OAKEN INNOVATIONS

Blockchain + IoT

Hudson Jameson

Involved in cryptocurrency/blockchain space since 2011.

USAA: 2014-2016

Ethereum Foundation: 2016-current

Oaken Innovations: 2016-current

1 Wife & 3 Cats

Who We Are

Oaken Innovations made up of a team of professionals working to build-out practical solutions within the blockchain space.

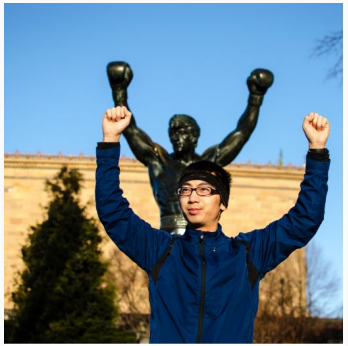
Oaken is an IoT blockchain platform for smart cities with hardware and software for automated machine-to-machine transactions over a secure and decentralized network.

Welcome to the intersection of Blockchain and IoT.

John Gerryts

Laney Fisher

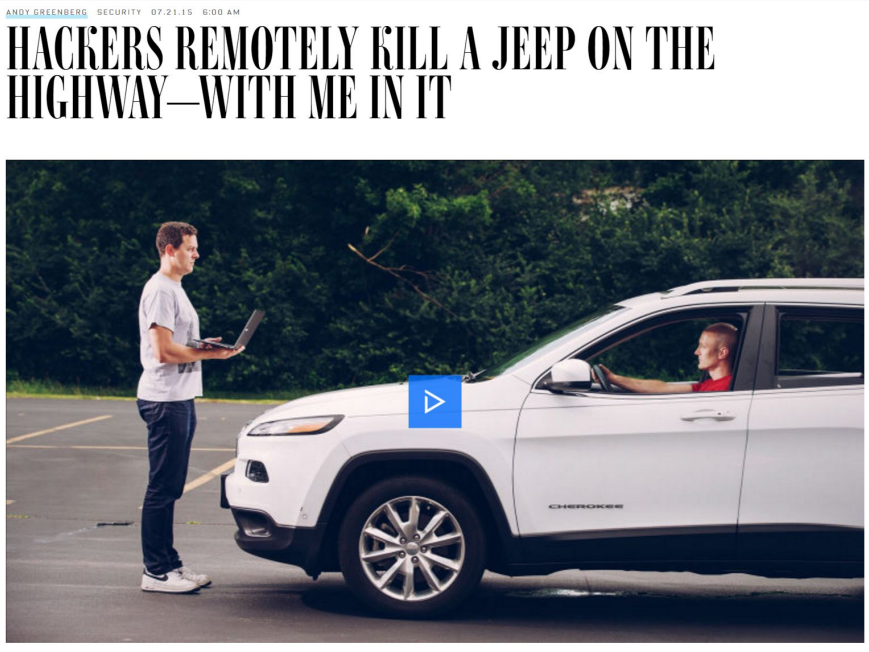
Hudson Jameson



Shuang “Lex” Liang

James Johnson

Why IoT Needs Blockchain



BLOCKCHAIN

Identity

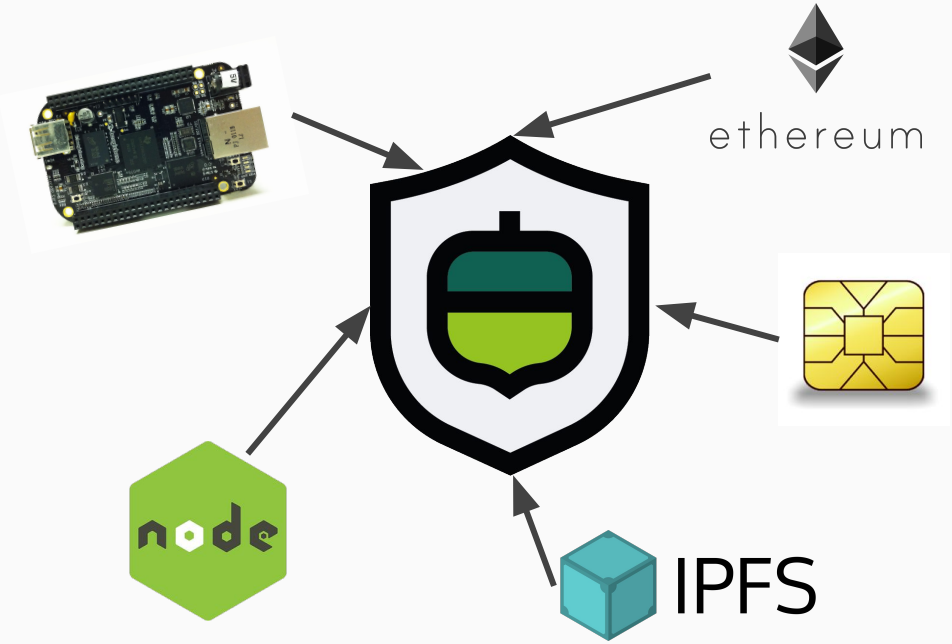
Trust

Value

The Oaken Platform

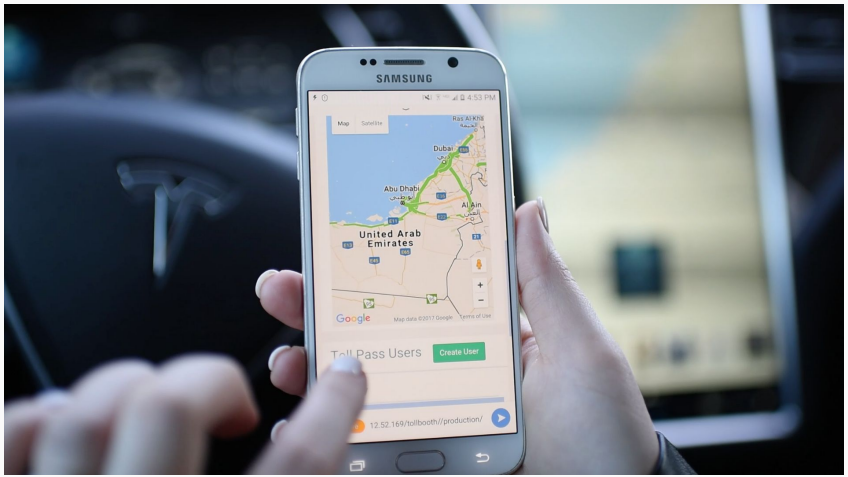
The Oaken platform is made of A.C.O.R.N.S (Autonomous Communication Over Redundant Nodes).

ACORNS provide a layer of security to both the hardware and software components of an IoT network.

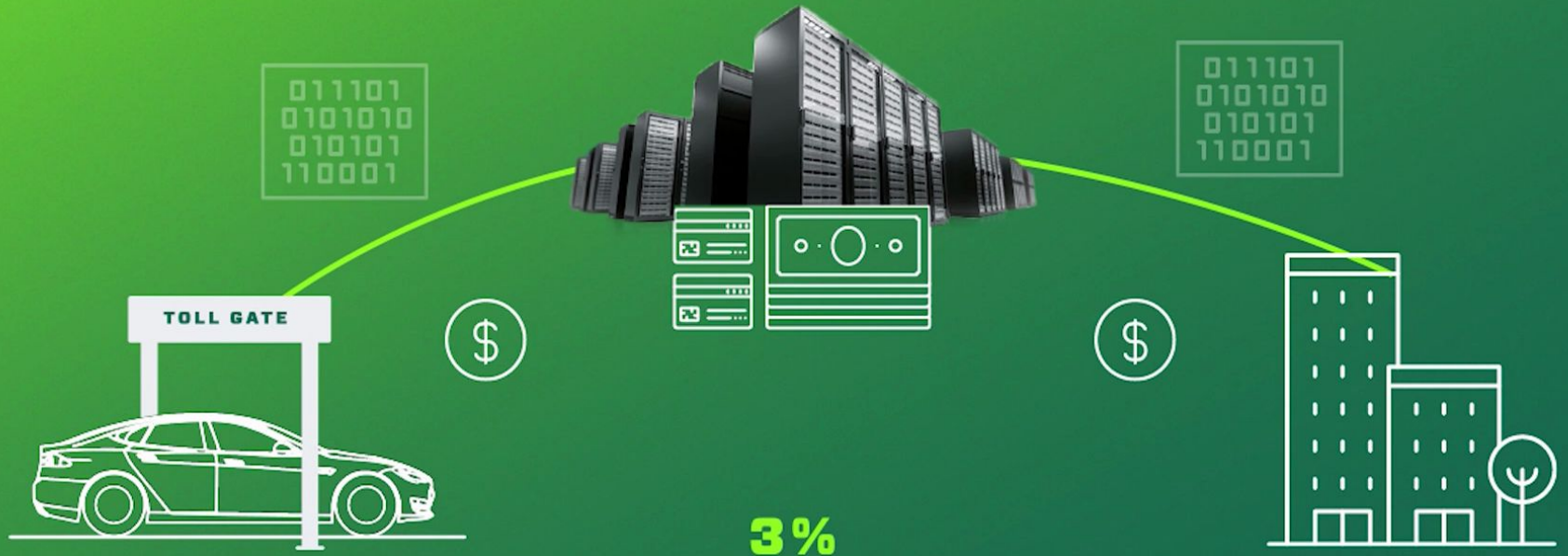


Use Case: Tollroads

- Hacked a Tesla and simulated a tollgate to win the grand prize at the United Arab Emirates Virtual GovHack.
  - Created a blockchain identity for the Tesla and for the tollgate.
  - Smart contract triggered when the Tesla would pass through.
  - True machine-to-machine value transfer.



CURRENT MODEL



OAKEN MODEL

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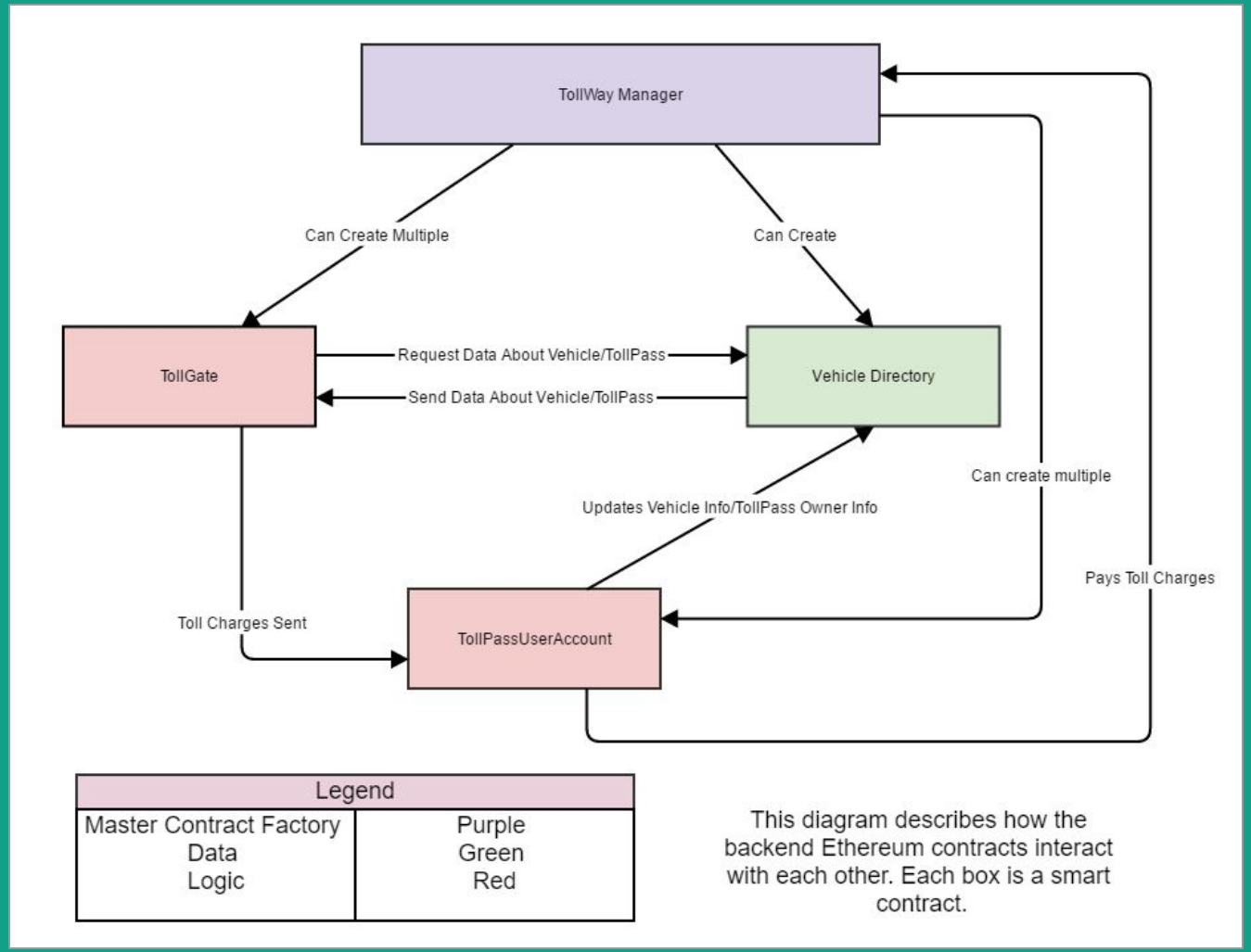
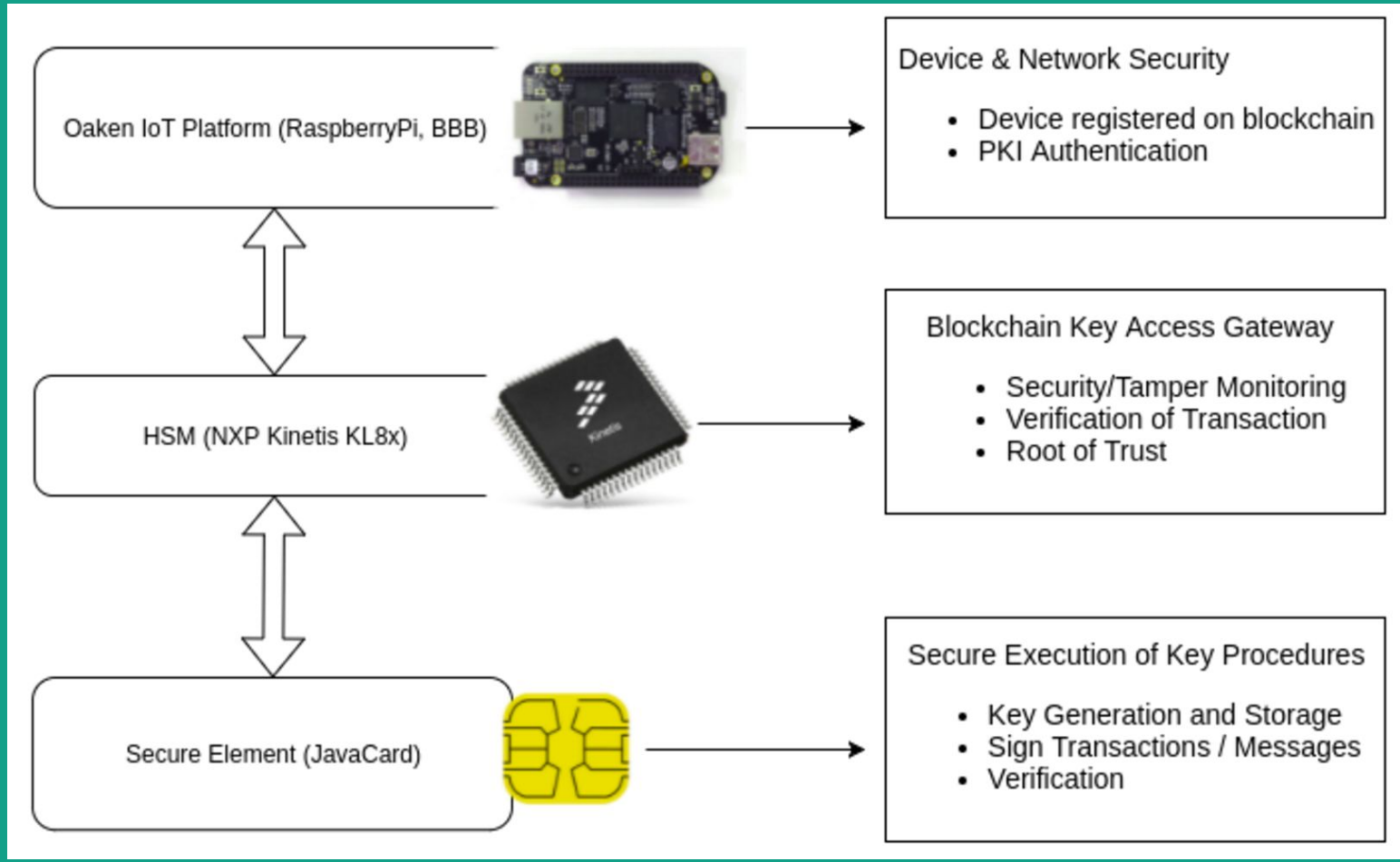
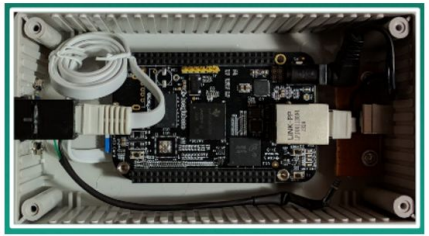

TollWay Manager
Can Create Multiple
Can Create
TollGate
Request Data About Vehicle/TollPass
Send Data About Vehicle/TollPass
Vehicle Directory
Can create multiple
Updates Vehicle Info/TollPass Owner Info
Pays Toll Charges
Toll Charges Sent
TollPassUserAccount
Legend
Master Contract Factory
Data
Logic
Purple
Green
Red
This diagram describes how the backend Ethereum contracts interact with each other. Each box is a smart contract.


Oaken IoT Platform (RaspberryPi, BBB)
HSM (NXP Kinetis KL8x)
Secure Element (JavaCard)
Device & Network Security
Device registered on blockchain
PKI Authentication
Blockchain Key Access Gateway
Security/Tamper Monitoring
Verification of Transaction
Root of Trust
Secure Execution of Key Procedures
Key Generation and Storage
Sign Transactions / Messages
Verification

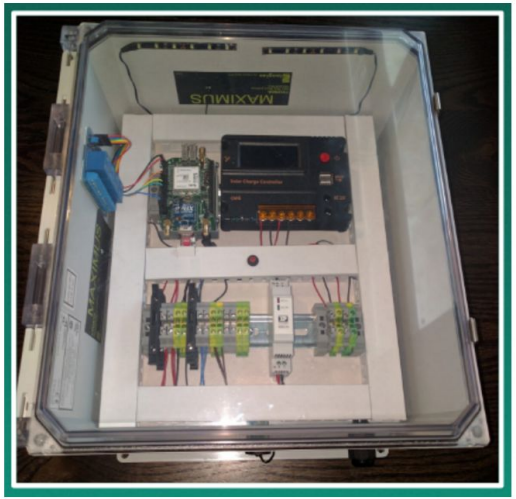
Looking Ahead

- Continuing to build and refine the Oaken Platform.
- Working with our industry partners to explore use cases across many fields.
- Expect an announcement during Consensus 2017.

ACORNS Node Proto Mk.1
Residential/Commercial Indoor



ACORNS Node Proto Mk.2
Industrial/Institutional Exterior



Contact

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Come see my IoT breakout session tomorrow!