ECE Informal Work Group on ITS

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U.S. Department of Transportation

Intelligent Transportation Systems
Joint Program Office

Action 1: Reaching a Common Definition for ITS

From U.S. Legislation:

- 23 CFR 940.3 Definitions.

- *Intelligent Transportation System (ITS)* means electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.

From PIARC:

Intelligent Transport Systems (ITS) are the control and information systems that use integrated communications and data processing technologies for the purposes of:

- improving the mobility of people and goods

- increasing safety, reducing traffic congestion and managing incidents effectively

- meeting transport policy goals and objectives – such as demand management or public transport priority measures

From UN ECE 2021-2025 ITS Roadmap:

Inland transport systems to which information and communication technologies have been applied to improve mobility are generically referred to as Intelligent Transport Systems (ITS). ITS systems are comprised of Information and Communications Technology (ICT) and ITS-unique applications, technologies, and communications.

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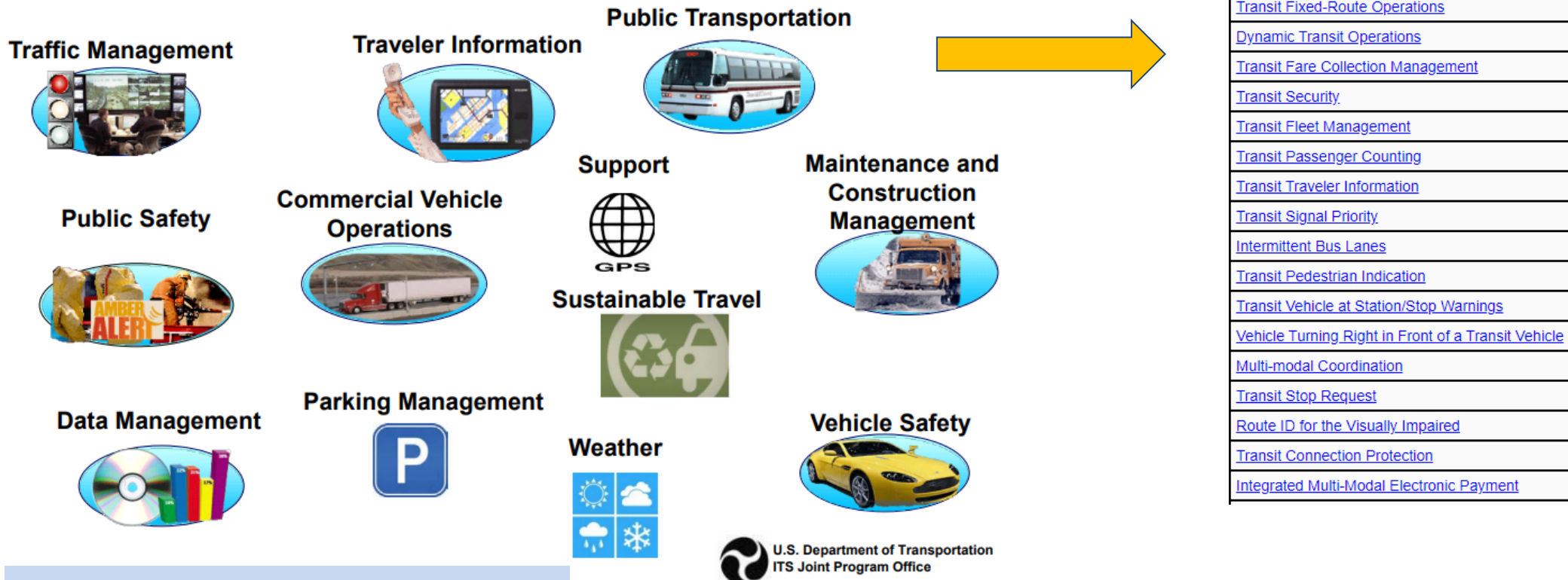
Characteristics of ITS (U.S. Perspective)

- Effective
- Efficient
- Interoperable
- Affordable
- Connected
- Data-driven (Digital)
- Dynamic
- Multimodal
- Multiagency
- Multijurisdictional (across Geographic/Political Boundaries)
- Responsive
- Proactive
- Complex

- Integrated
- Safe
- User focused
- Accessible
- Environmentally sensitive
- Inclusive
- Expansive (to include new modes/travel methods, etc.)
- Productive
- Innovative
- Versatile
- Agile
- Smart
- Transformative

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A Working Definition of ITS – Smart, Complex Systems
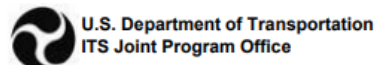
Intelligent transport systems use information and communication technologies to enhance the planning, management and operations, and maintenance of the transportation system and its components, to support the safe and efficient movement of people and goods, and to connect with other systems to improve the quality of life in our communities.

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A Complex Systems of Systems – US ITS Architecture - ARC-IT

- Service Packages grouped by Area

Traffic Management

Traveler Information

Public Transportation

Public Safety

Commercial Vehicle Operations

Support

GPS

Maintenance and Construction Management

Sustainable Travel

Data Management

Parking Management

Weather

Vehicle Safety

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Transit Vehicle Tracking

Transit Fixed-Route Operations

Dynamic Transit Operations

Transit Fare Collection Management

Transit Security

Transit Fleet Management

Transit Passenger Counting

Transit Traveler Information

Transit Signal Priority

Intermittent Bus Lanes

Transit Pedestrian Indication

Transit Vehicle at Station/Stop Warnings

Vehicle Turning Right in Front of a Transit Vehicle

Multi-modal Coordination

Transit Stop Request

Route ID for the Visually Impaired

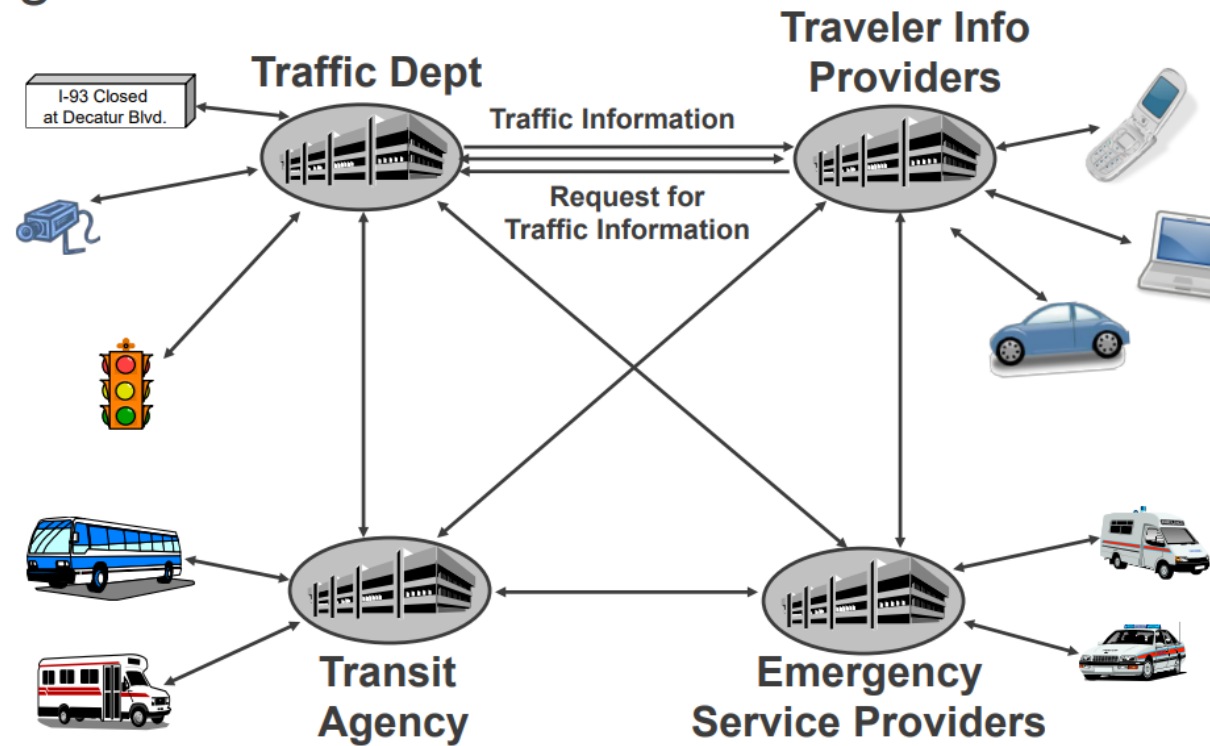Transit Connection Protection

Integrated Multi-Modal Electronic Payment

Helps to Define ITS!!

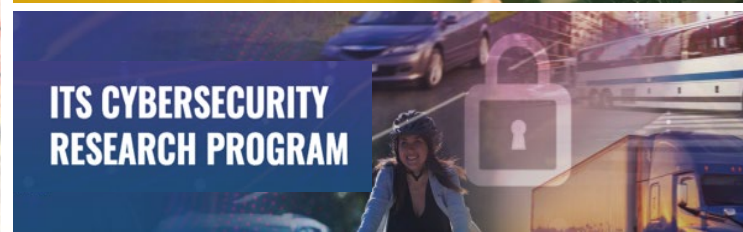# ARC-IT 9.0 Publicly Available for All to Use and Adapt
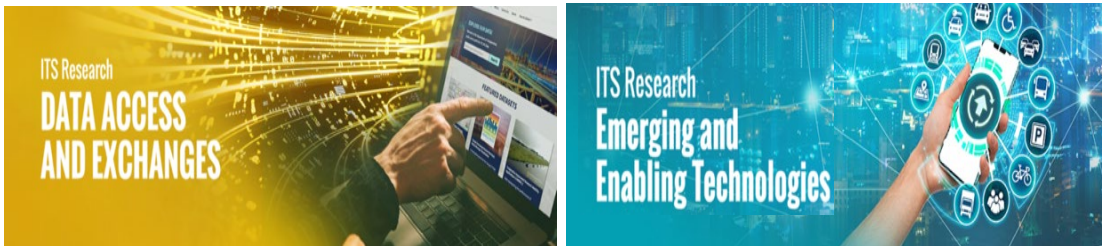

ITS Architectures Provide a Framework for Integration

https://www.arc-it.net/

U.S. Strategic Plan for ITS (2020-2025)

Identify and Assess Technologies → Coordinate and Lead R&D → Demonstrate Value → Support Implementation → Maintain ITS Technologies

Intelligent Transportation Systems Joint Program Office — Strategic Plan 2020-2025

ITS Research **Automation**

COMPLETE TRIP — ITS4US

ITS Research **DATA ACCESS AND EXCHANGES**

ITS Research **Emerging and Enabling Technologies**

ITS CYBERSECURITY RESEARCH PROGRAM

ITS Research **ACCELERATING ITS DEPLOYMENT**

JPO's Strategic Focus

Facilitating a Safe Automation Ecosystem

Available, Reliable, Versatile, Safe and Affordable ITS Data

Implementing Cybersecurity EOs and the NIST Framework

Advancing Mobility and Accessibility for All

Cultivating the Next Generation of ITS

       Artificial Intelligence

       ITS Spectrum use

       Smart Connectivity Capabilities

Effective Deployment Now, Not Later

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