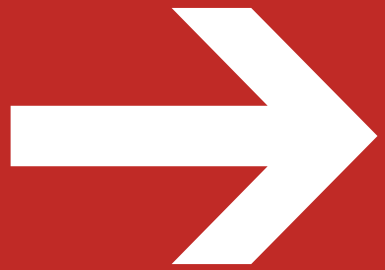
Requires Adobe Reader Version 8 or higher



Agent-Based Solutions for Industrial Environments

composed of Autonomous Mobile Agents, Modular Agent Platforms, and Tuple Spaces

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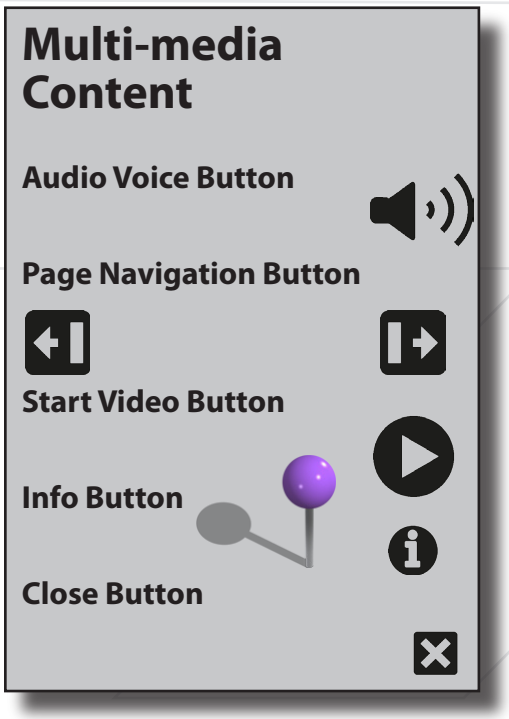
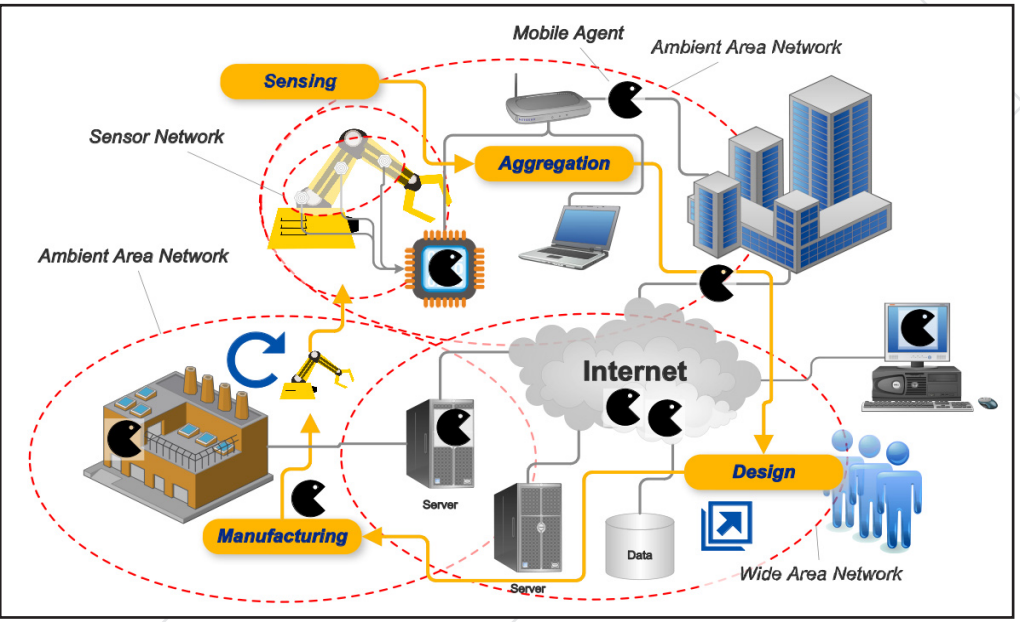
CONTENTS



INDUSTRIAL ENVIRONMENTS



From Design to Products

Modern industrial processes consists of large-scale networks and they are more and more integrated in cloud-based design and manufacturing environments.

Cloud-based manufacturing with a closed-loop perceptive design process can be partitioned in sensing, aggregation, and application layers with large-scale and massively distributed information processing systems.

Products can provide perceptive information collected during lifetime and at run-time, which is used to improve design and manufacturing.

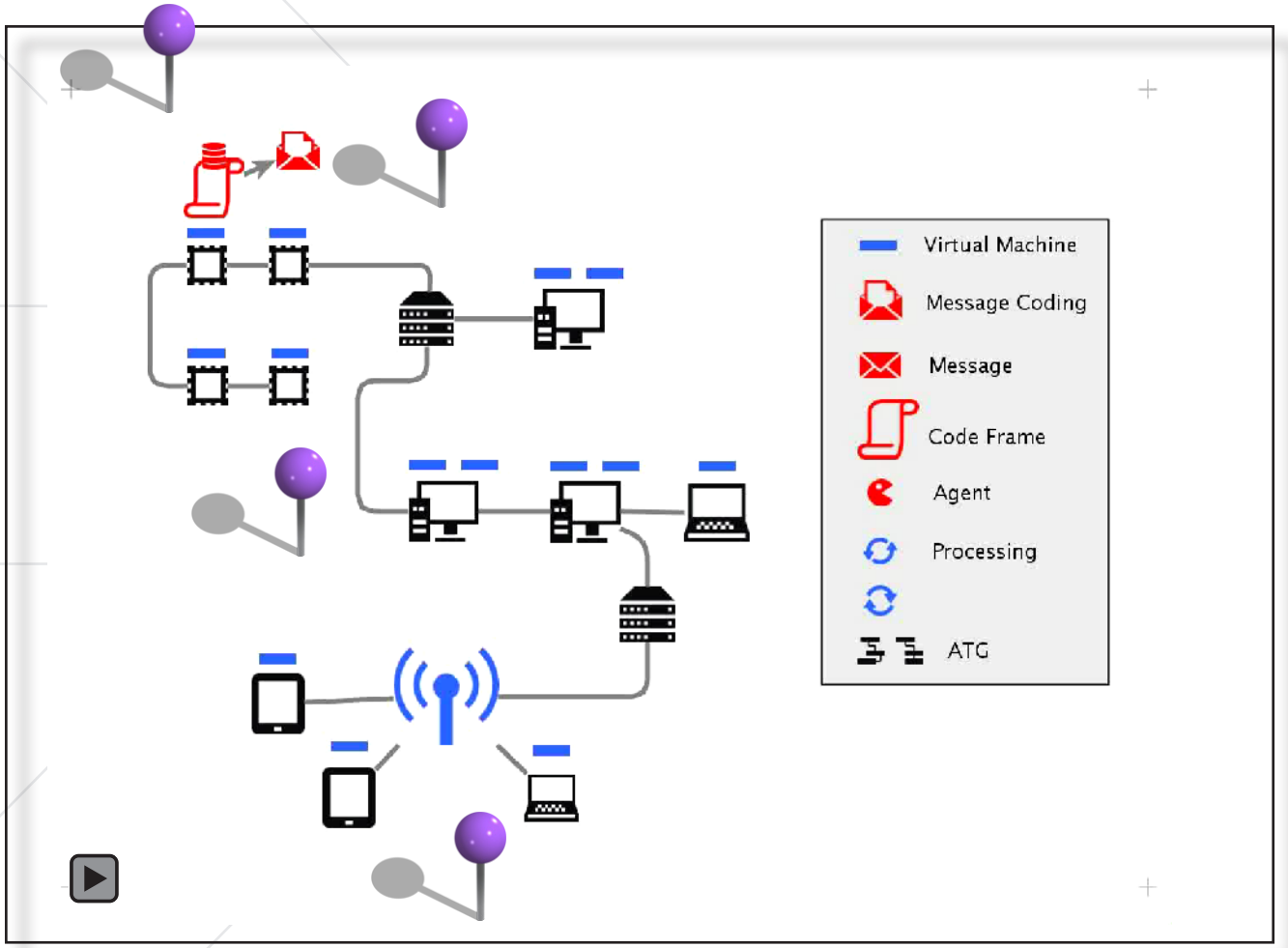
Sensing

Aggregation

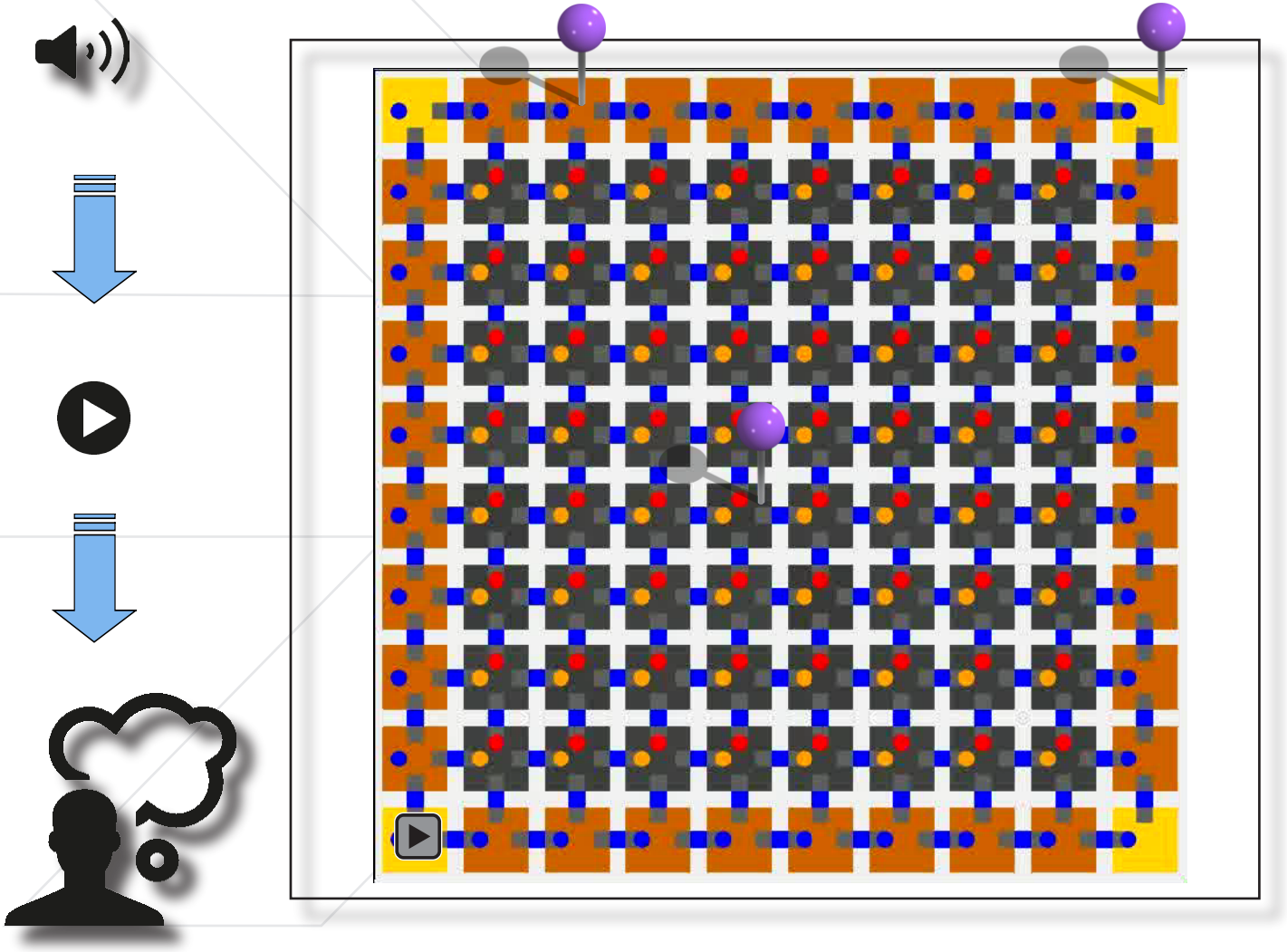
Application

INDUSTRIAL AGENTS

MOBILE AGENTS



SELF-ORGANIZING AGENT SYSTEMS



ABOUT THE AUTHOR

Stefan Bosse

Research experience and project leadership in the fields:

- **Development and design of Sensorial Materials**
- **Parallel and distributed data processing systems with mobile multi-agent systems.**
- **Agent-based Systems, Agent Processing Architectures, Agent Programming Languages, Agent-on-Chip Design**
- **Cloud Computing, IoT**
- **Sensor Networks with embedded systems**
- **Hardware Design and Synthesis**
- **Sensor Signal Processing**

Stefan Bosse studied physics at the University of Bremen. He received a Doctoral Degree (Dr. rer. nat.) in physics in the year 2002 at the University of Bremen.
In the year 2004 he joined the Department of Mathematics & Computer Science and the working group robotics. He works as a senior researcher and lecturer. Since 2002 his scientific work focuses on parallel and distributed systems, data processing in large-scale sensor networks with multi-agent systems, material-integrated sensing systems, digital circuit design, compiler construction, and general artificial intelligence.
He teaches several courses at the University of Bremen in fundamental computer science and in selected advanced topics covering the design of digital logic data processing systems, parallel and multi-agent system design, high-level synthesis, and material-integrated sensing systems with a high interdisciplinary background.

FURTHER READINGS

[1] **Bosse, S.,** *Agent-based Solutions for Industrial Environments composed of Autonomous Mobile Agents, Modular Agent Platforms, and Tuple Spaces*, **In Proceedings of the 2nd Int. Electron. Conf. Sens. Appl., 15–30 November 2015; Sciforum Electronic Conference Series, Vol. 2, 2015 , S5001; doi:10.3390/ecsa-2-S5001** [PDF]

[2] **Bosse, S.,** *Unified Distributed Computing and Co-ordination in Pervasive/Ubiquitous Networks with Mobile Multi-Agent Systems using a Modular and Portable Agent Code Processing Platform* **(Conference), The 6th International Conference on Emerging Ubiquitous Systems and Pervasive Networks (EUSPN 2015), Procedia Computer Science, Berlin, Germany, 27-30.9.2015, 63, Procedia Computer Science Elsevier, 2015, DOI:10.1016/j.procs.2015.08.312.** [PDF]

[3] **Bosse, S.,** *Design and Simulation of a Low- Resource Processing Platform for Mobile Multi-Agent Systems in Distributed Heterogeneous Networks* **(Inbook) Béatrice Duval, Herik, Jaap van den, Loiseau, Stephane, Filipe, Joaquim (Ed.): Agents and Artificial Intelligence (LNAI 8946), Springer, 2015, ISBN: 978-3-319-25209-4, DOI:10.1007/978-3-319-25210-0_5.** [PDF]

[4] **Bosse, S.,** *A Unified Distributed Computing Framework with Mobile Multi- Agent Systems and Virtual Machines for Large-Scale Applications: From the Internet-of-Things to Sensor Clouds* **(Conference) Annals of Computer Science and Information Systems Volume 6, Position Papers of the 2015 Federated Conference on Computer Science and Information Systems (FEDCSIS), Lodz, Poland, 13 - 16 Sep, 6, 2015, DOI:10.15439/2015F252.** [PDF]

[5] **Bosse, S.,** *Processing of Mobile Multi-Agent Systems with a Code-based Agent Platform in Material-Integrated Distributed Sensor Networks* **(Conference) 1st International e-conference on Sensors and Applications, Section D: Sensor Networks, 2014, 2014, DOI:10.3390/ecsa-1-d010.** [PDF] [Presentation]