDSS)

Exploring Future Directions

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FHWA/Road Weather Management Program

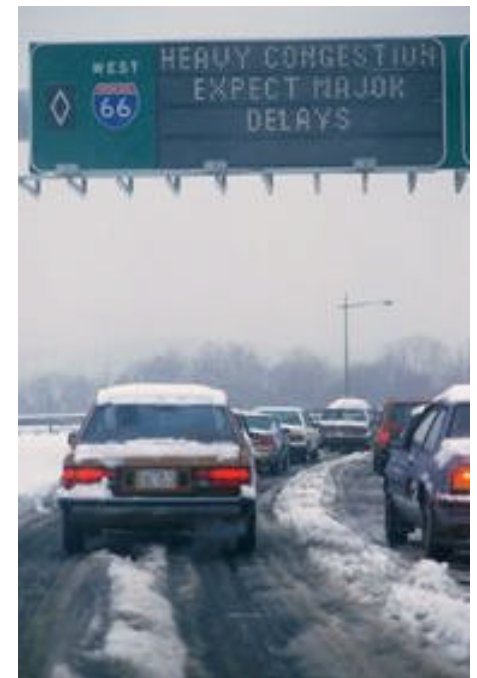
Rudy Persaud

FHWA/Operations Research & Development



The MDSS Project

- Activities in the near term (remainder of FY02):
 - **June 2002:** Functional Prototype demonstration to stakeholders, user surveys and feedback
 - **Remainder of Summer 2002:** Labs complete module documentation and last minute enhancements
 - **Sept 2002:** MDSS Prototype Release 1



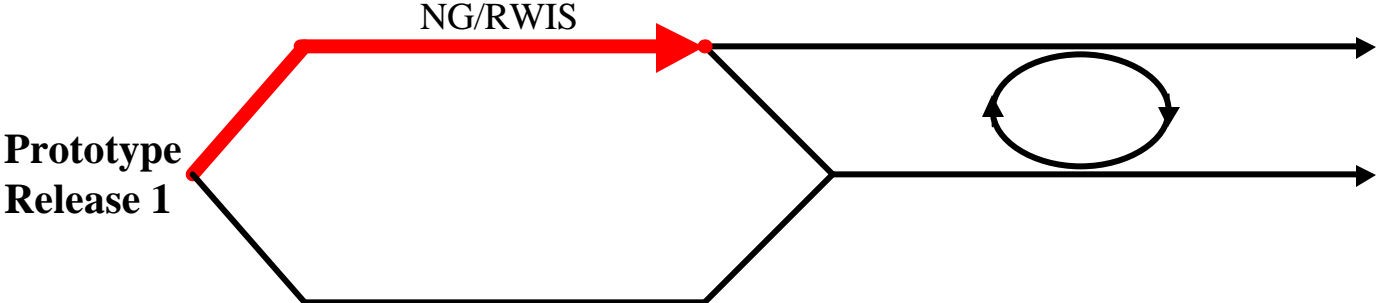
Looking Ahead to the Future of MDSS

Where do we go from here? 

Proposal: Develop a *multi-track path* which:

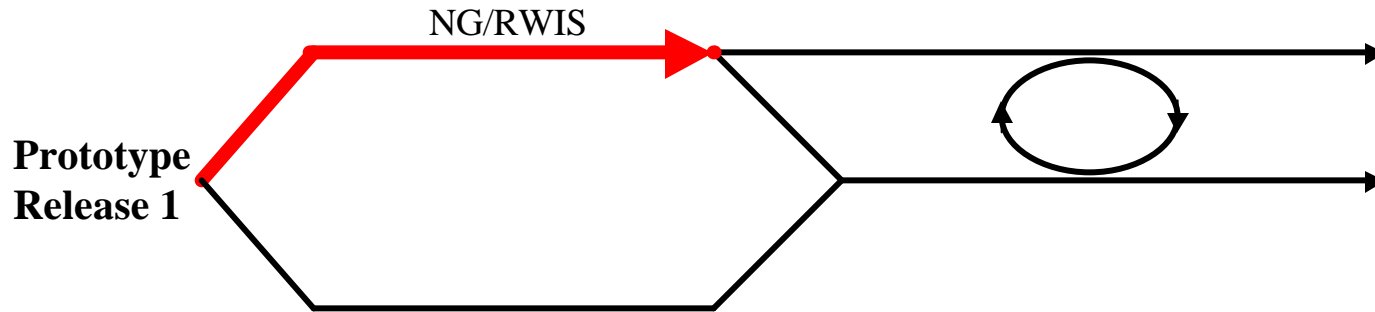
- Releases the **latest technology** to the user community
- Provides a parallel track which includes a **field demonstration with V&V** (Validation & Verification)
- Allows for the user community to **feed back new requirements** for research into a Long Range Test Bed

The Multi-Path Vision: The Next Generation RWIS Path



Next Generation RWIS: Real-World Products Deployed by VAMS to Users

The Multi-Path Vision: The Next Generation RWIS Path

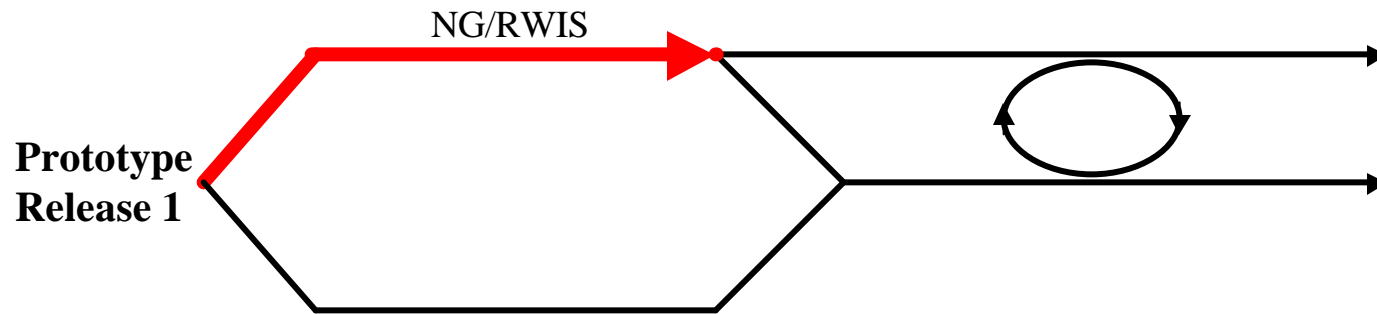


Next Generation RWIS: Real-World Products Deployed by VAMS to Users

What:

- State DOTs define requirements
- VAMS develop and deploy systems
- Development is Market Driven

The Multi-Path Vision: The Next Generation RWIS Path



Next Generation RWIS: Real-World Products Deployed by VAMS to Users

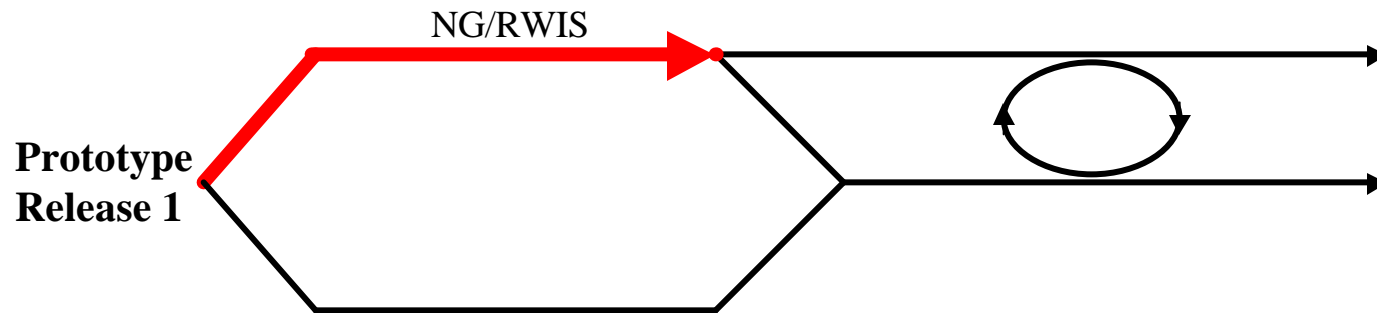
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Who:

- VAMS/State DOTs lead
- Technical support provided by the National Labs (via funding from FHWA)

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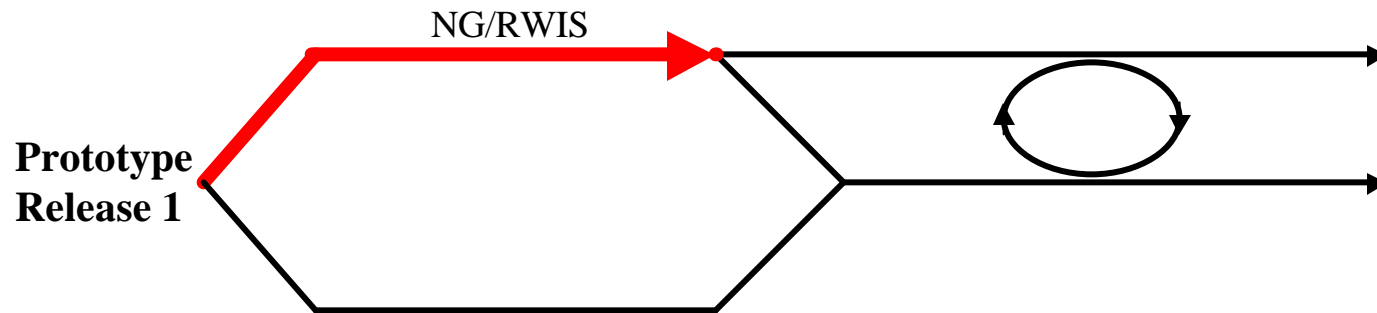
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How:

- Pooled-Fund Studies, Earmarks, etc..

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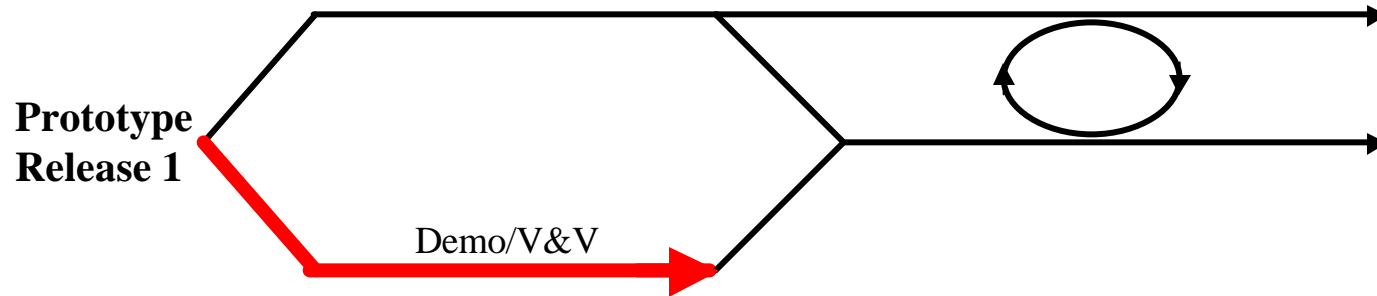
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\$\$:

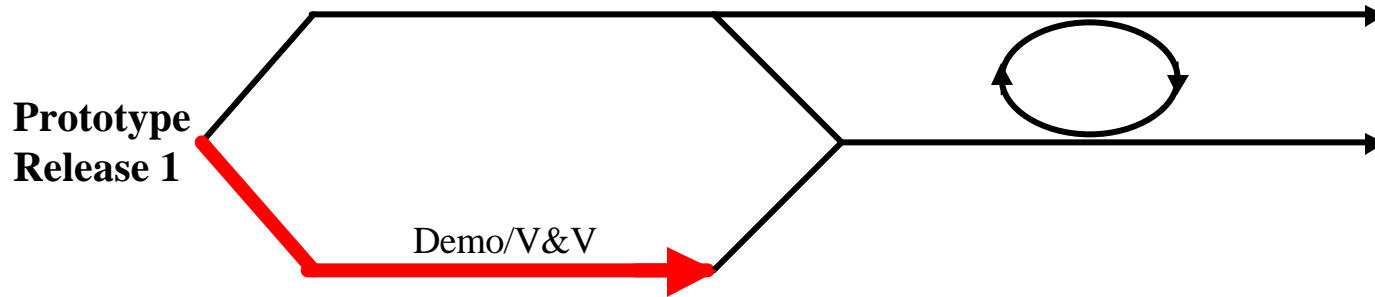
Mostly State
Funded
(some
Federal for
the Labs)

The Multi-Path Vision: MDSS Demo, V&V Path



MDSS Demonstration – Validation and Verification

The Multi-Path Vision: MDSS Demo, V&V Path

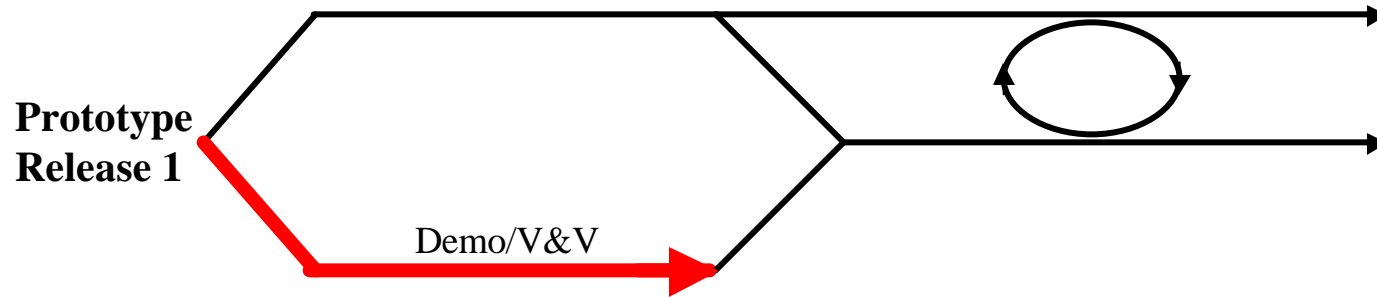


MDSS Demonstration – Validation and Verification

What:

- A Field Demo of the MDSS Functional Prototype
- To Allow V&V of the MDSS Modules
- To Expose the Complete Base Prototype to at least 1 State DOT

The Multi-Path Vision: MDSS Demo, V&V Path



MDSS Demonstration – Validation and Verification

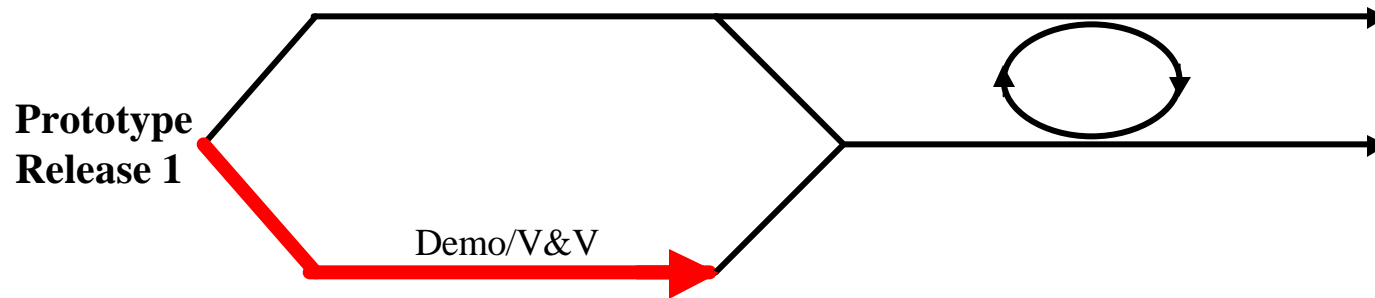
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- Used by a State DOT
- Possible 3rd Party Evaluation

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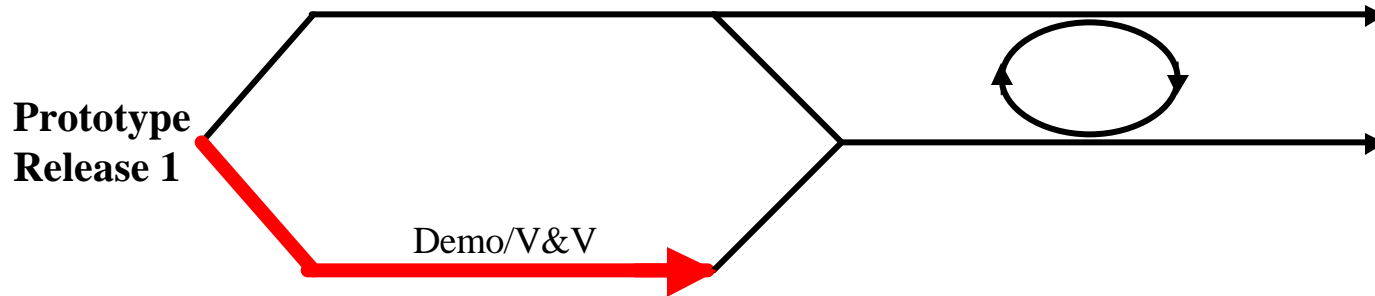
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How:

- Oversight by FHWA
- Cooperation by State to Allow Evaluation

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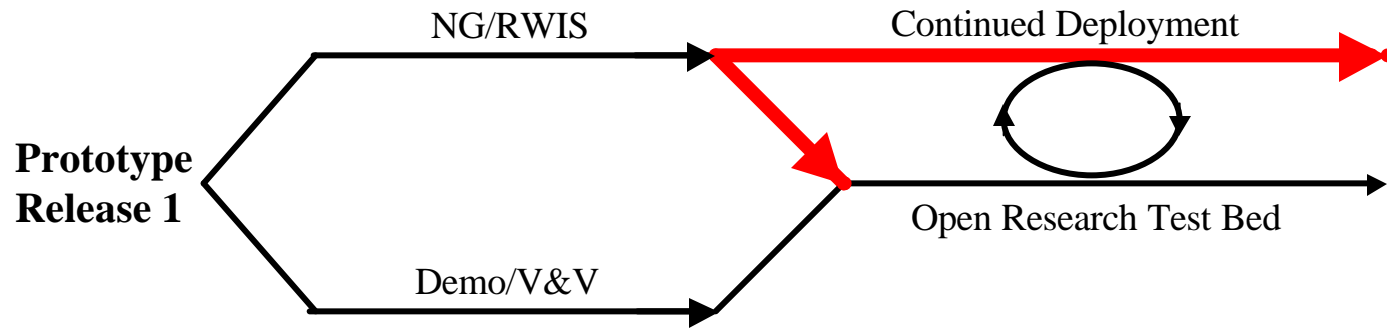
How:

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\$\$:

- FHWA Funding to the Labs
- Possible State Contribution

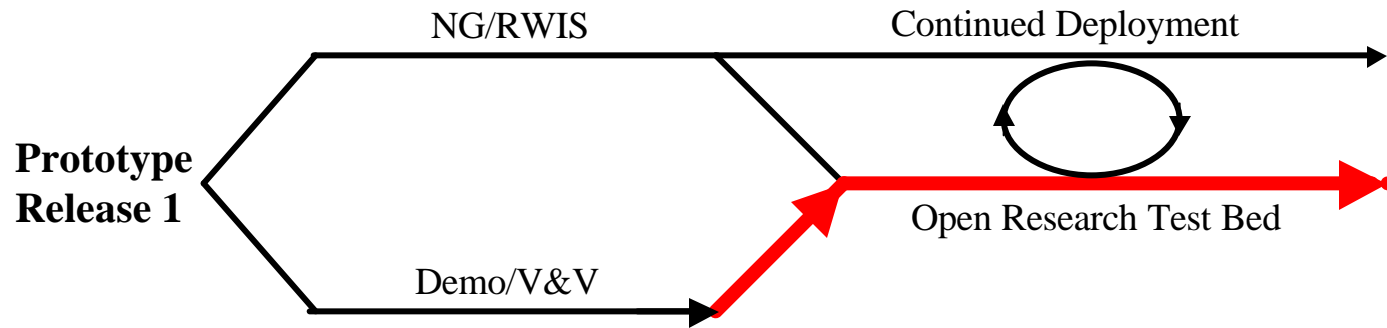
The Multi-Path Vision: Future VAMS Deployment



Future VAMS Deployment

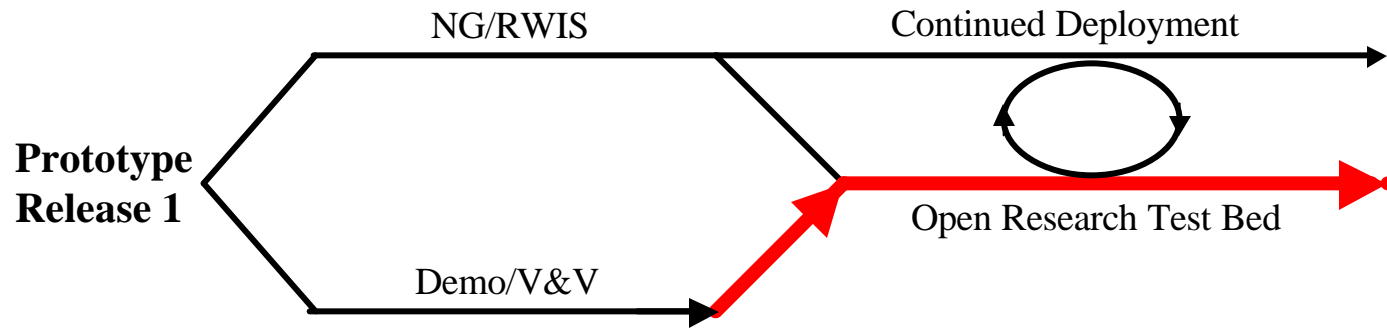
- VAMS Utilize MDSS Components & Their Own Research to Field the Latest Techniques and Technologies
- VAMS Provide Feedback to the Test Bed Track which helps to drive Future Advanced Research Priorities

The Multi-Path Vision: Open Research Test Bed



MDSS Open Research Test Bed

The Multi-Path Vision: Open Research Test Bed

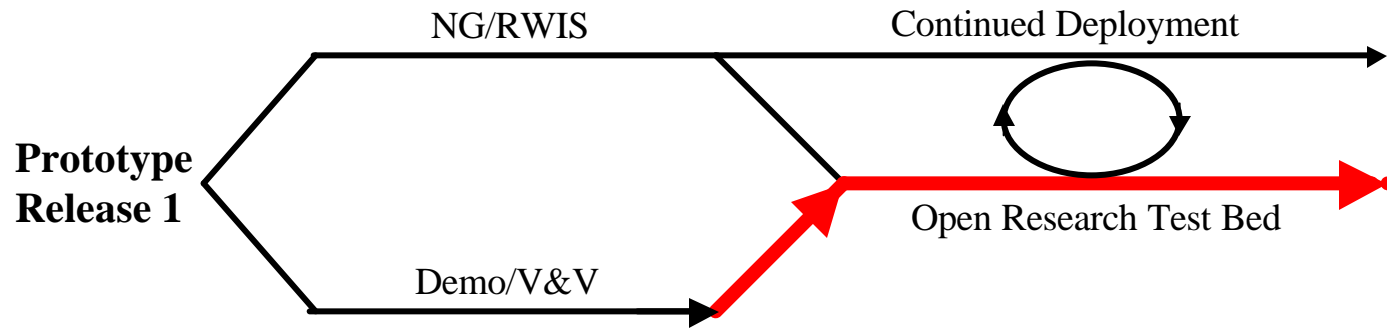


MDSS Open Research Test Bed

What:

- Open R&D to Continue MDSS Development
- Divorced from real-world operations
- Advanced Research
- Pushes the Envelope

The Multi-Path Vision: Open Research Test Bed



MDSS Open Research Test Bed

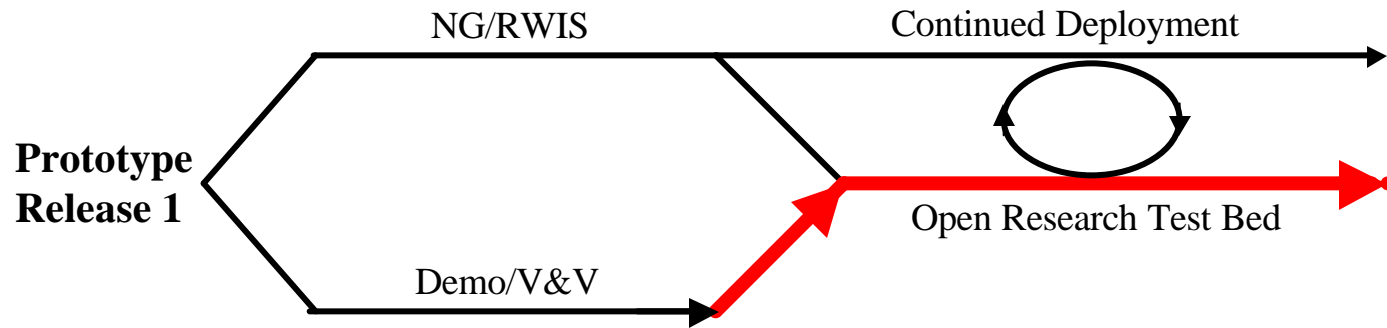
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- National Labs, State DOTs, VAMS, Academia, FHWA
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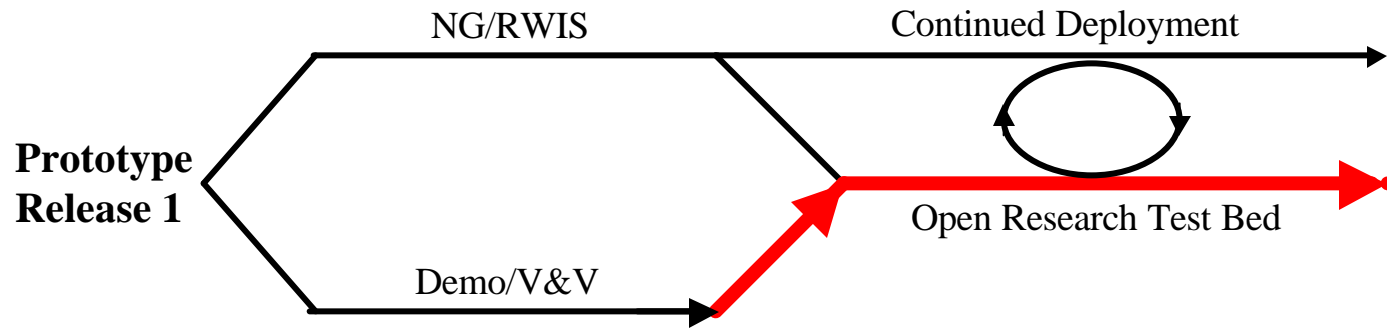
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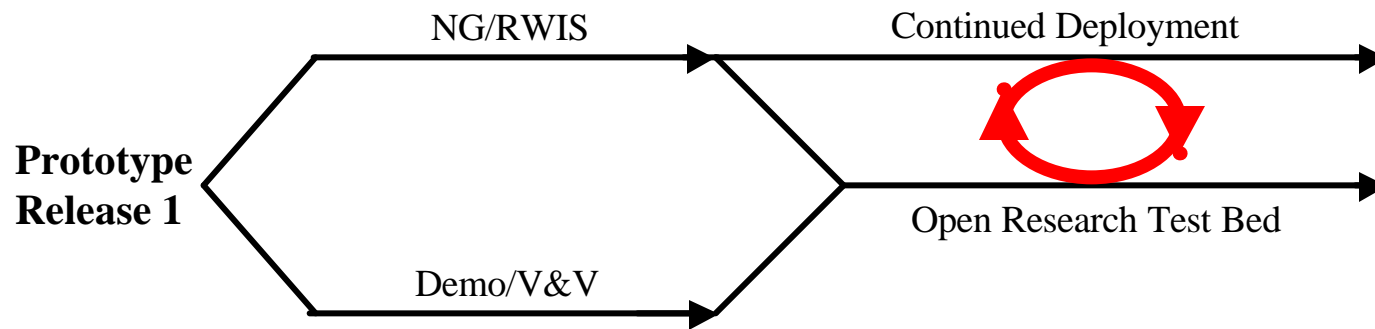
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FHWA (primary), State DOTs, Partners (may need to contribute \$\$)

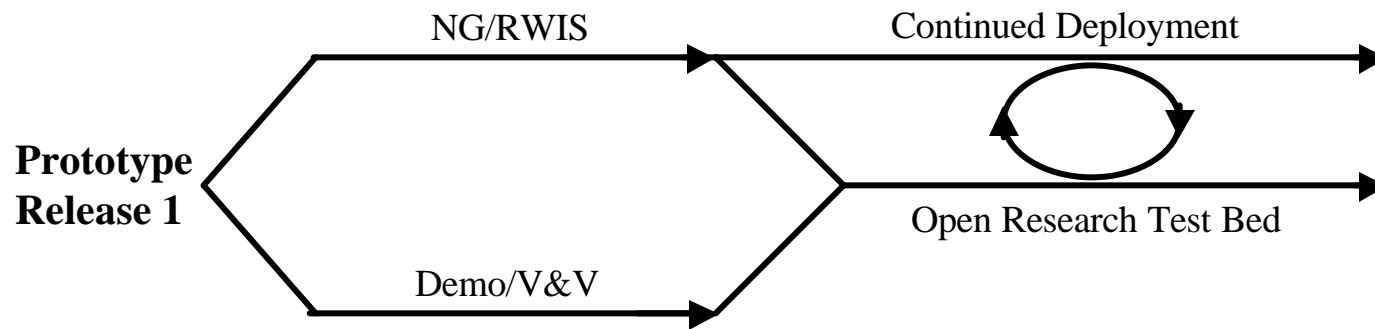
The Multi-Path Vision: MDSS Feedback Loop



MDSS Feedback Loop

- States Provide New Requirements/Needs to VAMS
- Research Needs Flow to the Open Research Test Bed via the Advisory Committee
- New Research/Techniques Flow Back to the VAMS and States for Deployment and Customization

The Multi-Path Vision: The Future of the MDSS



The Future of the MDSS

An Open Discussion about the Future Path of Surface Transportation Related Research is Welcomed by ALL Participants...