

# 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

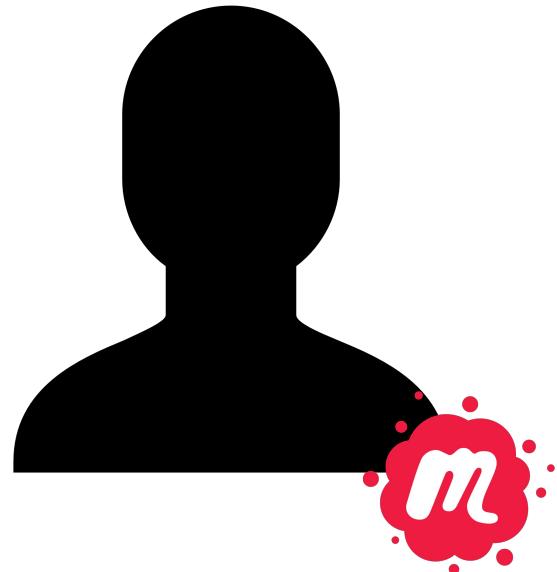
Name Surname

Your Title - [yourwebsite.com](http://yourwebsite.com)

Following distributed ledger technology since 2011

Love Free and Open Source Software

- Project with local company
- 
- 
- 



*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# whoami/whoarewe

Name Surname

Your Title - [yourwebsite.com](http://yourwebsite.com)

Following distributed ledger technology since 2011

Love Free and Open Source Software

- Project with local company
- 
- 
- 



*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# whoami/whoarewe

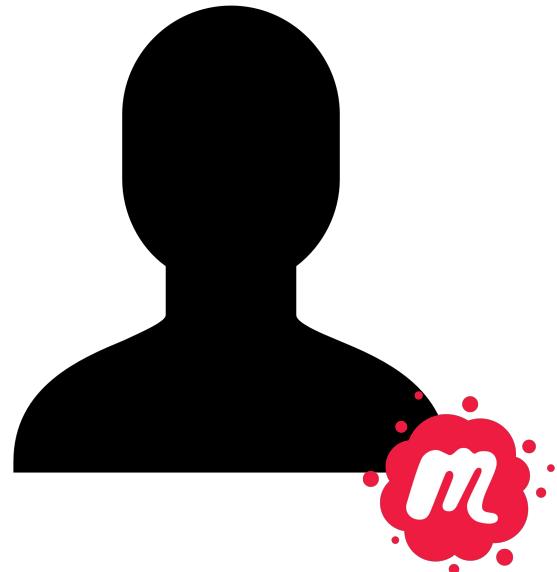
Name Surname

Your Title - [yourwebsite.com](http://yourwebsite.com)

Following distributed ledger technology since 2011

Love Free and Open Source Software

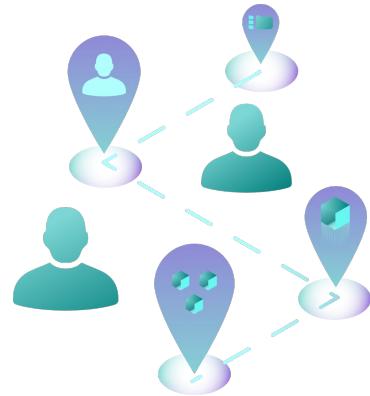
- Project with local company
- 
- 
- 



*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*



Technology



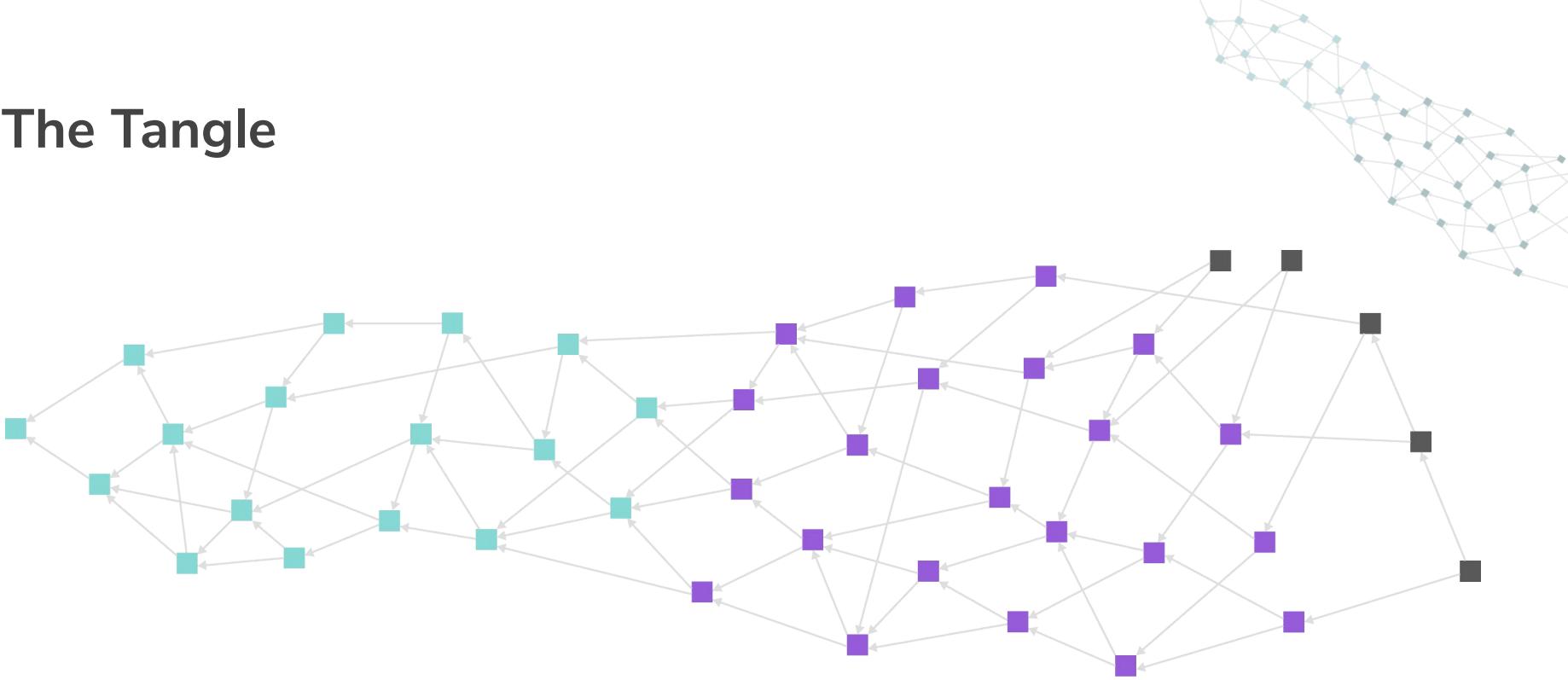
Governance



Ecosystem

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

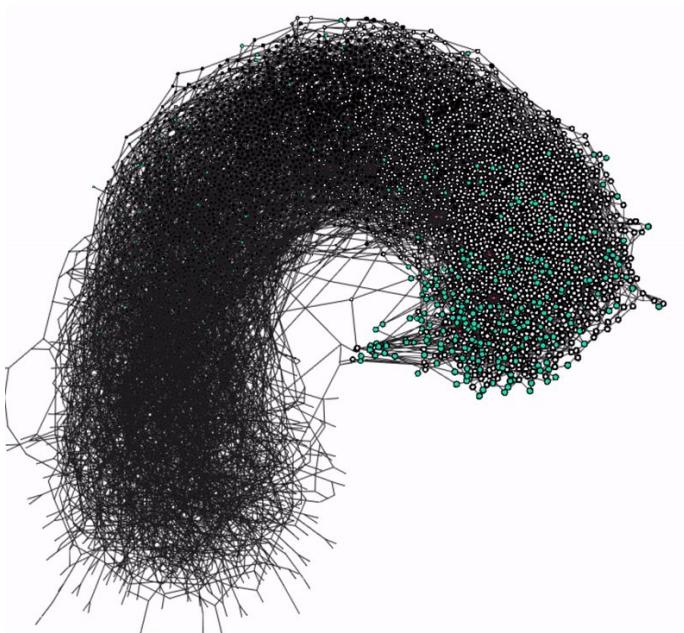
# The Tangle



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

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# The Tangle



The unique data structure being utilized in IOTA

Directed Acyclic Graph (DAG)

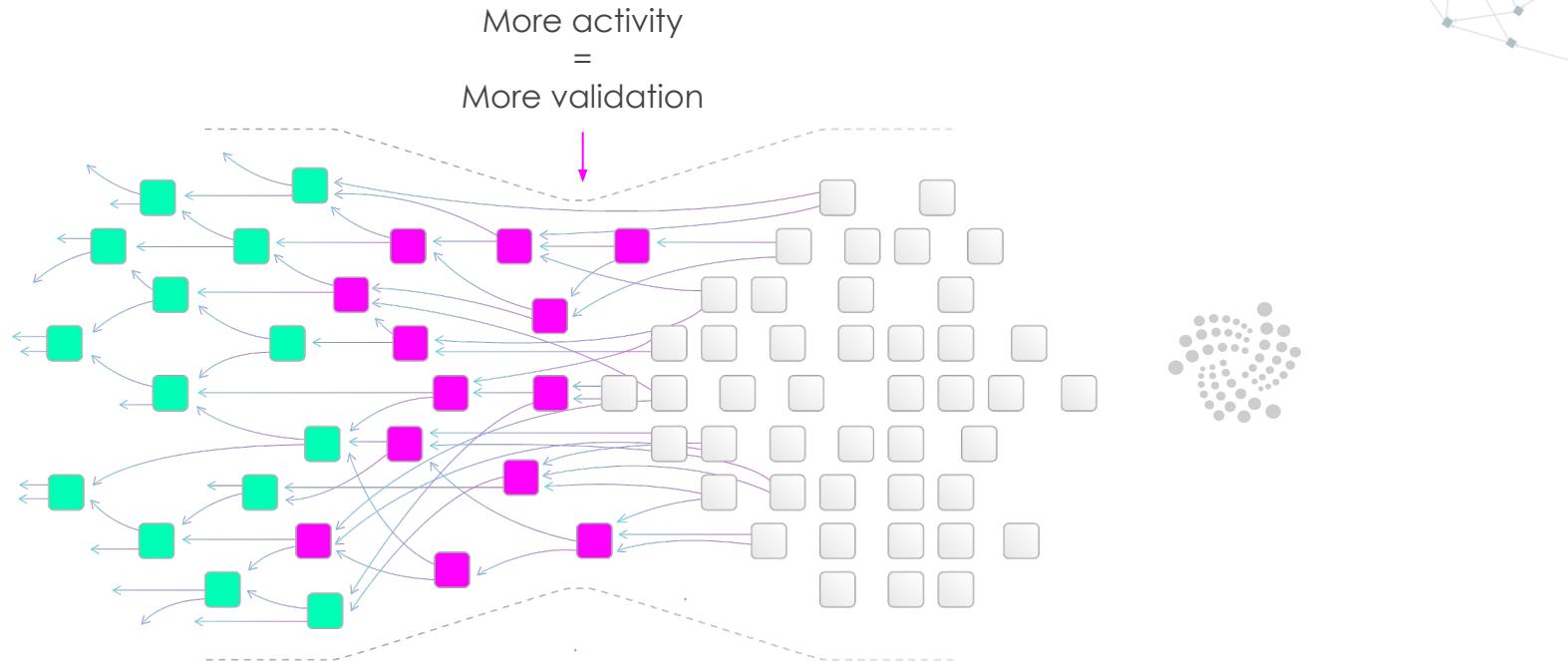
Scalable distributed framework for transactions

Transactions can hold data, value or both

Consensus

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# Tangle scales!



*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# The IOTA Tangle - Ternary

binary

A	not A
0	1
1	0

ternary

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



## Why Ternary?

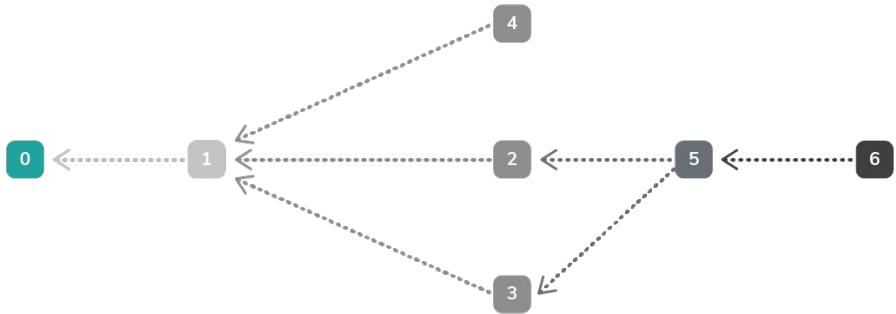
- Ternary is faster, more energy efficient and it also takes up less space
- Ternary is very important for AI and Neural Networks
- The ternary cryptographic environment can offer the following protections:
  - Malware
  - Breaches in access control will be reduced with the ternary PKD with the one-time 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

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*



# 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

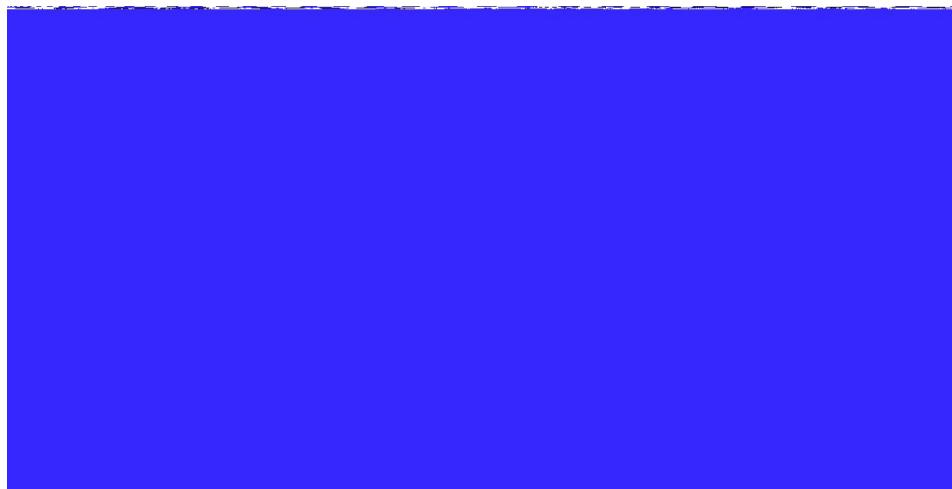
Tip selection algorithm

Consensus

Coordinator (+ Coindicide)



# Tip selection



Tip

Weighted random walk

Markov Chain Monte Carlo

# Consensus



Nodes validate transactions

Entry points

Solid transactions

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# The Coordinator - Compass

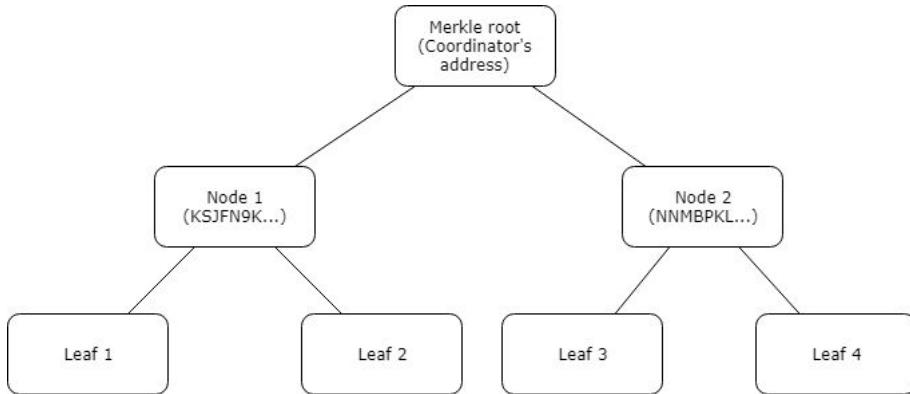


The Coordinator  
Milestones



*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# Compass merkle tree



The Merkle tree

Nodes verify milestones

# The Coordinicide



<https://youtu.be/quNNqEeu6gY>

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*



# 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

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*



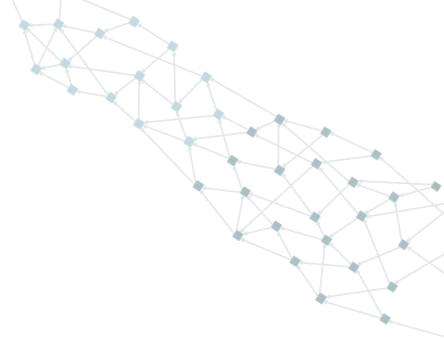
# Introduction to the IOTA protocol



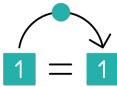
IOTA is a distributed ledger technology that allows devices to transfer immutable data and value among each other

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# Introduction to the IOTA protocol



Highly  
scalable



Zero-fee  
transactions



Immutable  
data transfer



Quantum  
robust

Overcoming  
the limitations of  
Blockchain

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# Use-Cases



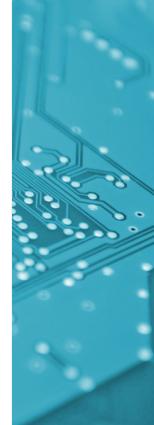
## Telecom

- 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

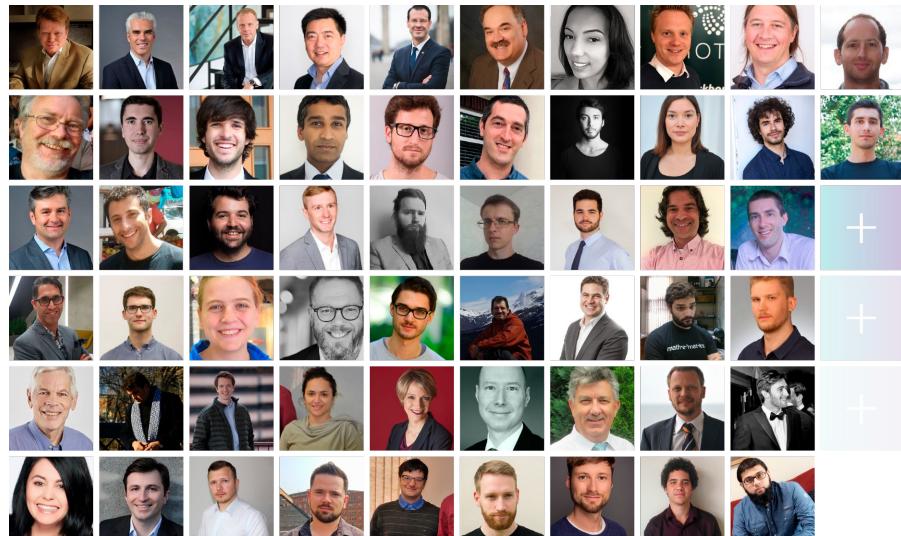
- Asset Tracking
- Connected Supply Chains
- Global Trade Document Flow
- Product Authenticity and Provenance
- Ports Management
- New Insurance Models



## 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**

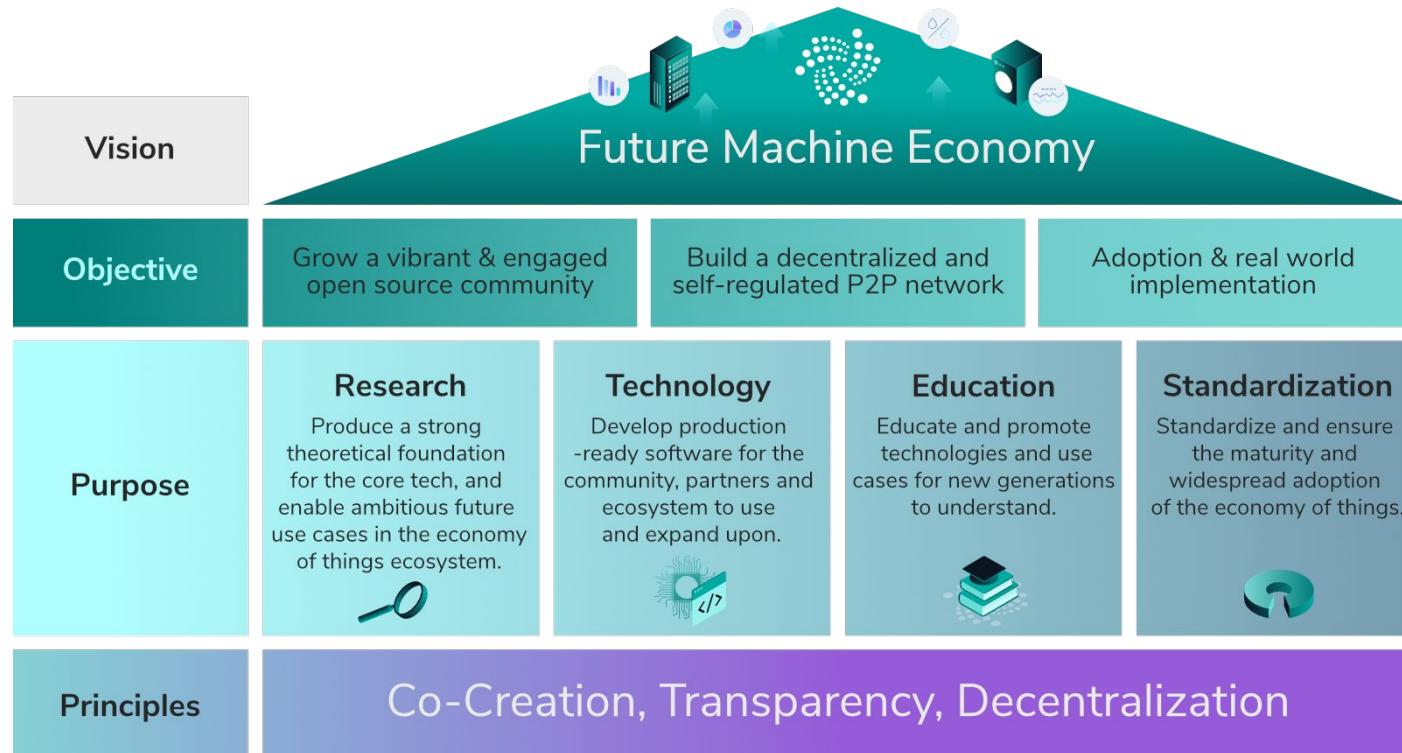
Non-profit Foundation based and regulated in  
Berlin, Germany

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

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

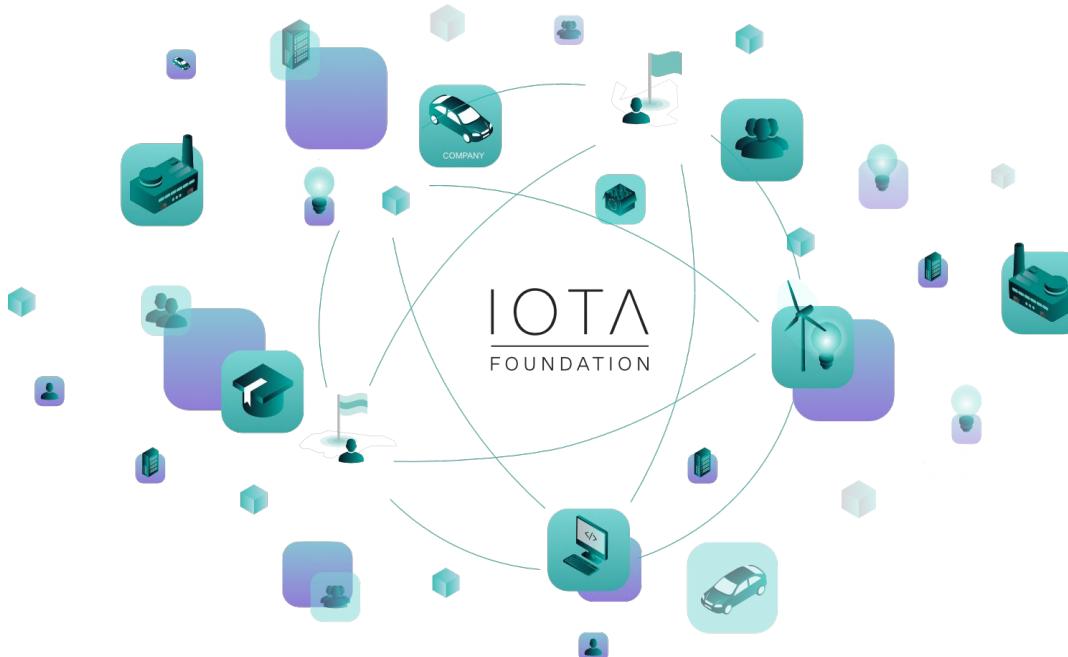
*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# IOTA Foundation - Vision & Goals



*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# IOTA Ecosystem



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

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# IOTA Ecosystem



## Meet the IOTA Ecosystem

Tutorials

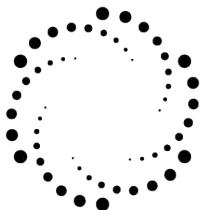
Projects

Events

Developers

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# 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

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# 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)

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*



TESLA

# Mobility & Automotive - PoC by bIOTAsphere

Vehicle Name: Tessie  
Last payment at: 11:36:18  
Insurance Status: Covered

Top Speed: 153 km/h  
Current Speed: 116 km/h  
Distance Since Last Payment: 2.493 kms  
Special Conditions: Ludicrous Speed (+5%)  
Time Since Last Payment: 00:13:58

Cost Per Minute (CAD) vs Speed

Est. Next Charge: \$0.0976 CAD  
141,650 IOTA

Funds: \$13.09 CAD  
18,989,379 IOTA

Best Insurance Provider: BFRocket Insurance

Transaction Status:

Special Conditions	Top Speed	Distance	End Time	Charge
Ludicrous Speed (+5%)	122 km/h	7.881 kms	11:36:18	\$8.3365 CAD 488,516 IOTA
Ludicrous Speed (+5%)	77 km/h	4.307 kms	10:36:18	\$0.2332 CAD 331,368 IOTA
	0 km/h	0 kms	09:36:19	\$0.0413 CAD 59,993 IOTA

## Insuremycar PoC

- Dynamic insurance provider
- Direct payments
- Vehicle monitoring

**CAUTION**Proof-of-Concept  
NOT endorsed by Tesla

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# 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

*Bottom Banner for Personal logos, webpage and IOTA Community Logo for personalisation  
(please edit me in the master slides)*

# Contacts:

[email@provider.com](mailto:email@provider.com)

[website.com](http://website.com)

[twitter.com/myhandle](http://twitter.com/myhandle)

[linkedin.com/in/mylink](http://linkedin.com/in/mylink)

# Sponsors:

<SPONSOR NAME>

<Description>

[sponsor.website.com](http://sponsor.website.com)

# Get involved:

Website: [www.iota.org](http://www.iota.org)

Ecosystem: [ecosystem.iota.org](http://ecosystem.iota.org)

Discord: [discord.iota.org](http://discord.iota.org)

Twitter: [twitter.com/iotatoken](http://twitter.com/iotatoken)

LinkedIn: [linkedin.com/company/iotafoundation](http://linkedin.com/company/iotafoundation)

YouTube: [www.youtube.com/c/iotafoundation](http://www.youtube.com/c/iotafoundation)