IntelliDrive
Dynamic Mobility Applications

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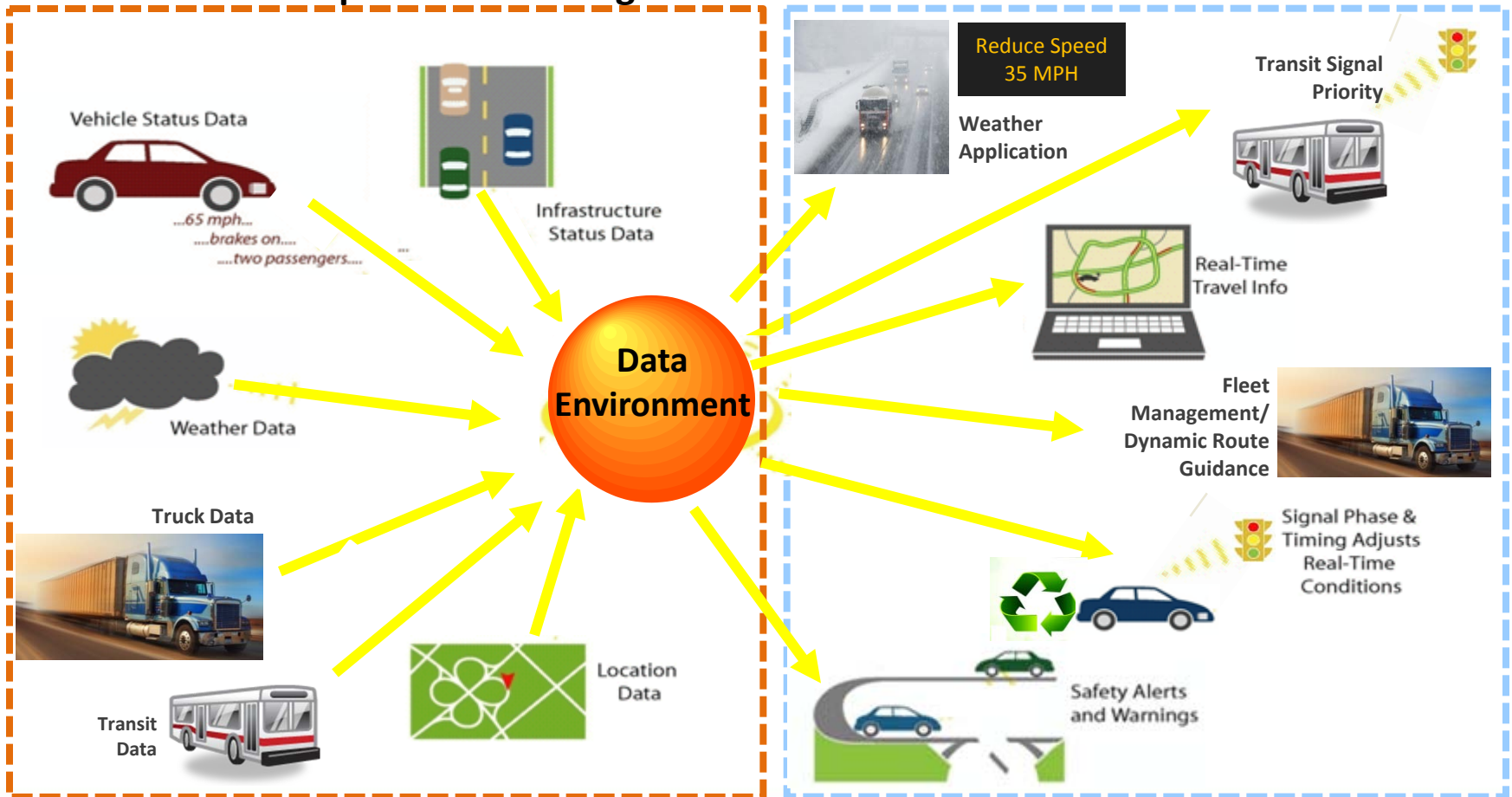
TRB – ITS Mid-Year Committee Meeting
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IntelliDrive Mobility

Real-time Data Capture and Management

Dynamic Mobility Applications

Vehicle Status Data
...65 mph...
....brakes on....
....two passengers....

Infrastructure Status Data

Weather Data

Truck Data

Transit Data

Location Data

Data Environment

Reduce Speed 35 MPH

Weather Application

Transit Signal Priority

Real-Time Travel Info

Fleet Management/ Dynamic Route Guidance

Signal Phase & Timing Adjusts Real-Time Conditions

Safety Alerts and Warnings

Dynamic Mobility Applications

Vision
- Expedite development, testing, commercialization, and deployment of innovative mobility applications:
    – maximize system productivity
    – enhance mobility of individuals and goods movement within the system
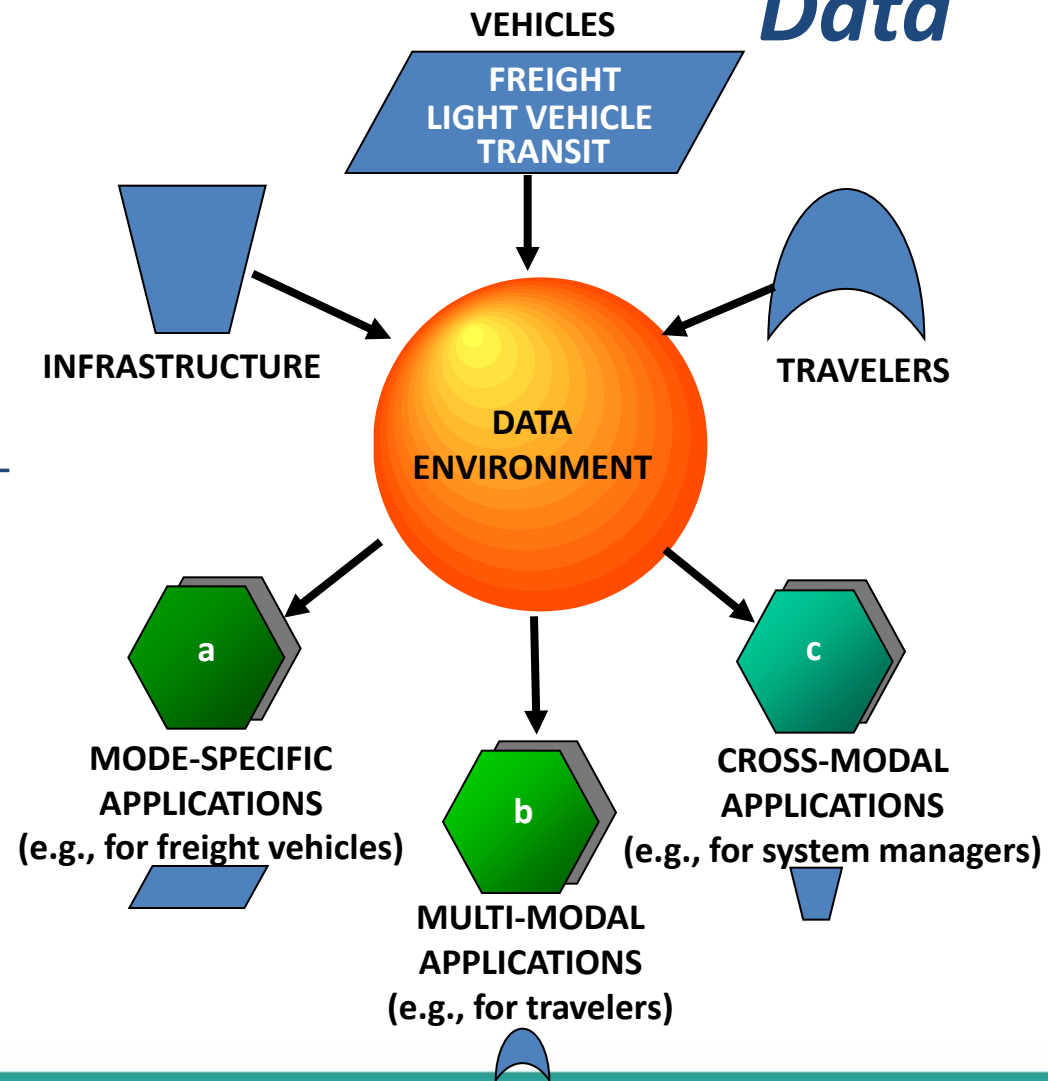
Objectives
- Create applications using frequently collected and rapidly disseminated multi-source data from connected travelers, vehicles (automobiles, transit, freight) and infrastructure

- Develop and assess applications showing potential to improve nature, accuracy, precision and/or speed of dynamic decision making by system managers and system users

- Demonstrate promising applications predicted to significantly improve capability of transportation system to provide safe, reliable, and secure movement of goods and people

Dynamic Mobility Applications will………

- Leverage multi-source data
- Develop and test mode-specific and multi-modal applications
- Feature open source application research and development
- Encourage competitive application commercialization
- Prioritize program resources based on expected impact
- Enhance analytical capabilities related to mobility applications
- Practice long-term technology stewardship

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Leverage Multi-Source Data

- Leverage high-quality data integrated from mobile and fixed sources to develop multiple applications (mode-specific and multi-modal)

- Requires coordination with Real-Time Data Capture and Management program

VEHICLES

FREIGHT
LIGHT VEHICLE
TRANSIT

INFRASTRUCTURE

TRAVELERS

DATA ENVIRONMENT

a

MODE-SPECIFIC APPLICATIONS
(e.g., for freight vehicles)

b

MULTI-MODAL APPLICATIONS
(e.g., for travelers)

c

CROSS-MODAL APPLICATIONS
(e.g., for system managers)

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- Coordinated development of mode-specific and multi-modal applications in an open source environment in order to:
  - avoid duplication
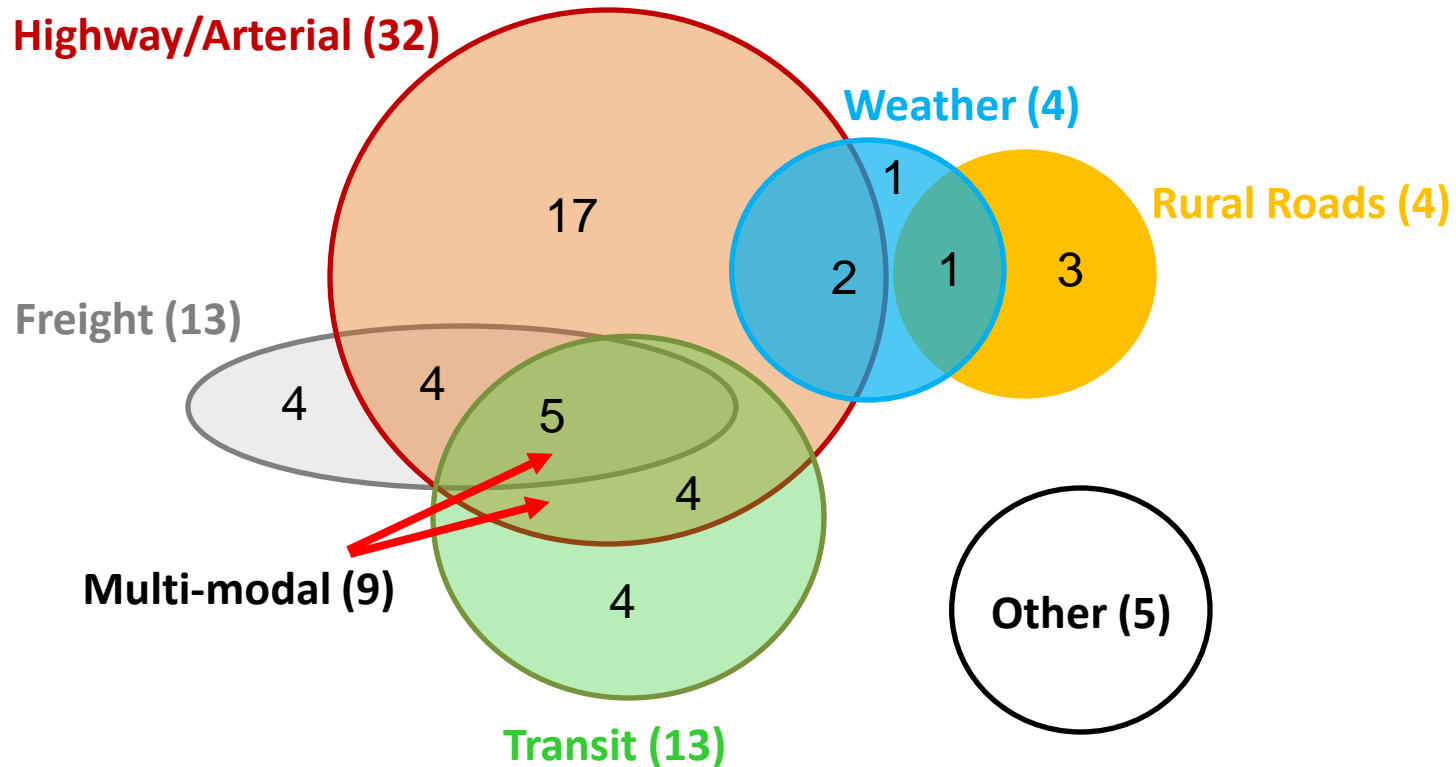 - be cost-effective
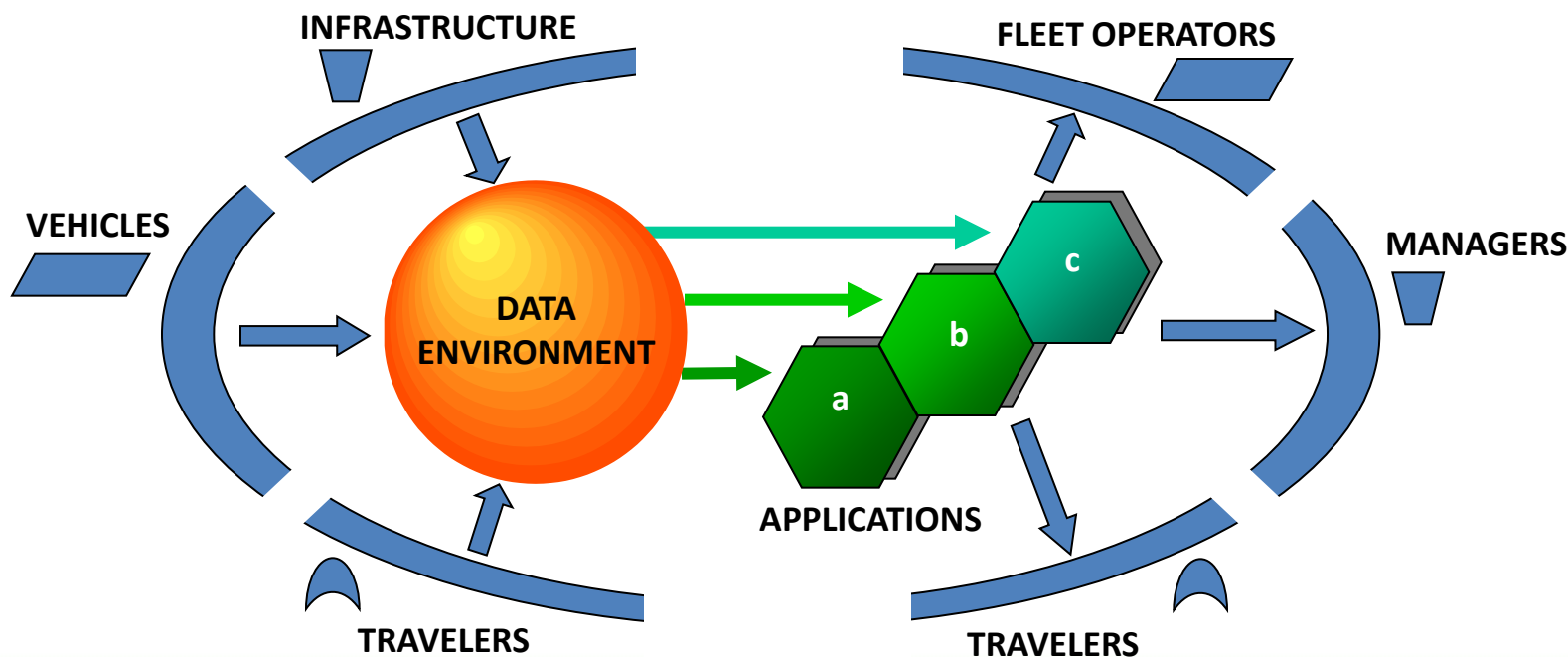
Candidate Applications Concepts

Goal

- Identify, with help of stakeholders, collection of applications for development and testing in the next phase of the DMA Program

Approach

- Solicit ideas for transformative applications that improve decision making by system managers and users
  - Template available for submission of ideas at: http://www.its.dot.gov/intellidrive/app_template/DMA_template.htm
  - Initial request closed on Aug 31; second call issued (**closes Oct 15**)
  - 47 submittals with 50 application ideas as of last week
- Combine suggested applications to avoid to focus interest
- Prioritize condensed list for future development and testing
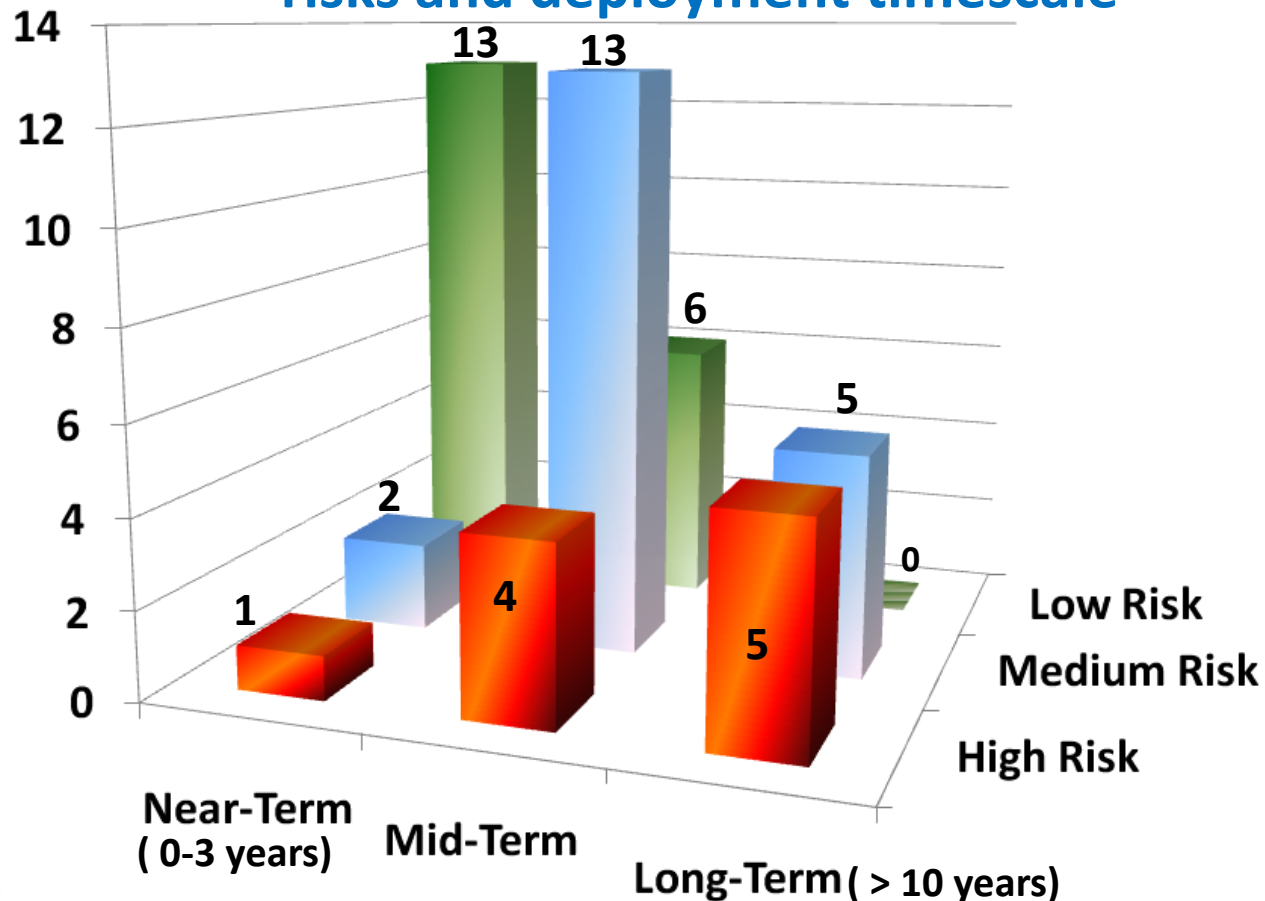- Submitted aps are on line (at url listed above).

Wide ranging collection of mode-specific and multi-modal ideas

Highway/Arterial (32)

Weather (4)

Rural Roads (4)

17

1

2   1   3

Freight (13)

4   4   5

4

Multi-modal (9)

4

Other (5)

Transit (13)

Broad cross-section of ideas at various levels of risks and deployment timescale

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Example Mapping of Application Concepts

Overlapping data needs and synergy between application concepts

High risk

Intersection vehicle control

Pedestrian detection

Tactical Arterial and Transit Data Environment

Connected Eco-driving

Smart transit signal priority

Signal optimization

Dynamic transit dispatching

Low risk

Near-term (0-3 years)

Long-term (> 10 years)
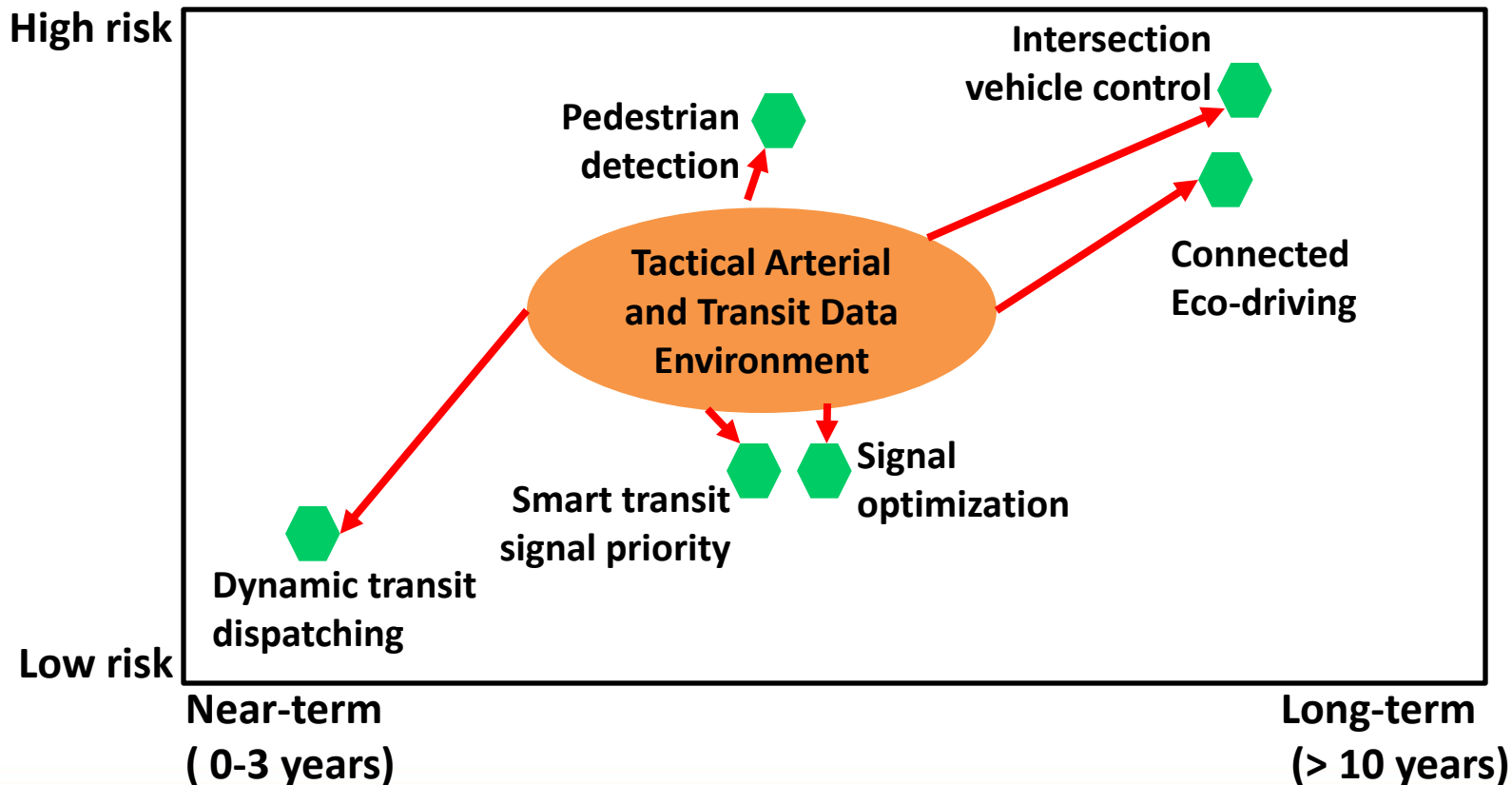
Candidate Applications Prioritization Criteria

- Potential for transformative impact

- Makes use of IntelliDrive data, i.e. multi source data

- Significant stakeholder interest

- Can evolve from near-term state to long-term state

- Potential to be released as open source

- Cross-modal impact

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Submitting New Concepts

- Got a transformative idea that utilizes IntelliDrive data?
  - Fill out template online: http://www.its.dot.gov/intellidrive/app_template/DMA_template.htm
  - Or, fill out a template off-line and send it via e-mail

- Template requires high-level description of idea
  - Problem being addressed
  - Transformative benefits
  - How the idea makes use of IntelliDrive data

- Deadline for getting your idea in: **15 October 2010**

Next Steps

- Assess ideas received through 15 October 2010
  - Research needs derived at this workshop will inform our prioritization
  - Preliminary assessment available at: http://www.its.dot.gov/intellidrive/app_template/DMA_template.htm
- Analyze collective input for clusters of promising applications concepts that have similar data needs
- Prioritize with stakeholder groups at various venues from now until December
- Solicit stakeholder feedback on draft prioritized list at IntelliDrive Mobility Workshop (1-2 December in Washington, DC)
- Announce finalized list at TRB 2011
- Issue solicitations to develop selected concepts shortly after TRB 2011