

BLOCKCHAIN TECHNOLOGY IN SUPPLY CHAIN MANAGEMENT

Blocknet

BlockChain Network Online Education for interdisciplinary European Competence Transfer



Blockchain Europe

The project to establish the European Blockchain Institute in North Rhine-Westphalia



Image of Gerd Altmann on Pixabay



WE ARE BLOCKCHAIN EUROPE

RESEARCH | APPLICATION | NETWORK



Supported by the Ministry of Economics, Innovation, Digitization and Energy of the State of North Rhine-Westphalia

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Blockchain Europe



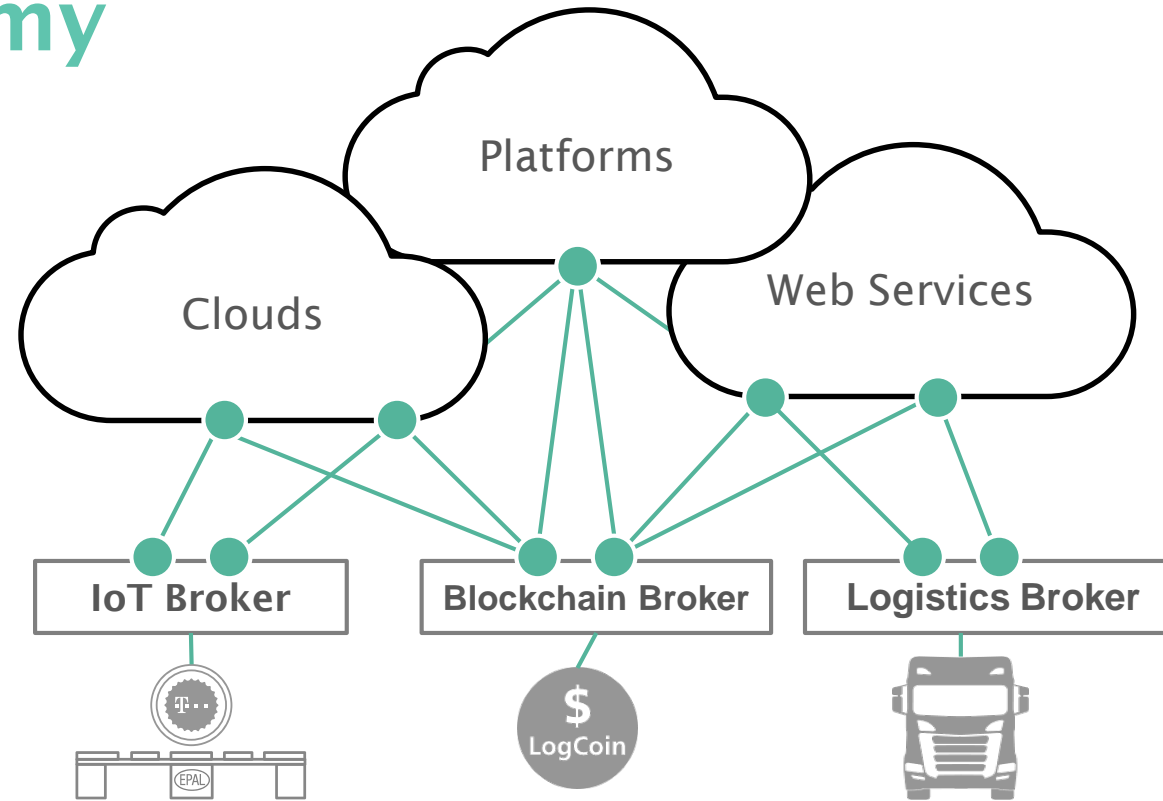
... the project to establish the European Blockchain Institute in NRW

... is a unique place,

- which makes the blockchain technology experienceable
- enables joint innovation through an open source community
- science and economy united in a ecosystem



Blockchain as an elementary component of the Silicon Economy

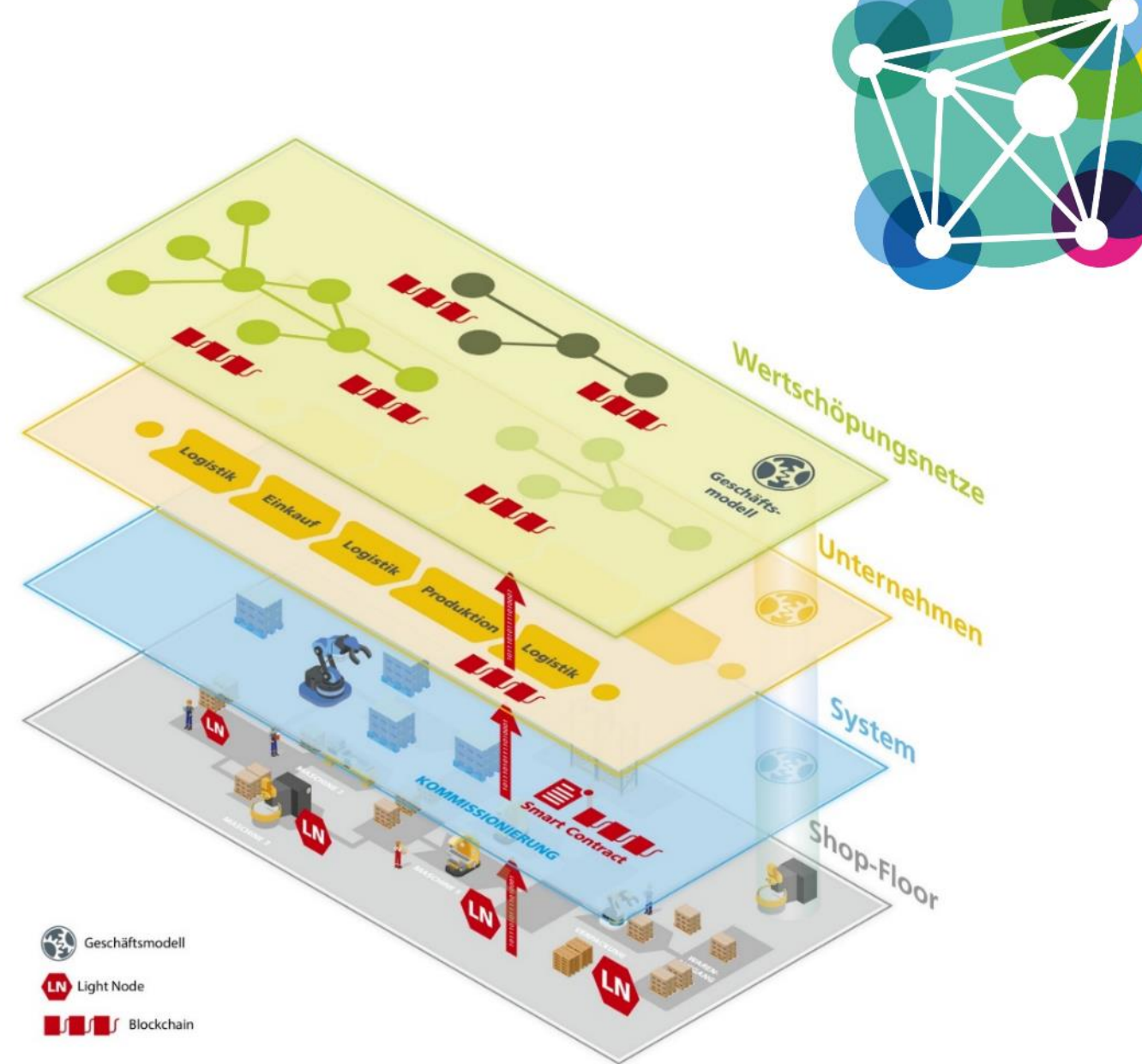


Supply chains become connected and autonomous supply chain ecosystems

Blockchain on all levels

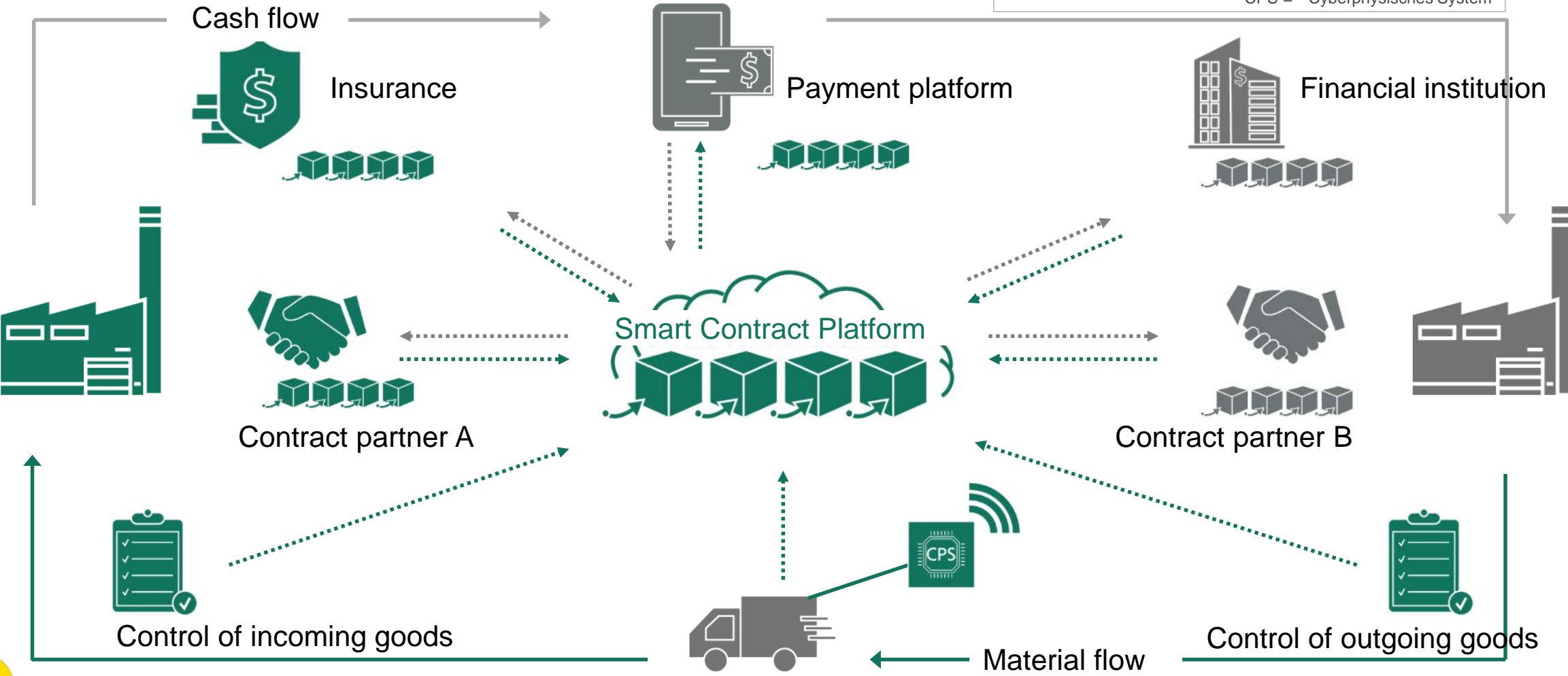
Holistic view and application of the blockchain technology:

- Shop Floor
- Production System
- Company
- Value-Added Network



What will the future look like...

	Blockchain	WA = Warenausgang
	Informationsfluss	WE = Wareneingang
		CPS = Cyberphisches System





Let's go!

The future with Blockchain

The contribution of BLOCKCHAIN EUROPE:
Innovative research and the establishment
of the European Blockchain Institute NRW



Planned Products and Solutions



E-Wallet
for the representation
of company values
using tokens

Blockchain Devices
for the integration of
material, information
and financial flow

Guidelines & Concepts
from concrete
application cases
(customs &
dangerous goods)

Smart Contract Library
for process
automation

Open Source Components
as blueprint for
blockchain
applications in
companies

**BLOCKCHAIN
EUROPE**

Business models
based on blockchain
technology



Insight into the project contents

How do we do this concretely?



Blockchain-capable IoT Device

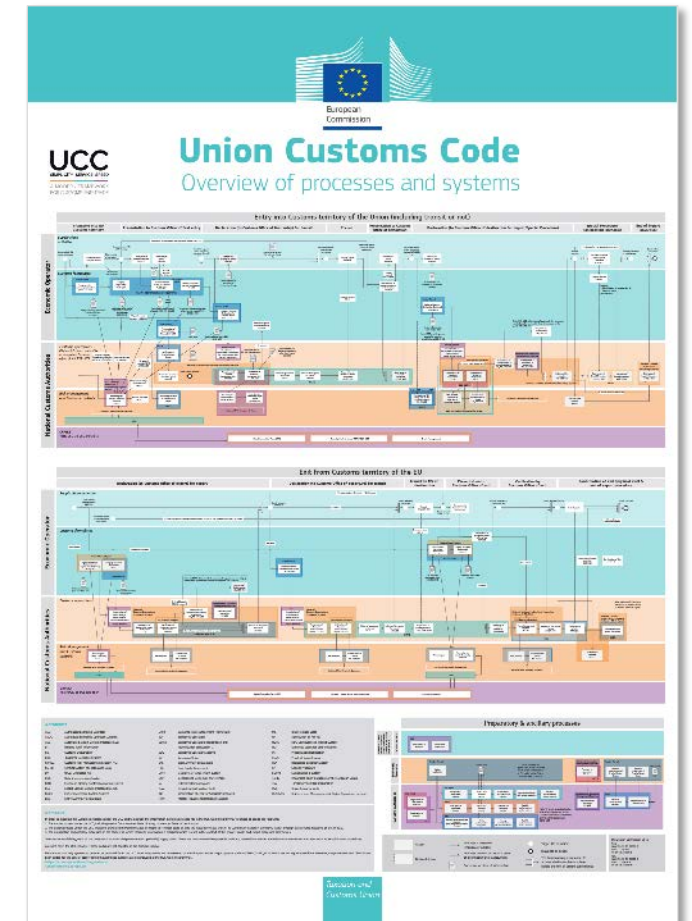


- Advanced prototype for monitoring temperature-sensitive goods such as food, medicines or vaccines along global supply chains
- Real-time data acquisition and autonomous real-time control of supply chains
- Further development of the first prototype into a series of blockchain devices
- Actively negotiate via Smart Contract, trigger transactions and book payments

Blockchain-based ATLAS

Starting point: one Union Customs Code (UCC) - but (still) many national systems

- Customs declaration and handling costly for all involved parties
- Ex- and imports require many process steps & documents and interactions with different institutions
- Heterogeneous level of digitisation and automation



Blockchain-based dangerous goods



Initial situation: Dangerous goods handling today faces a multitude of challenges

- Timeliness of transport data
- Paper-based exchange of sensitive data
- Adherence to many compliance requirements
- Data security and trust between actors

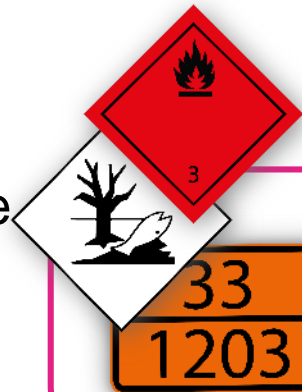


Blockchain-based Tracking of Dangerous Goods

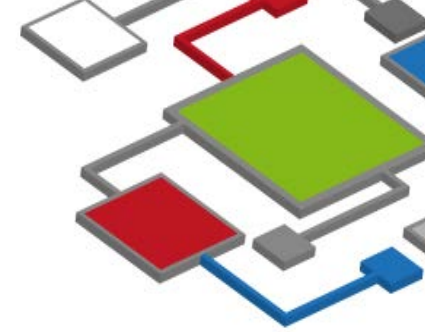


Vision: More efficient and safe handling of dangerous goods for people and the environment

- Compliance requirements are automatically considered
- Information exchange and traceability are supported by the blockchain
- Information security is guaranteed by smart contracts, decentralised communication and cryptographic mechanisms



BlockNet Project and Blockchain Education



Vision: Interdisciplinary Blockchain Education to ensure a successful integration and adaptation

	1	2	3	4	5
	Introduction to Blockchain-Enabled Supply Chain Processes	Supply Chain Management and -Processes	Blockchain Frameworks in Supply Chain Management	Blockchain Projects in Supply Chain Management	Blockchain Integration and Business Value
Level	Basic	Advanced	Advanced	Advanced	Advanced
Time	4h	2h	2h	2h	2h
ECTS	1 ECTS	0,5 ECTS	0,5 ECTS	0,5 ECTS	0,5 ECTS
Lecture Type	Lecture + Exercise	Lecture	Lecture	Lecture	Lecture
Content	<ul style="list-style-type: none"> • Definitions of Supply Chain Management and Basics • Trends in Supply Chain Management • Introduction to Blockchain Technology • Challenges and Potentials • Relevant Blockchain Use Cases 	<ul style="list-style-type: none"> • Historical Development of Logistics and Supply Chain Management • Globalization, Digitization and other Trends • Supply Chain Management Tasks and Challenges • Supply Chain Processes and Process Models 	<ul style="list-style-type: none"> • Introduction to Blockchain in Supply Chain Management • Blockchain Frameworks • Consensus Mechanisms • Challenges and Opportunities for Blockchain in Supply Chain Management 	<ul style="list-style-type: none"> • Blockchain Use Case Overview • Fraunhofer Blockchain Cases • Set-Up of Blockchain Projects and Involved Parties • Interdisciplinarity 	<ul style="list-style-type: none"> • Status of Current Blockchain Projects • Integration Models • Proof of Business Value • Blockchain Costs and Revenues • Methods for Financial Evaluation
Learning Objectives	<ul style="list-style-type: none"> • Understand the main tasks and goals of SCM • Understand the implications of BCT in and for SCM and have knowledge about different use cases • Identify Challenges and Opportunities 	<ul style="list-style-type: none"> • Understand the historical development of SCM and explain objectives • Understand the drivers & effects of trends affecting SCM • Be able to explain SC processes and current challenges 	<ul style="list-style-type: none"> • Understand why and for what reason BCT is used in SCM • Have knowledge about different blockchain frameworks • Be able to explain challenges and opportunities of BCT in SCM 	<ul style="list-style-type: none"> • Understand the key components and involved parties of a BCT-project and how they are set up • Have knowledge about current BCT projects in SCM • Be able to explain different disciplines involved in those projects 	<ul style="list-style-type: none"> • Understand the challenges BCT projects are facing • Be able to identify and explain steps needed for a BCT integration • Identify challenges and opportunities and analyze them



Keep in Touch - Become Part of our Communities




**blockchain
europe**



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Let's stay in touch



<http://project-blocknet.eu/>



www.blockchain-europe.nrw



twitter.com/blockchain1_eu



silicon-economy.com/#newsletter



linkedin.com/showcase/blockchain-europe/

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Contact



Univ.-Prof. Dr. Michael Henke

Blockchain Europe
Fraunhofer IML



Communication and Community Management :

Britta Scherer

britta.scherer@iml.fraunhofer.de

+49 231 9743 413