Digital Infrastructure for Autonomous Vehicles

-Requirements, Deployment and Plans

With the promise of autonomous vehicle (AV) technology and its potential use cases as demonstrated by various pilot programs, digital infrastructure has emerged as a win-win combination for cities, transportation authorities, transit agencies, suppliers and AV companies. Digital infrastructure has proven effective in improving safety, traffic management and asset maintenance. It improves transportation system resilience and allows incremental, flexible implementation, both for infrastructure readiness and vehicle automation.

The COVID-19 pandemic has made digital infrastructure a priority to safeguard people and assets as cities continue to deliver essential services. The market size for traffic intersection upgrade/V2I smart intersections in the United States is expected to grow from about $2 billion in 2020 to $18 billion in 2040. The market size of smart pavements is also expected to grow significantly in these years. As the share of connected and autonomous vehicles (CAVs) increases in the vehicle mix, changes are expected to be revolutionary. It is vital for government agencies and businesses to future-proof plans and explore strategies for deployment.

The report **Digital Infrastructure for Autonomous Vehicles** - ***Requirements, Deployment and Plans*** provides a comprehensive overview of digital infrastructure development as cities, government agencies, state DOTs, transit agencies, research institutions and private companies prepare to launch AVs. The report introduces key concepts and covers the domains of policy and standards development; infrastructure digitization; AV/CV deployment in public transit; market size; existing and planned test facilities; key suppliers; costing and funding; challenges; lessons learned and opportunities for businesses.

Format of the report: About 90-100 slides of MS PowerPoint in PDF format.

The report has eight sections:

1. Digital infrastructure requirements for AVs - This chapter introduces technologies and components comprising the digital infrastructure ecosystem. These include on-board and roadside units as well as computing and communication infrastructure.

2. Policy, standards and government initiatives - This chapter provides status of policy development and recent legislative measures at the federal, state and local levels. It covers standards relevant to digital infrastructure and initiatives being undertaken to provide interoperability.

3. Infrastructure digitization - This chapter provides information on upgrade of existing infrastructure components such as communication networks, traffic control devices, roadsand digital HD maps such that they are inter-connected and centrally managed. It covers key issues in deployment as well as operations and maintenance of digital infrastructure.

4. AV/CV in public transit - This chapter provides information on adoption of V2I and V2V digital infrastructure in transit, transit signal priority, transit pilots and demonstrations of digital infrastructure and AVs, and development of a strategic roadmap for AV/CV in public transit.

5. Market size, project investment and key players - This chapter provides estimates of the current and future market size of the smart intersection/V2I and smart road pavement markets. It describes the existing and planned projects and test facilities where digital infrastructure components are being deployed. It also lists the key private players who are part of the supply chain for different technology components.

6. Costs and funding sources - This chapter provides information on costs involved and funding sources available to implement digital infrastructure projects. It covers federal grant programs; state and local funding sources and private investment.

7. Challenges - This chapter describes the organizational, political, social, funding, cybersecurity and technical challenges being faced in the deployment of digital infrastructure.

8. Conclusion - These chapters summarizes the journey so far, lessons learned and opportunities in the digital infrastructure sector. It also has a section on the impact of COVID-19.

The report will be available in PDF format. It is priced at USD1,200. There is also a special "early bird" discount price of USD800 for orders and payments received on or before July 10, 2020.

The report aims to serve organizations interested in connected and autonomous vehicles-transport authorities, operators, policymakers and regulatory bodies, service and technology providers, original equipment manufacturers (OEMs), AV manufacturers, start-ups, technology companies, research organizations, legal and financial advisors, industry consultants, etc.

For subscriptions, please contact:

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Sources and Methodology

Global Transmission Research's industry analysts will utilise various primary and secondary research sources in preparing this report. Primary sources include data and statistics obtained through email questionnaires sent to various utilities, transmission companies, transmission system operators and industry regulators. Extensive secondary research will be conducted by our analysts and research associates. These secondary sources include, but are not limited to, websites of utilities; annual reports and financial reports of utilities; investor presentations; analyst reports; government ocuments, plans and statistical databases; websites of relevant ministries and regulators; websites of relevant industry associations; internal and external proprietary databases; news articles; and press reports.
Wherever applicable, all research sources will be appropriately cited within this report.

These primary and secondary research sources, combined with our industry expertise, will be synthesised into qualitative and quantitative analysis which will be presented in this report.

The data and statistics for the years 2006 to 2019 will be actual figures obtained from the concerned utilities and ministries. In a few cases, where data is not be available, we will use estimates based on information obtained from press reports or those based on past growth trends. For forecasted growth in generation and transmission capacity, we will extensively research the plan documents of various utilities and governments. Wherever these plans are not available, we will estimate the forecast based on past growth trends or based on new projects planned by the utilities.

Great care will be taken to ensure that all analysis is well supported by facts. Where facts are not available and assumptions are made, we will explain our assumptions and our methods of estimation.

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The mission of **AV America** is to connect people interested in autonomous vehicles with information and analysis on the autonomous vehicles industry. The portal provides links to news, technology features, policies, reports, presentations, perspectives, interviews, webinars, videos and podcasts on autonomous vehicles.
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