Decentralized, peer-to-peer IoT

MANAGE IOT DEVICES WITH BLOCKCHAIN BASED, PEER-TO-PEER, DECENTRALIZED SYSTEMS

Who we are?

- Group of open source developers
- We do blockchain and decentralized, P2P application development
- We develop Streembit http://streembit.github.io/
- We participate in the W3C standardization process

The Problem

Problems with proprietary, closed source client-server systems

- Security and Privacy
- Economy
- Occupations - certain professions such as lawyers, journalists need a secure communication tool
- Politics - Incoming communication legislation such as the UK Investigatory Powers Bill
- Mitigate the risk of inside job hacking

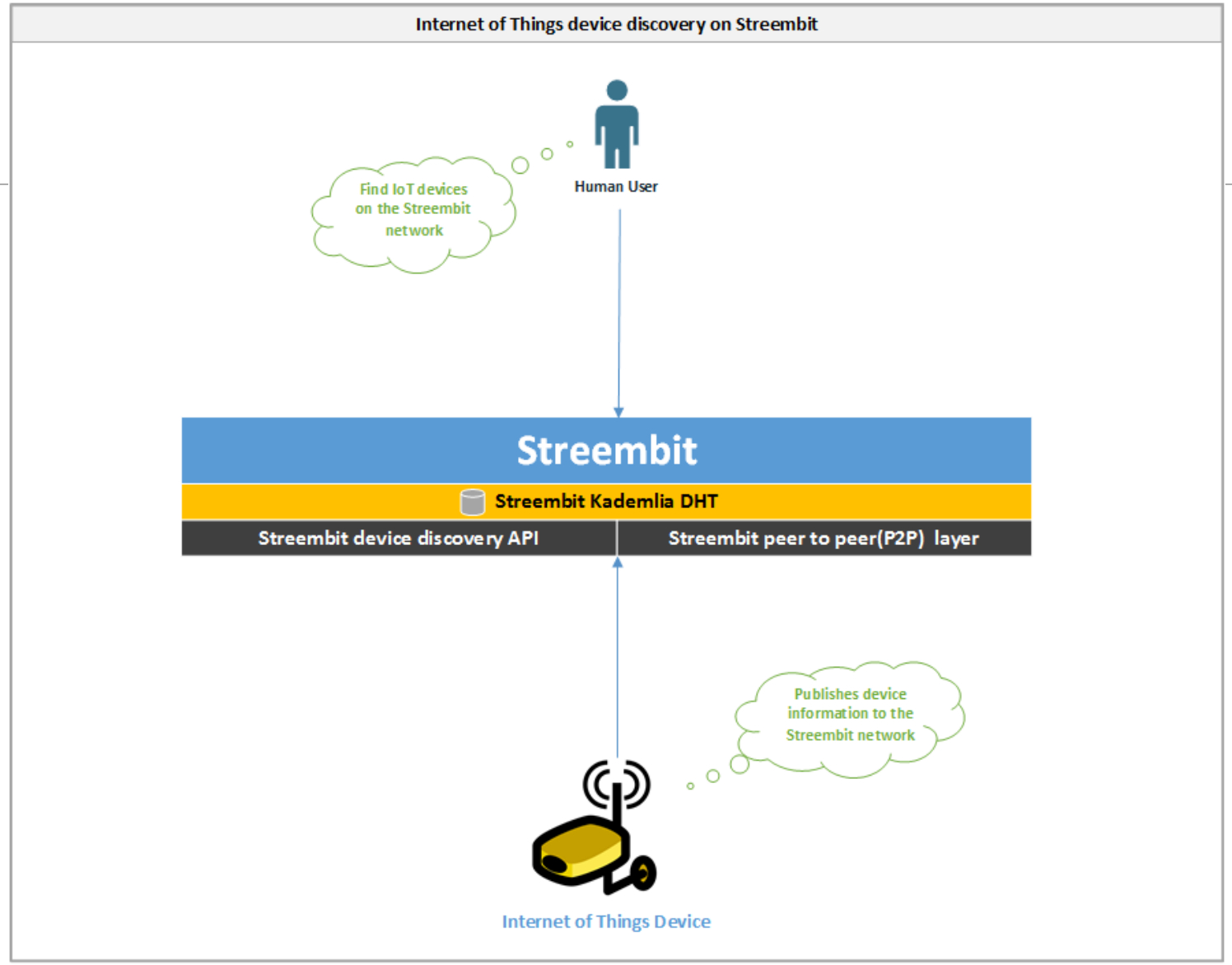
The solution

Use decentralized, peer-to-peer systems to move away from the cloud.

Blockchain technologies:

- Confirming data origin and accuracy
- Tracking updates
- Establishing true data authority for millions of different data fields
- Smart contract management

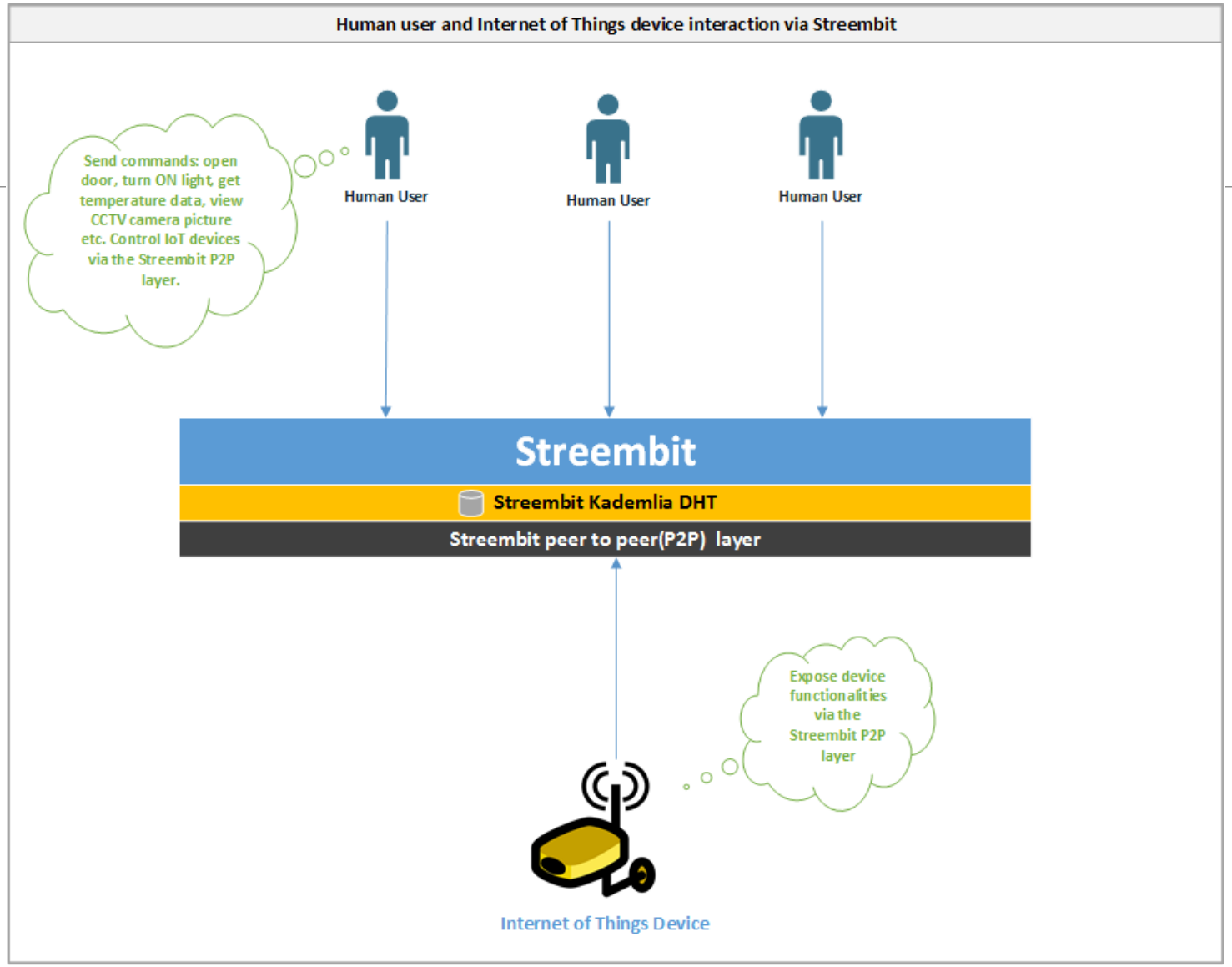
Device Discovery



Control Internet of Things devices

- Via peer to peer manner
- End to end encrypted between the human users and IoT devices
- Using W3C WoT standards

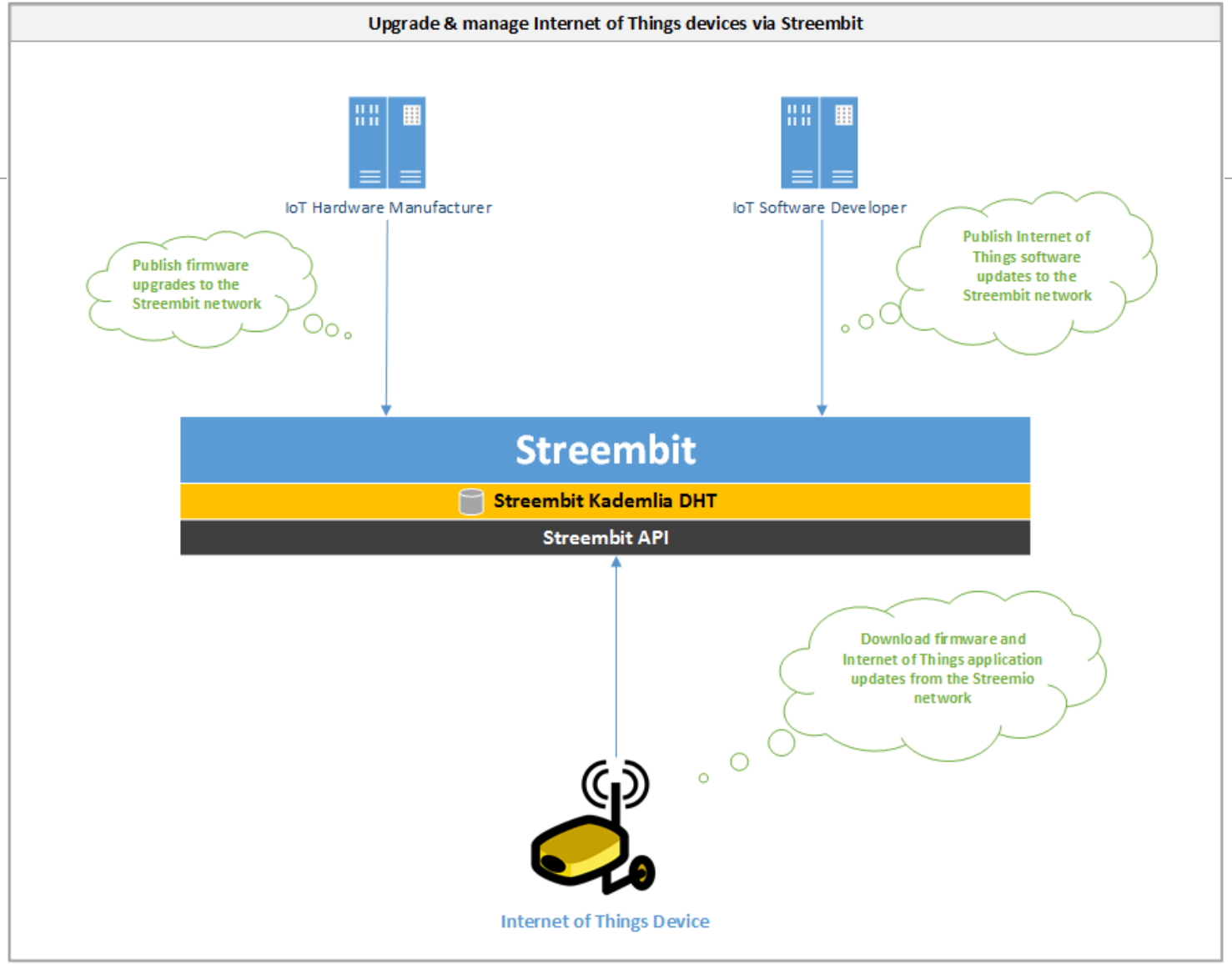
Control Internet of Things devices



Upgrade and manage IoT devices

- Hardware and software providers upgrade Internet of Things devices on the always up and running on decentralized networks.
- Internet of Things device manufacturers and software designers publish firmware and software updates via the decentralized network.
- Ensure via strong PPKI security that the origin and data integrity of the updates by verifying the public key of the publisher.

Upgrade and manage IoT devices



Strong security

- Based on PPKI, ECC cryptography
- Each actor of the system must generate a public/private key pair. (Typically keys are generated prior to configuring the device and will be burned into the devices' firmware).
- The devices and users publishes the public key to other users of the system.
- The data integrity and authenticity of the messages is guaranteed with PPK signatures.
- Each session between users is secured with strong 256-bit AES symmetric symmetric cryptography keys.
- Uses ECC Diffie Hellman (ECDH) key exchange

Working on standards

We try to create an IETF standard for decentralized, peer-to-peer IoT.

Github protocol repository

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