Mobility Data Interoperability Principles

Building the framework for a modern transportation tech industry

Summer 2025

What is MDIP?

The Mobility Data Interoperability Principles were authored by a coalition of public sector agencies (primarily state DOTs, MPOs, and transportation agencies) and transportation equity non-profits in 2021.

The five principles establish a vision for how interoperable technology can transform the entire mobility industry.

The coalition provides guidance on procuring interoperable products, evaluates products, vendors, and data standards, and educates members of our industry about the benefits of interoperability for all of us.

The Co-Author Coalition

The Taskar Center for Accessible Technology

DESIGNING FOR THE FULLNESS OF HUMAN EXPERIENCE

Why Interoperability?

Transportation is a high-tech industry that relies on constant real-time communication between many different parts.

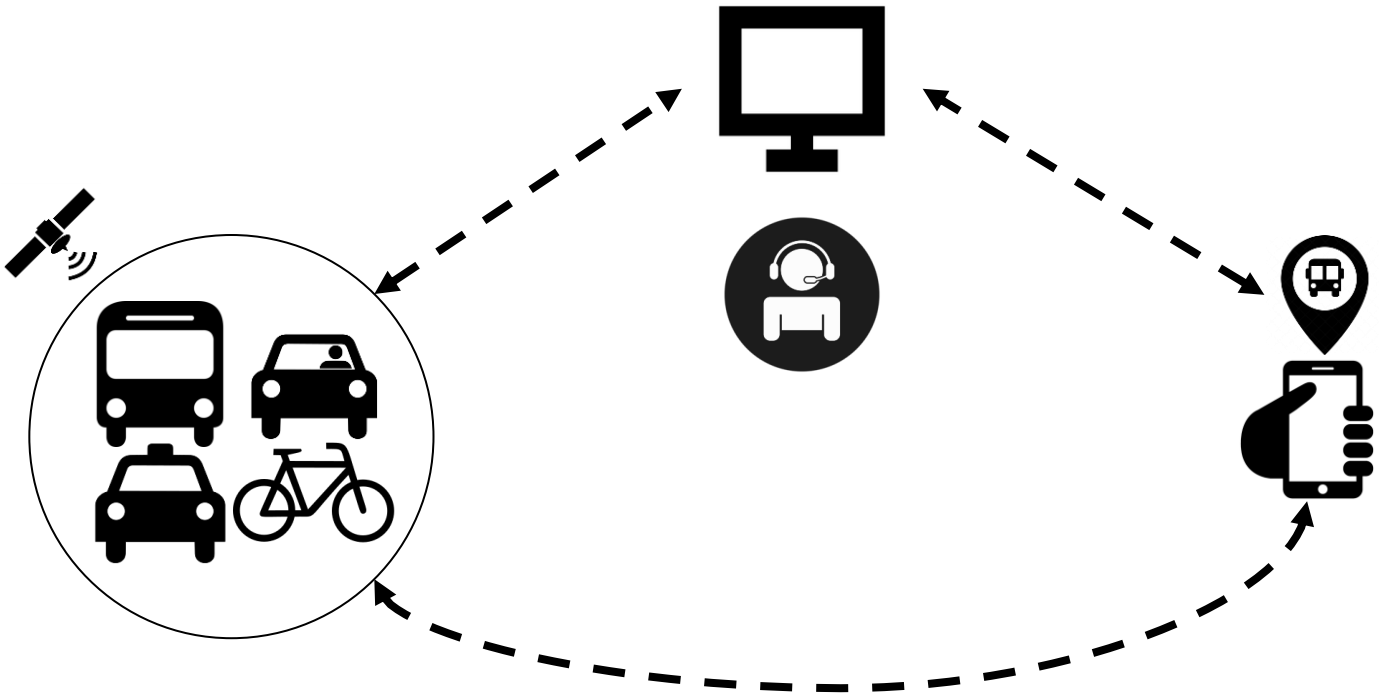
Mobility service providers need tech components that are capable of working together in real time in order to support the level of service their customers expect.

Agencies need clear, reliable, and cheap means of sending and receiving data from other companies.

Standard formats make our data ecosystem sustainable, affordable, and extensible.

Mobility Data Interoperability Principles Goal

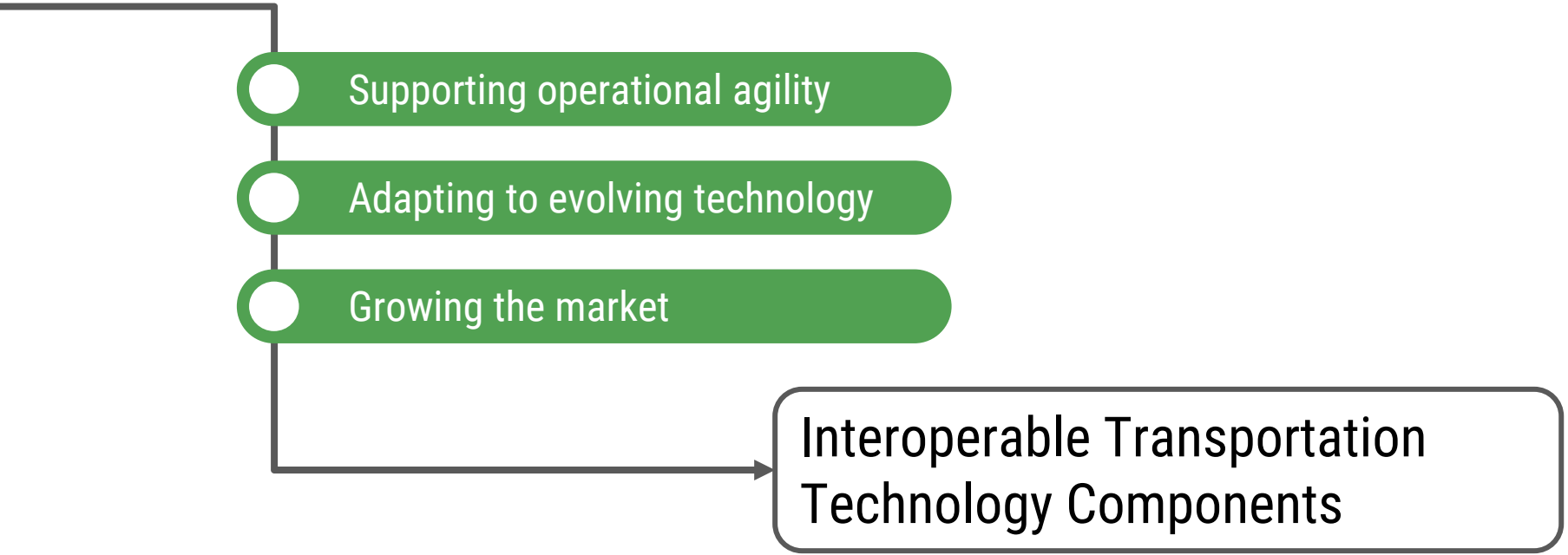
MDIP provides actionable guidance on developing and evaluating data standards and tech with the goal of supporting an integrated transportation marketplace



Mobility Data Interoperability Principles cont.

The case for interoperability:

Modern, easily-accessible and **well-operated transportation services depend on** a complex system of operations and customer-oriented **technology components which must work together**.



Interoperable Vision

Interoperable systems allow:

1. Operators to keep up with an ever-evolving technology landscape by encouraging the development of affordable, cutting-edge applications
2. Vendors to interface seamlessly with other products to meet passenger needs while safeguarding profitability.
3. System managers (like DOTs) to use the best available data to support analytics and decision-making to effectively regulate their networks.
4. Passengers to instantly access high quality mobility data and do anything they need to do from a single app.

The Interoperability Principles

1. All systems creating, modifying, or consuming mobility data should be interoperable.

   - The technology used by riders, providers, and regulators of mobility services is one single ecosystem
   - Because the same data is used many ways by many actors, interoperability is essential to making that ecosystem work quickly, efficiently, and cheaply

The Interoperability Principles

2. Interoperability should be achieved through the development, adoption, and widespread implementation of open standards that support the efficient exchange and portability of mobility data.

- We have a preferred path to get to interoperability:
  - Use open standards where they exist
  - Create and implement them where they do not exist

The Interoperability Principle 3

3. Transit agencies and other mobility service providers should have access to tools that present high-quality mobility data accessibly, equitably, and in real-time to assist travelers in meeting their mobility needs.

- Interoperability improves the tools that are available for providers
- By eliminating costly integrations, interoperability also helps makes tools more widely accessible

The Interoperability Principle 4

4. Transit agencies, other mobility service providers, and consumers should be able to select the transportation technology components that best meet their needs.

- Interoperability is a powerful tool for combatting vendor lock-in
- Vendor lock-in results when companies are able to extract costly customization fees and licenses in the absence of an interoperable alternative
- An open, interoperable technology ecosystem promotes the ability of providers and riders to choose only those tools that meet their needs

The Interoperability Principle 5

5. All individuals and the public should be empowered through high-quality, well-distributed mobility data to find, access, and utilize high-quality mobility options that meet their needs as they see fit, while maintaining their privacy.

- Without interoperability, so much data is created that cannot be properly utilized by available applications, which diminishes the quality of our mobility
- We can have interoperable mobility that promotes our choice and protects our privacy

How Interoperability Changes Things

Without Interoperability	**With Interoperability**
Trip planning applications cannot easily access the data about which transportation services are available, making it difficult for service providers to be found. ***Riders need to find out how they can get a for-hire ride through a proprietary app, a web search, or another means.*** ***Conflicting information may be available for individual trips.***	Service information is published by mobility service providers using an open standard, and that standard can also be read by the developers of trip planning applications. ***Riders can discover providers in their area and book rides using a single application of their choice.*** ***Information is correct and well-distributed in a timely manner.***

How Interoperability Changes Things cont

Without Interoperability	**With Interoperability**
System managers (states, counties, and cities) must get information about mobility providers in piecemeal fashion, in varying formats and with varying underlying data quality. ***Aggregating transportation data is more expensive and onerous.*** ***Targeting investments to improve the transportation system is more complex.***	Data is published by mobility service providers using an open standard, and that standard can also be read by tools used by the system managers. ***It is cheap and easy to automatically ingest transportation demand data.*** ***Developing a complete data set for analysis and strategic investment becomes a reality.***

How Interoperability Changes Things cont.

Without Interoperability	**With Interoperability**
Vendors are either entirely locked out of integrated tech ecosystem that would allow them to send and receive data from other companies's products or must perform expensive, redundant work to integrate with others. Integrations are brittle. ***Product development is more expensive.*** ***Innovative and valuable work gets de-prioritized in favor of ad hoc connections to other companies.***	Integrations are based on open data standards, are free, and only need to be developed once. ***Partnering with new companies no longer requires a significant investment and relationship development.*** ***Vendors can spend time improving their product and being more responsive to customer feedback.***

Implementing the Principles

Products	Vendors	Mobility Service Providers
Free from cost and restriction access to data within agency systems.	Develop needed open standards.	
Use current or proposed open standards. (or compatible open schemas)	Document current, proposed, and needed open standards.	
Protect traveller privacy.	Provide products consistent with principles.	Require products consistent with principles.

Participate

Reviewer

Provide feedback.

Co-signer

Contributor

Lead or support implementation resources.

Internal Champion

Within your organization

Co-author

Join The Coalition

MDIP membership is open (and free) for new:

- **Co-authors (public organizations) to help us govern the Principles**
- **Co-signatories (any organizations) to help us spread the word and implement the Principles**