

fahrerlose transportsysteme

Fahrerlose Transportsysteme (FTS), or driverless transport systems, are increasingly becoming a pivotal element in modern logistics and manufacturing environments. These automated solutions are designed to transport goods efficiently and safely without the need for human intervention. By leveraging cutting-edge technologies such as sensors, artificial intelligence, and robotics, FTS are revolutionizing how goods are moved within warehouses, factories, and distribution centers. This article delves into the various aspects of fahrerlose transportsysteme, including their types, advantages, challenges, and future trends.

What are Fahrerlose Transportsysteme?

Fahrerlose Transportsysteme are automated vehicles that transport materials or products within a defined area. Unlike traditional forklifts or manual transport systems, FTS operate autonomously, managing their routes and tasks based on pre-set parameters and real-time data. These systems can range from guided vehicles to more advanced robotic solutions that utilize sophisticated navigation systems.

Types of Fahrerlose Transportsysteme

There are several types of fahrerlose transportsysteme that vary in technology, function, and application. The most common types include:

1. **Automated Guided Vehicles (AGVs):**
 - These vehicles follow predefined paths using magnetic strips, lasers, or optical sensors. AGVs are widely used in warehouses for transporting materials from one point to another.
2. **Autonomous Mobile Robots (AMRs):**
 - Unlike AGVs, AMRs are equipped with advanced sensors and AI algorithms that enable them to navigate dynamically and make decisions in real-time. They can adapt to changes in the environment, such as obstacles or varying layouts.
3. **Driverless Forklift Trucks:**
 - These are automated versions of traditional forklifts, capable of loading and unloading goods autonomously. They are particularly useful in environments where heavy lifting is required.
4. **Automated Pallet Trucks:**
 - These vehicles are designed to move pallets from one location to another within a warehouse or production facility. They often work in conjunction with other automated systems.
5. **Shuttle Systems:**
 - These systems consist of automated vehicles that transport goods along a fixed route, often in a loop, making them ideal for repetitive tasks in high-density storage areas.

Advantages of Fahrerlose Transportsysteme

The implementation of fahrerlose transportsysteme offers numerous benefits to organizations looking to enhance their logistics and operational efficiency. Some key advantages include:

- Increased Efficiency: FTS can operate continuously, 24/7, without breaks or downtime, significantly increasing productivity levels.
- Cost Reduction: By minimizing labor costs and reducing the risk of human error, organizations can achieve substantial cost savings in their operations.
- Safety Improvements: FTS are designed with safety features, such as obstacle detection and emergency stop functions, which reduce the likelihood of accidents in the workplace.
- Flexibility and Scalability: Many FTS can be easily integrated into existing systems and scaled to meet changing demands, ensuring that businesses can adapt to market fluctuations.
- Data Collection and Analysis: FTS are equipped with sensors and software that collect valuable data on material handling processes, facilitating ongoing optimization and decision-making.

Challenges in Implementing Fahrerlose Transportsysteme

Despite the numerous advantages, organizations face several challenges when implementing fahrerlose transportsysteme. Understanding these challenges can help companies prepare for a successful transition:

- High Initial Investment: The upfront costs associated with FTS, including technology, infrastructure, and training, can be significant.
- Integration with Existing Systems: Integrating FTS into current workflows and systems can be complex, requiring careful planning and execution.
- Technological Limitations: While advancements in AI and robotics have propelled FTS capabilities, there are still limitations, particularly in unpredictable environments.
- Workforce Resistance: Employees may be concerned about job displacement and may resist adopting new technologies, necessitating effective change management strategies.
- Maintenance and Support: FTS require ongoing maintenance and technical support to ensure optimal performance, which can add to operational costs.

Applications of Fahrerlose Transportsysteme

Fahrerlose transportsysteme are applicable across various industries, each benefiting from

automation in different ways. Some key applications include:

1. Manufacturing

In manufacturing environments, FTS are used for transporting raw materials to production lines and finished products to storage areas. This streamlines operations and reduces lead times.

2. Warehousing and Distribution

In warehouses, FTS facilitate the movement of goods from receiving docks to storage locations and picking areas. They improve order fulfillment processes and enhance inventory management.

3. Retail

Retailers are beginning to adopt FTS for inventory management and replenishment. Automated systems can transport products within stores or between storage areas and sales floors.

4. Healthcare

In healthcare settings, FTS are deployed to transport medications, supplies, and equipment within hospitals. This can lead to improved efficiency and reduced human contact, particularly important in sensitive environments.

5. Food and Beverage Industry

FTS are utilized in food processing and distribution to move ingredients, packaging, and finished products, ensuring compliance with safety and hygiene standards.

Future Trends in Fahrerlose Transportsysteme

The future of fahrerlose transportsysteme looks promising, with several trends shaping the industry:

- Increased Use of AI and Machine Learning: As AI technology advances, FTS will become even more intelligent, capable of learning from their environment and optimizing routes in real-time.
- Collaborative Robots: Future FTS may work alongside human workers, enhancing the overall efficiency of operations through collaboration.
- Enhanced Safety Features: Ongoing developments in sensor technology will lead to improved safety features, minimizing risks associated with automated systems.
- Integration with IoT: The Internet of Things (IoT) will play a significant role in the future of FTS, with interconnected devices enabling better data sharing and operational insights.

- Sustainability Initiatives: As companies focus on sustainability, FTS may incorporate eco-friendly technologies and practices, such as electric vehicles and energy-efficient systems.

Conclusion

Fahrerlose Transportsysteme are transforming the landscape of logistics and manufacturing, offering organizations a pathway to enhanced efficiency, safety, and cost-effectiveness. Despite the challenges associated with their implementation, the benefits far outweigh the drawbacks, particularly as technology continues to evolve. As industries embrace automation and seek innovative solutions to streamline operations, the role of fahrerlose Transportsysteme will undoubtedly expand, paving the way for a more automated and efficient future. By understanding the types, advantages, challenges, applications, and future trends of FTS, businesses can strategically position themselves to leverage these automated systems for optimal success.

Frequently Asked Questions

Was sind fahrerlose Transportsysteme?

Fahrerlose Transportsysteme (FTS) sind automatisierte Systeme, die Material oder Waren ohne menschliches Eingreifen bewegen. Sie nutzen Technologien wie Sensoren, Kameras und Software zur Navigation.

Welche Branchen nutzen fahrerlose Transportsysteme?

FTS werden in verschiedenen Branchen eingesetzt, darunter Logistik, Fertigung, Gesundheitswesen und Einzelhandel, um Effizienz und Sicherheit zu erhöhen.

Wie funktionieren fahrerlose Transportsysteme?

FTS verwenden eine Kombination aus Laser- und Kameratechnologie, um ihre Umgebung zu scannen, Hindernisse zu erkennen und präzise Routen zu planen.

Welche Vorteile bieten fahrerlose Transportsysteme?

FTS bieten Vorteile wie reduzierte Betriebskosten, höhere Effizienz, verbesserte Sicherheit und die Möglichkeit, rund um die Uhr zu arbeiten.

Was sind die Herausforderungen bei der Implementierung von fahrerlosen Transportsystemen?

Herausforderungen sind die Integration in bestehende Systeme, hohe Anfangsinvestitionen, Schulung des Personals und die Notwendigkeit, Sicherheitsstandards einzuhalten.

Wie sicher sind fahrerlose Transportsysteme?

Fahrerlose Transportsysteme sind in der Regel sicher, da sie mit fortschrittlichen Sensoren ausgestattet sind, die Hindernisse erkennen und Kollisionen vermeiden können. Dennoch erfordert ihre Nutzung strenge Sicherheitsprotokolle.

Können fahrerlose Transportsysteme in kleinen Unternehmen eingesetzt werden?

Ja, auch kleine Unternehmen können FTS nutzen, um ihre Prozesse zu optimieren. Es gibt flexible und kostengünstige Lösungen, die für verschiedene Unternehmensgrößen geeignet sind.

Wie beeinflussen fahrerlose Transportsysteme die Arbeitsplätze?

FTS können Arbeitsplätze verändern, indem sie Routineaufgaben automatisieren. Dies kann zu einer Verlagerung von Arbeitskräften in höherwertige Tätigkeiten führen, erfordert jedoch auch eine Umschulung.

Welche Zukunftstrends gibt es im Bereich fahrerlose Transportsysteme?

Zukünftige Trends umfassen die Integration von Künstlicher Intelligenz, verbesserte Interoperabilität zwischen Systemen und die Entwicklung von umweltfreundlicheren FTS-Lösungen.

Fahrerlose Transportsysteme

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fahrerlose transportsysteme: Recent Progress in Robotics: Viable Robotic Service to Human Sukhan Lee, Il Hong Suh, 2008-01-14 This volume is an edition of the papers selected from the 13 International Conference on Advanced Robotics, ICAR 2007, held in Jeju, Korea, August 22-25, 2007, with the theme: "Viable Robotics Service to Human." It is intended to deliver readers the most recent technical progress in robotics, in particular, toward the advancement of robotic service to human. To ensure its quality, this volume took only 28 papers out of the 214 papers accepted for publication for ICAR 2007. The selection was based mainly on the technical merit, but also took into consideration whether the subject represents a theme of current interest. For the final inclusion, authors of the selected papers were requested for another round of revision and expansion. In this volume, we organize the 28 contributions into three chapters. Chapter 1 covers Novel Mechanisms,

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fahrerlose transportsysteme: Field and Service Robotics Christian Laugier, Roland Siegwart, 2008-06-19 FSR, the “International Conference on Field and Service Robotics”, is a robotics Symposium which has established over the past ten years the latest research and practical results towards the use of field and service robotics in the community with particular focus on proven technology. The first meeting was held in Canberra, Australia, in 1997. Since then the meeting has been held every two years in the pattern Asia, America, Europe. This book presents the results of the sixth edition of Field and Service Robotics FSR03, held in Chamonix, France, on 9th - 12th July 2003. The conference provided a forum for researchers, professionals and robot manufacturers to exchange up-to-date technical knowledge and experience. Field robots are non-factory robots, typically mobile, that operate in complex, and dynamic environments: on the ground (of Earth or planets), under the ground, underwater, in the air or in space. Service robots are those that work closely with humans to help them with their lives. This book offers a collection of a broad range of topics including: Underwater Robots and Systems, Autonomous Navigation for Unmanned Aerial Vehicles, Simultaneous Localization and Mapping, Climbing Robotics, Sensor Fusion.

fahrerlose transportsysteme: Human-Centered Software Engineering Cristian Bogdan, Kati Kuusinen, Marta Kristín Lárusdóttir, Philippe Palanque, Marco Winckler, 2018-12-31 This book constitutes the refereed post-conference proceedings of the 7th IFIP WG 13.2 International Conference on Human-Centered Software Engineering, HCSE 2018, held in Sophia Antipolis, France, in September 2018. The 11 full papers and 7 short papers presented together with 5 poster and demo papers were carefully reviewed and selected from 36 submissions. The papers focus on the interdependencies between user interface properties and contribute to the development of theories, methods, tools and approaches for dealing with multiple properties that should be taken into account when developing interactive systems. They are organized in the following topical sections: HCI education and training; model-based and model-driven approaches; task modeling and task-based approaches; tools and tool support; and usability evaluation and UI testing.

fahrerlose transportsysteme: Autonomous Driving Markus Maurer, J. Christian Gerdes, Barbara Lenz, Hermann Winner, 2016-05-21 This book takes a look at fully automated, autonomous vehicles and discusses many open questions: How can autonomous vehicles be integrated into the current transportation system with diverse users and human drivers? Where do automated vehicles fall under current legal frameworks? What risks are associated with automation and how will society respond to these risks? How will the marketplace react to automated vehicles and what changes may be necessary for companies? Experts from Germany and the United States define key societal, engineering, and mobility issues related to the automation of vehicles. They discuss the decisions programmers of automated vehicles must make to enable vehicles to perceive their environment, interact with other road users, and choose actions that may have ethical consequences. The authors further identify expectations and concerns that will form the basis for individual and societal acceptance of autonomous driving. While the safety benefits of such vehicles are tremendous, the authors demonstrate that these benefits will only be achieved if vehicles have an appropriate safety concept at the heart of their design. Realizing the potential of automated vehicles to reorganize traffic and transform mobility of people and goods requires similar care in the design of vehicles and networks. By covering all of these topics, the book aims to provide a current, comprehensive, and scientifically sound treatment of the emerging field of “autonomous driving.”

fahrerlose transportsysteme: Robotics Goes MOOC Bruno Siciliano, 2025-06-08 It is often read in the media that AI and Robotics are the primary cause of technology unemployment. AI and

machine learning techniques are expected to take over lower-level tasks, while humans can spend more time with higher-level tasks. In perspective, it can be said that jobs requiring boring cognitive tasks or repeatable and dangerous physical tasks will be considerably shredded by automation thanks to the wide adoption of AI & Robotics technology to replace humans, while jobs requiring challenging cognitive tasks or unstructured physical tasks will be suitably re-engineered with the progressive introduction of AI & Robotics technology to assist humans. From the discussion above, it should be clear that in a world populated by humans and robots, issues arise that go beyond engineering and technology due to the impact resulting from the use of robots in various application scenarios. The anthropization of robots cannot ignore the resolution of those ethical, legal, sociological, economic (ELSE) problems that have so far slowed their spread in our society. The final book of the Robotics Goes MOOC project enlightens the impact of using robotic technology in the main fields of application, namely, industrial robots as in Chapter 1 by Bischoff et al, medical robotics as in Chapter 2 by Dario et al, aerial robots as in Chapter 3 by Ollero et al, orbital robotics as in Chapter 4 by Lampariello, underwater robots in Chapter 5 by Antonelli, and rescue robots as in Chapter 6 by Murphy. The last part is devoted to the open dilemma of using and accepting robots in human co-habited environments which is addressed in Chapter 7 on social robotics by Pandey and the very final chapter by Tamburrini on the important issues raised with roboethics.

fahrerlose transportsysteme: Automated Guided Vehicle Systems Günter Ullrich, 2014-12-24 This primer is directed at experts and practitioners in intralogistics who are concerned with optimizing material flows. The presentation is comprehensive covering both, practical and theoretical aspects with a moderate degree of specialization, using clear and concise language. Areas of operation as well as technical standards of all relevant components and functions are described. Recent developments in technology and in the markets are taken into account. The goal of this book is to further stronger use of automated guided transport systems and the enhancement of their future performance.

fahrerlose transportsysteme: Intelligent Robots - Sensing, Modeling And Planning Bob Bolles, Horst Bunke, Hartmut Noltemeier, 1997-12-04 Rapid advances in sensors, computers, and algorithms continue to fuel dramatic improvements in intelligent robots. In addition, robot vehicles are starting to appear in a number of applications. For example, they have been installed in public settings to perform such tasks as delivering items in hospitals and cleaning floors in supermarkets; recently, two small robot vehicles were launched to explore Mars. This book presents the latest advances in the principal fields that contribute to robotics. It contains contributions written by leading experts addressing topics such as Path and Motion Planning, Navigation and Sensing, Vision and Object Recognition, Environment Modeling, and others.

fahrerlose transportsysteme: Handbook On Smart Battery Cell Manufacturing: The Power Of Digitalization Kai Peter Birke, Max Weeber, Michael Oberle, 2022-06-09 The transformation towards electric mobility requires the highest quality mass production of battery cells. However, few research in battery cell engineering focus beyond new cell chemistries. As a consequence, there exists a huge gap between basic battery research and comparable scientific approaches to battery cell production. This handbook bridges the gap between basic electrochemical battery cell research and battery cell production approaches. To run lithium-ion battery gigafactories successfully and sustainably, high-quality battery cell production processes and systems are required. The Handbook on Smart Battery Cell Manufacturing provides a comprehensive and well-structured analysis of every aspect of the manufacturing process of smart battery cell, including upscaling battery cell production, accompanied by many instructive practical examples of the digitalization of battery products and manufacturing systems using an integrated life cycle perspective.

fahrerlose transportsysteme: Fallstudien Logistik Harald Gleißner, Klaus Möller, 2010-02-17 „Aus Sicht der unternehmerischen Praxis bieten Fallstudien eine hervorragende Möglichkeit, Studierende der Logistik auf reale Entscheidungssituationen vorzubereiten. Mit diesem Ansatz fördert das vorliegende Buch die Anwendung des konzeptionellen Wissens und ergänzt so in

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fahrerlose transportsysteme: Dynamics in Logistics Michael Freitag, Aseem Kinra, Herbert Kotzab, Nicole Megow, 2024-04-02 This book reports on interdisciplinary research and developments in logistics. It describes cutting-edge methods from business economics, operations research, computer science, and electrical and production engineering, applied to solve current problems in logistics. It includes empirical, theoretical, methodological, and practice-oriented contributions addressing the modeling, planning, optimization, and control of processes in supply chains, logistic networks, production systems, and material flow systems and facilities. Gathering peer-reviewed papers presented at the 9th International Conference on Dynamics in Logistics (LDIC 2024), held on February 14-16, 2024, in Bremen, Germany, and continuing the tradition of previous volumes, this book offers extensive information to both researchers and professionals in logistics. Moreover, it emphasizes current challenges such as those related to sustainable business development and digitalization, proposing novel, effective solutions to cope with current issues in different types of industry.

fahrerlose transportsysteme: 20. ASIM Fachtagung Simulation in Produktion und Logistik Sören Feldkamp, Niclas Souren, Rainer Straßburger, Steffen Bergmann, 2023-01-01 Die 20. ASIM-Fachtagung Simulation in Produktion und Logistik, Ilmenau, 13.-15. September 2023, steht unter dem Motto der „Nachhaltigkeit in Produktion und Logistik“. Sie soll Anregungen und Denkanstöße geben und über bereits erfolgreiche Projekte und Neuerungen berichten. Der vorliegende Tagungsband präsentiert neben aktuellen Beiträgen aus der klassischen Simulationsforschung und -anwendung, die z.B. den Digitalen Zwilling thematisieren, auch hochinteressante und einschlägige Beiträge zu Fragen der Abbildung energie- und nachhaltigkeitsbezogener Einflussfaktoren in der Simulation.

fahrerlose transportsysteme: Advances in Automotive Production Technology - Theory and Application Philipp Weißgraeber, Frieder Heieck, Clemens Ackermann, 2021-06-01 This volume of the series ARENA2036 compiles the outcomes of the first Stuttgart Conference on Automotive Production (SCAP2020). It contains peer-reviewed contributions from a theoretical as well as practical vantage point and is topically structured according to the following four sections: It discusses (I) Novel Approaches for Efficient Production and Assembly Planning, (II) Smart Production Systems and Data Services, (III) Advances in Manufacturing Processes and Materials, and (IV) New Concepts for Autonomous, Collaborative Intralogistics. Given the restrictive circumstances of 2020, the conference was held as a fully digital event divided into two parts. It opened with a pre-week, allowing everyone to peruse the scientific contributions at their own pace, followed by a two-day live event that enabled experts from the sciences and the industry to engage in various discussions. The conference has proven itself as an insightful forum that allowed for an expertly exchange regarding the pivotal Advances in Automotive Production and Technology.

fahrerlose transportsysteme: Intelligent Autonomous Systems 12 Sukhan Lee, Hyungsuck Cho, Kwang-Joon Yoon, Jangmyung Lee, 2012-11-02 Intelligent autonomous systems are emerged as a key enabler for the creation of a new paradigm of services to humankind, as seen by the recent advancement of autonomous cars licensed for driving in our streets, of unmanned aerial and underwater vehicles carrying out hazardous tasks on-site, and of space robots engaged in scientific as well as operational missions, to list only a few. This book aims at serving the researchers and practitioners in related fields with a timely dissemination of the recent progress on intelligent autonomous systems, based on a collection of papers presented at the 12th International Conference on Intelligent Autonomous Systems, held in Jeju, Korea, June 26-29, 2012. With the theme of

"Intelligence and Autonomy for the Service to Humankind, the conference has covered such diverse areas as autonomous ground, aerial, and underwater vehicles, intelligent transportation systems, personal/domestic service robots, professional service robots for surgery/rehabilitation, rescue/security and space applications, and intelligent autonomous systems for manufacturing and healthcare. This volume 1 includes contributions devoted to Autonomous Ground Vehicles and Mobile Manipulators, as well as Unmanned Aerial and Underwater Vehicles and Bio-inspired Robotics.

fahrerlose transportsysteme: Production at the leading edge of technology Bernd-Arno Behrens, Alexander Brosius, Wolfgang Hintze, Steffen Ihlenfeldt, Jens Peter Wulfsberg, 2020-09-24 This congress proceedings provides recent research on leading-edge manufacturing processes. The aim of this scientific congress is to work out diverse individual solutions of production in the border area and transferable methodological approaches. In addition, guest speakers with different backgrounds will give the congress participants food for thoughts, interpretations, views and suggestions. The manufacturing industry is currently undergoing a profound structural change, which on the one hand produces innovative solutions through the use of high-performance communication and information technology, and on the other hand is driven by new requirements for goods, especially in the mobility and energy sector. With the social discourse on how we should live and act primarily according to guidelines of sustainability, structural change is gaining increasing dynamic. It is essential to translate politically specified sustainability goals into socially accepted and marketable technical solutions. Production research is meeting this challenge and will make important contributions and provide innovative solutions from different perspectives.

fahrerlose transportsysteme: Proceedings. 26. Workshop Computational Intelligence, Dortmund, 24. - 25. November 2016 Hoffmann, Frank, Huellermeier, E., Mikut, Ralf, 2016-11-14

fahrerlose transportsysteme: Konzept eines sicherheitsbezogenen Sensorsystems für die Erkennung von Personen im Umfeld fahrerloser Transportfahrzeuge David Korte, 2021-09-01 In der vorliegenden Arbeit wird ein Konzept eines sicherheitsbezogenen Sensorsystems entwickelt, das in der Lage ist, Personen im Umfeld fahrerloser Transportfahrzeuge zu erkennen und dadurch ein situatives Verhalten der Fahrzeuge ermöglicht. Das entwickelte Konzept basiert auf Anforderungen, die aus dem Betrieb fahrerloser Transportfahrzeuge im Kontext einer zukünftigen Automobilfertigung abgeleitet werden. Für die Entwicklung des Konzeptes werden 16 Sensorkombinationen aus zwölf verschiedenen Sensorarten gebildet und anhand der gestellten Anforderungen bewertet. Die Kombination aus Time-of-Flight-Kamera, RGB-Monokamera und Laserscanner wird aufgrund der besten Bewertung in Form eines Demonstrators für die anschließende Validierung aufgebaut. Dieser Aufbau erfolgt in Bezug auf die Hard- und Software modular, um auch eine Implementierung weiterer Sensoren zu ermöglichen. Neben der Erkennung von Personen soll das sicherheitsbezogene Sensorsystem auch weitere Objekte erkennen können. Dazu werden Methoden der Künstlichen Intelligenz eingesetzt. Die Validierung des Konzeptes erfolgt in einer dafür angelegten Versuchsumgebung und besteht aus verschiedenen Szenarien, in denen Personen in unterschiedlichen Körperhaltungen abgebildet sind. Durch die redundante Erkennung von Personen mittels zweier unterschiedlicher Methoden kann eine zuverlässige Personenerkennung, die den Erfassungsbereich heutiger Sensoren übersteigt, erreicht werden. Mit diesem Ansatz können fahrerlose Transportfahrzeuge ihr Verhalten frühzeitig an das Vorhandensein von Personen anpassen und so einen effizienteren Betrieb ermöglichen.

fahrerlose transportsysteme: Industrie 4.0 - Schlüsseltechnologien für die Produktion Johannes Pistorius, 2020-06-29 Die Digitalisierung in der industriellen Produktion verlangt ein Umdenken bezüglich Organisation, Prozessgestaltung und dem Einsatz neuer Technologien. Das Buch vermittelt dem Leser ein Grundverständnis über das Thema Industrie 4.0 und liefert einen fundierten Überblick über eine Vielzahl von Schlüsseltechnologien sowie deren Potenziale und Einsatzmöglichkeiten für die digitale Fabrik. Aktuelle Statistiken und Anwendungsfälle aus der Praxis verdeutlichen die Relevanz der Technologien im Produktionsumfeld. Ein wichtiges Augenmerk richtet sich zudem auf strukturelle Voraussetzungen für die erfolgreiche Integration der

neuen Technologien in Industrieunternehmen. Der Inhalt Bedeutung von Industrie 4.0 Dreizehn Schlüsseltechnologien für die Produktion Infrastrukturelle Voraussetzungen Handlungsempfehlungen Use Cases und Interviews mit Experten/ Management

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fahrerlose transportsysteme: MMS 2018 Lucia Knapčíková , Dragan Peraković, Michal Balog, Marko Periša, 2018-12-04 The conference aims at creating synergies of “practice and research” increasing the potential and commercial viability of research and development in the field of innovative technologies in management of manufacturing systems, Industry 4.0, logistics and traffic/transport system. The ambition of the MMS 2018 conference is to establish channels of communication and disseminate knowledge among stakeholders in mentioned ecosystem. Therefore, we cordially invite experts, researchers, academicians and practitioners in relevant fields to share their knowledge from the field of innovative ecosystem for management of manufacturing systems, Industry 4.0, logistics and traffic/transport system.

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