



 **Intelligent Blockchain+**
Innovation Research Center

AIngle

A DLT technology and the compliance GDPR



Speakers



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Content

- Evolution of DLT
- Evolution of Transactions
- What is AIn9le for first time
-  Using DAG with purpose
- How it Works  with AIn9le
- FASTER tools and GDPR compliance 

SICORP
戦略的国際共同研究プログラム



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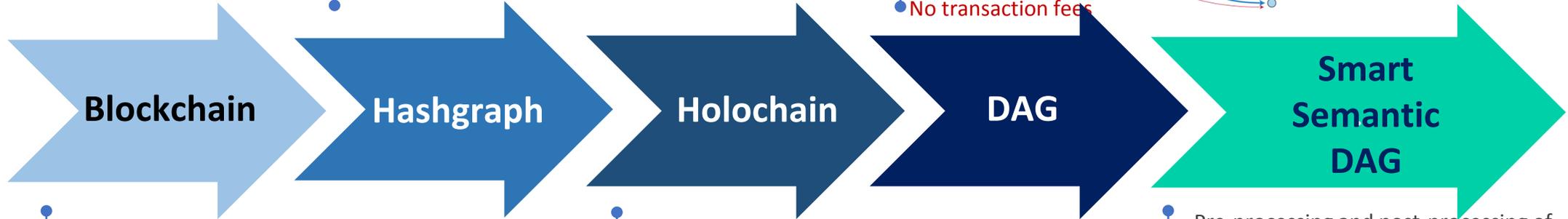
Funded by the Horizon 2020
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833507 — FASTER — H2020-SU-SEC-2018-2019-2020/H2020-SU-SEC-2018
Project funded by: EUROPEAN COMMISSION - Research Executive Agency (REA)



Evolution of DLT

DLT Evolution



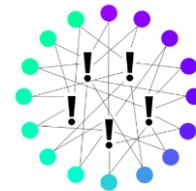
Data structured in blocks
Transactions validated by miners in ecosystem
Scalability issue
Transactions fees



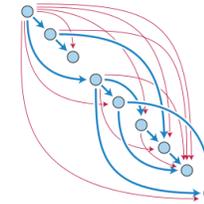
Virtual voting
Gossip about Gossip ensure transactions are validated by **majority**



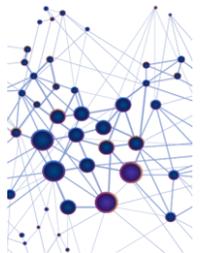
Data distributed among several nodes
No problem in network congestion
Many eyes looking at different problems
Scalability free



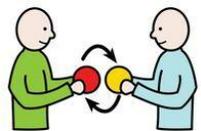
Data structure follows Directed Acyclic Graph
Each transaction is independent
No transaction fees



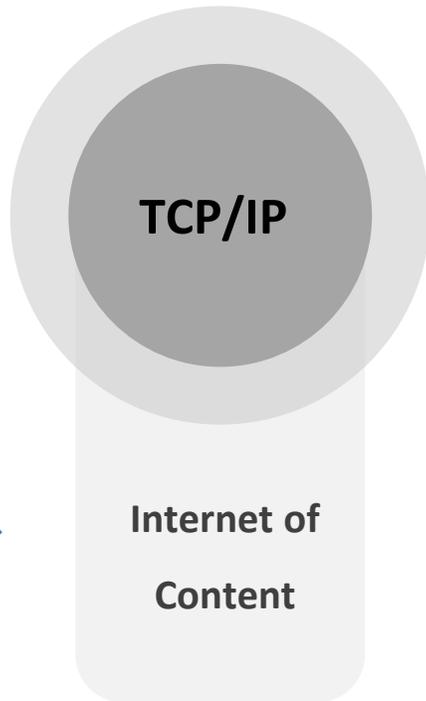
Pre-processing and post-processing of data. ML/DL
Low Resource Requirements
Ternary Programming
More data, more TPS
Offline transactions
No speculative Token
Quantum Resistant
GDPR Ready



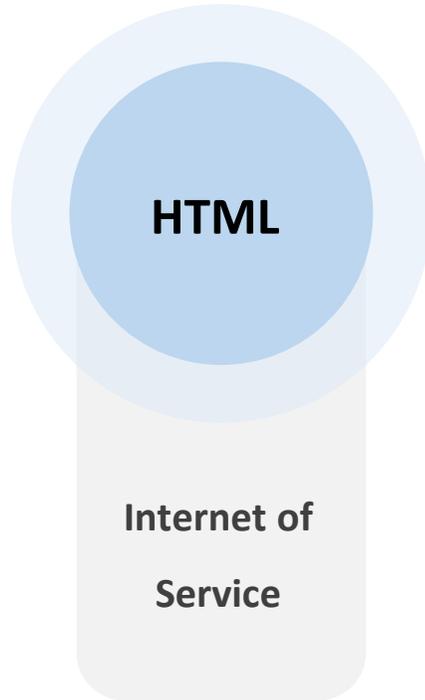
Evolution of Transactions



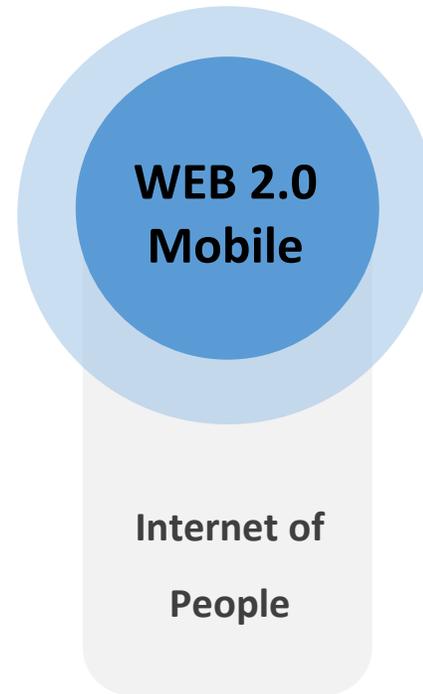
**HAND to
HAND**



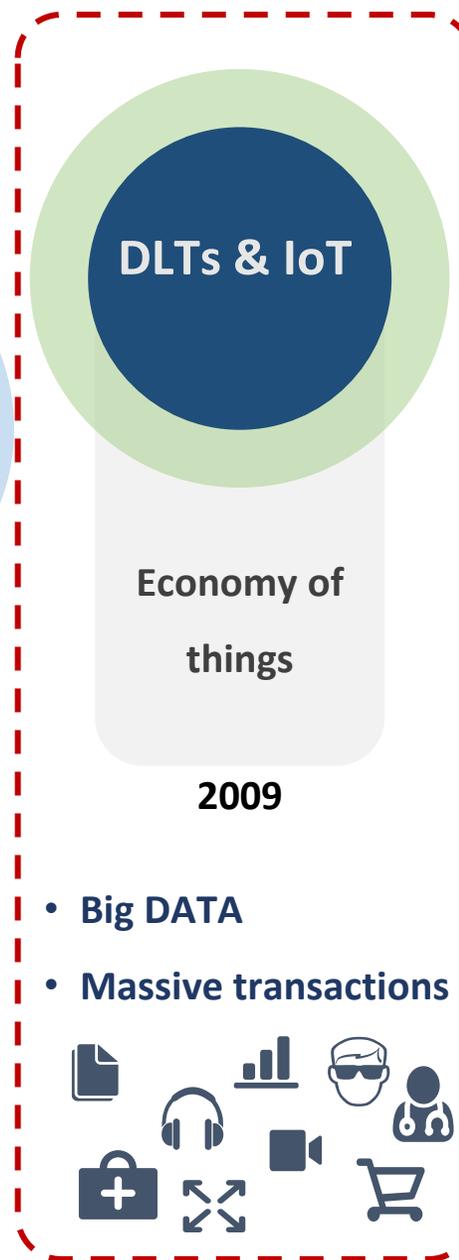
1990



1995



2005



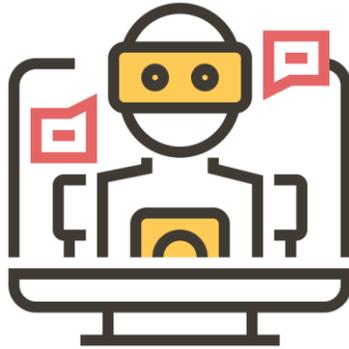
- Big DATA
- Massive transactions

**MACHINE to
MACHINE**



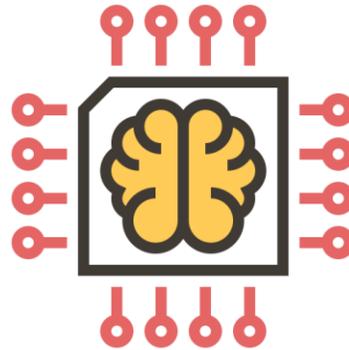
Bridging the Human to Internet of Things

Economy of Things
IoT / M2M



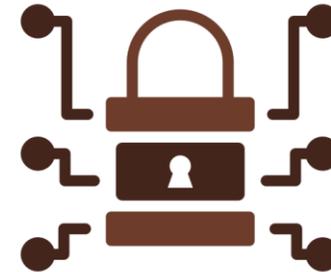
*Devices trade resources
among each other
P2P IoT Data Marketplaces*

Smart Community
Sharing Economy



*Anything with a chip
can be leased*

Citizen Centricity
“GDPR as an opportunity”

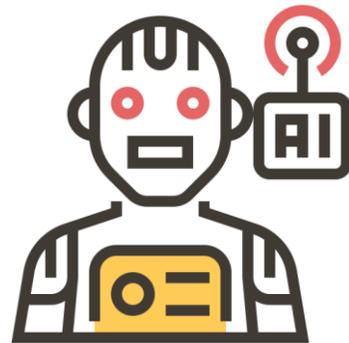


*Citizen can control and share
their personal and user data
securely & privately*

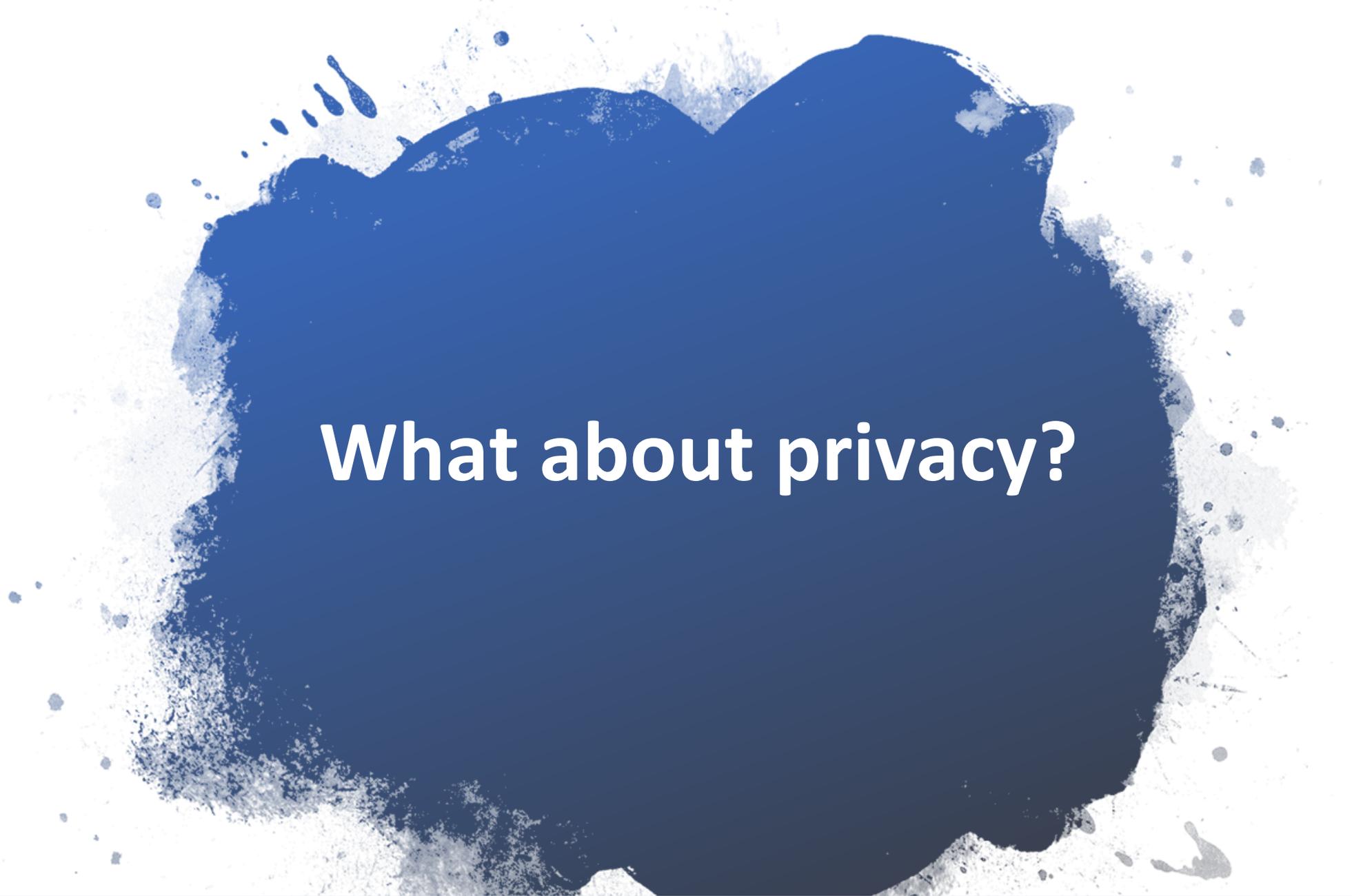
Smart cities



Industrial IoT



- Internet of Things is experiencing an exponential increase in the connected devices, of which the number is expected to be over **25 billion** by 2020 [Gartner Report]
- However, this tremendous market growth raises new challenges such as **security and privacy**, **scalability** and **data processing performance** for IoT system architecture.
- Blockchain is a promising solution, but with some problems.



What about privacy?

Challenges of trust & privacy in the economy of things

DIGITAL TRUST



*Data Integrity
CyberSecurity
e-Privacy*

DATA (STREAM) Monetization



*Zero fee microtransactions
Real time
"Machine ready"*

IOT / M2M enabled BUSINESS MODELS



*Data Driven
Interoperability
Ecosystem play*

GDPR Compliance



General
Data
Protection
Regulation

*Ensure data privacy and the right to
delete personal information*

Introducing AIn9le

Artificial Intelligence DAG Semantic

Angle

AIngle

Characteristic:

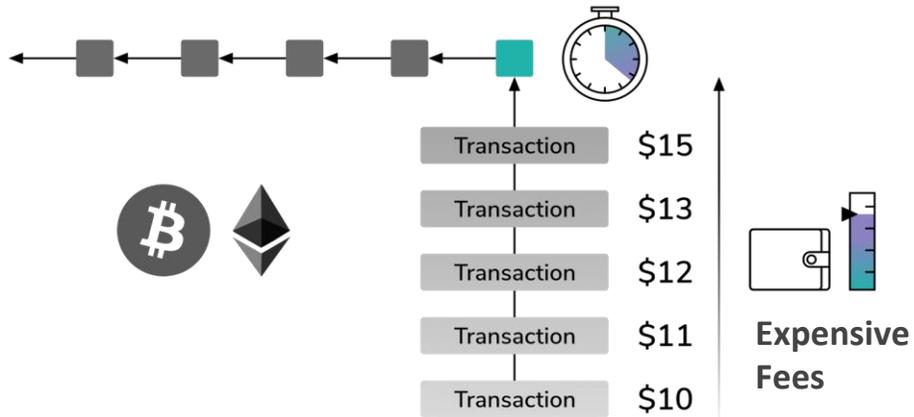
1. Increasing network activity with more nodes decreases transaction settlement times, unlike in a traditional blockchain.
2. The token is designed for the economy of things. The use of the token is focused on the encryption and how it is exchanged by the different nodes that make up the decentralized network. It is not thinking to speculate with the value of transactions
3. No block times or lengthy validation periods. Transactions and data can be published, validated and digested within milliseconds.
4. All data is encoded, enabling secure data transfer, storage and referencing. The data can also be organized in data streams for easier querying, authorization allocation and use.
5. Designed for micro and IoT devices (eg, sensors and microprocessors) to participate, it allows the secure of the data at the source of aggregation. Low energy is required regarding sustainable IoT growth and data proliferation.
6. Devices don't need perfect connectivity and can be validated when connectivity is available.
7. The AIngle is based on a ternary model. It is relevant because the programming is based on ontology, it allows taking advantage of the null results in the decision, which allows making multiple conclusions of operation and creating new relationships in the behavior of the data.
8. An exclusive anonymizing algorithm. It protects the personal data before being processed into the DAG using AI/ML. Thus, it allows compliance with GDPR policies.

Benefit:

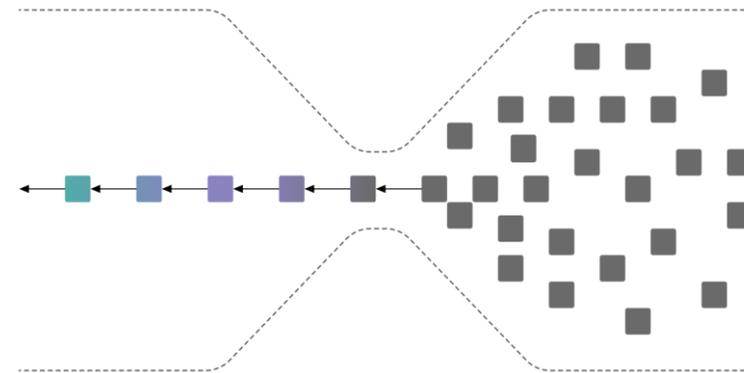
1. High scalability.
2. Zero-fee microtransactions.
3. Real-Time transactions.
4. Secure data transfer or organization.
5. Low resource requirements.
6. Offline transactions.
7. Quantum resistant.
8. GDPR compliance.

Blockchain is not fit for IoT

Slow Confirmations



Consensus Bottleneck



TPS

AlIn9le

12000 - ∞

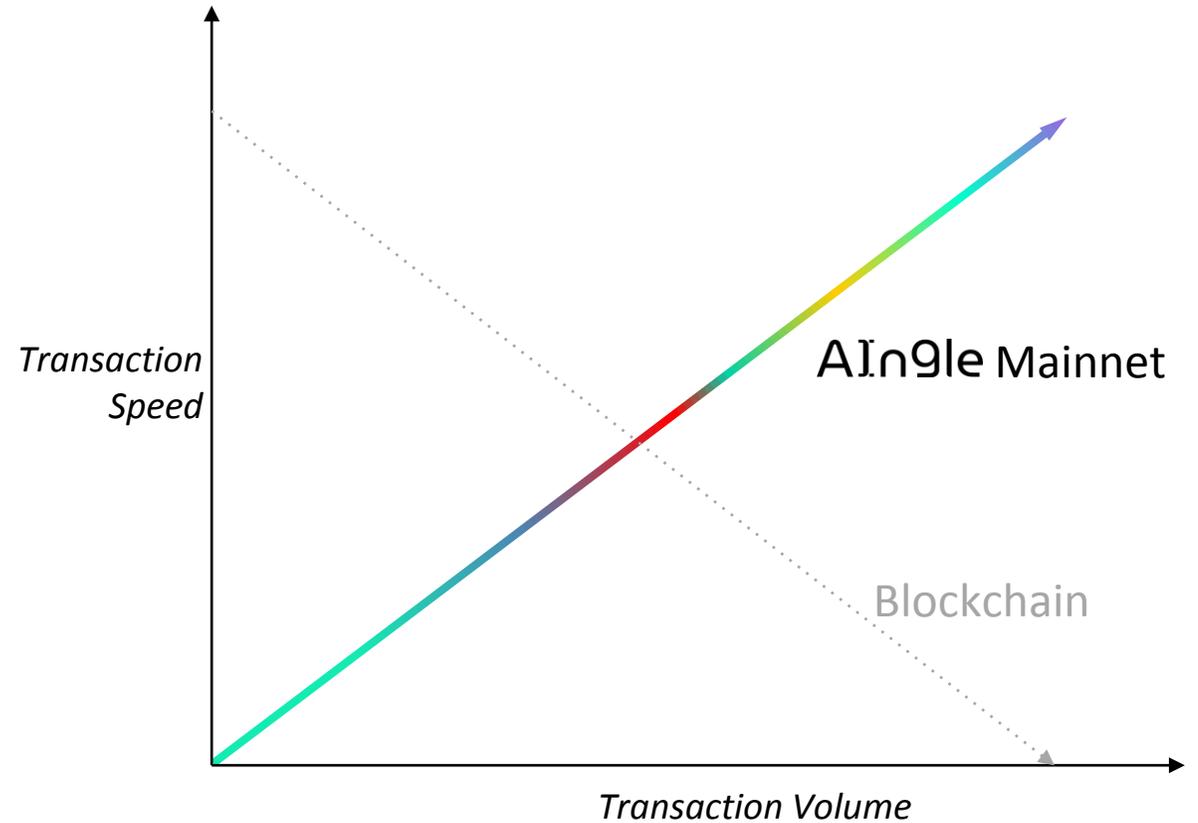
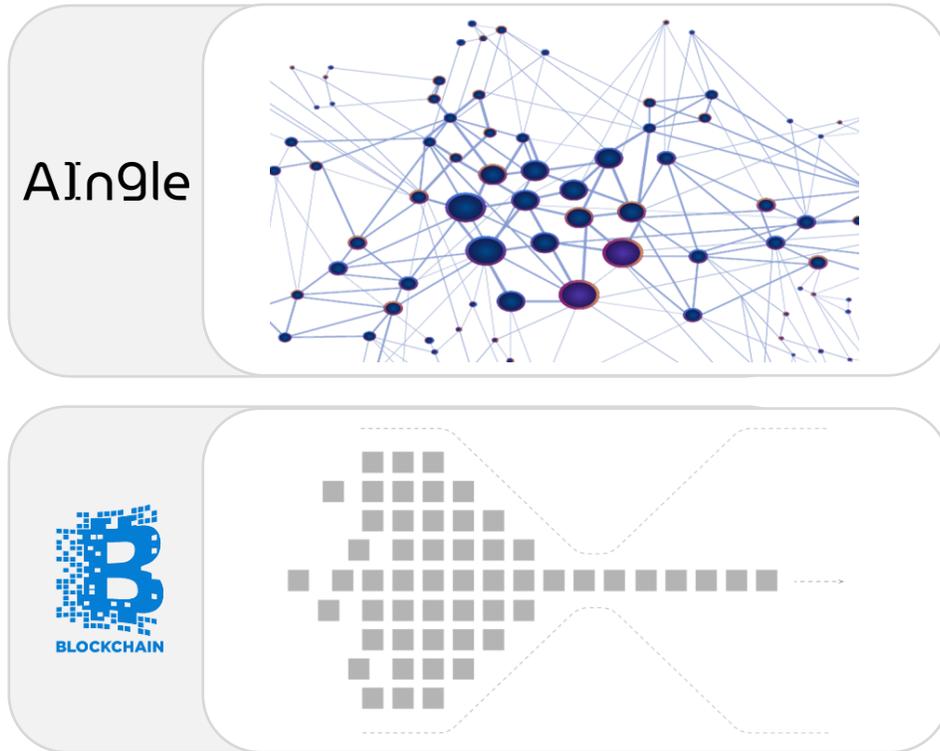


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Blockchain is not fit for IoT

The **Dag scales** with more transactions – **more activity equals more validation**

AIngle vs. Blockchain



FASTER: using a DAG with purpose



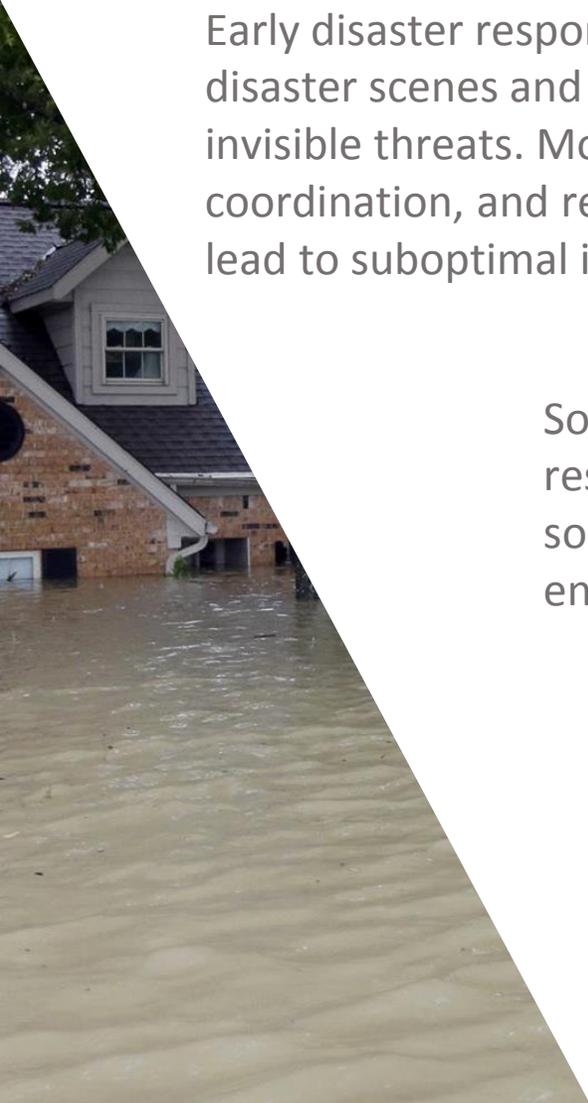


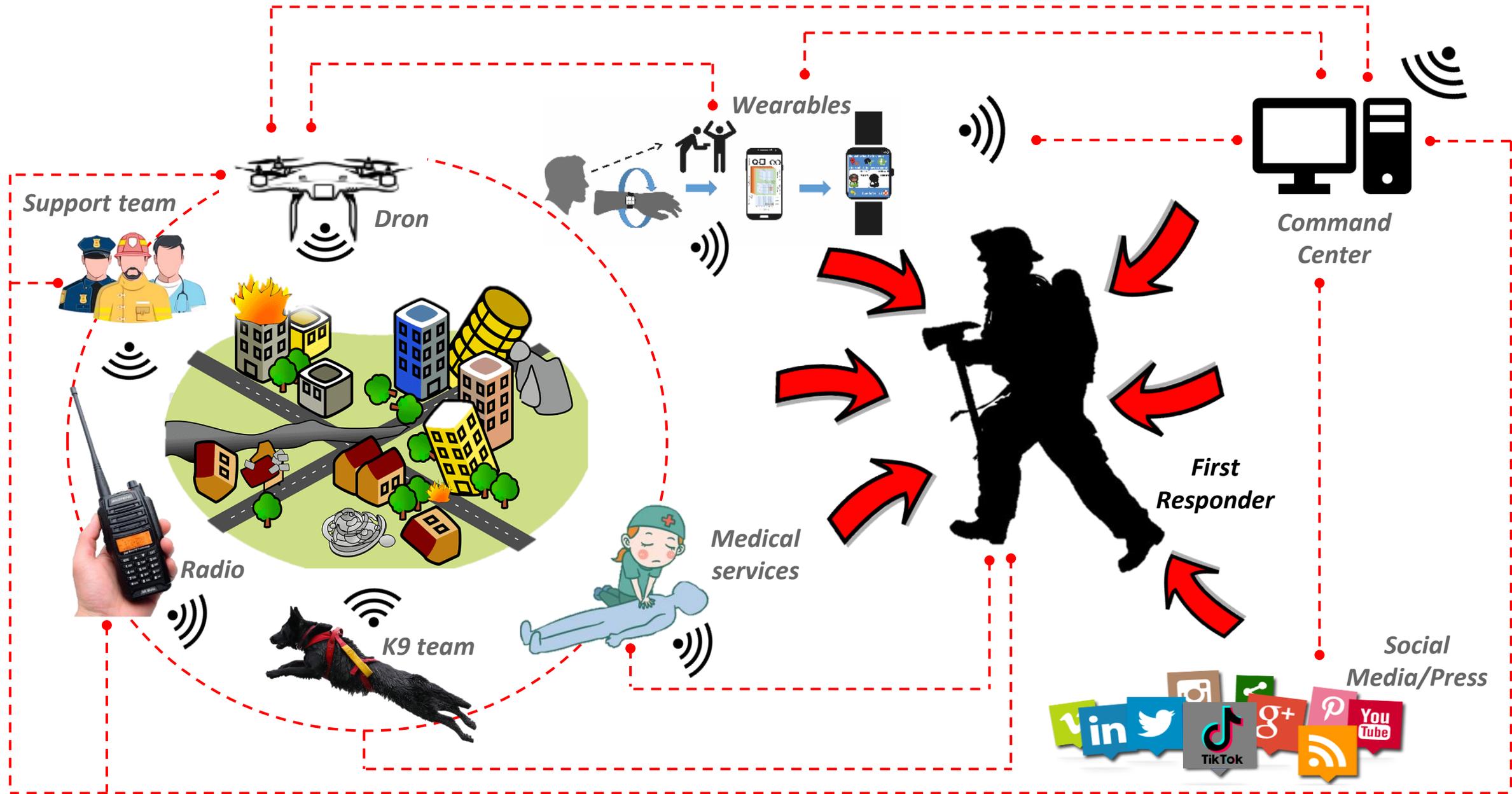
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In Europe and Japan, disasters due to natural phenomena, technical accidents, or human behavior are increasing. Early disaster responders are operating in dangerous disaster scenes and endangered to both visible and invisible threats. Moreover, lack of proper communication, coordination, and resources in such an environment can lead to suboptimal intervention.

So, technological advances must be used to protect disaster responders from multiple unforeseen hazards and provide solutions that can operate seamlessly and efficiently in any environment.





How AIngle works?

How Angle works



It means private information that somebody else is watching

- Patient information
- Disaster's data
- Dron, sensors, mobile, radio, and more

Comparative Blockchain and Angle for IoT Data Treatment

Blockchain

BLOCKCHAIN

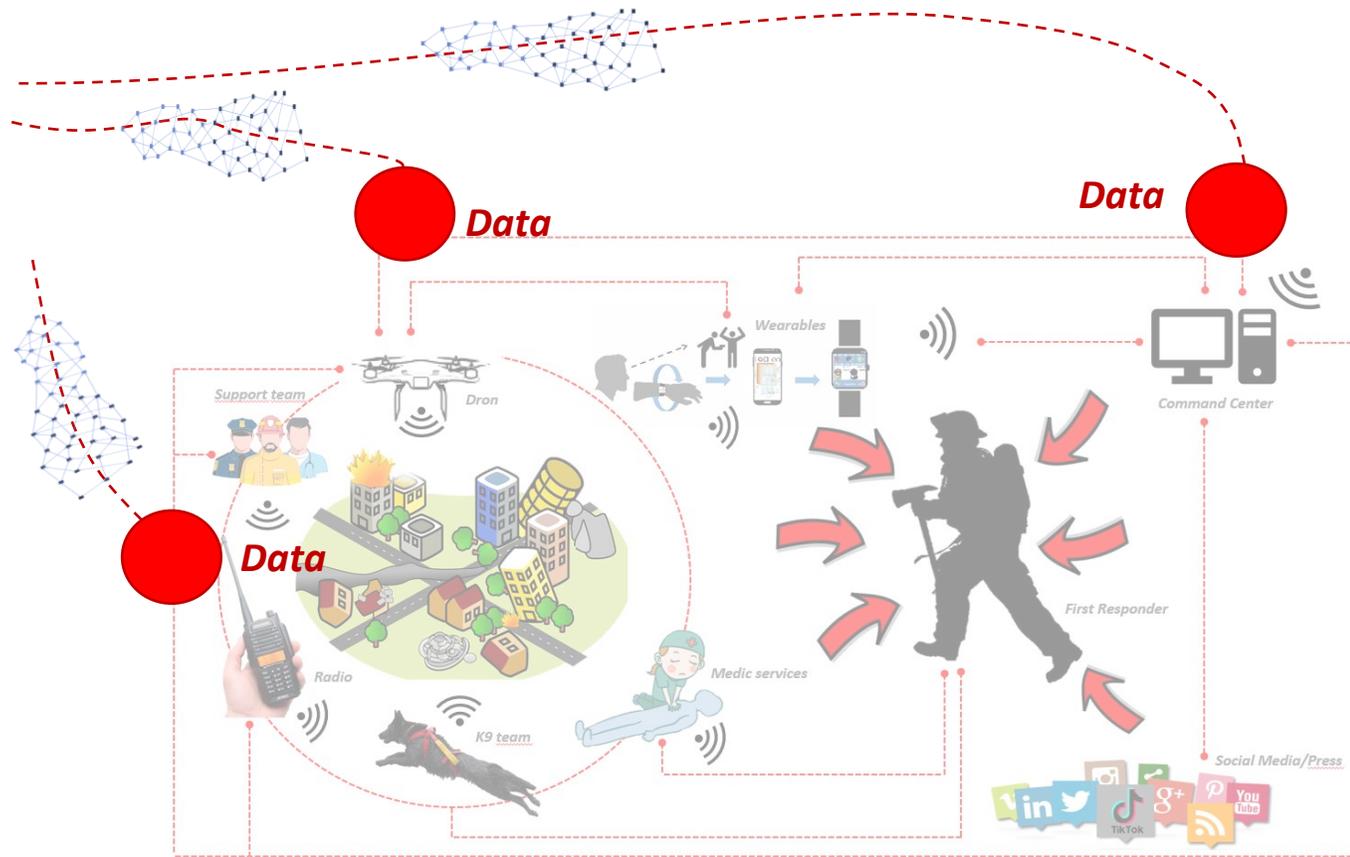
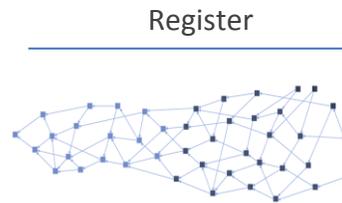
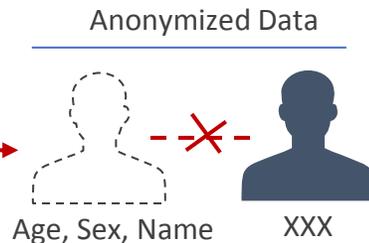
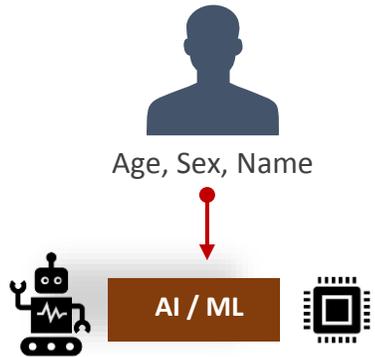
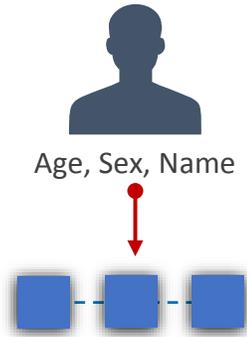


Blockchain create a hash. The miner validate data. It's immutable. It's not possible to delete it

Angle DAG

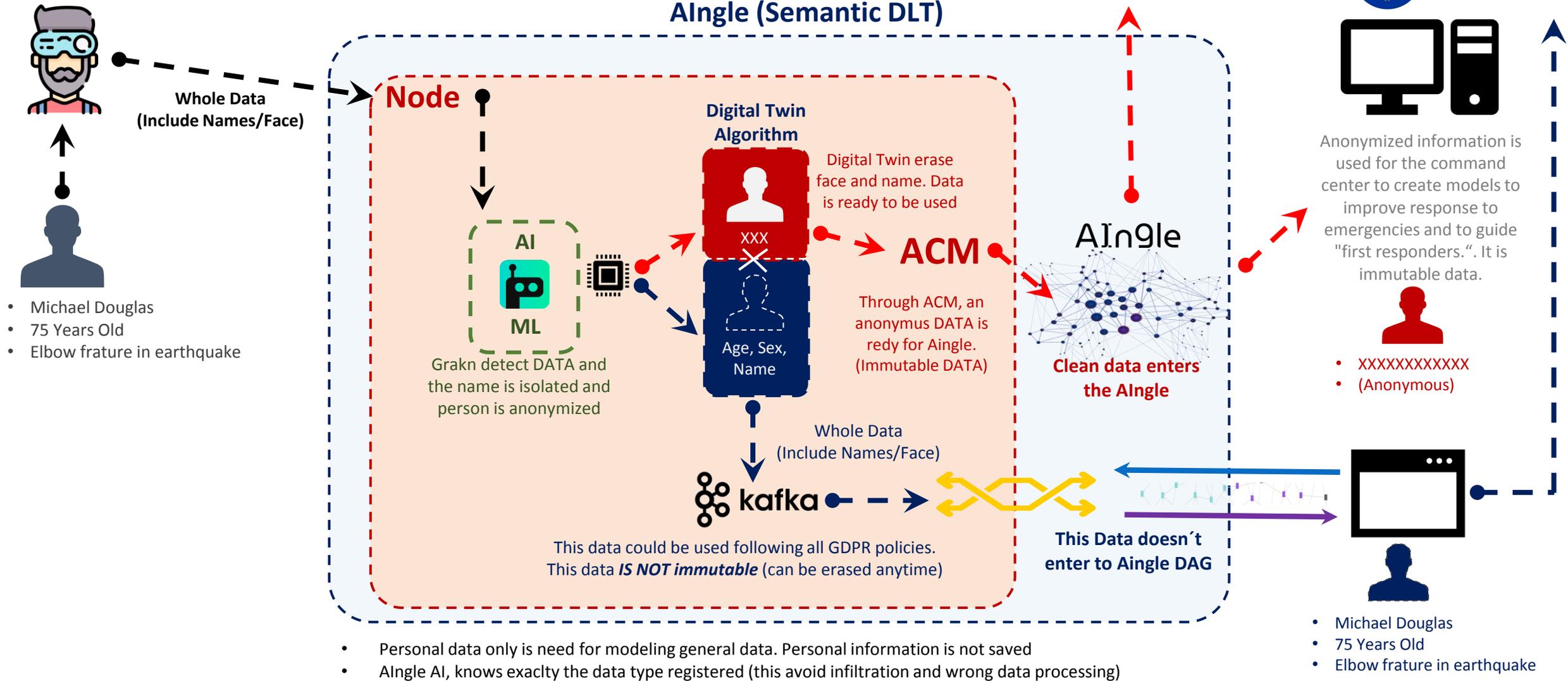


Angle create a "digital twin" before to validate information. It allows to "anonymize" personal information



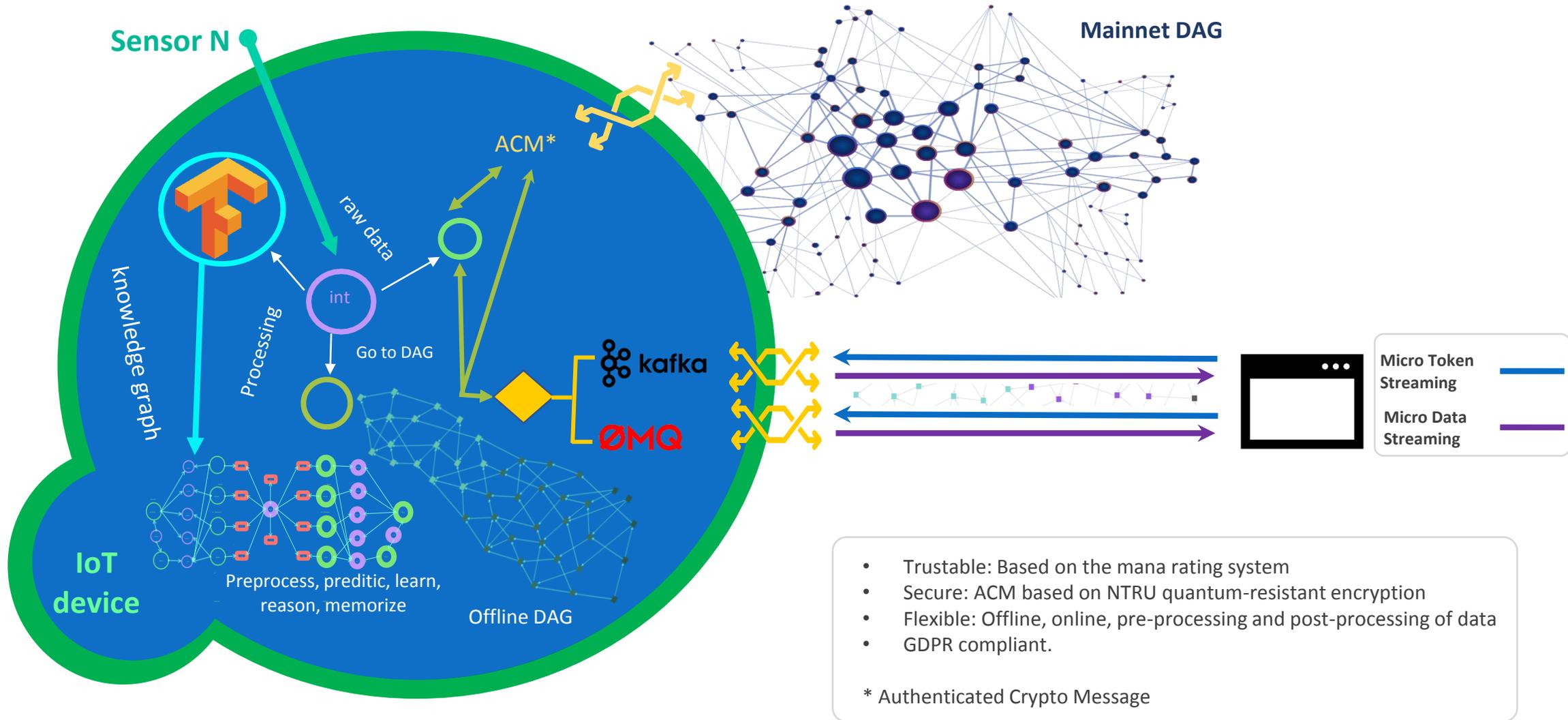
AIngle and GDPR

Anonymizing algorithm



AIngle

- Bundle all transactions in a Directed Acyclic Graph (DAG)
- Completely self-regulating, consensus no longer decoupled
- Low overhead Proof-of-Work prevent resource overconsumption



- Trustable: Based on the mana rating system
 - Secure: ACM based on NTRU quantum-resistant encryption
 - Flexible: Offline, online, pre-processing and post-processing of data
 - GDPR compliant.
- * Authenticated Crypto Message

Potencial challenges:



OBLIVION RIGHT **PRIVACY RIGHT** **DATA SECURITY**

AIngle
CRYPTO

Solutions:





AIngle **DIGITAL TWIN** **QUANTUM CRYPTOGRAPHY** **SECURITY IN INFORMATION**

Alngle create a "twin" hash before to validate information. It allows to "anonymize" personal information

Prevents hacking and quantum attacks avoiding data could be lost or stolen

*Communicate in trusted environment
New smart contracts with micro-payments
Reward for honest participation
Outsourced computation*






STABLECOIN

Token used as communication protocol between all IoT devices. No fees / Scalable

This crypto doesn't like speculation but being useful in facilitating transactions and data exchange.



Conclusions



The evolution of technology has created an ecosystem that forces machines to communicate with each other (M2M), generating a massive volume of information



Blockchain is a type of DLT. It was a disruptive revolution for transactions and processes. But its functionality makes it difficult to use it for massive data interchange.



Angle is a technology that allows to exchange information massively with the benefits of a blockchain but without the problems of scalability and fees.



FASTER is a project with a social sense, which aims to ensure that the "first responders" of an emergency can be safer and, at the same time, be more efficient through the exchange of valuable and secure information in real-time with multiple sources.



Angle contributes to FASTER project the benefit of helping to comply with the GDPR policies by ensuring the anonymization of private information by using artificial intelligence, machine learning working together with a DAG.



For the exchange of information, the Angle will use his own crypto, which will be focused on the operability without fees and being scalable. Furthermore, it will not be speculative.



Thanks