
Institute for Industrial Management

Company Presentation as well as Project Idea “Intelligent Production Systems based on Neuronal Networks”

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Partnering Event for CORNET Research Projects
Vienna, Dezember 2nd 2015

FIR in the Network with its Partner Institutes

**RWTHAACHEN
UNIVERSITY**

- founded in 1870
- approx. 40,000 students
- approx. 10,000 students in mechanical engineering

Laboratories of Machine Tools
and Production Engineering
(WZL) RWTH Aachen

**WZL
RWTHAACHEN**

- founded in 1906
- 600 employees
- approx. 160 research associates

Institute for Industrial
Management (FIR)

fir an der
RWTHAACHEN

- founded in 1953
- 130 employees
- approx. 45 research associates

Fraunhofer Institute for
Production Technologies (IPT)

 **Fraunhofer**
IPT

- founded in 1980
- 340 employees
- approx. 160 research associates

The FIR at the RWTH Aachen is open for new project ideas and interested in cooperating with European research partners



Managing Director
Prof. Dr. Volker Stich



Directorate
Prof. Dr. Achim Kampker



Directorate
Prof. Dr. Günther Schuh

Our Business

- Over 40 public funded projects annually
- Over 60 industrial projects annually

Our Topics

Department Service Management

- Service Engineering
- Lean Services
- Community Management

Service Science
InnovationLab

Department Information Management

- Information Logistics
- IT Complexity Management
- Information Technology Management

Smart Systems
InnovationLab

Department Production Management

- Supply Chain Management
- Production Planning
- Production Control

ERP
InnovationLab

Department Business Transformation

- Transformation Strategy
- Transformation Design
- Leadership

Competence-Center Maintenance
Competence-Center IT
Competence-Center Logistics
Competence-Center Services

FIR Principles for the Company of the Future

Information centric

Sustainability

Transformation capability

Integration capability

Real-time capability

Network capability

Flow orientation

Automation

Solution orientation

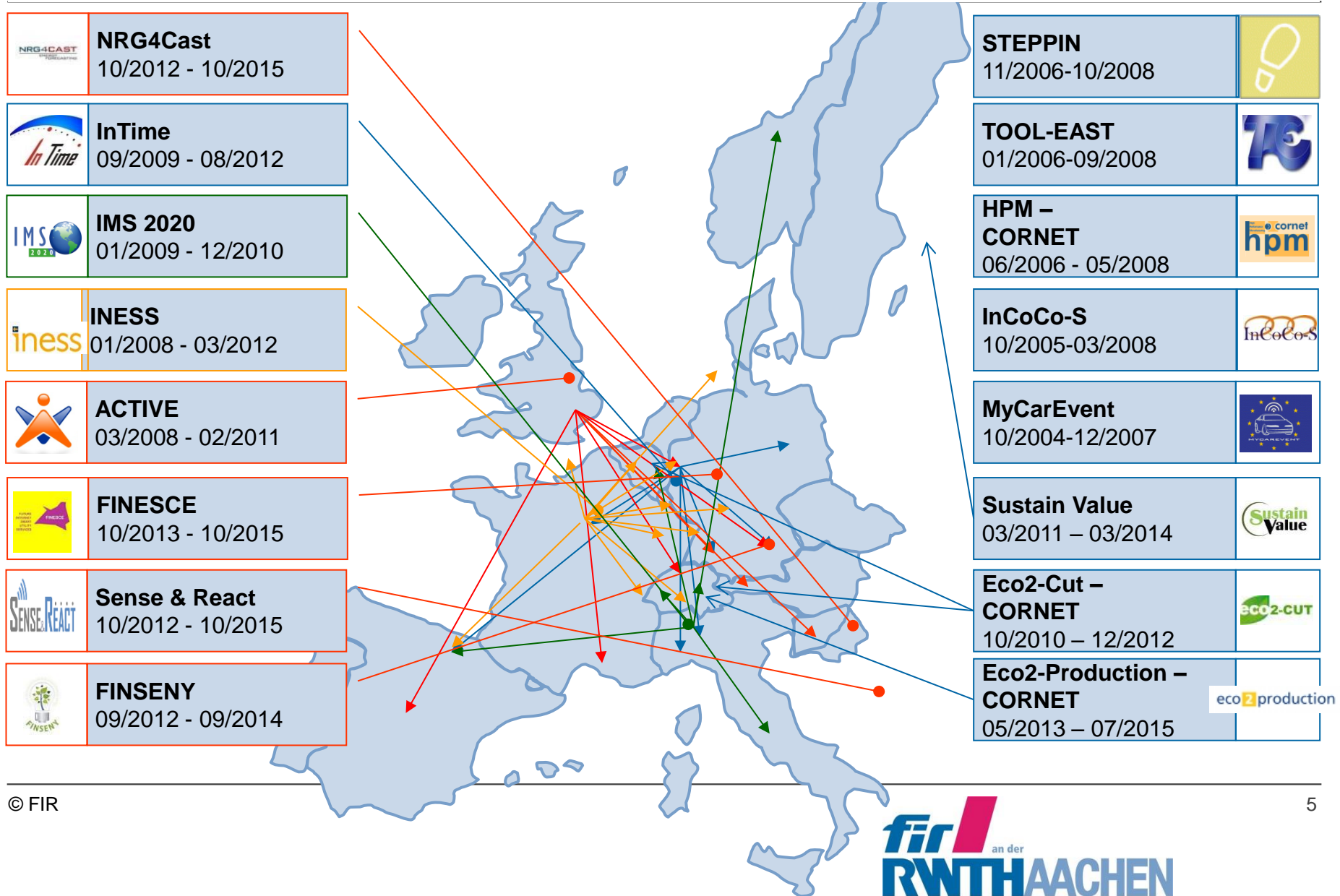
Self optimization

Resource efficiency

Hybridization

Lean Management

We have already gained a lot of experience considering international research projects



Project Idea „Intelligent Production Systems Based on Neuronal Networks“

Challenges

- The impact of deviations (e.g. disturbances, urgent orders) within a production system have not been fully detected, so far.
- Manufacturing companies are not able to implement a dynamic production control since the interconnections between process parameters and deviations have not been identified, yet.

Goals

- A higher planning certainty as well as stable production processes lead to cost savings, energy and resources efficiency and an improved logistical performance.
- In addition, the number of mistakes can be sustainably reduced. Through the optimal planning of resources new flexible models for working hours can be introduced.

Approach

- Requirement analysis including technology selection and definition of KPIs and use-cases.
- Process and information modeling to define which data is needed and to enable a context-sensitive information provision.
- Characterization and structuring of deviations within a production system.
- Mathematical model to optimize production systems based on the neuronal networks approach.



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Thank you for your attention.