Understanding Innovation Programs & Opportunities (RD&T)

Accelerating Market Readiness…

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CENTER FOR *ACCELERATING* INNOVATION

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Federal Highway Administration

OFFICE OF INNOVATIVE PROGRAM DELIVERY

Four ‘Simple’ Questions

Q. **Where** do you go if you have an innovative idea?
(individual, industry, or DOT)

Q. **What** support is available?

Q. **How** can you get to **MARKET READY**?

Q. **How long** does all this take?

Impact of Innovation

- **Disruptive** ✓ *Game Changing*
- **Emerging** ✓ *Gap Filling, significantly advance the state-of-the-art*
- **Noteworthy** ✓ *Significantly advance conventional practice*
- **Incremental** ✓ *Advance the state-of-the-practice*

TRANSFORMATIVE

Measure of Outcome of Innovation

- Quantitative ✓*Return on Investment (ROI)*
- Qualitative ✓*Derived Value (DV)*
- Marketing ✓*Success Stories (Mar/Com)*

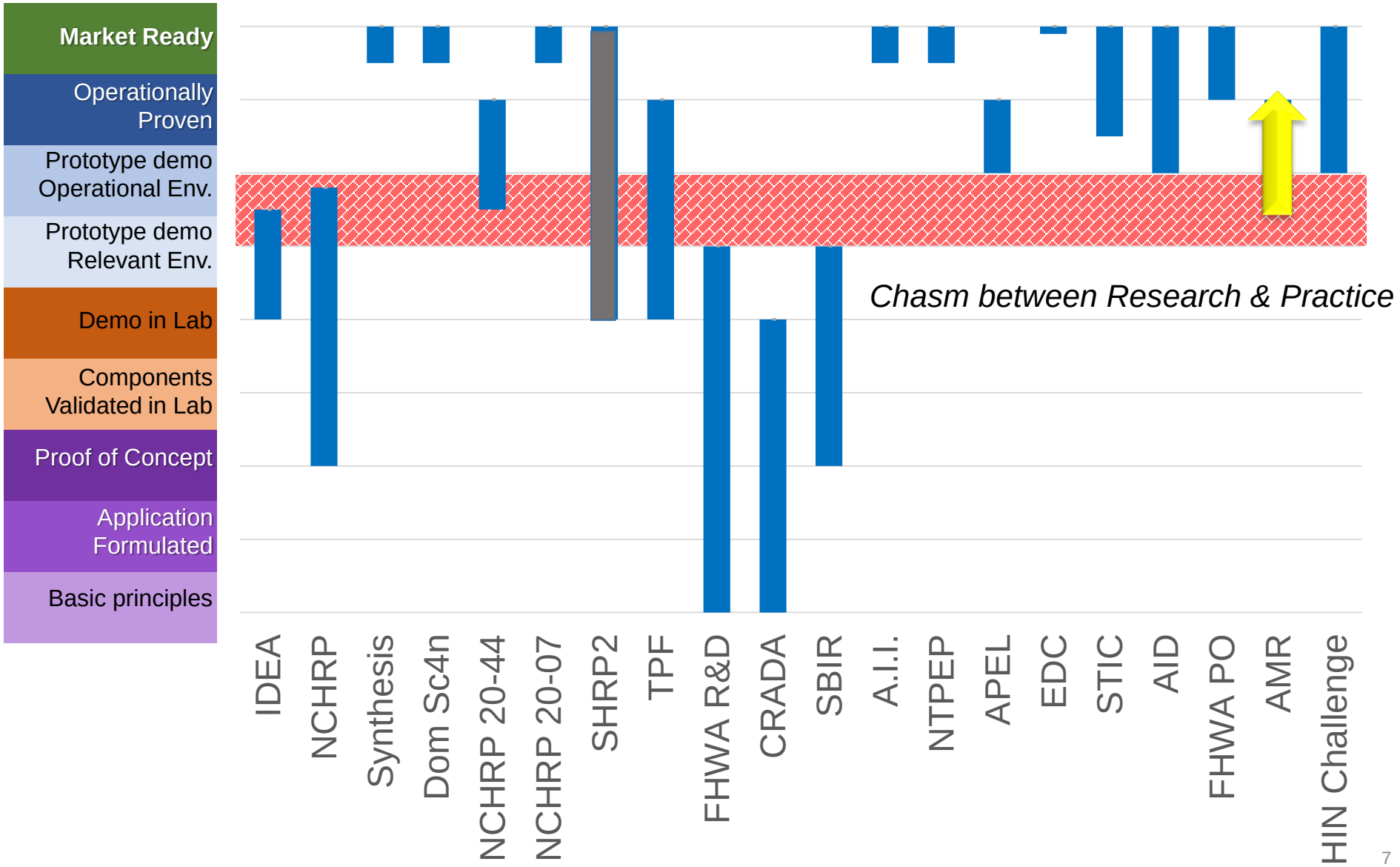
FYI: AASHTO Value of Research (VOR) Task Force

Is there a Chasm between Research & Practice?

Market Readiness of Innovation: Technology Readiness Level (TRL)

Basic Research TRL 1 to 3	Applied Research TRL 4 to 5	Development TRL 6 to 8	Implementation TRL of 9
1. Basic principles and research	4. Components validated in a laboratory environment	6. Prototype demonstrated in relevant environment	9. Technology refined and adopted
2. Application formulated	4.Integrated components demonstrated in a laboratory environment	7. Prototype demonstrated in operational environment	- *EDC Innovations are a TRL of 9*
3. Proof of Concept		8. Technology proven in operational environment	

Technology Readiness Level (TRL)
Range of National RD&T Programs



23USC503(c) **Technology and Innovation Deployment Program (TIDP) Goals**

- Significantly accelerate adoption of innovative technologies…
- Provide leadership and incentives
- Construct longer-lasting highways
- Improve highway efficiency, safety, mobility, reliability, service life, environmental protection, and sustainability
- Develop and deploy new tools, techniques, and practices to accelerate the adoption of innovation

OIPD- CAI TIDP Programs

Fostering a Culture of Innovation

Missouri Department of Transportation—
Nano-coating Technology for Bridges

NEW - Big Bend Boulevard Bridge over I-270 in east central St. Louis County

Source: Fox2

TRL = 8

- Mo DOT's current painting system involves a 3 coat system with lengthy closure time.
- New product called Tesla Nano-coating: forms a passive corrosion protection system that only requires two coats with the second coat being applied prior to drying.

Concept: NEW
Accelerating Market Readiness (AMR)

…to provide resources for the rapid, national assessment of emerging innovations and to *provide transportation offices with objective-written assessments to accelerate the adoptions of innovations* that meet their unique needs.

AMR Accelerating Market Readiness

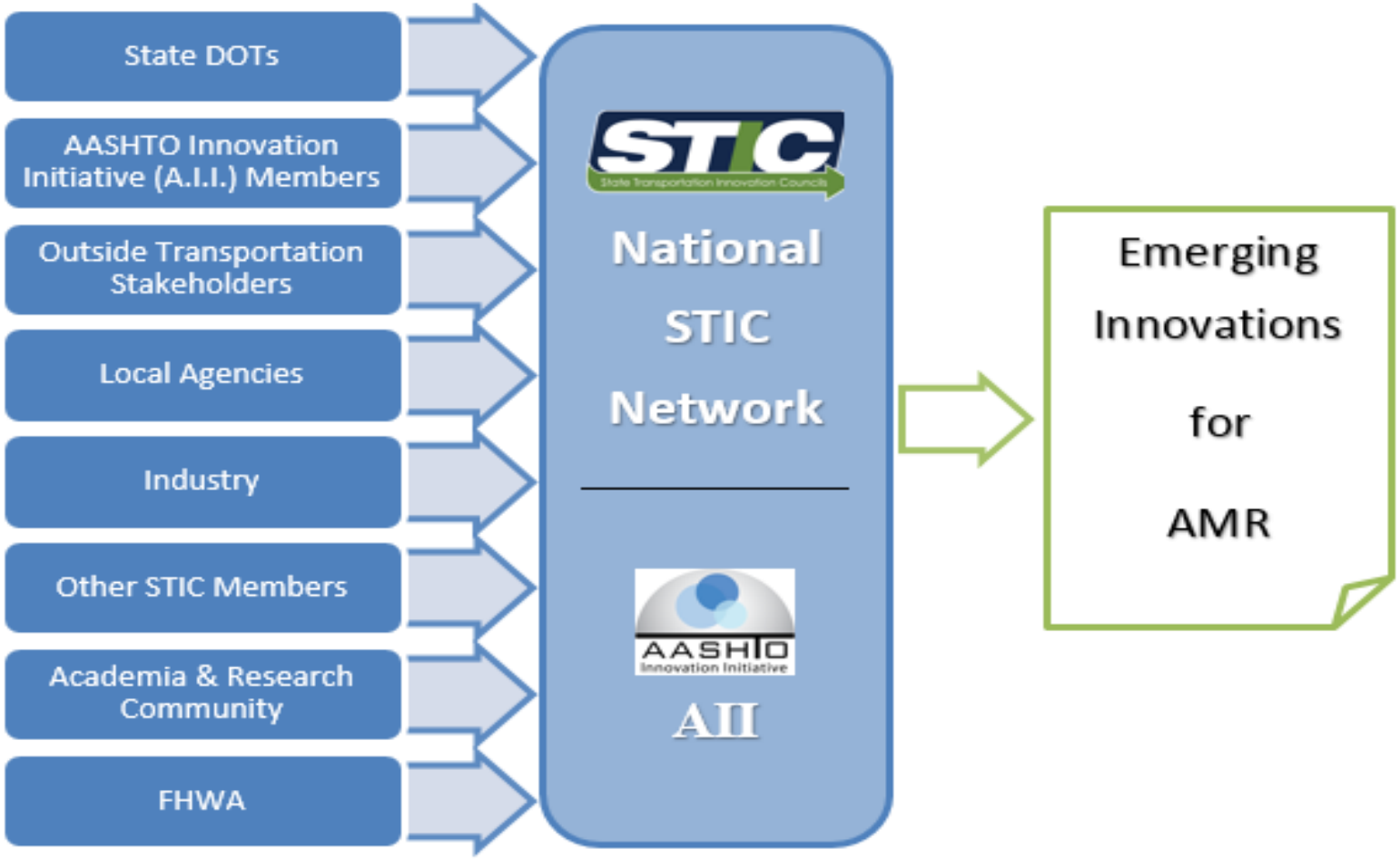
Goals of new Program

Provide a rapid, national assessment of emerging innovations…

- ✓ Provide a **shared-risk environment**
- ✓ Provide sound, objective, detailed, and coordinated evaluation and **reporting**
- ✓ Provide **marketing and communication**
- ✓ Help feed the **EDC pipeline**
- ✓ Provide a pathway between research and practitioner
- ✓ Identify future areas for research and development

AMR Accelerating Market Readiness

BAA - AMR Solicitation
FHWA / STIC feed AMR



AMR Accelerating Market Readiness

Evaluation Criteria

1. Does the innovation have the potential to significantly advance conventional practice? — Transformative
2. Does the innovation have potentially high demand for implementation? — Demand
3. Is the innovation substantially developed? — TRL 6+
4. Does the innovation have the potential to be included in the EDC cycle? *(aspirational)* — *EDC?*

AMR Accelerating Market Readiness

Proposed Funding

Up to $5 million dollars annually (TIDP)

Opportunity to leverage other complementary programs (e.g. AID and STIC Incentive)

Range from $100 to $500k per innovation

- Delta Costs for Innovation and Report Writing
- Support Findings with Mar/Com
- Leverage National STIC Network in dissemination & AASHTO All (APEL for posting)

Center for Accelerating Innovation

Discussion – Additional Information

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EDC

AID Demo
Accelerated Innovation Deployment

STIC
State Transportation Innovation Councils

AMR
Accelerating Market Readiness