

IOTA Community Logo

IOTA

The distributed communication layer of tomorrow

DISCLAIMER:
NO FINANCIAL ADVICE WILL BE GIVEN IN THIS PRESENTATION



Index

What today is about

- whoami/whoarewe
- Tangle deep dive
- The IOTA Foundation
- Use Cases

Index

What today is about

Sponsored by

SPACE FOR SPONSOR LOGOS

- whoami/whoarewe
- Tangle deep dive
- The IOTA Foundation
- Use Cases

whoami/whoarewe

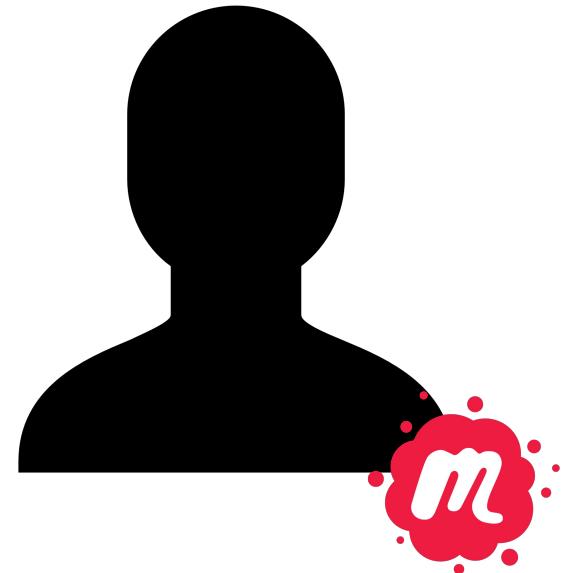
Name Surname

Your Title - yourwebsite.com

Following distributed ledger technology since 2011

Love Free and Open Source Software

- Project with local company
-
-
-



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whoami/whoarewe

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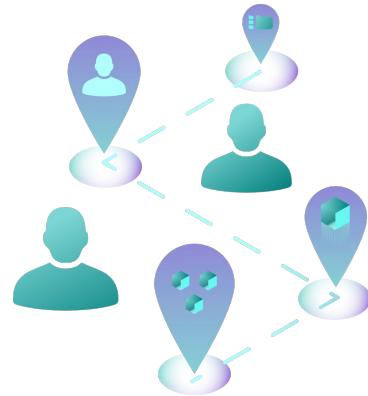
- Project with local company
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Technology



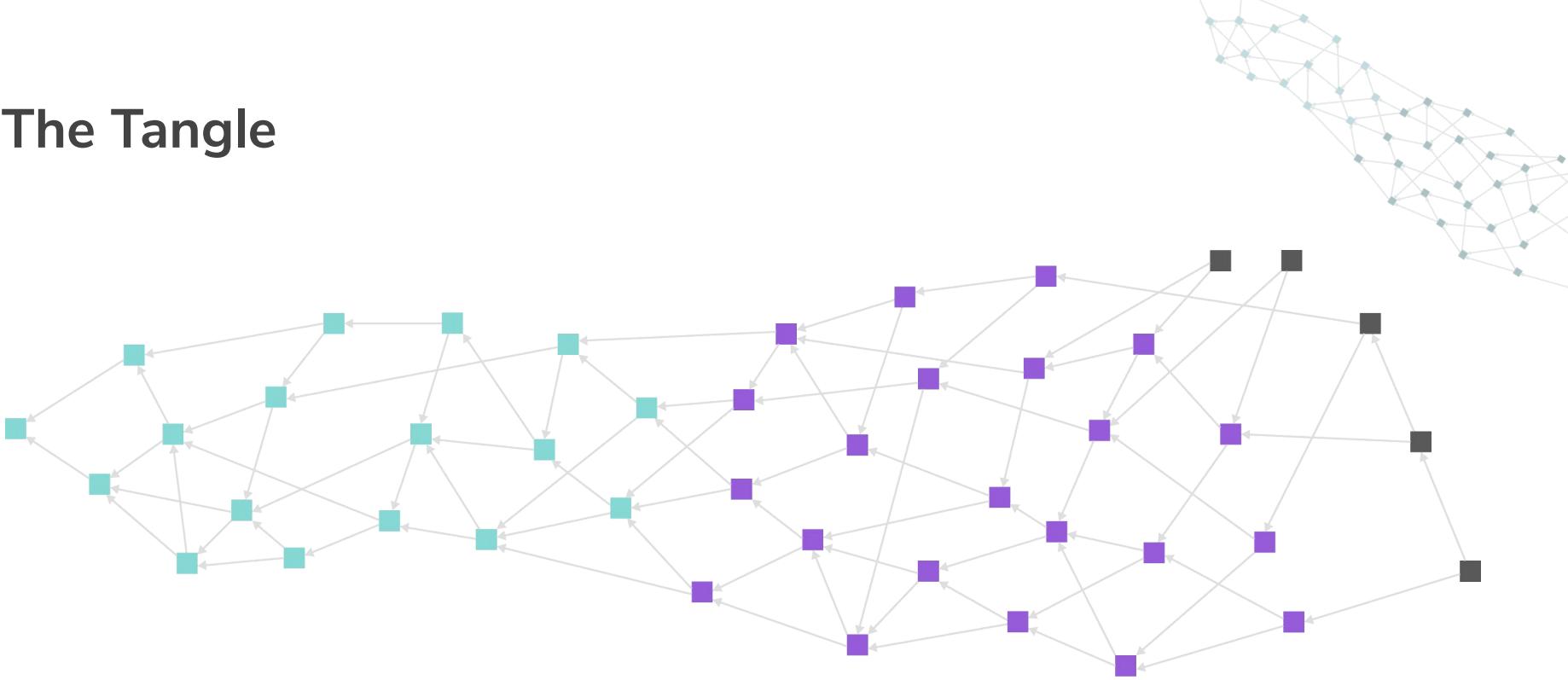
Governance



Ecosystem

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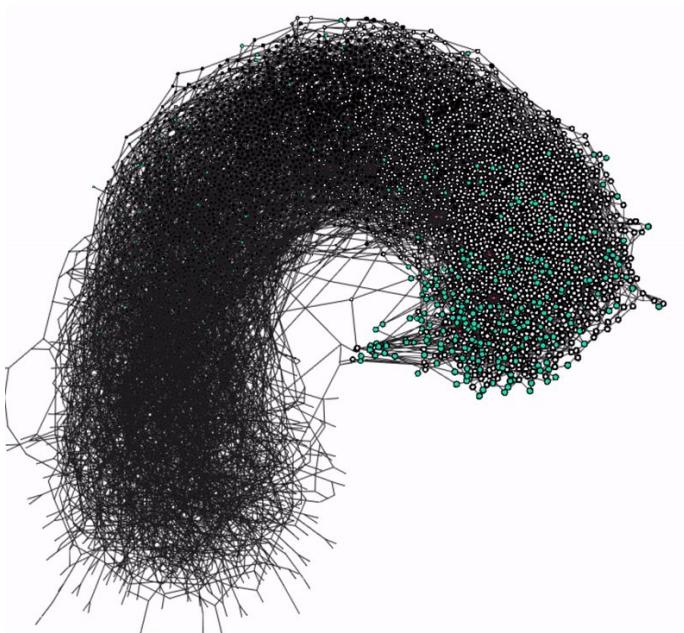
The Tangle



The Tangle is the immutable data structure that contains a history of IOTA transactions.

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The Tangle



The unique data structure being utilized in IOTA



Directed Acyclic Graph (DAG)

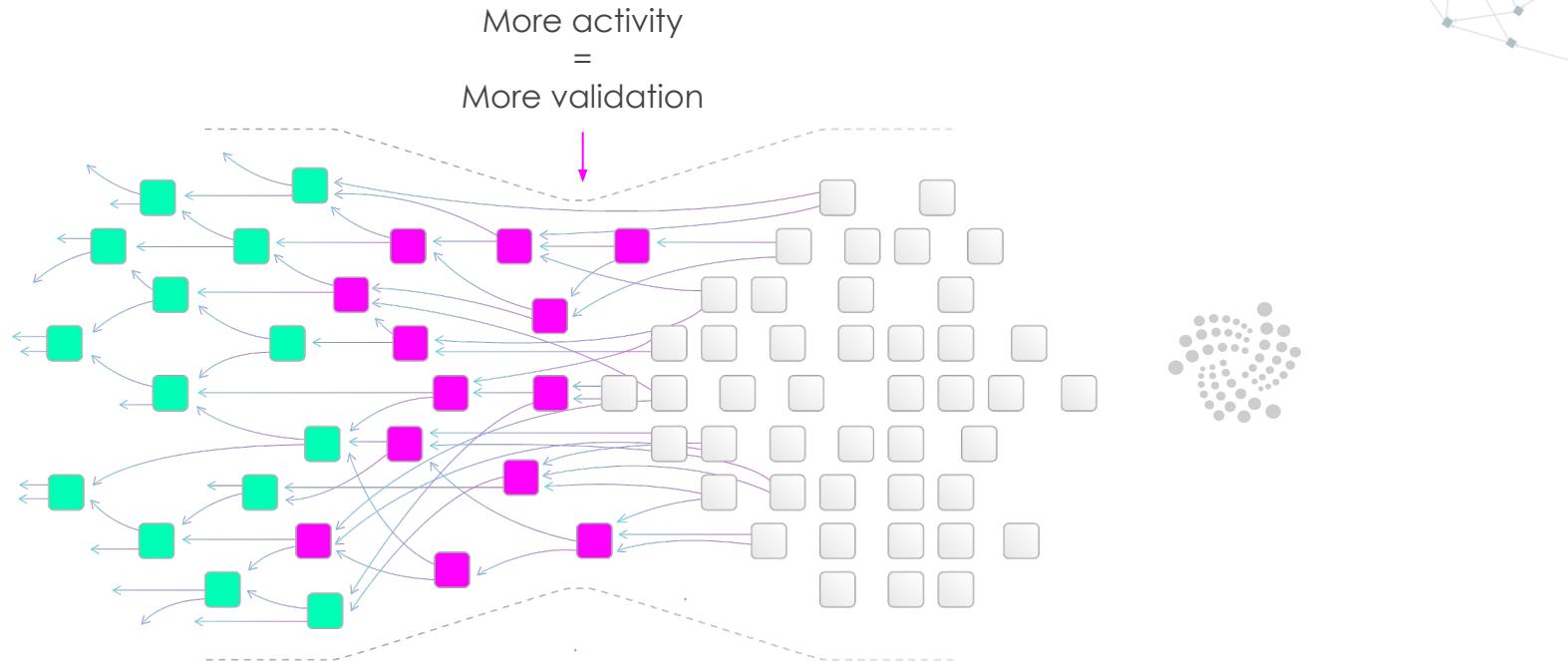
Scalable distributed framework for transactions

Transactions can hold data, value or both

Consensus

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Tangle scales!



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The IOTA Tangle - Ternary

binary

A	not A
0	1
1	0

ternary

A	not A
-1	+1
0	0
+1	-1



Why Ternary?

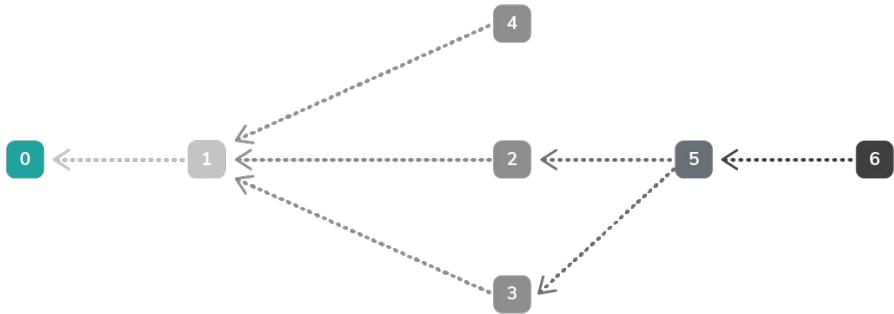
- Ternary is faster, more energy efficient and it also takes up less space
- Ternary is very important for AI and Neural Networks
- The ternary cryptographic environment can offer the following protections:
 - Malware
 - Breaches in access control will be reduced with the ternary PKD with the one-time public/private key pair
 - Eavesdropping problems will be greatly reduced because all aspects of the ternary architecture can change constantly

-9	-8	-7	-6	-5	-4	-3	-2	-1	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9
-1001	-1000	-0111	-0110	-0101	-0100	-0011	-0010	-0001	+0000	+0001	+0010	+0011	+0100	+0101	+0110	+0111	+1000	+1001
-00	-0+	-+-	-+0	-++	0--	0-0	0-+	00-	000	00+	0+-	0+0	0++	+-+	+-0	+-+	+0-	+00

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What is the Tangle?



In this diagram, each numbered box is a transaction. Transaction 5 directly references transactions 2 and 3, and transaction 6 indirectly references transaction 3 (through transaction 5).

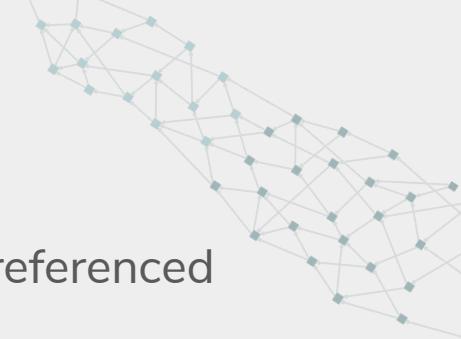
Cryptographically referenced transactions

Nodes confirm transactions

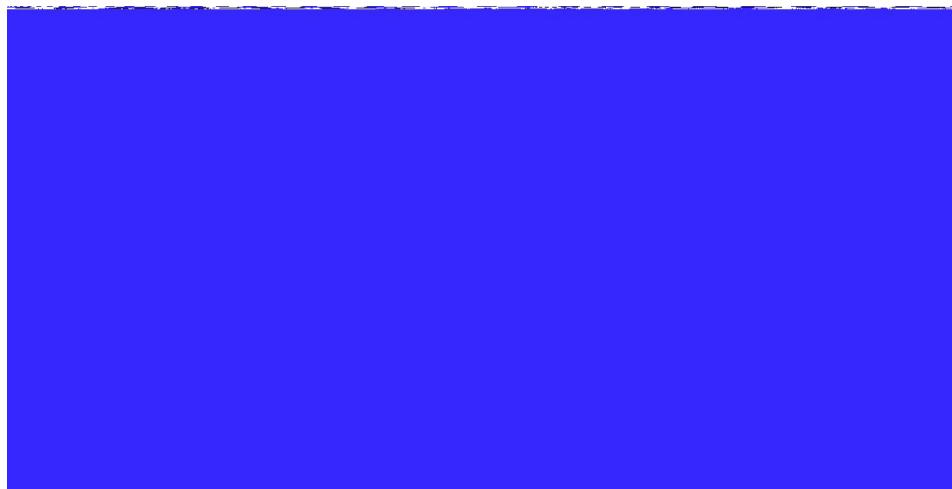
Tip selection algorithm

Consensus

Coordinator (+ Coindicide)



Tip selection



Tip

Weighted random walk

Markov Chain Monte Carlo

Consensus



Public nodes on <https://iotanodes.org/>



Nodes validate transactions

Entry points

Solid transactions

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The Coordinator - Compass

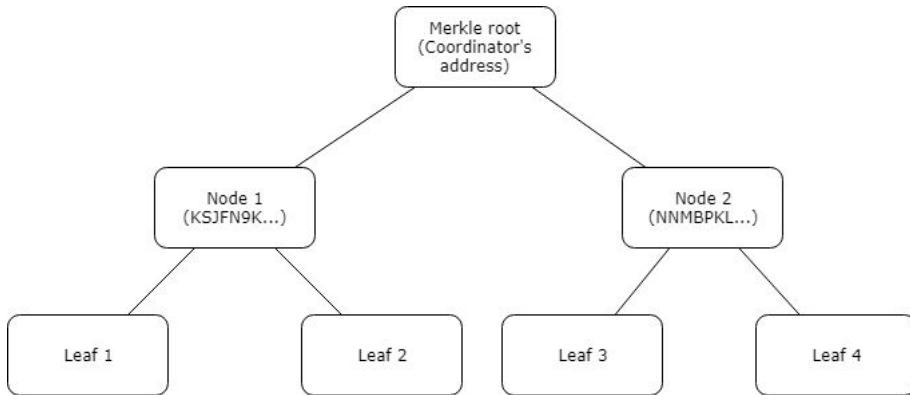


The Coordinator
Milestones



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Compass merkle tree



The Merkle tree

Nodes verify milestones

The Coordinicide



<https://youtu.be/quNNqEeu6gY>

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The Coordinicide

DECENTRALIZED & PERMISSIONLESS
Unlike other DLTs, IOTA's solution does not compromise decentralization in any way.

FINALITY WITHIN SECONDS
Transactions reach finality in seconds without having to wait for confirmations by external entities. A massively reduced need for reattachments increases the reliability of transactions.

SCALABLE & LIGHTWEIGHT
Truly limitless scalability with no protocol-related bottlenecks. The network is limited only by hardware and the laws of physics.

MODULAR & FUTURE PROOF
Much like the Internet Protocol, a layered approach enables extension of the base protocol through additional modules.

FEELLESS & DATA TRANSACTION
Feeless transactions enable the secure transfer of data and values between humans and machines, opening up new business models based on micro-payments.

RELIABLE GOVERNANCE & OPEN SOURCE
The nonprofit organization behind IOTA drives the adoption and evolution of its free and open source technology without any collusion of interests with 3rd parties like miners.

Node Identities

Auto-peering

Spam Protection

Tip Selection

Shimmer



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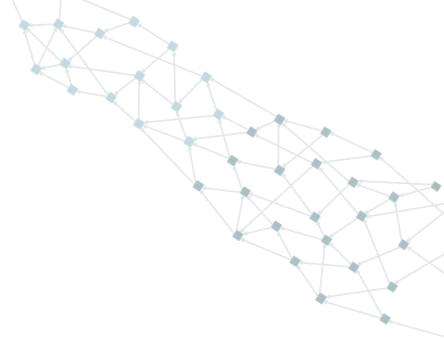
Introduction to the IOTA protocol



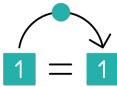
IOTA is a distributed ledger technology that allows devices to transfer immutable data and value among each other

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Introduction to the IOTA protocol



Highly
scalable



Zero-fee
transactions



Immutable
data transfer



Quantum
robust

Overcoming
the limitations of
Blockchain

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Use-Cases



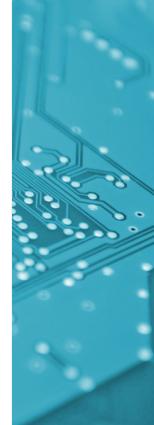
Telecom

- Payments
- Settlement
- Data Sharing
- Data Integrity
- Identity Management



Mobility

- Smart Charging
- Over-the-Air Updates
- Car ID & Wallet
- Cars as Autonomous Economic Agents
- Usage Based Insurance
- Car Paying for Parking



Digital Economy

- M2M Economy
- MyData & GDPR
- Biometric Authentication & Digital ID
- IOTA Data Marketplace
- Smart Factory
- Digital Twin



Smart City

- Digital ID
- Smart Energy Districts
- P2P Energy Grid
- Cross vertical
- Biometric Identification
- CityxChange Smart Cities



Supply Chain

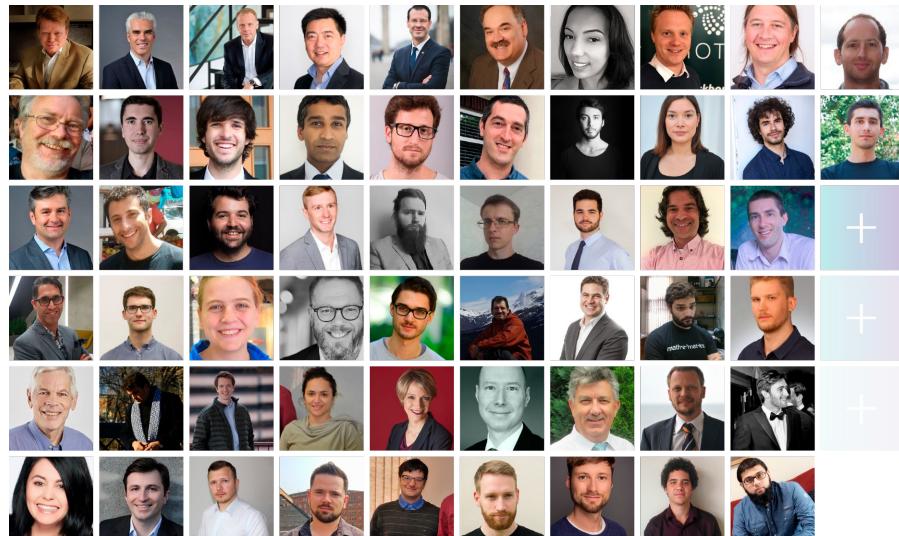
- Asset Tracking
- Connected Supply Chains
- Global Trade Document Flow
- Product Authenticity and Provenance
- Ports Management
- New Insurance Models



Social Impact

- Digital ID & Citizen Services
- Humanitarian ID
- Real-time Environmental Monitoring
- Financial Inclusion

The IOTA Foundation



**The IOTA Foundation - to
research, develop and grow
market adoption of DLT**

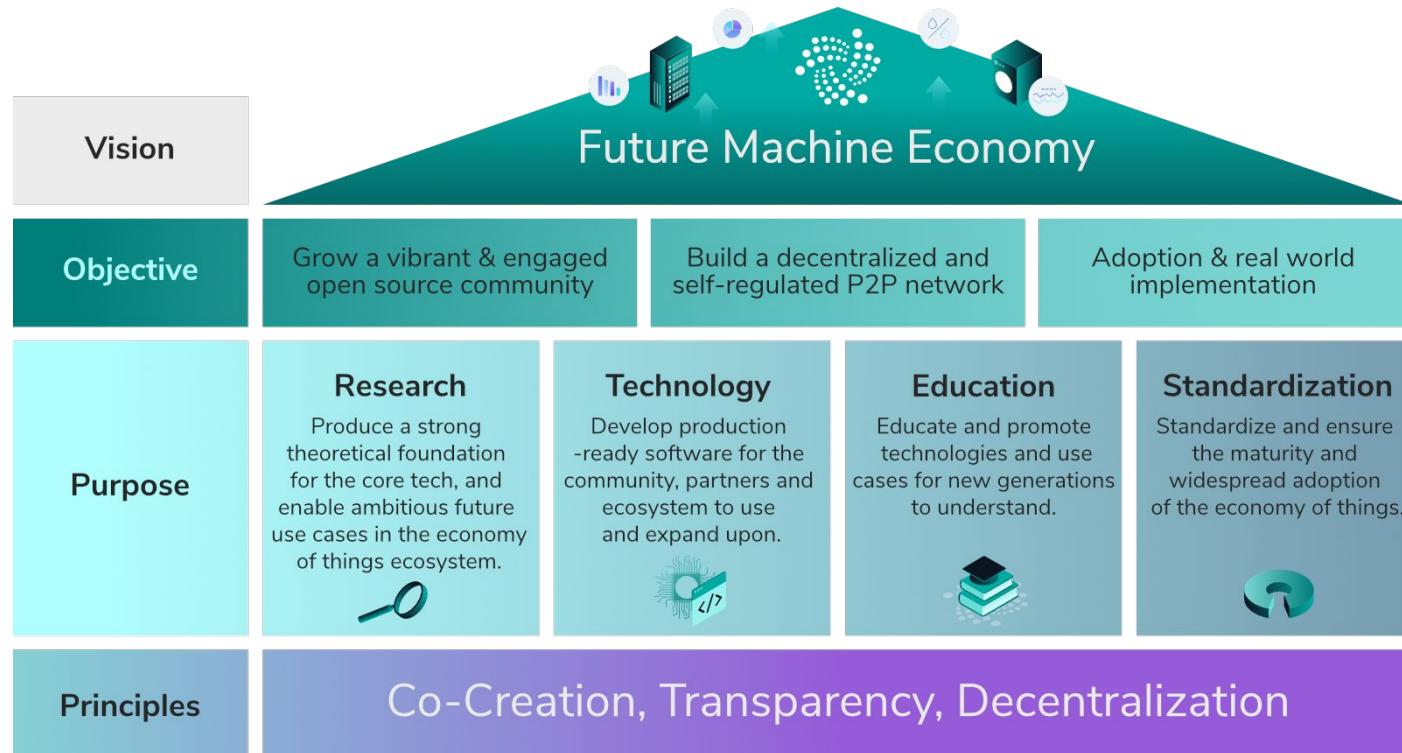
Non-profit Foundation based and regulated in
Berlin, Germany

Growth from 6 to 100+ full time employees
distributed across 27 countries

Focused on technical and regulatory
challenges of crypto-currencies & DLT

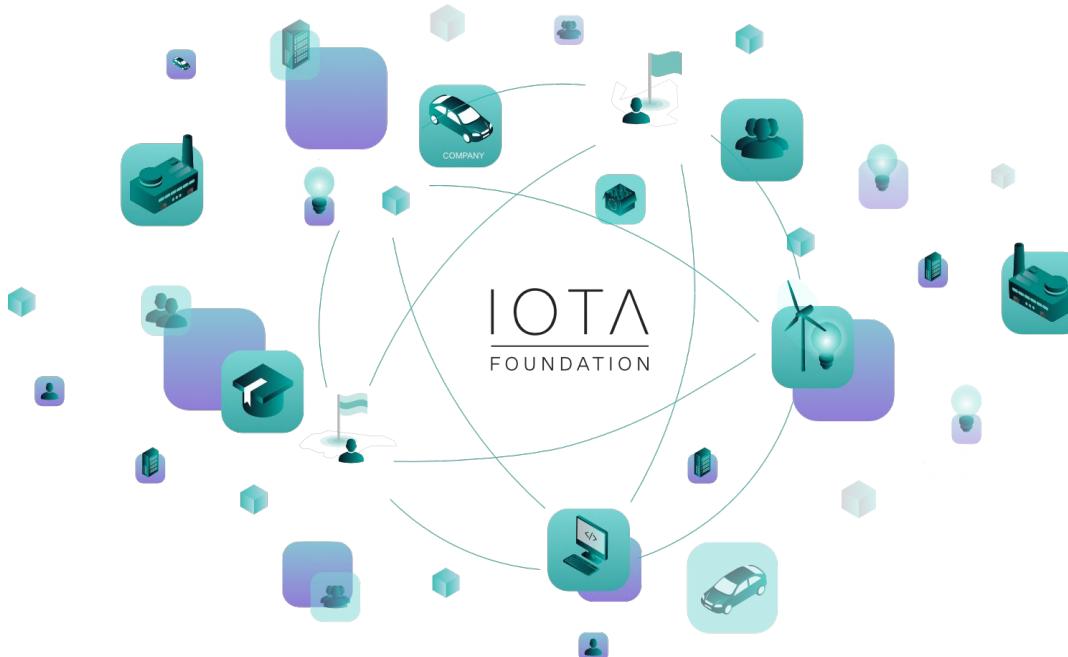
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IOTA Foundation - Vision & Goals



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IOTA Ecosystem



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

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IOTA Ecosystem



Meet the IOTA Ecosystem

Tutorials

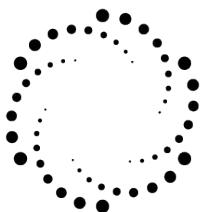
Projects

Events

Developers

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IOTA Ecosystem Development Fund



IOTA Ecosystem
Development **Fund**

Funding for projects in the IOTA
Ecosystem

Proof of concepts

Open source utilities and libraries

Educational resources

Media

Philanthropic endeavors

Hackathons

Ideation workshops

Meetups

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Coordicide Grant Program



<https://coordicide.iota.org/grants>

Research Grant

e.g.

Optimization of the networking layer to avoid network congestion

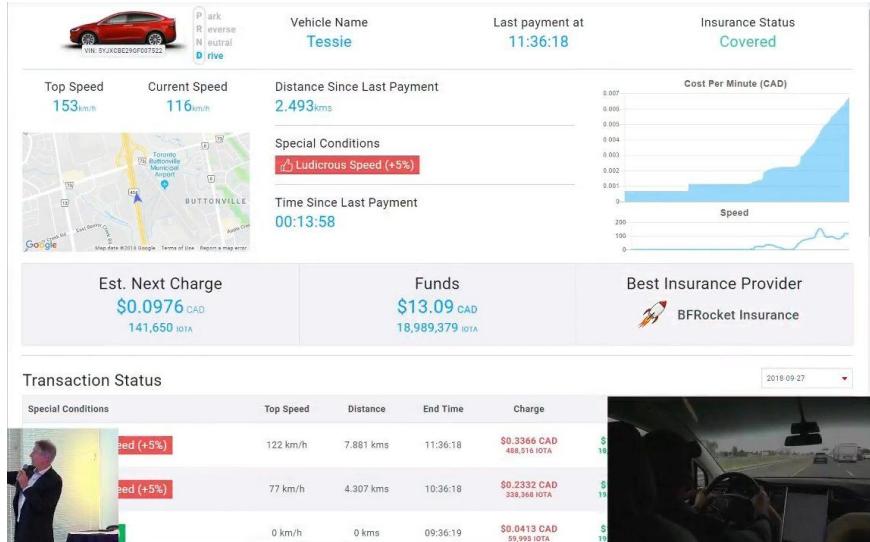
Reputation system based on node behavior

Theoretical behavior of cellular automata based consensus

Theoretical properties of query-based voting schemes (e.g., FPC)

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Mobility & Automotive - PoC by bIOTAsphere



Insuremycar PoC

- Dynamic insurance provider
- Direct payments
- Vehicle monitoring



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IIoT/IoT - Bosch XDK



Bosch XDK110 and
Masked Authentication Messaging



Fast and easy IOTA integration for prototypes

- Secure and immutable sensor data transmission via IOTA
- Micropayments on the (Industrial) Data Marketplace

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Contacts:

email@provider.com

website.com

twitter.com/myhandle

linkedin.com/in/mylink

Sponsors:

<SPONSOR NAME>

<Description>

sponsor.website.com

Get involved:

Website: www.iota.org

Ecosystem: ecosystem.iota.org

Discord: discord.iota.org

Twitter: twitter.com/iotatoken

LinkedIn: linkedin.com/company/iotafoundation

YouTube: www.youtube.com/c/iotafoundation