Real-World AI Scenarios in Transportation for Possible Deployment

The Identifying Real-World Transportation Applications Using Artificial Intelligence (AI): Real-World AI Scenarios in Transportation for Possible Deployment report (July 2020, FHWA-JPO-20-810) identifies practical real-world scenarios where AI offers the potential to address specific transportation needs. These high-value scenarios serve as a template for potential deployments that demonstrate the transformational power of AI to address ITS operational challenges.

To view the report, please visit: [https://rosap.ntl.bts.gov/view/dot/50752](https://rosap.ntl.bts.gov/view/dot/50752)

The report identifies five real-world scenarios: Urban Arterial Network, Urban Multimodal Corridor, Regional System Management, Rural Freeway Corridor, and Underserved Communities. The report defines these scenarios by their unique operational challenges (e.g., coordinating multi-agency responses), principal facility types covered (e.g., urban arterial), and key user types served (e.g., underserved communities, long-haul truck driver).

For each scenario, the report: (1) discusses how AI could potentially be used to address operational challenges relevant to that scenario, (2) illustrates a concept for the scenario where actors interact with the AI-enabled systems, and (3) summarizes potential benefits and value to the U.S. Department of Transportation (DOT) of investing in AI-powered solutions for the scenario.

### Potential Benefits

- **Safety**
- **Mobility and Reliability**
- **Accessibility**
- **Sustainability**
- **Productivity**
- **Security**
- **Cost Savings**
- **User Satisfaction**
### Potential Barriers to Adoption of AI For ITS

- Data
- Compute Power
- Hardware
- Bias
- Generalization
- Obsolescence
- Privacy
- Ethics and Equity
- Liability
- Talent/Workforce
- Stakeholder Acceptance
- Risk Aversion

### Potential Opportunities for U.S. DOT Investments in AI For ITS

- Spur adoption of AI-enabled solutions by funding AI research, demonstrations, and deployments that would not otherwise be accomplished by the public or private sectors
- Facilitate interoperability of AI-enabled ITS applications
- Encourage peer exchanges and collaboration on complex AI solutions
- Establish confidence in AI solutions through independent evaluations and dissemination of best practices

To learn more about the program, visit: [https://its.dot.gov/research_areas/emerging_tech.htm](https://its.dot.gov/research_areas/emerging_tech.htm), or contact:

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