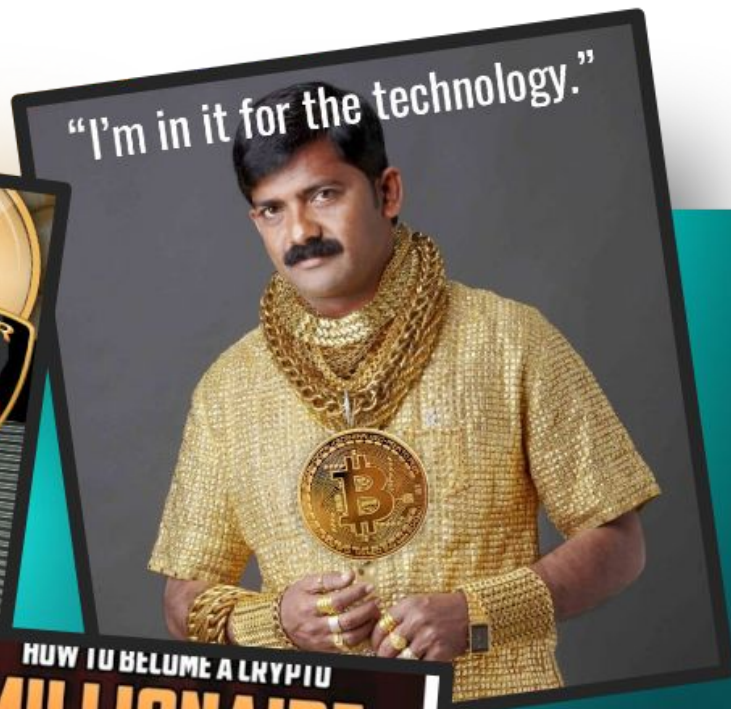




IOTA

Connecting our world to{day,morrow}





# Crossing the Chasm





# Important Puzzle Pieces



Technology



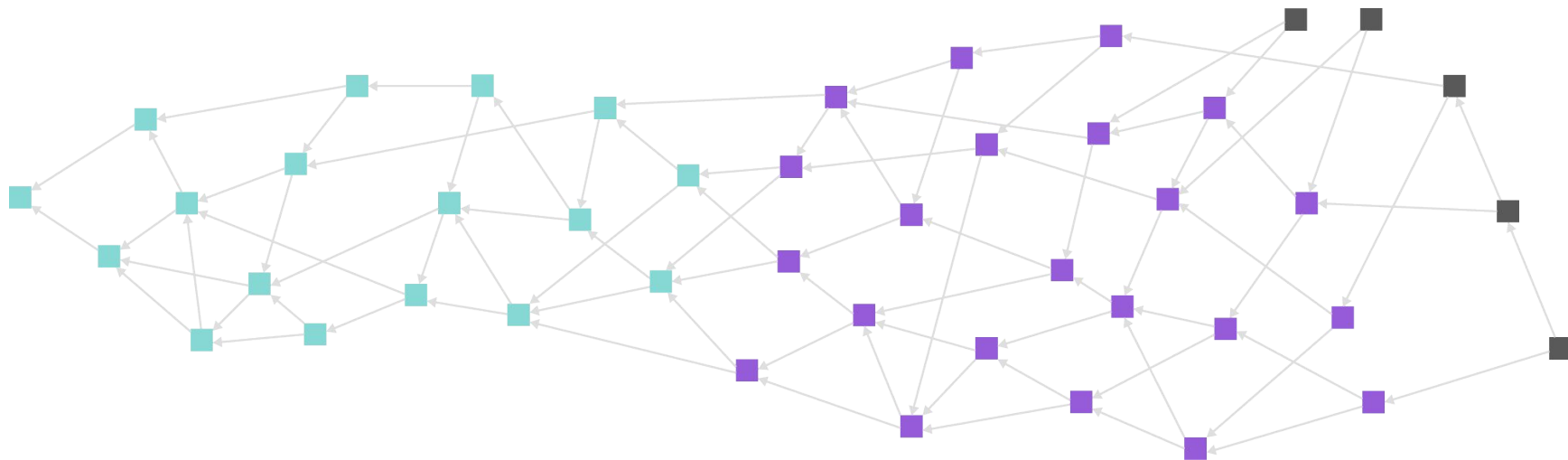
Governance



Ecosystem

# The Tangle

Feeless, Scalable, Quantum-immune



The Tangle is a permissionless peer-to-peer network based on the open source distributed ledger protocol IOTA

# The Tangle

Feeless, Scalable, Quantum-immune

## Machine-to-Machine Payments

Today there is no protocol for machines to pay each other. With distributed ledgers, every machine will be able to have a wallet and they can freely transact with each other.

# The Tangle

Feeless, Scalable, Quantum-immune

## Data Immutability

Feeding data into a distributed ledgers makes it immutable and tamper-proof. Thanks to this data integrity, it is easy to share data with external parties in a verifiable manner.



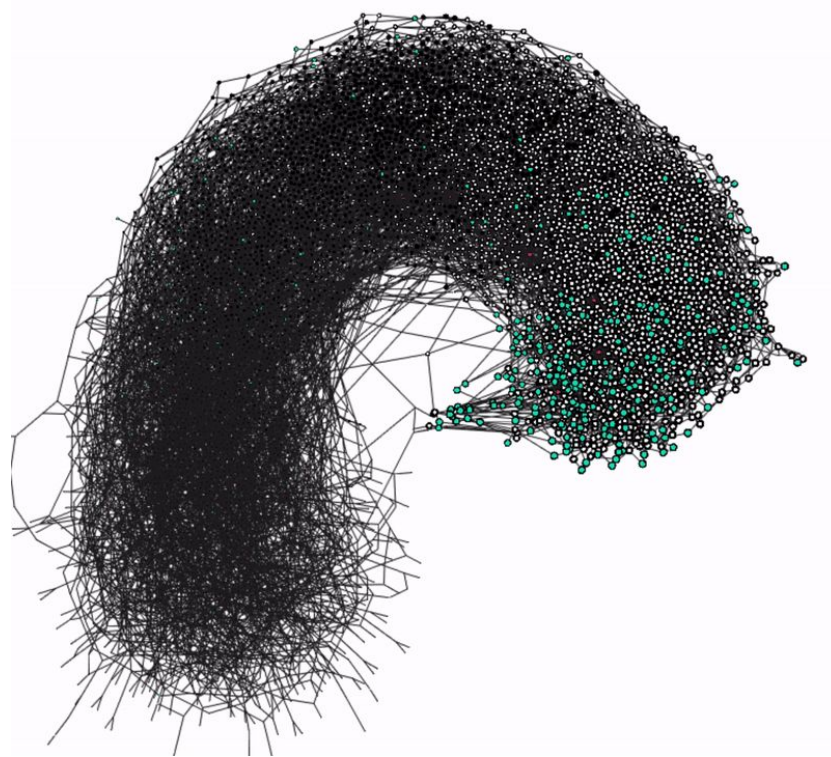
# The Tangle

Feeless, Scalable, Quantum-immune

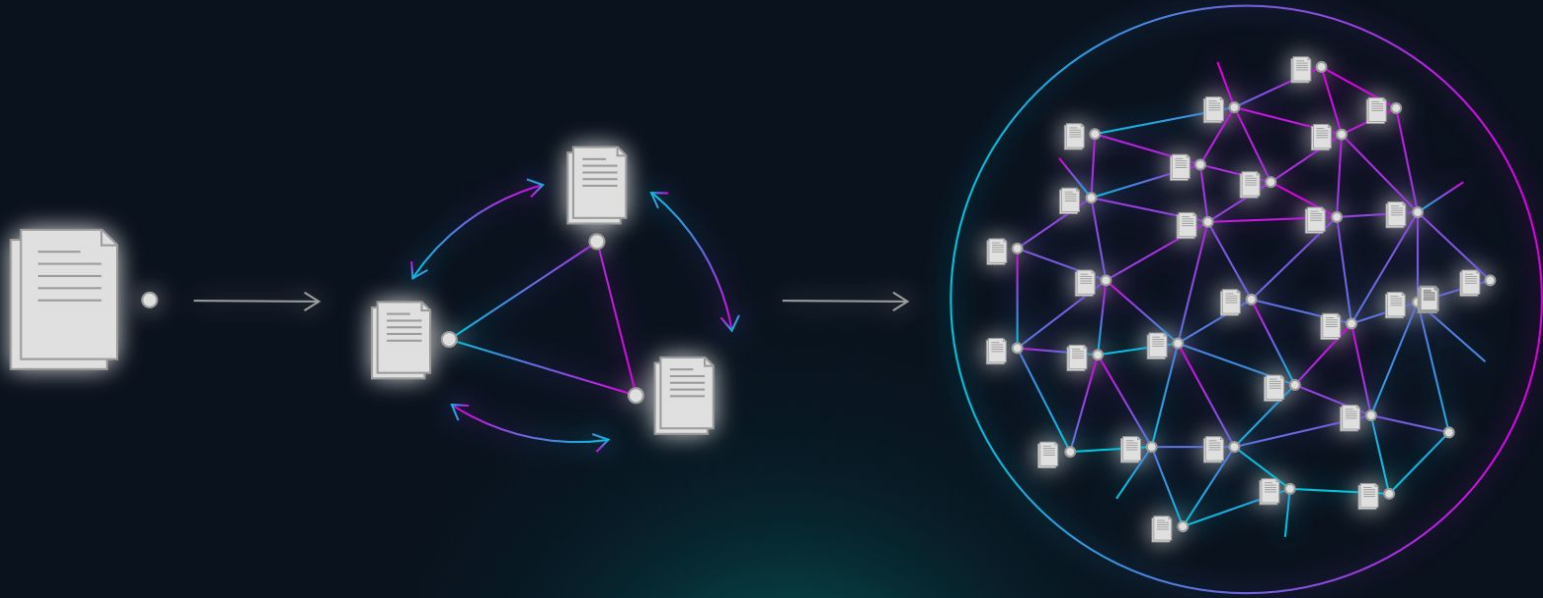
## Permissionless Ecosystems are the Future

Feeding data into a distributed ledgers makes it immutable and tamper-proof. Thanks to this data integrity, it is easy to share data with external parties in a verifiable manner.

# A Healthy Tangle



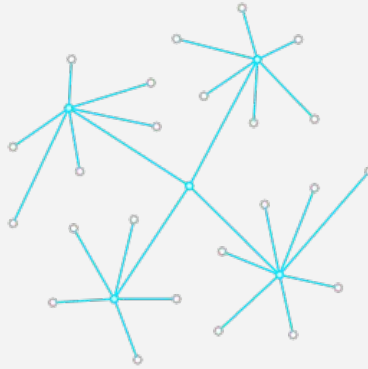
# What are Distributed Ledgers?



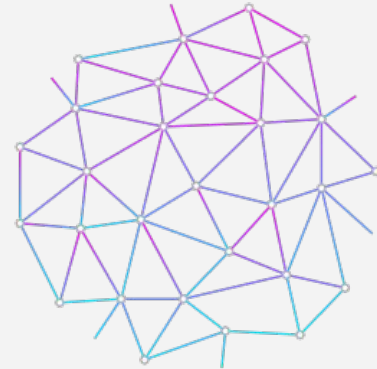
# Networks



Centralized

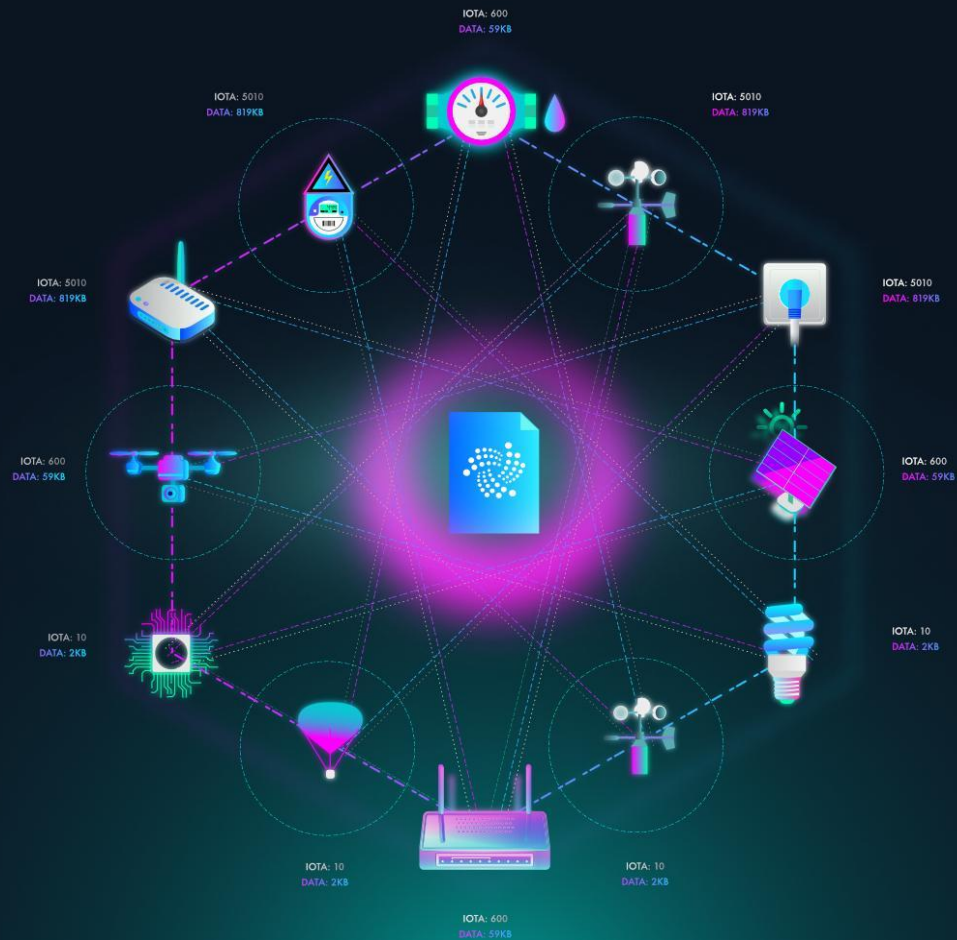


Decentralized  
With Intermediaries

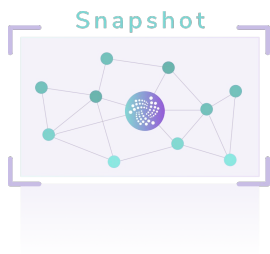


Distributed  
No Intermediaries

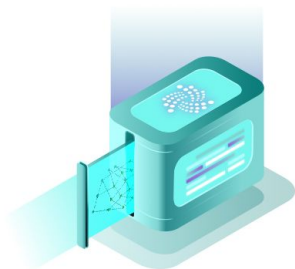




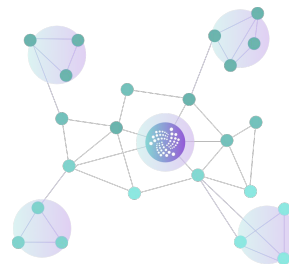
# Milestones Ahead



Local Database  
Snapshots



Permanent Data Record  
PermaNodes



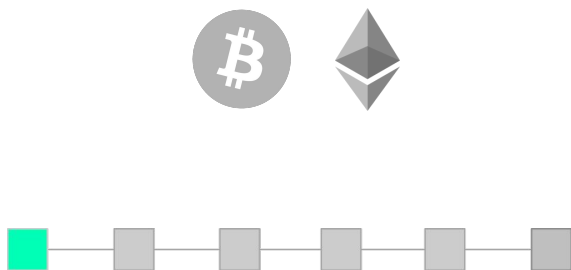
Scaling & Sharding  
Economic Clustering

TURN OFF THE  
COORDINATOR

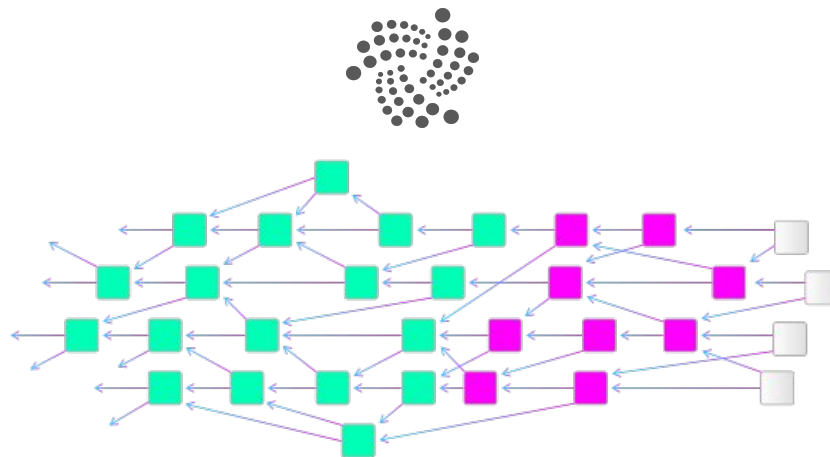
Removing the  
Coordinator



# Blockchain vs. Tangle



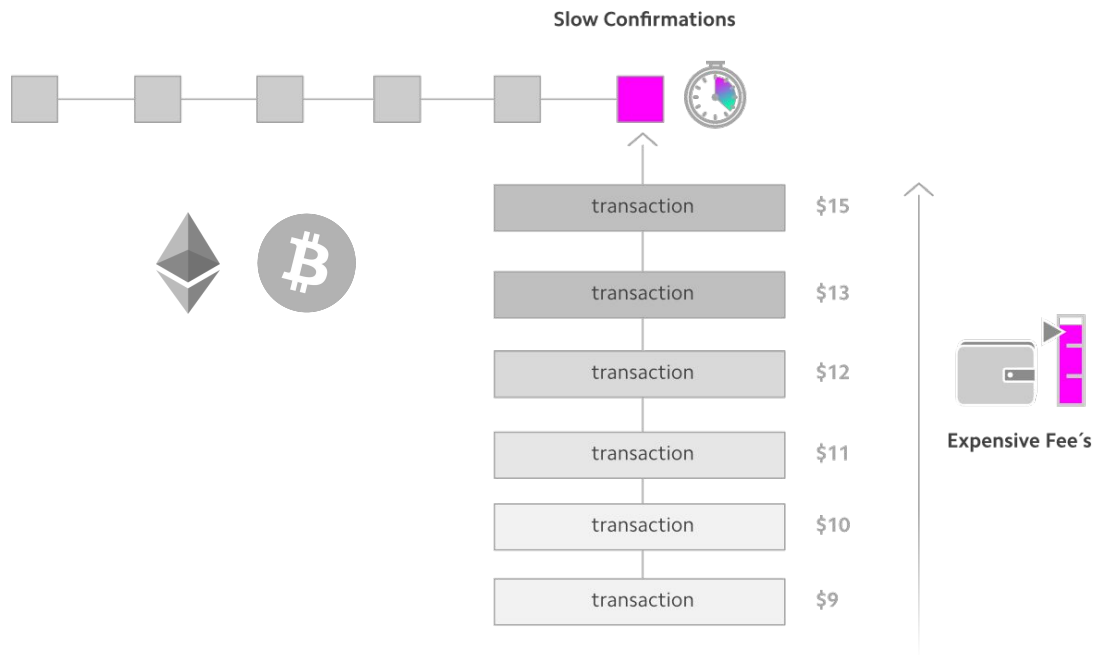
Blockchain



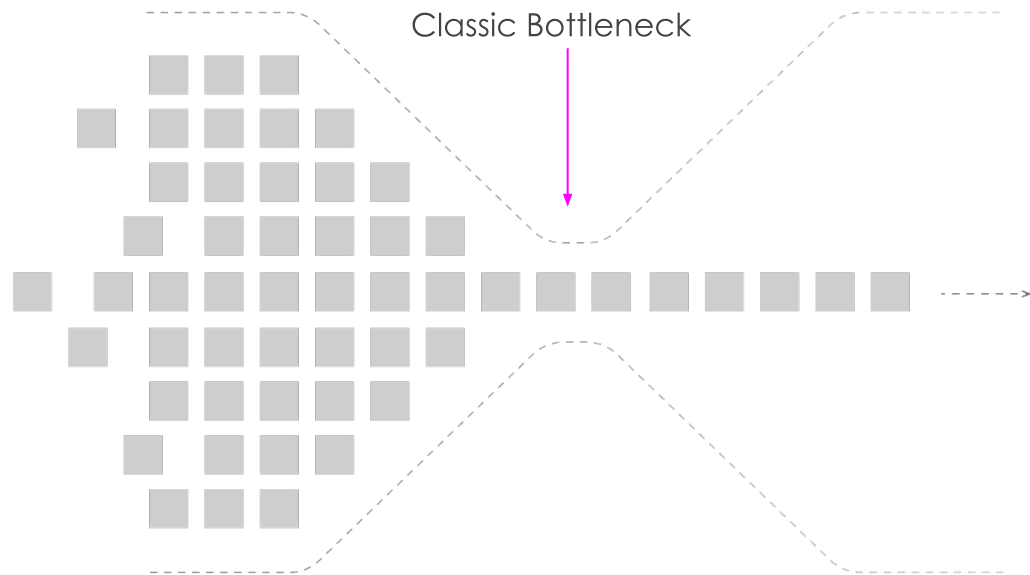
Tangle  
(DAG / Directed Acyclic Graph)



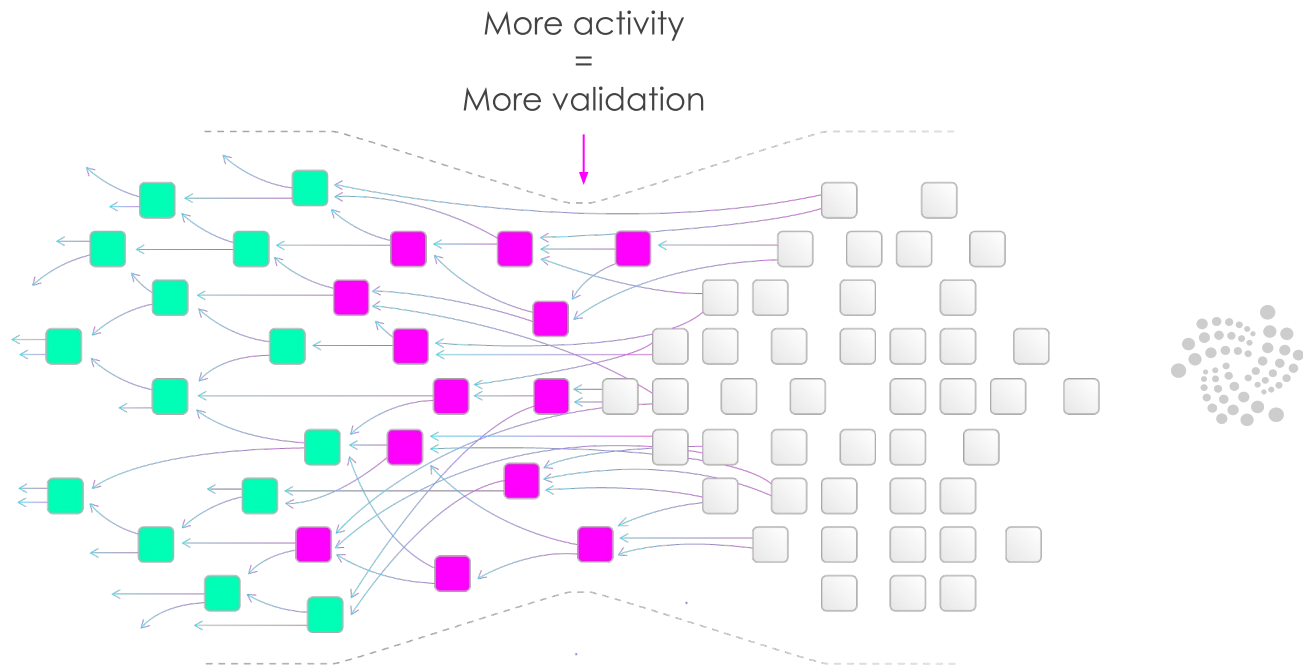
# The Blockchain Bottleneck



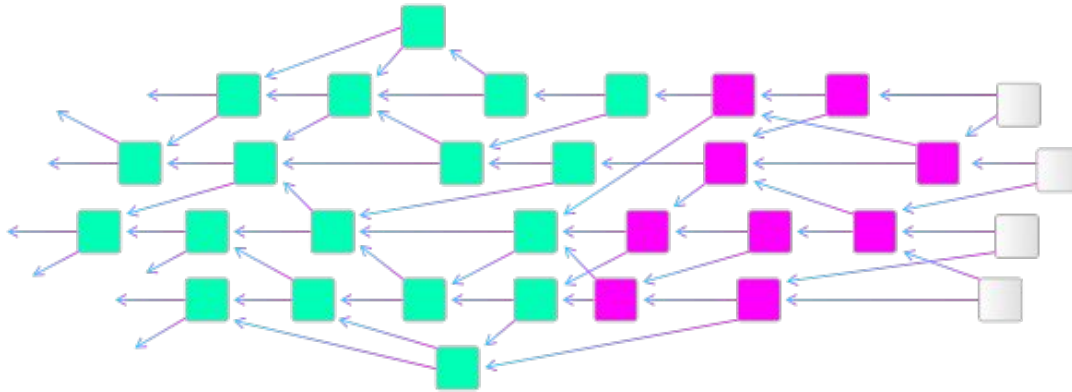
# The Blockchain Bottleneck



# Tangle scales!



# Consensus in IOTA



Each transaction validates at least 2 other transactions

- Chosen by Markov Chain Monte Carlo Random Walk algorithm

Signed with private key

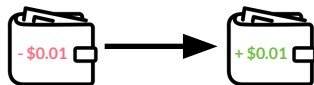
Small amount of Proof of Work

- Similar to Hashcash, not Bitcoin
- Spam and Sybil-resistance

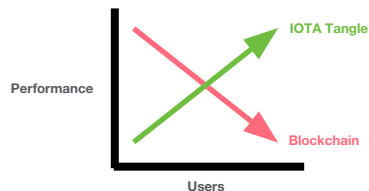


# Blockchain vs. Tangle

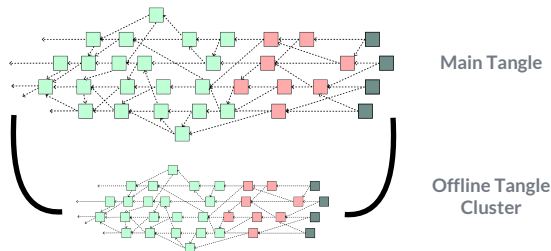
No Transaction Fees



Scalability



Offline Transactions (Partitioning)



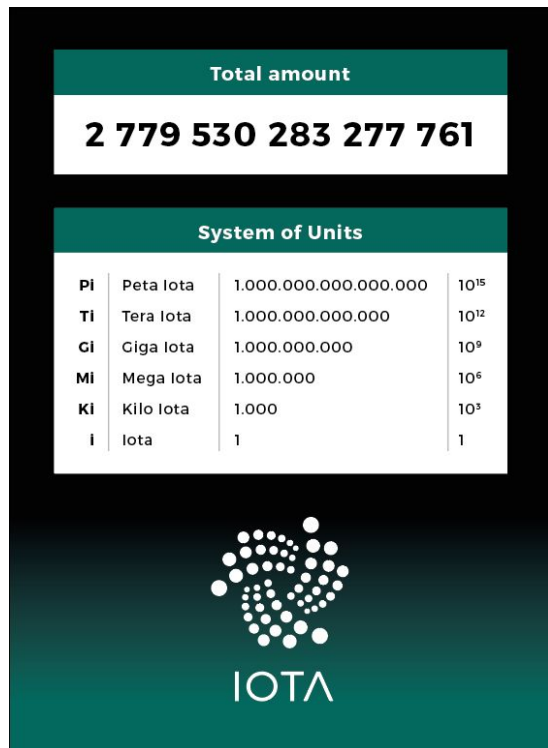
## Other Benefits:

- No Miners
- Quantum immune

## Disadvantages:

- Need a large enough network to be self-sustainable

# Blockchain vs. Tangle



## Other Comparison:

BTC has:  
**2,100,000,000,000,000** Satoshi

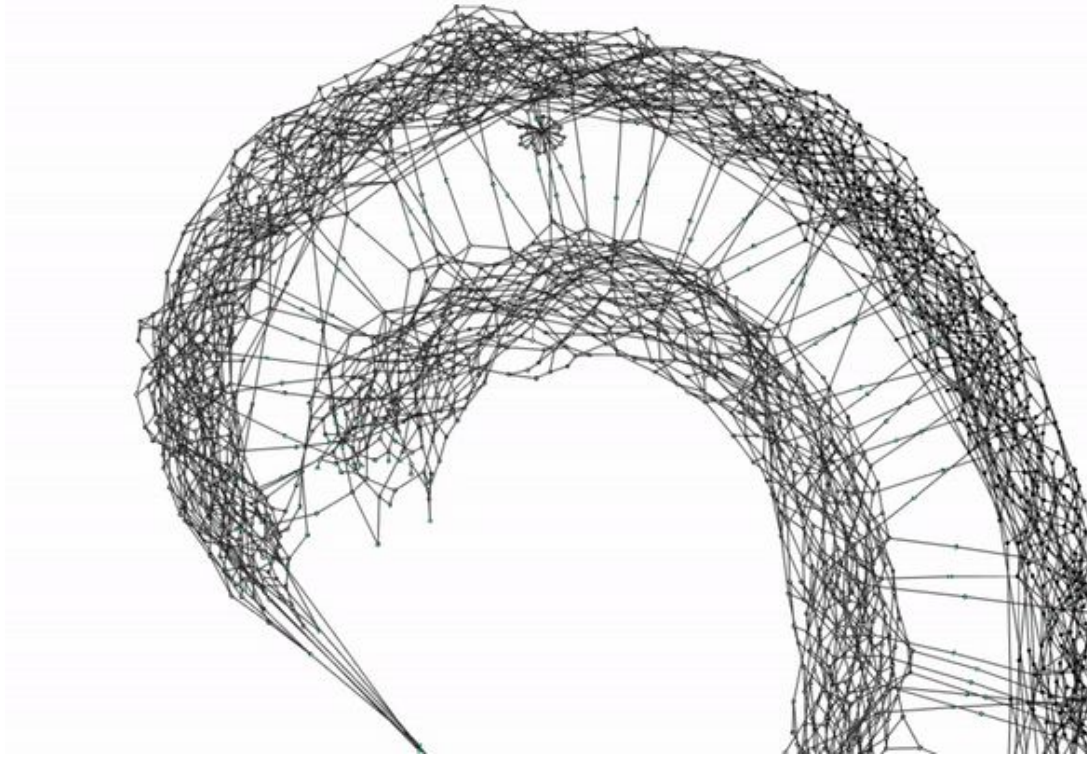
The IOTA Tangle today has  
**2,779,530,283,277,761** IOTA

So almost 3 Quadrillion IOTAs and  
only a difference of roughly **680**  
trillion units

## A word of caution:

Exchanges work with **MIOTAs**  
don't let people scam you!

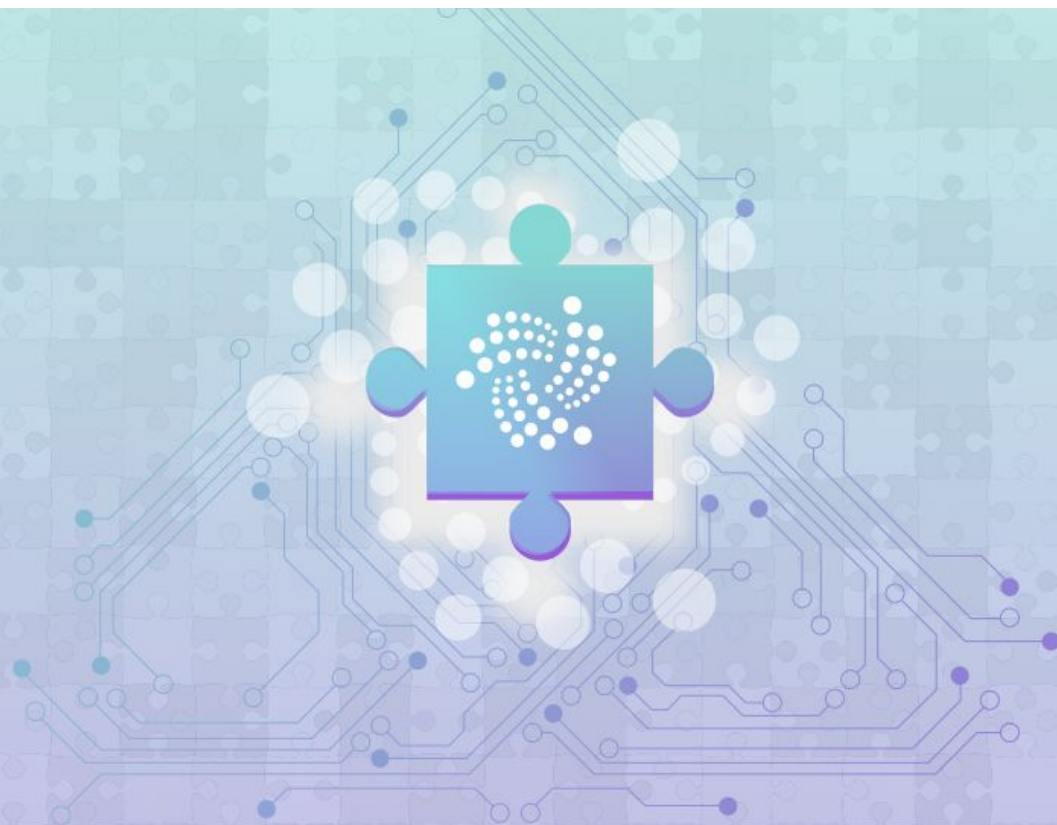
# Attacks on the Tangle





# Who and What

# Production Readiness & Standardization



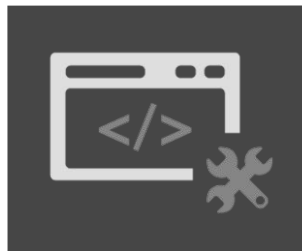
# Production Readiness & Standardization



## Research

### Exploring the unknown

Going beyond IOTA and developing solutions for the Machine Economy requires the brightest minds to work together and research new solutions.



## Development

### Cutting edge technology

Development of production-ready software will make it possible for the Foundation's members to easily adopt and integrate the developed solutions.



## Education & Promotion

### Show your Competence

Educating members and non-members through seminars, educational materials and even larger events will ensure the Foundation's success in achieving its goals.

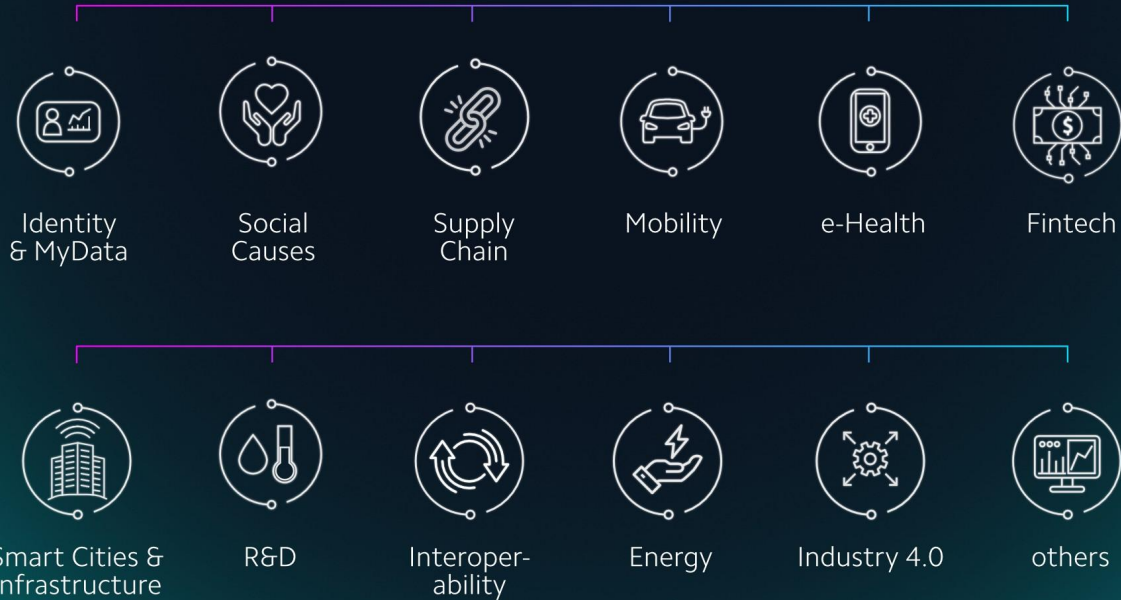


## Standardization

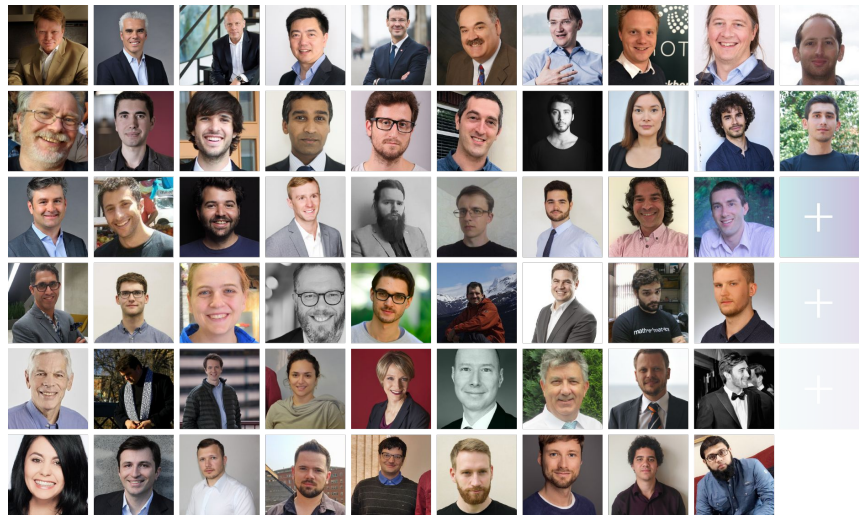
### Of Core Protocols

Interoperability requires standardization. A major effort of the IOTA Foundation will be to standardize the core protocols that we're developing.

# IOTA Use Case and Industries



# The IOTA Foundation



- Non-profit Foundation based and regulated in Berlin, Germany
- Growth from 6 to 70+ full time employees distributed across 17 countries
- \$140m+ in funding
- Focused on Technical and Regulatory Challenges of Crypto-Currencies & DLT



# IOTA Foundation Latest Member



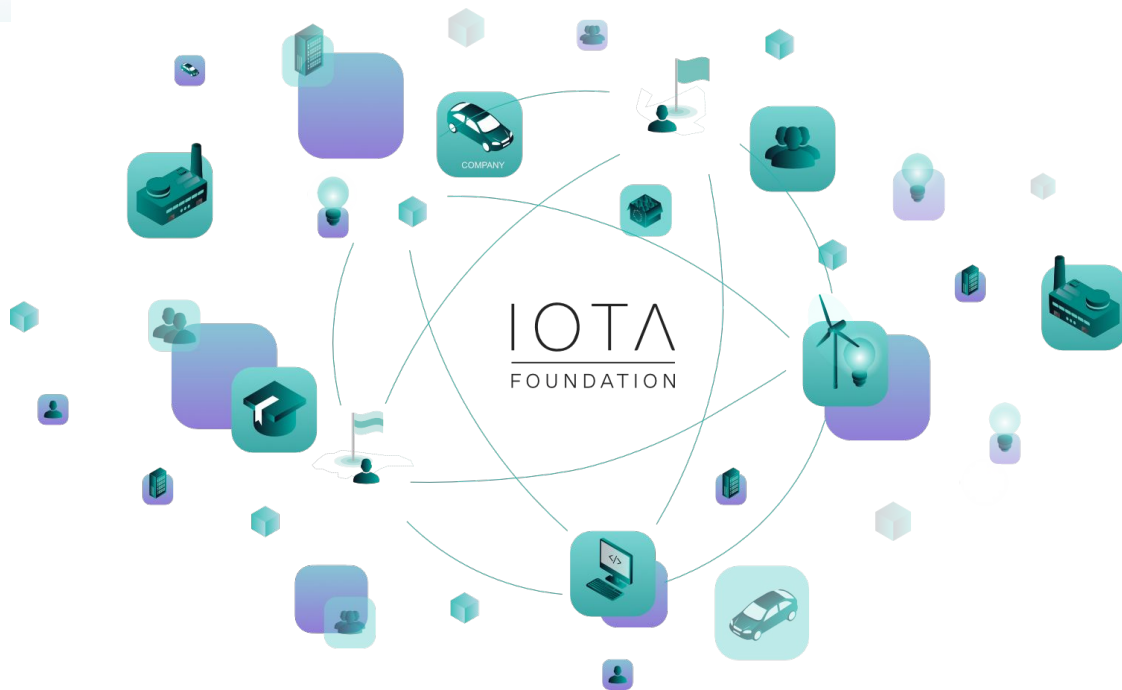
## Casper Eicke Frederiksen

*Media Producer*

journalist and communications consultant who initially started writing about politics, social issues, culture and sports, but throughout the years moved on to welfare technology, robotic / digital impact on the labour market, machine learning and AI.

IOTA's vision and values are very much in line with my own and I am as eager as a beaver to start communicating the scope of IOTA and the Tangle.

# IOTA Foundation Ecosystem



Our universe relies on a network of many collaborators  
– corporates, academics, governments, NGOs



# The Ecosystem and Cooperations

# Ecosystem



Official IOTA Ecosystem

Tutorials

Projects

Events

Developers

The IOTA Ecosystem  
Development Fund

Grant Funds Available*	Grant Funds Awarded*	Proposals pending	Proposals paid out
21.55 TI \$ 11,285,057	144.22 GI \$ 64,900	70	0

\*IOTA PRICE: 1 MI = 0.5231480311 USD.

# Development



IOTA MAM can run on Bosch XDK (32-bit cortex)

Secure sensor data transmission to the Cloud via IOTA

Micropayments to the Cloud

Bosch XDK110 and  
Masked Authentication Messaging

# Proof of Concept funzionante – Trasferimento dati da sensore a DLT IOTA/Tangle via MAM

Bosch XDK

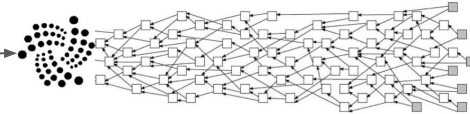


  
mosquitto  
Broker



  
node  
JS  
MQTTtoMAM

IOTA/Tangle



Sensore Bosch XDK per raccolta dati:

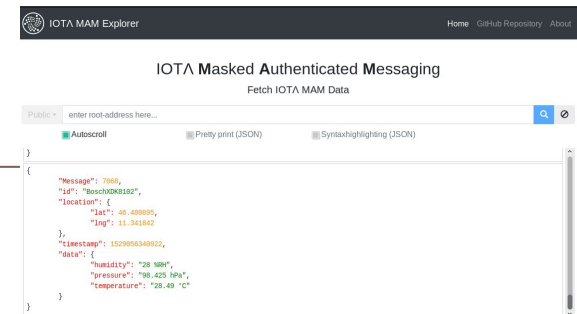
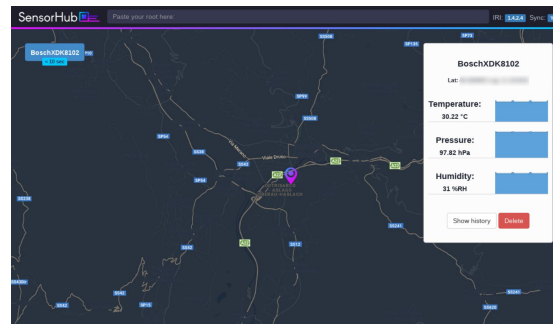
- ID
- Temperatura
- Umidità
- Pressione

Trasmissione dei dati in formato JSON via mqtt al broker sul server

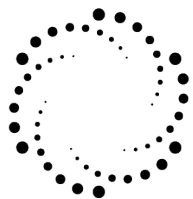
NodeJS sul server per invio dei dati su ledger distribuito IOTA/Tangle via MAM

Trasmissione crittografata dei dati su nodi distribuiti del Tangle via MAM (Masked Authenticated Messaging)

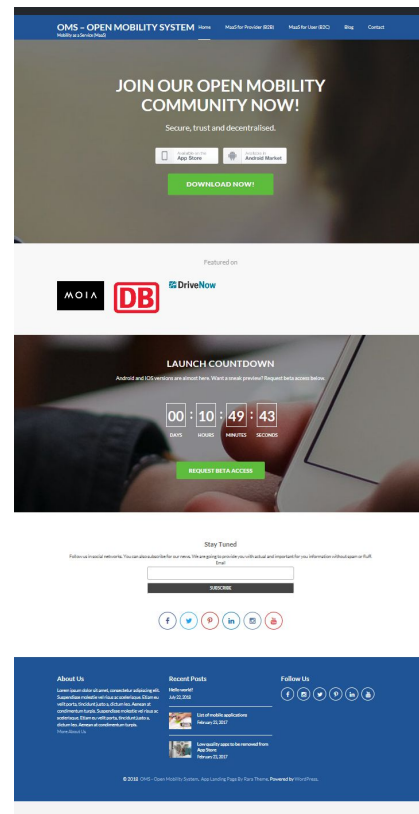
Esclusivamente gli enti con la **RootKey** adeguata hanno la possibilità di vedere/raccogliere i dati



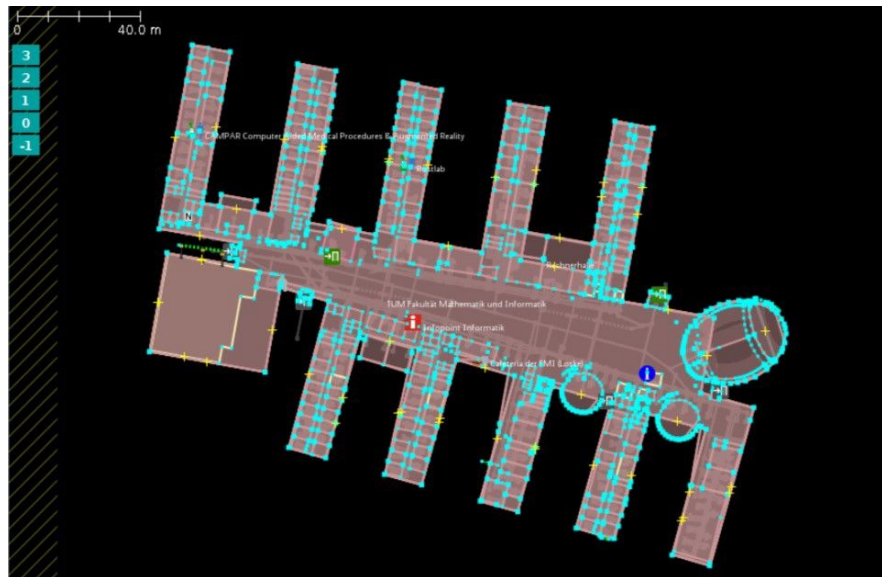
# Ecosystem Support



IOTA Ecosystem  
Development **Fund**



# Ecosystem Funds Granted



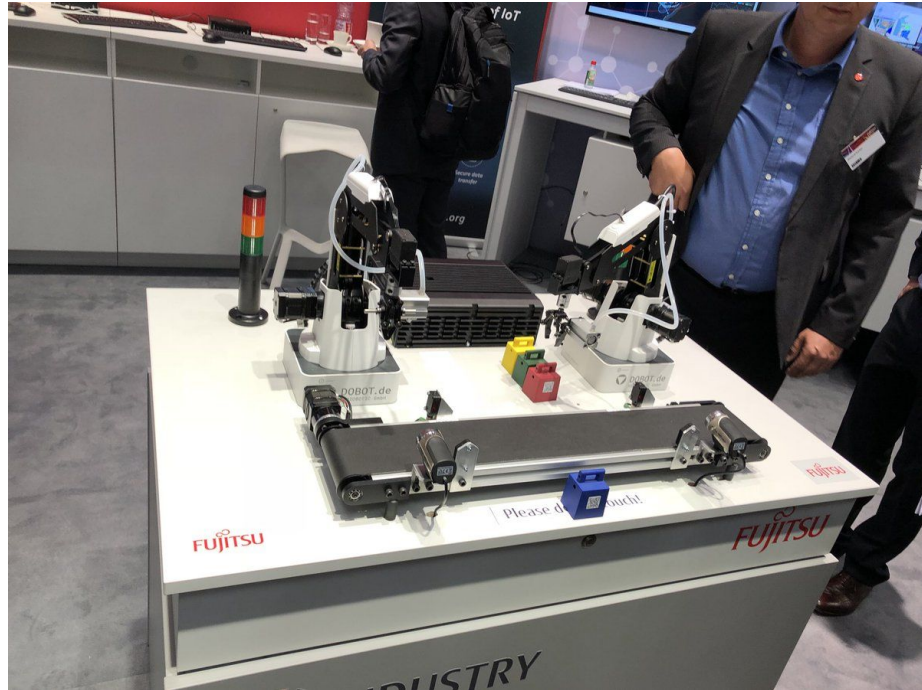
## Navindo (USD \$83,000)

The team from the Technical University of Munich has created novel technology that can be integrated with smartphones to produce high-quality indoor mappings, and plan to build open source libraries and “landmark mining” tools to be able to crowdsource indoor maps by incentivizing people with micro-payments of IOTA tokens, eventually launching a full-scale pilot on a large campus or municipality.



# Smart Manufacturing

FUJITSU



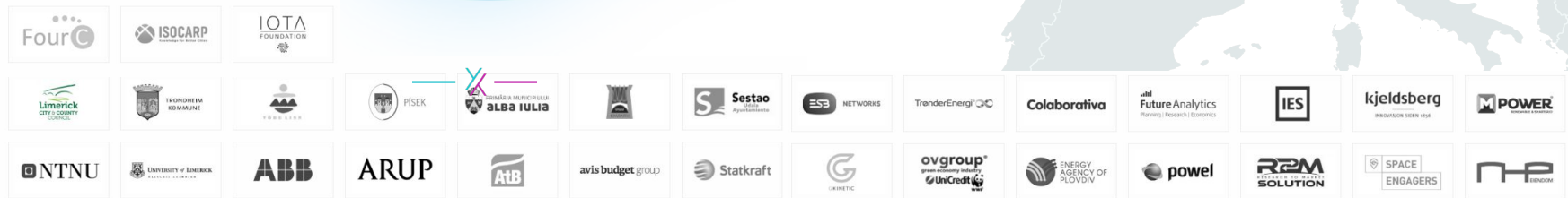
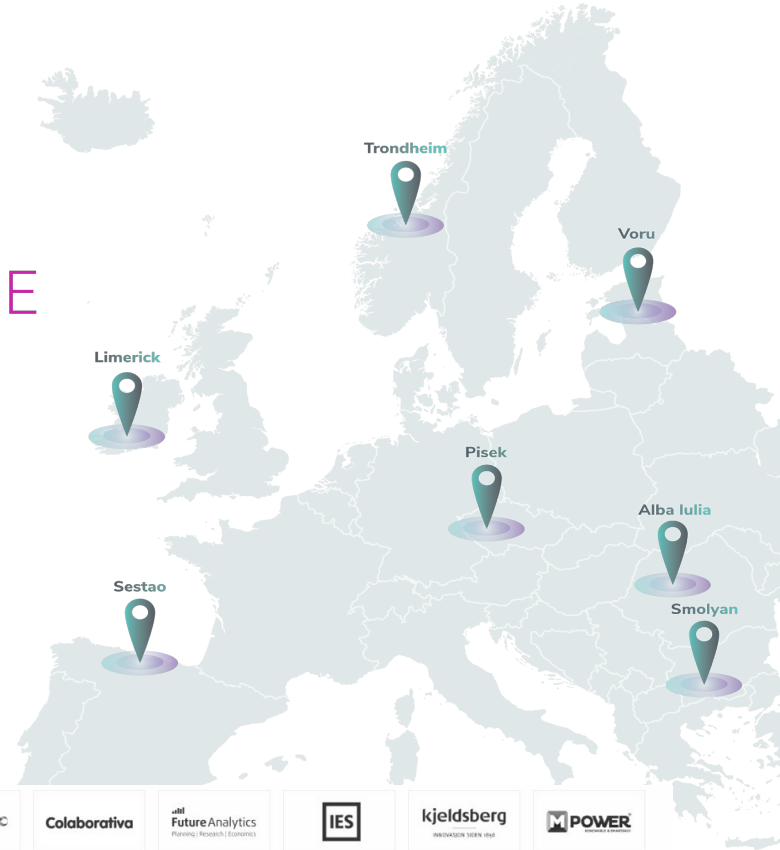
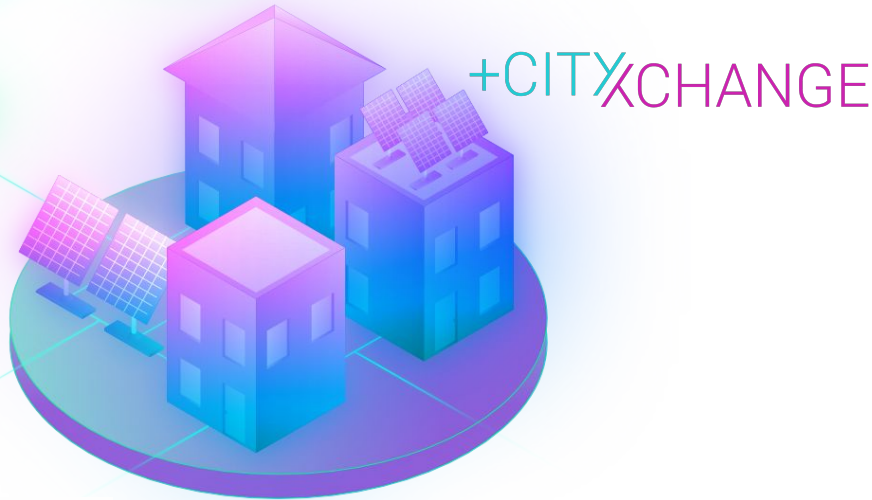
# Smart Mobility



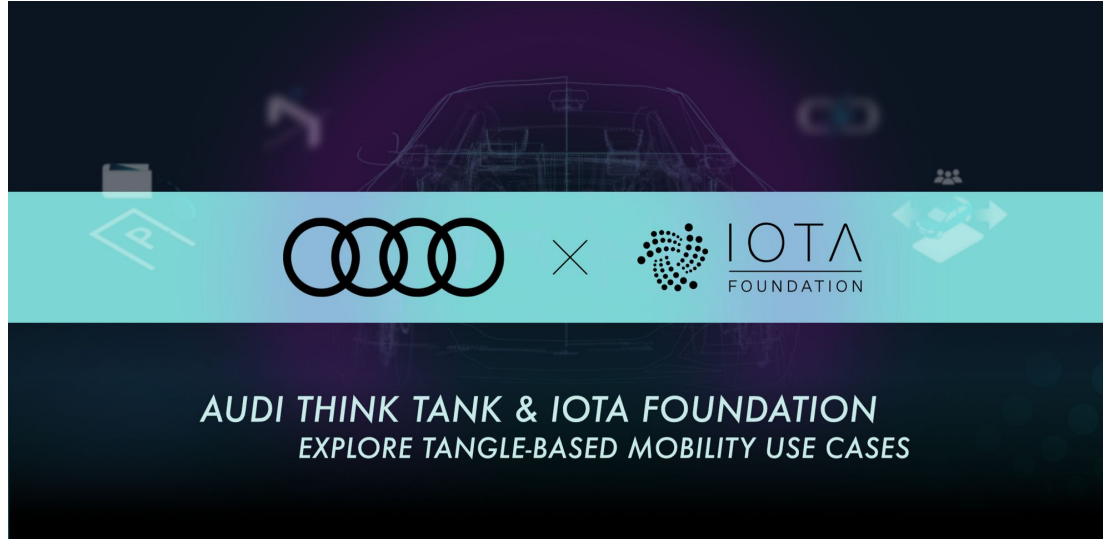
# Smart Energy



# IOTA and the European smart city consortium +CityxChange



# Latest Cooperation



The Audi Denkwerkstatt team consists of seven Audi employees who support 15 colleagues from all business areas, levels and age groups in generating, validating and implementing ideas about premium mobility within six months. The aim is to establish business models independently or in cooperation with others.

IOTA Foundation started Google Design Sprint with Audi Denkwerkstatt to explore Tangle-based use cases, build a low level prototype and to gather customer feedback.





# What is going on

# CarIOTA



CAN Bus on the  
Tangle

Get your car data on the Tangle

Get OBD CAN data:

Arduino Yun is used to fetch a car sensor data from OBD-II port via OBD PIDs (On-Board Diagnostics Parameter IDs).

Same code can be used in different vehicles to get Engine/Vehicle speeds and Air/Coolant temperatures.

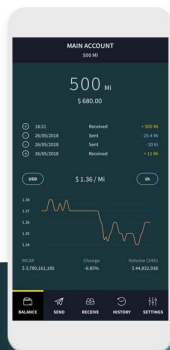
OBD-II port can be accessed easily almost on each car.

# Trinity Wallet



[Home](#) [Security](#) [Roadmap](#) [Help Center](#) [Trinity Docs](#)

[DOWNLOAD](#)



## Introducing Trinity BETA

The new user-friendly IOTA wallet:  
now available to download on mobile



User friendly wallet

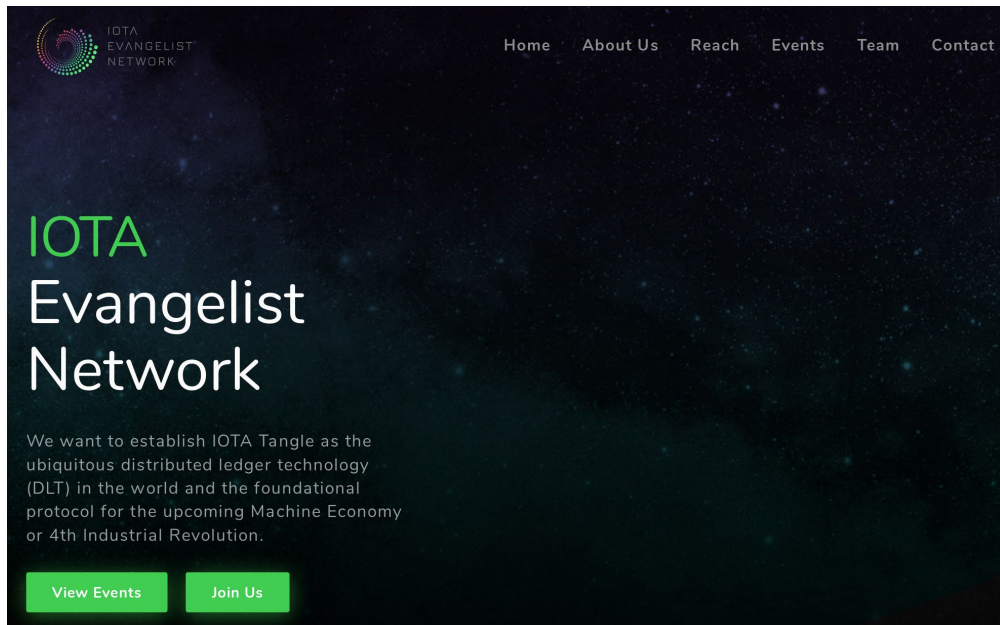
Android

iOS

Windows/MacOS/Linux soon™



# IOTA Evangelist Network - IEN.io




Content Creating

IOTA Demo

IOTA PoCs

over 100 members so far

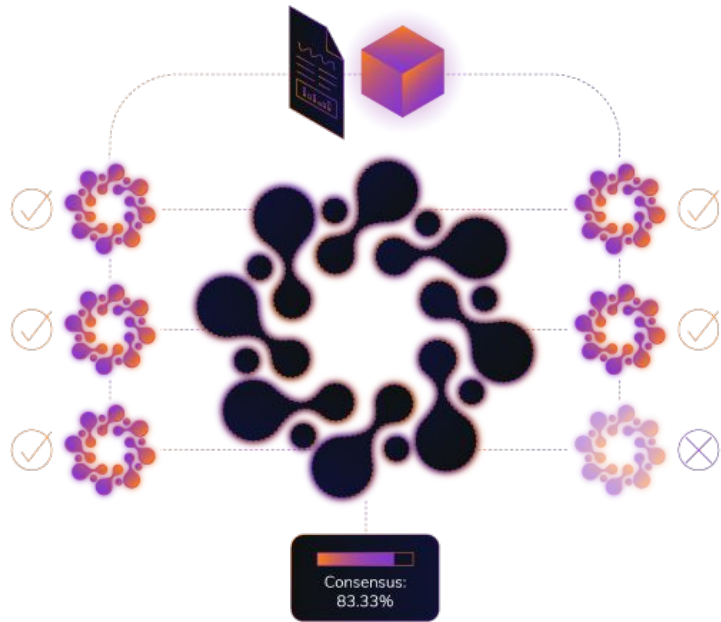
A world-wide strong community of IOTA enthusiasts.



qubic

www.qubic.com

# Qubic



Quorum Based Computing

Oracles

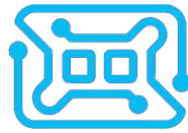
Smart Contracts

Distributed Computing



# Meetup Relevant Projects

# XDK2MAM.io



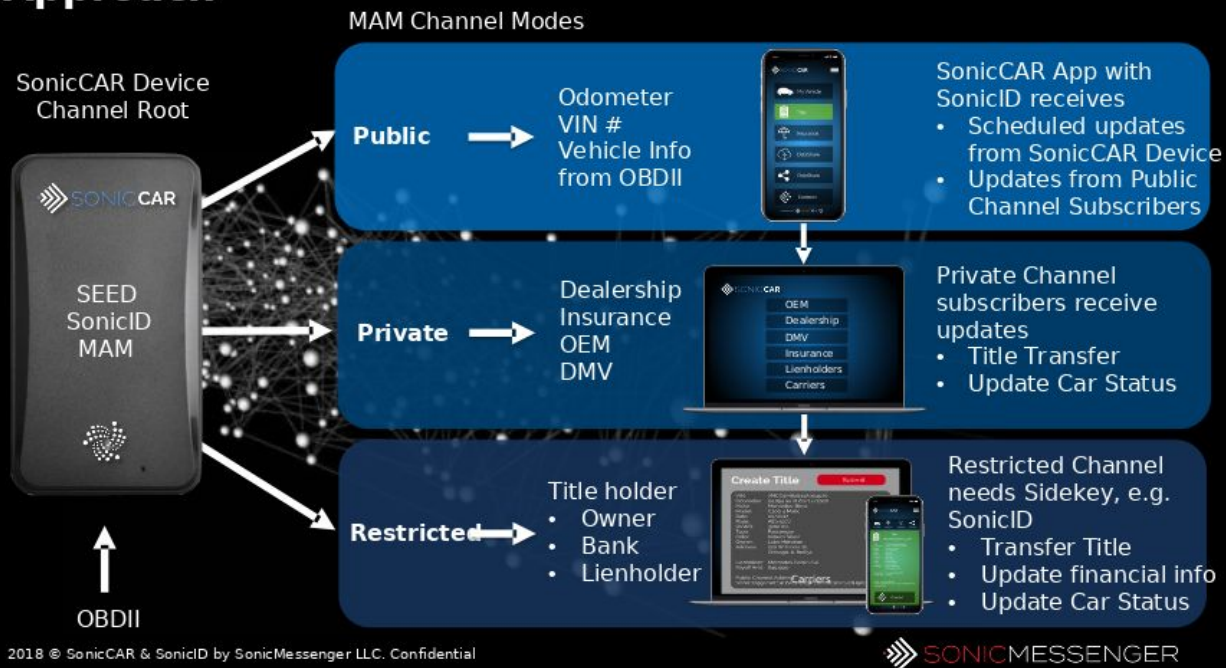
XDK2MAM main goal is to provide open source software to allow interaction between this powerful hardware and the promising IOTA Tangle.

- HTTP
- MQTT
- USB
- BLE

We deliver open source software to take advantage of Bosch Cross Development Kit over IOTA's Protocol Masked Authenticated Messaging.

# SonicCAR

## Approach



# Let's innovate with

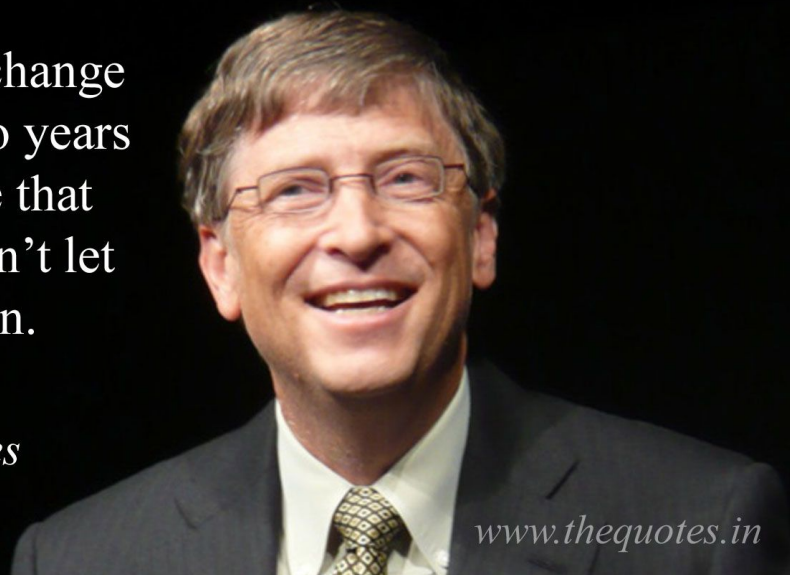




# A Final Remark

We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten. Don't let yourself be lulled into inaction.

*Bill Gates*



*www.thequotes.in*



# Contacts:



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