

1. Record Nr.	UNINA9910882896503321
Titolo	Road Vehicle Automation 11 / / edited by Gereon Meyer, Sven Beiker
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2024
ISBN	3-031-67466-9
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (200 pages)
Collana	Lecture Notes in Mobility, , 2196-5552
Disciplina	629.836
Soggetti	Transportation engineering Traffic engineering Automation Transportation Transportation Technology and Traffic Engineering Transportation Economics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Preface -- Contents -- Introduction: The Automated Road Transportation Symposium 2023 -- 1 Overview -- 2 Keynote Talks -- 3 Plenary Panel Sessions -- 3.1 What the Pioneering Cities are Learning by Hosting Truly Driverless Ride-Hailing Operations -- 3.2 Implementing Best Practices for ADS Safety -- 3.3 Delivering the Goods: ADS in Freight Applications -- 3.4 European Approach to AV Regulation -- 3.5 Infrastructure Issues/Opportunities Panel -- 3.6 How Should Automated Driving Be Regulated in the U.S.? -- 3.7 Capital's Role in the AV Revolution -- 3.8 Leading Business Journalists' Perspectives on the AV Industry -- 4 Plenary Presentations -- 4.1 Presentations on Specific Cross-Cutting Topics -- 4.2 Unique Perspectives on AV Deployment from Specific Companies -- 4.3 Public Sector Developments Relevant to Automated Driving -- 5 Breakout Sessions -- 5.1 ARTS23 Breakout Sessions -- 6 General Cross-Cutting Observations -- 6.1 Real-World Experience of Driverless Automated Operations -- 6.2 Remote Human Interventions -- 6.3 Automated Driving Safety Regulations -- 6.4 Need for Authoritative Data -- 6.5 Infrastructure Support? -- 6.6 Economic Challenges -- Part I: Public Sector and Policy Activities -- RoAD to L4, Advancing Autonomy:

Research, Development, Demonstration, and Deployment of Level 4 Driving Automation and Enhanced Mobility Services in Japan -- 1

Introduction of Automated Mobility Services -- 1.1 Prospects

of Automated Mobility Services Deployment: A Strategic Approach -- 1.2 The First Level 4 Commercial Vehicles in Operation -- 2 Focused

Project Themes and Initiatives in Advanced Self-driving Technologies

for Passenger and Truck Services -- 2.1 Project Themes -- 2.2 MaaS

with Automated Driving Technology -- 3 Conclusions -- 4 Next Steps

-- References.

I didn't Fight the Law, We All Won: Autonomous Vehicles

and Compliance with the Rules of the Road -- 1 Introduction -- 1.1

Session Background -- 1.2 AVs and Traffic Law Compliance -- 2

Literature Review -- 3 Summary of the Discussion -- 3.1 Identifying

Problems -- 3.2 Finding Solution -- 4 Conclusions -- References --

Public Welfare and Emerging Technology: Balancing Interests

in Automated Vehicle Regulations Across Six Jurisdictions -- 1

Introduction -- 1.1 ARTS 2023 Panel Discussion: "AV Laws Around

the World: Who, What, Where and Why?" -- 2 Summary

of the Discussion -- 2.1 Context and Scope -- 2.2 Recent Research

and Trends -- 2.3 New Insights and Suggestions -- 3 Conclusions -- 4

Next Steps -- References -- A User Centred Approach to Designing

Future Self-driving Transport Systems: Evidence from Public Trials

and Engagement -- 1 Why a User Centred Approach is Required

for the Long-Term Success of Self-driving Vehicles -- 1.1 Background

-- 2 So What Do the Public Want from Self-driving Vehicles? -- 3 How

to Ensure the Acceptable Introduction and Operation of Self-driving

Vehicles -- 3.1 Enabling Capability -- 3.2 Creating Opportunity -- 3.3

Building Motivation -- 4 How to Increase Knowledge

and Understanding of Self-driving Vehicles -- 4.1 Enabling Capability

-- 4.2 Creating Opportunity -- 4.3 Building Motivation -- 5 Conclusion

-- References -- Multidisciplinary Dialogues on Assessing

the Automation-Readiness of Cities -- 1 Introduction -- 2 Background

-- 3 Presentations and Dialogues -- 3.1 Experts Presentations -- 3.2

Automation-Readiness Priority Statements -- 4 Discussion -- 5

Conclusions and Next Steps -- References -- Data Drive Legal Regimes

for Automated Vehicles -- 1 Introduction -- 1.1 Methods -- 2

Discussion: Data-Related Themes -- 2.1 Crash Data Form a Core --

2.2 Safety -- 2.3 Cybersecurity -- 2.4 Privacy -- 2.5 National Security.

2.6 Liability -- 3 Conclusions -- References -- Part II: Business Models

and Operations -- Impacts of Automation in the Supply Chain -- 1

Introduction -- 2 Perspectives on Supply Chain Automation, Activities

and Considerations -- 2.1 Wing: Last-Mile Drone Delivery -- 2.2

AllianceTexas: Intermodal Inland Port -- 2.3 Gatik: Autonomous B2B

Delivery -- 2.4 The Borderplex Alliance: US-Mexico Trade -- 3

Discussion Summary -- 3.1 Policy Considerations -- 3.2 Workforce

and Economic Impact -- 3.3 Technology Maturity -- 4 Conclusions

and Additional Research -- Reference -- Data Exchanges Enabling

the Future of Automation: Opportunities and Challenges -- 1

Introduction -- 2 Summary of the Discussion -- 2.1 Context and Scope

-- 2.2 State of the Industry and Current Research -- 2.3 Summary

of Panel Discussion at ARTS23 Breakout Session on Data Exchanges

Enabling Future of Automation: Opportunities and Challenges -- 3

Conclusions and Next Steps -- References: -- Workforce Development

for 21st Century Mobility -- 1 Introduction -- 2 Examples of Workforce

Development Activities, Programs, and Research -- 2.1 Nuro's

Upskilling Workforce Development Initiative -- 2.2 Beep's Workforce

Development Activities -- 2.3 Research on Workforce Development

Needs in Taxi, Transportation Network Company, and AV Services --

2.4 WE-TRANSFORM: Addressing AV Workforce Needs in Europe -- 2.5
Kodiak Robotics: Autonomous Trucking Workforce Development Needs
-- 2.6 Addressing Workforce Development in Minnesota -- 2.7
Advanced Skills Development Training at AREA X.O by Invest Ottawa --
2.8 Masters in Intelligent Transportation Systems -- 3 Conclusions
and Additional Research -- References -- Part III: Vehicle Technology
Development and Testing -- Human Factors Considerations of Remote
Operation Supporting Level 4 Automation -- 1 Introduction -- 1.1
Scope of the Paper -- 1.2 Terminology.
2 Human Factors of Remote Operation to Support Level 4 Automation:
Key Insights from the Breakout Sub-sessions -- 2.1 Operational
and Perceived Safety -- 2.2 Training, Certification, and Interaction
with First Responders -- 2.3 Design of the Human-Machine Interface
-- 2.4 Tasks, Roles, and Ratios -- 3 Overview of Legal
and Standardization Efforts on Human Factors of Remote Operation --
3.1 National and Regional Efforts -- 3.2 International Efforts -- 4
Conclusions and Next Steps -- References -- Scenarios and Scenario
Databases for AV Safety Assurance -- 1 Introduction -- 2 Scenario
Methodology -- 2.1 Scenario-Based Safety Assurance Process -- 2.2
Abstracting the Reality with Scenarios -- 2.3 Scenario Generation
for Databases -- 3 Scenario Database -- 3.1 Input Data Description
Format -- 3.2 Scenario Identification and Scenario Management -- 3.3
Query and Generation of Scenarios -- 3.4 Key Performance Indicators
-- 4 Data for Scenario Generation -- 4.1 Requirements -- 4.2
Classification of Public Roads Trajectory Data Sources -- 4.3 Drone
Data -- 5 Conclusion -- References -- Measuring Automated Vehicle
Safety -- 1 Introduction -- 1.1 Background -- 1.2 Safety Assessment
-- 1.3 Measurements and Assessments -- 2 Approach -- 2.1 Elements:
Traffic Kinematics -- 2.2 Safety Assessment -- 3 Kinematic Context --
3.1 Non-Collision Events -- Near-Misses -- Near-Crash Events --
Close-Calls -- 4 Collision Hazard Measure -- 4.1 Perception-Reaction
Time -- 4.2 Modulation -- 4.3 Road/Street Grip -- 5 Characteristics --
5.1 Comparison of Surrogate Collision Hazard Measures -- 6 Example
SHM Data -- 6.1 Individual Track Example -- 6.2 Geo-Temporal
Aggregation Example -- 7 Conclusions -- References -- Part IV:
Transport System Planning -- Transportation and Real Estate: Case
Studies in Cross-Sector Collaborative Developments -- 1 Introduction.
2 Post-COVID Emerging Trends -- 2.1 Decreases in Transit Use
and Increase in Private Vehicle Ownership -- 2.2 Telework, Changes
in Commuting Patterns, and Real Estate -- 2.3 Rise in E-Commerce --
3 The Unexpected Overlap Between Realized Impacts from COVID
and Potential Impacts from AVs -- 3.1 Privately-Owned AVs -- 3.2
Shared AVs -- 3.3 Automated Freight -- 3.4 Summary of AV Use Cases
and Potential Implications for Land Use -- 4 Case Studies -- 4.1 AV-
Enabled "Main Street" Suburbs -- 4.2 Automated Valet Parking -- 4.3
Mobility Hubs -- 4.4 Mobility-Oriented Real Estate Development -- 5
Conclusions -- References -- Managed Lanes: Incubator for Automated
Vehicles -- 1 Introduction -- 2 Summary of Presentations -- 2.1
Historical Perspective -- 2.2 Managed Lanes as Automated Vehicle
Incubators - Insights and Initiatives -- 2.3 Getting Connected
Automation Tests off the Drawing Board and into Lanes -- 2.4
Accelerating Autonomous Freight with Dedicated Infrastructure -- 3
Conclusions -- 4 Next Steps -- References -- Author Index.

Sommario/riassunto

This book is the eleventh volume of a sub-series on Road Vehicle Automation, published as part of the Lecture Notes in Mobility. It gathers original peer-reviewed works based on contributions to the plenary and breakout sessions of the Automated Road Transportation Symposium (ARTS 2023), held on July 9-13, 2023, in San Francisco, CA,

USA. The chapters were selected and reviewed by the book editors, together with a number of experts in automated mobility, who were also involved in organizing different sessions at the above-mentioned conference. Written by researchers, engineers and analysts from around the globe, this book offers multidisciplinary perspectives on the opportunities and challenges associated with automating road transportation. It highlights innovative strategies, including public policies, infrastructure planning and automation technologies, which are expected to foster more sustainable and safer mobility in the near future, thereby addressing industry, government and research communities alike.
