



RESEARCH.  
INNOVATION.  
REALIZATION.







# # Creating Digital Value

*Digital technologies and trends change us, our environment, our companies. The increasing digitalization, global networking and new technologies create ever more promising applications. They increase the dynamics of procurement and sales markets and change our organizations. Regarding industry, unprecedented potentials for optimization and value creation are opening up.*

Our goal is to exploit this value creation potential with top performances in the thematic area of organizational research. We concentrate on questions from business organization, development of the company and -IT for the company of the future, which we see in large parts as an information processing understanding the system. The focus of our work is on questions of preparation of data and the optimal provision of information. We use this as a basis for the development of forward-looking value creation models and sustainable organizational structures in the companies.





## # Digital Studies

*With application-oriented research we create the basis for innovations in the manufacturing industry. We generate new knowledge about technologies, processes and applications, develop models and methods and push for their standardization. This is how we drive the digital transformation forward and lay the foundation for the future security of companies.*

7 MILL €  
RESEARCH  
VOLUME



Under the generic term of Industrial Management we do research in the following areas business transformation, service management, information management and production management and smart work. We consider digital networking issues, new technologies and business models with their effects on the strategic, organizational and operational redesign of industrial companies.

We define our projects from relevant challenges of industry and society, always with a view to the short-term transfer of the lessons learned into operational application. In publicly funded research, projects entrusted to us by companies and in joint projects, we develop solutions, that are scientifically sound and of direct benefit to industry.

As a founding member of the Johannes-Rau-Research Association we strengthen the research strategy of the state of North Rhine-Westphalia. We are also a member of the Zuse Community – the representative association for privately organized research institutions. As a research center of the German Federation of Industrial Research Associations (AiF) we are actively involved in projects on future issues of industry. As an affiliated institute of the RWTH Aachen University we maintain and use the close collaboration with the university on the basis of a cooperation agreement but are at the same time organizationally, economically and legally independent.

**RWTHAACHEN**  
UNIVERSITY

**AiF** Member

**JRF**  
MEMBER Johannes-Rau-  
OF Forschungsgemeinschaft



**ZUSE-GEMEINSCHAFT**  
FORSCHUNG, DIE ANKOMMT.





## # Digital Positioning

*Technical innovations such as industry 4.0, 5G, Artificial Intelligence (AI), Virtual Reality (VR), block chain or cloud computing etc. accelerate the transformation of our companies. The classic industry is changing more and more from a mere production operation to an information processing system whose future success depends decisively on how it uses the constantly growing flood of data on the increase in its added value.*

We support companies in shaping the digital transformation in the areas of digitalization & strategy, information technology & management, production & logistics, service & maintenance. We develop our consulting services along relevant future topics and trends that accelerate the transformation of business and society.

We support companies on many levels, in focusing their attention on the opportunities offered by digital transformation, identifying their specific challenges and transferring them into strategies and measures to increase their competitiveness. Starting point for this is the Maturity model co-developed by FIR, the Industry 4.0 Maturity Index. This enables an identification of the Industry 4.0-capabilities of a company and provides a roadmap for the digitization process. We help to make decisions, choose the best options for regarding all changes, and to make digital change a success. In short: to position the company successfully be in the digital environment in the long term.

200  
INDUSTRIAL  
PROJECTS



### Digitalization & Strategy

■ Secure and efficient through digital transformation



### Information Technology & Management

■ Sustainable added value through the right information technology concept



### Production & Logistics

■ Increased performance of production and logistics systems



### Service & Maintenance

■ Securing business success through a profitable service business



### Smart Work

■ Designing innovative learning and working environments for the digitized enterprise

A close-up photograph of a white industrial robotic arm with blue accents, positioned in a factory environment. The arm is the central focus, with its joints and cables visible. The background is blurred, showing other industrial equipment and structures. A large blue geometric shape, resembling a stylized 'V' or a folded piece of paper, is overlaid on the left side of the image, containing the text for the section header and paragraph.

## # Digital Opportunities

*Cooperation means working together to address common concerns. Cooperation also means to contribute individual skills and strengths in the sense of joint achievement of objectives and to create a win-win situation for all parties involved. For us, this involves working with partners from industry and the service sector to identify and exploit the opportunities offered by digitization – for individual companies, for business locations, for the global society. Therefore you will find many cooperation possibilities, which meet different objectives.*

500 INDUSTRIAL  
COMPANIES



## »» PARTICIPATION IN PUBLICLY FUNDED PROJECTS

The transfer of knowledge to industry is the goal of our research activities. The participation of companies ensures the practical relevance of our projects, while they benefit from the latest research findings and use them to further develop their companies.

[research-projects.fir.de](https://research-projects.fir.de)

## »» INDUSTRY PROJECTS

Sometimes it takes an undisguised view from the outside to recognize and establish growth perspectives. Methodically sound, with the experience of many successfully implemented projects and the solid foundation of the latest research results, our specialists work together with you to develop tailor-made solutions to optimize your processes and structures.

[reference-projects.fir.de](https://reference-projects.fir.de)

## »» INNOVATION PROJECTS

Learning from the best: In consortium projects you win together with other companies, who face similar challenges, valuable insights into cross-cutting issues and best practices. You and the other consortium partners will bring your concrete questions on a topic defined by us into the project. We find answers to these questions by identifying particularly successful market participants. And it does not stop there: during company visits you will gain insights and suggestions, which you can apply to your company.

[innovation-projects.fir.de](https://innovation-projects.fir.de)

## »» SMART LOGISTICS CLUSTER MEMBERSHIP

Since 2010 the FIR is the cluster-leading institute of the Smart Logistics Cluster at the RWTH Aachen Campus. The cluster combines the topics of currently seven independent centers to industrial application scenarios such as: Smart Mobility, Future Logistics, Smart Maintenance, Smart Services and Smart Commercial Building. Companies participate in the center activities within the framework of an enrollment and benefit from the interdisciplinary cooperation between teams of scientists and industrial consortia, who work together on previously defined future issues with visionary approaches to solutions approaches.

[smart-logistics-cluster.com](https://smart-logistics-cluster.com)

## »» COOPERATIONS

Together with specialists from industrial and consulting companies we develop methods and solutions to currently relevant issues. This cooperation expands the know-how of all parties involved, ensures an accelerated innovation process and, as a result, offers real added value for manufacturing companies.

[our-network.fir.de](https://our-network.fir.de)



## # Digital Capabilities

*Knowledge and qualification secure jobs and progress – for entire organizations as well as for the individual employee. Especially senior executives, decision makers and managers are required to lead companies successfully into digitization. Lifelong learning and thus the continuous expansion of knowledge and skills is the basic requirement in order to keep pace with current developments and to work successfully in the market.*

# 300 CERTIFICATES



# 5 CONGRESSES

The professional training of skilled personnel and managers is one of the most important transfer assignments of both FIR and the centers in the Smart Logistics Cluster. With a wide range of different course formats and topics, we promote the development of decisive digital competences and skills. Our symposia and congresses are an integral part of the FIR annual cycle and recognized stimulus for the economy.

We present current trends, products and experiences at first hand. In lectures, workshops, best practices, an accompanying exhibition and numerous networking opportunities the participants get a 360° view on different aspects of a focus topic from industry, services or technologies.

## » CLUSTER SMART LOGISTIK ACADEMY

The Cluster Academy bundles the competences of both FIR and Centers in the Smart Logistics Cluster in a differentiated professional training portfolio covering all aspects of the connected company of the future. As a central platform it provides access to specialist conferences and RWTH certificate courses as well as to a wide range of online seminars, quick checks and training for all operational functional areas. High practical relevance and topicality are the basis of all courses. Topics and content can be directly integrated into the everyday working life. This is how we strengthen our innovative strength of companies.

[www.smart-logistik-academy.com](http://www.smart-logistik-academy.com) (German)

# # Digital Experience

*With the progress of industrial development towards to digitalization and automation the potentials of industrial companies and thus also our organization, our range of tasks and our subject areas. Today we integrate different entities in order to share experiences of digitization in the market and to place the potentials further into focus of the companies.*

Despite all changes, our guiding principle has remained the same:

We accompany companies, research, qualify and teach with the aim of increasing the productivity of companies, strengthening their competitiveness sustainably and making a significant contribution to the further development of society.

RESEARCH.  
INNOVATION.  
REALIZATION.

20,000  
VISITORS





## »» FIR E. V. AT RWTH AACHEN UNIVERSITY

Founded in 1953 as “Association for the Promotion of Research Institutes of Rationalization” by the state NRW based, is the FIR e. V. is the nucleus of our institute.

Under the motto “be prepared ... be connected” the FIR e. V. connects today more than 270 members from companies, institutions and individuals in an active competence network. They are all working to shape the future of industrial management in a sustainable way. In the network you appreciate and use the interdisciplinary exchange and access to current expert knowledge as an impulse generator for new projects, as a door opener for contacts and partnerships, to develop new ideas and innovations.

[firev-en.fir.de](http://firev-en.fir.de)

## »» SMART LOGISTICS CLUSTER

Since 2010 we are the cluster-leading institute of the Smart Logistics Cluster on the RWTH Aachen campus. On the one hand, the name means a thematic bracket around our topics, on the other hand names our building. In a unique experimental environment with demonstration factory, innovation labs and theme park scientists are developing and testing together with industry representatives the potentials of digitization, networking and integration. Research and practice merge in a unique way to pioneering answers for the design of agile companies, which, with the appropriate processes, organizational structures and technologies are able to operate in a highly dynamic market environment.

[www.smart-logistics-cluster.com](http://www.smart-logistics-cluster.com) (German)

## »» FIR-ALUMNI E. V.

We prepare our employees for their career, accompany them on their way to a doctorate and prepare them for the assumption of management tasks in the economy. This intensive cooperation results in valuable contacts, which we sustainably maintain through our alumni work. Today, more than 220 employees and alumni from industry and research are connected to our institute through this extraordinary network.

[fir-alumni.de](http://fir-alumni.de) (German)

# # Feedback

*We are pleased about the positive response of our project partners and participants.*

## 2022

*"An extremely impulsive event day of FIR at RWTH Aachen University and the Center Smart Services with numerous presentations from the industry and service landscape. Many thanks for the exciting insights into the overarching topics."*

*Doris Plaschke, Marketing Excellence B2B,  
Digital Sales & Marketing – Industry 4.0 – Digital Transformation – Smart Factory  
Participant of the Aachener Dienstleistungsforum 2022*

## 2020

*"Great event with inspiring speakers and a stimulating panel discussion on the transformation of software. I look forward to next year as well."*

*Felix Steinlein, Product Owner Production in the department – Globale IT,  
Grünenthal GmbH;  
Participant of the CBA Aachen 2021*

## 2020

*"A sensational digital event today. If you didn't attend, I strongly recommend you schedule it for 2021 if practical IT transformation and strategy is your topic."*

*Knut Krummnacker, Managing Director  
INS Systems GmbH;  
Participant of the CBA Aachen 2021*

## 2019

*"The FIR analyzed our initial situation in partnership, efficiently and in great detail and derived the right steps for a sustainable optimization of our processes and IT landscape."*

*Dr. Donald Weir, CEO Business Unit Service,  
thyssenkrupp AG;  
Project "Optimized Service Processes through  
smart information logistics"*



# 2018

*"Using FIR's 3-phase concept we have selected an IPS system that optimally reflects the requirements of future users. We can thus perform our maintenance tasks even more efficiently."*

*Waldemar Gawol, Dralon GmbH, Ingenieurtechnik, Werk Dormagen;  
Project: "Selection of an IPS system using the Aachen 3-phase concept"*

# 2017

*"On our way to digitalization FIR supported us by a structured procedure for the analysis of manual program planning and developed a performant assistance system for the far-reaching automation of this activity."*

*Michael Schönbeck, Head of Production Paderborn plant,  
Wincor Nixdorf Manufacturing GmbH;  
Project "Optimal utilization of assembly capacity with maximum variant flexibility"*

# 2015

*"By working together with the FIR, we were able to succeed in laying the foundation for a comprehensive and promising corporate strategy. Thanks to the extensive integration of our employees into the process of strategy development the result enjoys a high acceptance throughout our company."*

*Erik von Leeuwentijn, Managing Director  
Pelzer conveyor technology GmbH;  
Project „Definition of a strategy roadmap for the next five years"*

# 2013

*"Within a short project time the FIR was able to provide us with a convincing target process concept, supported by our employees, as well as to point out improvement potential and measures."*

*Dr. Jan Christoph Meyer, Director Product Engineering North America Region,  
LSG Lufthansa Service Holding AG*

