



INDUSTRIAL INTERNET OF THINGS TELECOM ON THE BLOCKCHAIN

White Paper

<https://iiot.tel>

Innovation squared -

Industrial Internet of Things on the Blockchain

(The new formula of innovation: $I2=IIoT+Blockchain$)

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INTRODUCTION

Good afternoon.

If you are reading this whitepaper, it means that you are interested in ICO Company “IIoT Telecom”, and that you would like to get as much information as possible about the company’s activities.

Let me guide you through this, whilst trying to explain technically complicated things in easily understandable language.

For your convenience, I'll highlight the technical nuances in the individual reference topics. If you prefer not to go too much in detail, you will still be able to understand the essence of our Company just by concentrating on the other topics. I have our CTO Frank Novak and CFO Peter Tomazic to help me out and write these nuances.

In this whitepaper, I will describe the activities of our Company, our strategy on the IIoT (Industrial Internet of Things) Market, our plans to make money with Blockchain, our definition of the consumer of our services and the way of using our own cryptocurrency.

Without further ado, let's begin.

CEO IIoT Telecom Ivan Petek

PROJECT SUMMARY

The IIoT Telecom Company (Industrial Internet of Things Telecom) plans to provide a lot of Services of Industrial Internet of Things on the Blockchain in the Whole World.

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The core business of the company includes two components. One is the decentralized IIoT Platform and the other is the wireless network LoRaWan, based on equipment of its own design.

IIoT Platform – decentralized specialized software on the Blockchain – allows to gather information from numerous “smart” IIoT devices, saves these data in the Blockchain and processes the data according to its special algorithms. The information may be sent to separate external Customer’s business support systems (OSS/BSS), and provide visualization and analysis of the obtained data in the

This Project will be one of the largest in the world! And the first project in the Industrial Internet of Things on the Blockchain with the ability to pay for services in its own I2 Cryptocurrency

personal account of the Customer and the Client.

The Blockchain technology allows the IIoT Platform to present a high availability and independence.

The equipment prototypes of LoRaWAN standard and IIoT Platform software on the Blockchain have been in development since 2016. The

prototypes of the LoRAWAN devices, and the alpha version of IIoT Platform are being developed as we speak.

The company has no plans to invent a new mechanism of the decentralization IIoT Platform. IIoT Telecom will focus on programming, algorithms and visualization services for Clients, and the decentralization IIoT Platform on the Blockchain will perform through technologies that have already been invented in earlier startups (like SONM or EOS). Thus, we will see one of the first real products on the Blockchain.

IIoT Telecom will produce the industrial LoRaWAN devices on the partner's factories. This reduces the initial investment to enter the market of Industrial Internet of Things considerably.

The company has an impressive strategic plan to cover large- and middle-sized cities by wireless networks based on the LoRaWAN technology. This network will provide the main transport for the Internet of Things data, and implement specialized software – a decentralized Platform for the Industrial Internet of Things based on the Blockchain (IIoT Platform).

This Project will be one of the largest in the world! And the first project in the Industrial Internet of Things on the Blockchain with the ability to pay for services in its own I2 Cryptocurrency.

IIoT Telecom earns on the provision of the Services to large enterprises,

municipal services and households, and ordinary people.

SERVICES ARE DIVERSE:

- ◆ Remote gathering of the indication of electricity, gas and water meters;
- ◆ Smart Parking reservation from a special application;
- ◆ Sensors, which allow to optimize the movement of workpieces in plants;
- ◆ Sensors that determine the location leaks in gas and oil pipelines;
- ◆ And numerous other services.

We plan to reach about 50 million connections by 2022 in 1,000+ cities around the world. If we keep in mind that the total number of devices will be 30 billion already in 2020, we can conclude that this goal is achievable.

Payment for Services by IIoT Telecom will be effected in its own I2 cryptocurrency (issued on the Ethereum platform).

The Franchise will help us to quickly capture the market of the Industrial Internet of Things.

IIoT Telecom offers IaaSB – Infrastructure-as-a-Service on the Blockchain. From the infrastructure of IIoT Telecom everybody can make tokenization and to the Blockchain any IoT non-Blockchain solution.

WHY DOES INDUSTRY NEED IIOT* ?

Worldwide IIoT business allows you to gain a competitive advantage by reducing costs and developing new sources of income. For example, the American company GE Aviation produces aircraft engines, which are equipped with sensors that enable you to remotely obtain information on the operation and on their basis, to identify the optimal algorithms of aircraft maintenance, which has made it possible to have maintenance costs 7 times lower.

Another example is the mining company Rio Tinto in Australia, which uses unmanned quarry trucks, continuously operating and being controlled from the operations center at a distance of 1200 km. Industrial IIoT-technology is the basis of Industry 4.0: by German Academy of Science and Technology estimations, its implementation will increase the performance of German industrial companies by 30% until 2025. The consumer market today is being filled with “smart” technology. For example, according to a survey by PwC in the US, every fourth consumer uses or is planning to use a device with the “smart house” technology.

IIoT technologies used in industry can reduce costs and increase productivity. According to a survey of the largest German companies, company's expectations of the next five years are that investment in industrial Internet technologies can enable more efficiency by an average of 18% and reduce costs by 14%. At the same time, IIoT allows industrial companies to transform business models and increase revenues from services (e.g. after-sales service): companies predict that, on average, these technologies will provide a growth in revenue of 2.9% annually.

IIOT TELECOM COMPANY



OUR MISSION

Create an international innovative Company, whose technology and information solutions will allow to improve existing business processes of companies and people's daily lives through the implementation of the products of the Industrial Internet of Things.

Didn't understand a thing? Personally, I didn't understand this jumble of words at first. Let's deal with it.

Industrial Internet of Things (IIoT) is the concept of building a technical infrastructure, implying a connection to the Internet industrial devices, equipment, sensors, and systems of controlling the technological processes and their interaction with each other and with other systems.

What are these devices and sensors? Their great variety, for example:

- ◆ Water meters, electricity meters with connectivity to the IIoT, through various protocols, of which the most promising (but not only one) is LoRaWAN;

- ◆ Parking sensors with connectivity to the IIoT, which allow you to get into the Car Park, to find a free space and to book it through a special mobile phone application;
- ◆ Smart lighting Sensors – adaptable to weather conditions, and to the time of the year. Managed centralized, personal and allowing to save about 30% of electric power;
- ◆ And many others devices. The main directions of development of the sensors and services of our company will be further presented in next chapters.

These examples describe the purpose of the Company IIoT Telecom.

At first, you'd think the figure 0,0022% looks funny. However, when you keep in mind that the Internet of Things market will be worth about 25.000 billion \$ by 2025, this figure will get us at 530 million \$ a year. Not bad.

The goal of our Company is getting the profits through the Services of Industrial Internet of Things in the global market. Capturing nothing less than 0,0022% of the global market share of the Internet of Things.

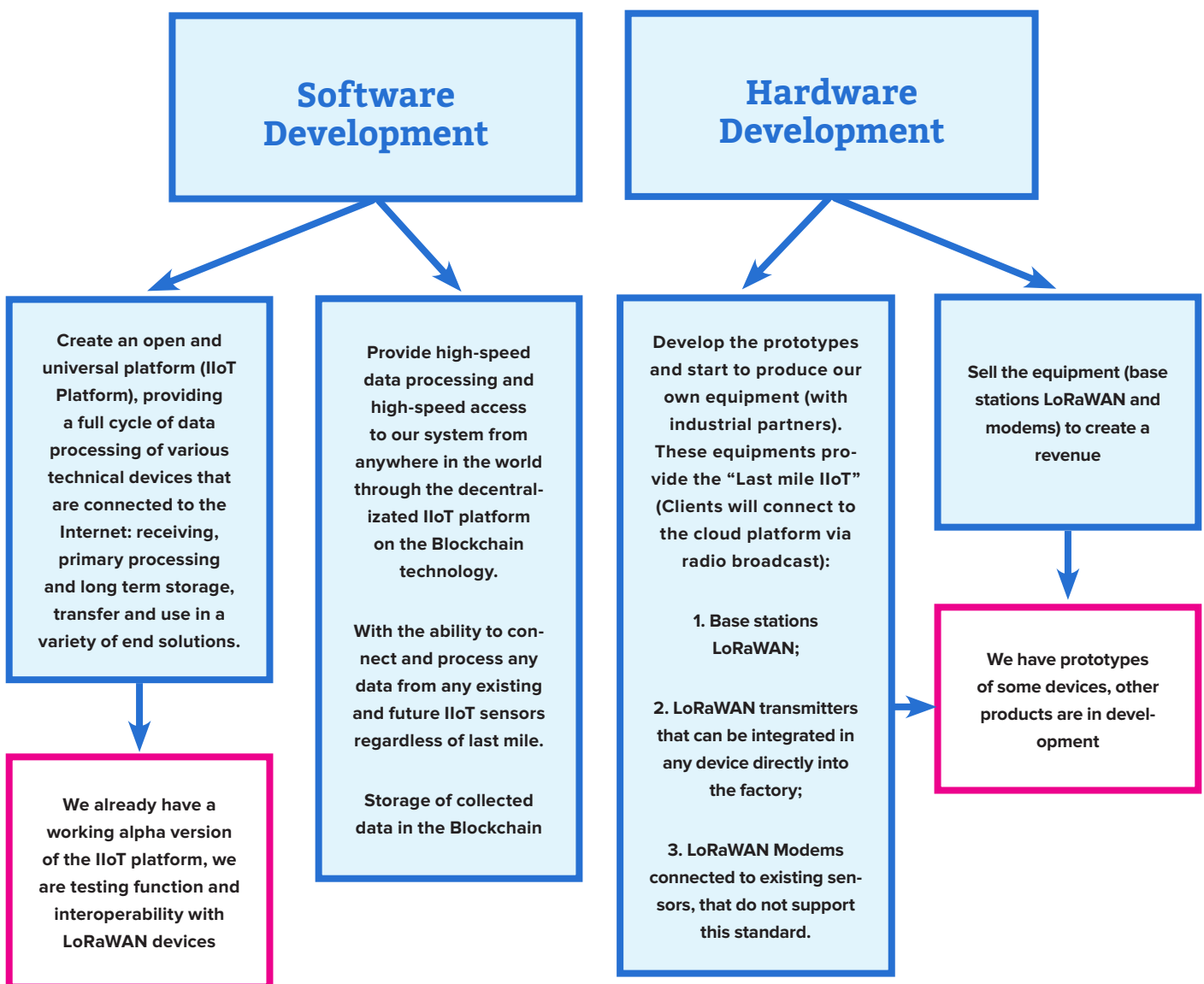
I want to emphasize that we are not trying to create a new Blockchain algorithm of interaction for IIoT devices among themselves, supported by cryptocurrency transactions. Our main goal is to make Earnings on Services for the Client.

For achieving our goals we plan to introduce several innovations:

- ◆ Decentralized IIoT Platform for the Industrial Internet of Things and data storage based on the Blockchain technology;
- ◆ Receive your own cryptocurrency I2 as a payment for our services

And that's not all...

OUR GOALS



LoRaWAN – is a wireless standard developed specifically for the Internet of things. It has a simple architecture - type "star". The network nodes are characterized by low power consumption (up to 10 years with regular AA batteries), low data rate, long range connections (15 km in country areas and 5km in a dense urban environment) and low cost of terminal equipment.

IMPORTANT NOTE

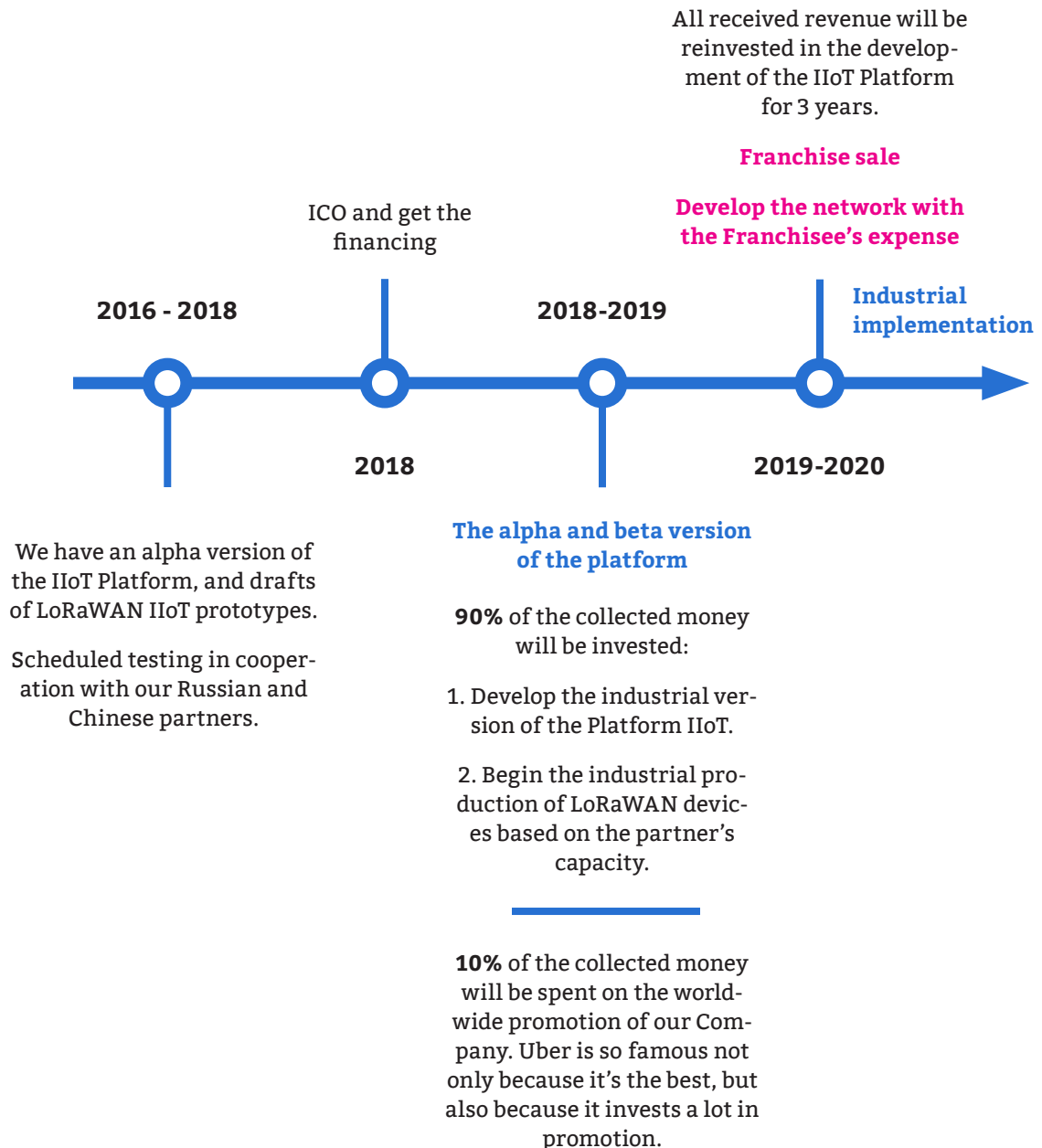
The two directions of our business are independent from each other. IIoT Platform is available through any wired or wireless communication and can connect to any subscriber regardless of the last mile (through the usual Wi-Fi, Ethernet, xWDM, etc.). But the LoRaWAN network allows to simplify the subscriber's access to our system and to make it a lot cheaper.

Industrial production of LoRaWAN base stations and subscriber's LoRaWAN transmitters will be deployed on the plants – partners of the Company. This will allow us to save money on the start-up equipment. For production, drawings of the equipment will be sent to the plants, as well as our own developed software for microcontrollers. We are currently in negotiation with several plants. We have some prototypes of the devices – a LoRaWAN base station, and some IIoT meters and sensors.

Meters, sensors and other devices are more cost-effective when bought from the factories, which are specialized in manufacturing of such devices.

Subscriber LoRaWAN transmitters will be installed in various meters, sensors in the factories of partner companies. Plants will get 100% working and tested samples, which they only have to place in the housing of an IIoT device. In doing so, an ordinary device becomes an Industrial Internet of Things device thanks to our LoRaWAN transmitters.

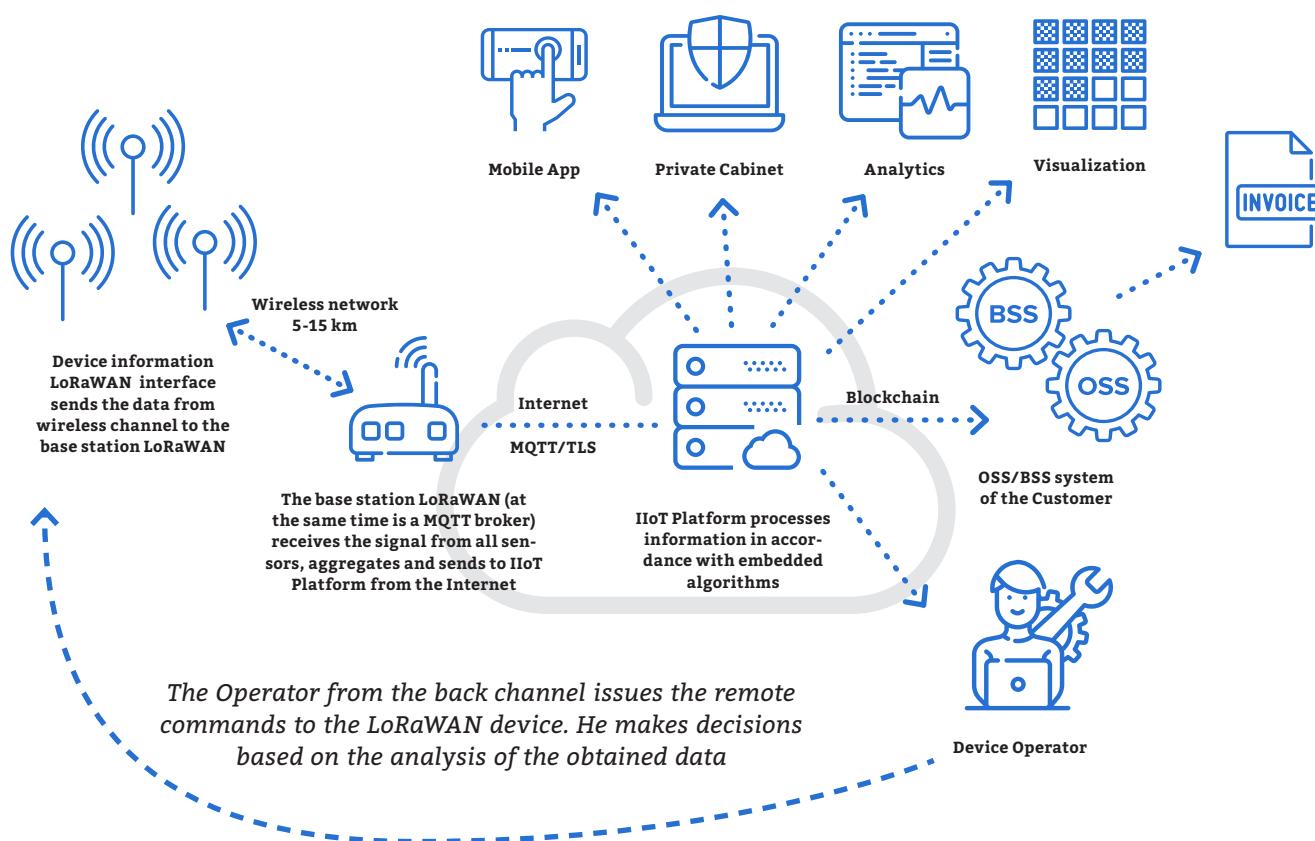
HOW WE ARE PLANNING TO ACHIEVE OUR GOALS



I hope that you understand a bit more now about IIoT, so let's continue to the next steps. We will now take a look into the technological architecture of our system, and our main services that we plan to promote in the Market. If you have little interest in technical details, or if you are already familiar with these services, you can perfectly skip this section and go to the "Monetization" chapter of this Whitepaper. I remind you that a detailed description of the Marketing of our company, as well as our Business plan, are described in a separate document, which you can download from our website.

HOW DOES IT WORK?

The General principle of the system's operation is shown in the diagram below. The scheme is drawn in a simplified way to clarify how the whole system works.



Business support systems (BSS) are the components that a telecommunications service provider (or telco) uses to run its business operations towards customers. Together with **operations support systems (OSS)**, they are used to support various end-to-end telecommunication services (e.g., telephone services).

THE MAIN COMPONENTS OF OUR SYSTEM

1. IIOT PLATFORM BY OWN DEVELOPMENT ON THE BLOCKCHAIN

IIoT Platform allows us to provide the technical basis, regardless of the last mile access for industrial production, agriculture and other economic sectors. It initially provides the collection, storage and processing of raw data (from the meters, probe and sensors) and ends with visualization and analytics, and sends data in the required format to the external OSS/BSS systems. For example, data from electric meters via a wireless network LoRAWAN delivered to the IIoT Platform, thereafter processed and sent to the OSS/BSS system electric company for billing. IIoT Platform decentralizes and stores data in the Blockchain. Everyone can connect to the IIoT Platform through the Internet, or via a wireless LoRaWAN network.

2. THE WIRELESS BASE STATION LORAWAN BY OWN DESIGN

A base station by wireless standards, developed specifically for the Industrial Internet of Things. This base station provides up to 15 km in country areas, and up to 5 km in a dense urban environment. At the same time, it acts as a MQTT/TLS broker to transfer information in the IIoT Platform. One base station can connect tens of thousands of sensors. However, the frequency of 433 Mhz and 868 Mhz have a high permeability, easily penetrating through the walls of houses. The base station LoRaWAN is interconnected from the Internet or from special IP/MPLS VPN, which hiked from Telecom operators having substantial coverage networks in the country. For example, Vodafone in Europe.

3. WIRELESS CUSTOMER DEVICES

Wireless customer devices with integrated LoRaWAN sensors by own development, or wireless LoRaWAN modems designed for connecting equipment that does not support this standard. Sensors transmit data to the base station LoRaWAN, for a certain amount of time (usually 1 time a month or as requested), and then go into standby mode, thus operating up to 10 years with only one AA battery.

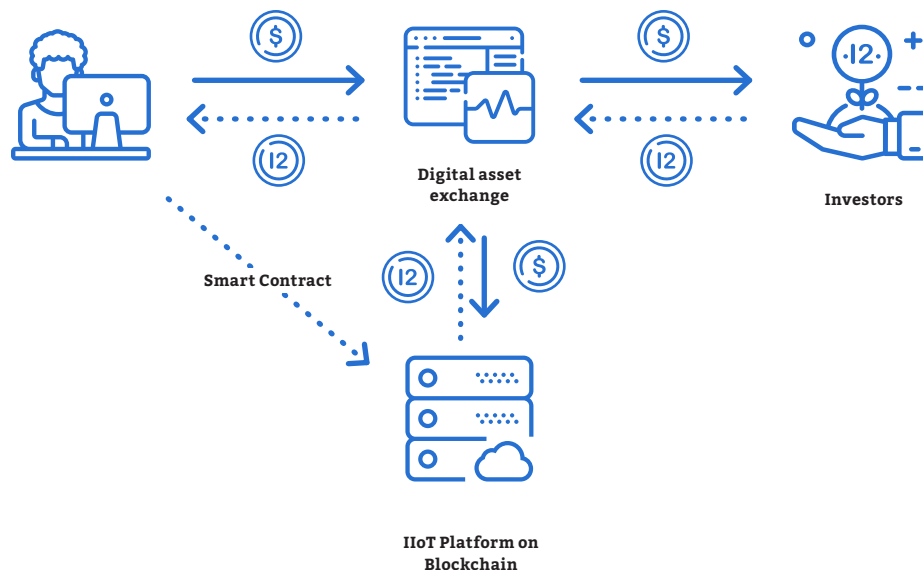
OUR OWN CRYPTOCURRENCY I2



Own cryptocurrency I2 (which will be on sale during the ICO) will be accepted as the unique payment method for IIoT Platform Services.

Cryptocurrency payments will be made as easy as possible – between the Client's cryptocurrency wallet and the cryptocurrency wallet of the IIoT Platform. The cryptocurrency payment will be made automatically, only for rendered services, on the basis of smart contracts.

If a Client wants to pay for our services, he will be able to buy I2 at the cryptocurrency exchange. Investors or holders of our currency, will sell. The rate of I2 will be set by the cryptocurrency exchange.



The prices for our Services will be in the Fiat currency of the country in which our services are delivered. On one hand we will provide the constant value of our services to the Client. On the other hand we will provide the ease of payments by use of our own cryptocurrency I2. Thirdly, we will provide sustainable demand for our cryptocurrency I2 to protect the interests of Investors.

I2 will be released in a limited volume and no additional issue is planned. The volume of I2 will be deficient at the beginning, to stimulate demand for a cryptocurrency exchange.

On one hand, the higher the rate of our currency, the lower will be the demand, because the cost of services is recalculated in the Fiat rates. On the other hand, a growing number of Clients will ensure increased

demand and the initial limit on the number of issued tokens in some moments will create an excessive demand.

According to our calculations, this will provide a steady growth of our cryptocurrency for several years – even more precisely over those years, during which the Internet of Things (IoT) market will grow, as well as the number of connected Clients.

WHY WE USE ONLY OUR DIGITAL CURRENCY PAYMENT?

The answer is obvious: we can directly influence its course and capitalization. Our Customers and our Investors keep the ratio of bids and asks in balance. The effectiveness of our Company (or, as is certainly possible: an economic downturn) affects the amount of bids and asks. We have no influence from other cryptocurrencies and Fiat money.

SO WHY BOTHER, ISN'T IT BETTER TO PAY IN FIAT CURRENCIES?

At first glance, it seems to be that way. But let's take a closer look. Firstly, working worldwide for Clients in different countries, it will take time for them to make a payment in their own currency to another country. Very often, it's necessary to go to the Bank to present a service agreement as the basis for your payment. Yes, keep the monthly payments in mind. And these transfers are not fast. Secondly, do not forget about the commission fees – these are not low. If you pay 2,5\$ every month for a few of the sensors, the commission will be very substantial.

We offer an easier way, in only two clicks: buy our currency on a cryptocurrency exchange. Pay automatically thanks to smart contracts, without any commission fee!

TECHNICAL INFORMATION

HOW DOES IIOT TELECOM ON LORAWAN WORK

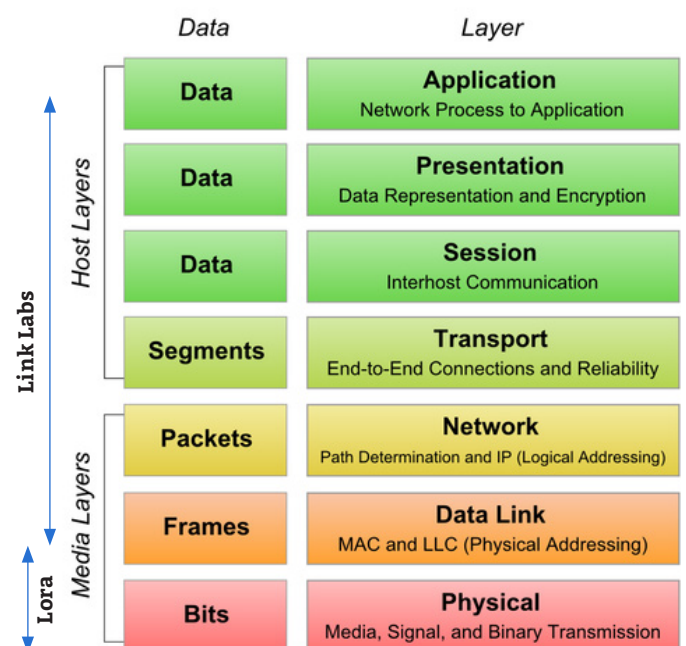
THE LORAWAN PROTOCOL AS THE BASIS OF THE IIOT TELECOM TRANSPORT NETWORK

Prototypes of LoRaWAN base stations from IIoT Telecom are based on standard LoRaWAN. It will provide the compatibility of our base stations with LoRaWAN devices from all manufacturers around the world. We are planning to develop one of the first dual-band base stations, operating at 868 Mhz and 433 Mhz.

Let's look at the basic principles we use in our equipment.

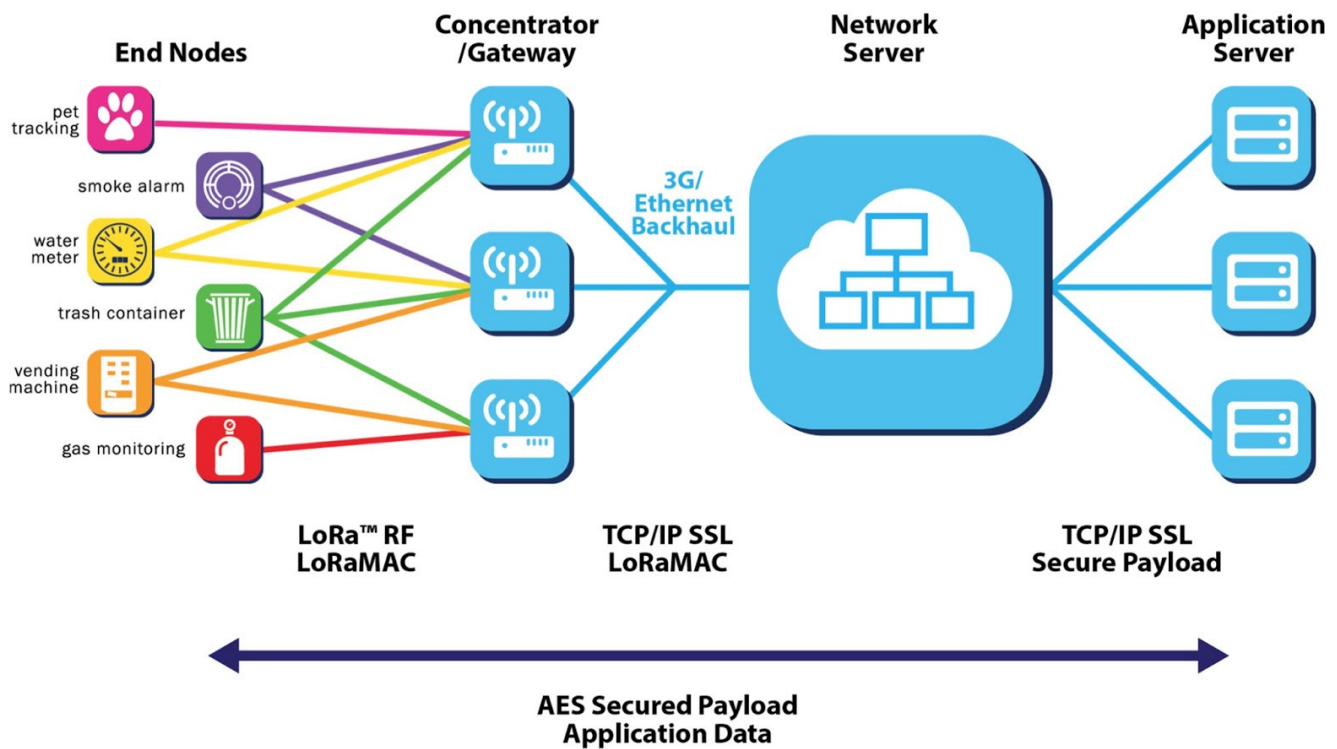
The outdoor energy-efficient network Protocol LoRaWAN (Long Range Wide Area Networks) provides a significant advantage over Wi-Fi and cellular 3G/4G networks due to the deployment of machine-to-machine (M2M) communications, energy-efficient devices, and low costs.

LoRa modulation is OSI physical layer (Layer 1), and LoRaWAN (Long Range Wide-Area Networks) is a MAC layer Protocol of OSI (Layer 2) for networks with many nodes, with a large radius of action and low own power consumption.



OSI Model

The LoRaWAN network has a simple architecture with a star topology without repeaters and mesh links. The network nodes are characterized by low power consumption (up to 10 years on regular AA batteries), low data rate, long range connections (15 km in country areas and 5km in a dense urban environment) and low costs of terminal equipment.



The LoRaWAN Protocol is optimized for terminal devices operating on batteries and includes different classes of nodes, providing a compromise between speed of information delivery and the time of operation of the devices when using the battery (batteries). The Protocol provides full two-way communica

tion, and architecture, by a two-level encryption in two different AES-128 keys according to RFC-4493. It ensures total reliability and security of the entire system. The architecture of the LoRaWAN base stations was developed with the possibility of active work with mobile end devices (End Node).

THE NODES OF THE NETWORK LORAWAN IIOT TELECOM

1. End Node. Designed to exercise control or measurement functions. It contains a set of necessary sensors and controls.

2. LoRaWAN Gateway (LoRaWAN Wireless base station). In a typical LoRaWAN network, gateways (LoRaWAN Gateways) transmit the encrypted data received from the terminal device (End Node) to a Central server of the network provider (Network Server), and then to the IIoT Platform application server (Application Server) from which the data presented to the final user.

3. IIoT Platform. Consists of two major subsystems: Network Server and Application Server. Manages the schedule, task, speed, storage, processing of data received from the End Node, controls the operation of the End Node. It displays processed data to the Client, performs cryptocurrency transactions for accepting payments from Customers.

THE TYPES OF CLIENT SENSORS IIOT (END NODE)

- ◆ Class A (All). Autonomous sensors or actuators with restrictions on time-out. As efficient as possible for the duration of the work;
- ◆ Class B (Beacon). Actuators with external power supply. More energy-consuming type of devices. Frequency feedback;

- ◆ Class C (Continuous). The drives with power supply. The device has an open continuous window for communication with the network server.

THE BASE STATION IIOT (LORAWAN GATEWAY)

LoRa gateways designed for use in radial star-shaped network architectures for long range in the system LoRaWAN. Because of the properties of LoRa technology, these gateways can be multi-channel transceivers, which are able to perform demodulation (Mux/Demux) from multiple channels simultaneously, and even the simultaneous demodulation of multiple signals on the same channel.

Communication between the LoRaWAN network's base stations is carried out using traditional technologies (Ethernet, WiFi, GSM) - TCP/IP. Usually it is either encrypted VPN over a public network, the Internet or a dedicated leased VPN over IP/MPLS network Operator (leased: for example Vodafone).

The capacity of the network depends on the number of packets that can be received in a given time. One base station with 8 channels using the LoRaWAN Protocol, is able to get about 1.5 million packages a day. So, if the End Node sends one packet per hour, LoRaWAN can serve up to 62.500 of such end devices on one Gateway.

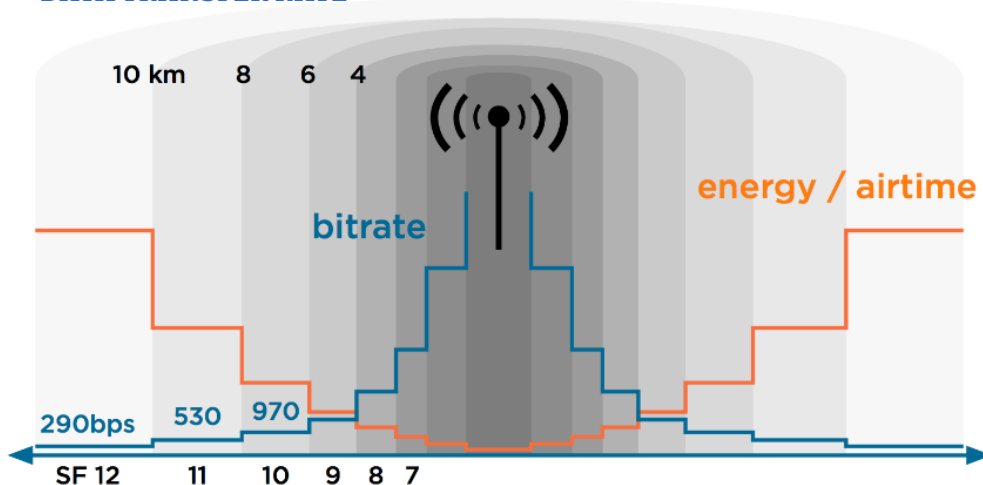
RFI RESISTANCE

The high penetrating power of a radio signal of subgigahertz range in buildings and cellars, offers a stable connectivity where other wireless technologies fail.

The LoRaWAN Modem on the combined GMSK channel has the ability of noise reduction to 19.5 dB (due to

Gaussian filtering). It can receive and demodulate signals of 19.5 dB below the level of interference or noise. For correct demodulation, the majority of systems with frequency shift keying FSK (Frequency Shift Keying) need a signal power at 8-10 dB above the noise level.

DATA TRANSFER RATE



Adaptive data transmission rate ADR (Adaptive Data Rate) in LoRaWAN networks on the speed of radio transmissions from 300 bit/s to 50 kilobits per second, the speed decreases in proportion to the increasing distance between the transmitter and receiver. This is enough to solve the technological problems – the transfer of information from numerous sensors and devices on the Industrial Internet of Things in the IIoT Platform.

GFSK (Gaussian Frequency-Shift Keying) is used for the data transmission channel. Modulation is applied in the form of frequency shift keying, which

uses a Gaussian filter to smooth the data stream of 50 kbps.

To extend End Node battery life and to optimize the overall throughput of the network, the IIoT Platform's Network Server controls the data transfer speed and capacity of the radio frequency output of each end-device (End Node) separately, based on the distance from the gateway. The control is performed using the algorithm of adaptive data transmission speed ADR (Adaptive Data Rate). This is crucial for a high performance network and guarantees the necessary scalability.

SECURE TRANSMISSION OF DATA END NODE TO GATEWAY LORAWAN

To protect against unauthorized access and falsification or interception of data transmitted between the End Node and Gateway LoRaWAN, mandatory duplex data encryption is used with two different AES-128 keys according to RFC-4493.

This ensures complete confidentiality of the data while passing through to all involved in the chain of devices, so the contents of the package is only available to the sender (the endpoint) and the recipient for whom it is intended, i.e. the application service provider. The network server operates on data in encrypted form and authenticates and verifies the integrity of each packet, but has no access to the payload, information from connected to the node sensors.

ARCHITECTURE IIOT PLATFORM.

GENERAL INFORMATION

The IIoT Platform of the Industrial Internet of Things company “IIoT Telecom” is a multicomponent decentralized system on the Blockchain, providing a full cycle of data processing of various technical devices that are connected to the Internet: receiving, primary processing and long-term storage, transfer and use in a variety of end solutions.

The task of the IIoT Platform is to provide the technical basis for the creation of various technological solutions of the full cycle for industrial production, agriculture and other economic sectors, starting with the collection and processing of primary data (from the meters, probes and sensors) and ending with the provision of visualization tools and analytics.

The IIoT Platform is built on a service-oriented architecture (SOA) in accordance with the recommendations of Fog Open Reference Architecture for Fog Computing. The decentralization platform on the Blockchain will be created either by developing their own algorithms, either through existing platforms (e.g. SOMN or EOS) which allow to decentralize any system.

The IIoT Platform consists of separate independent components-modules, each of which can be used alone or in combination with other components.

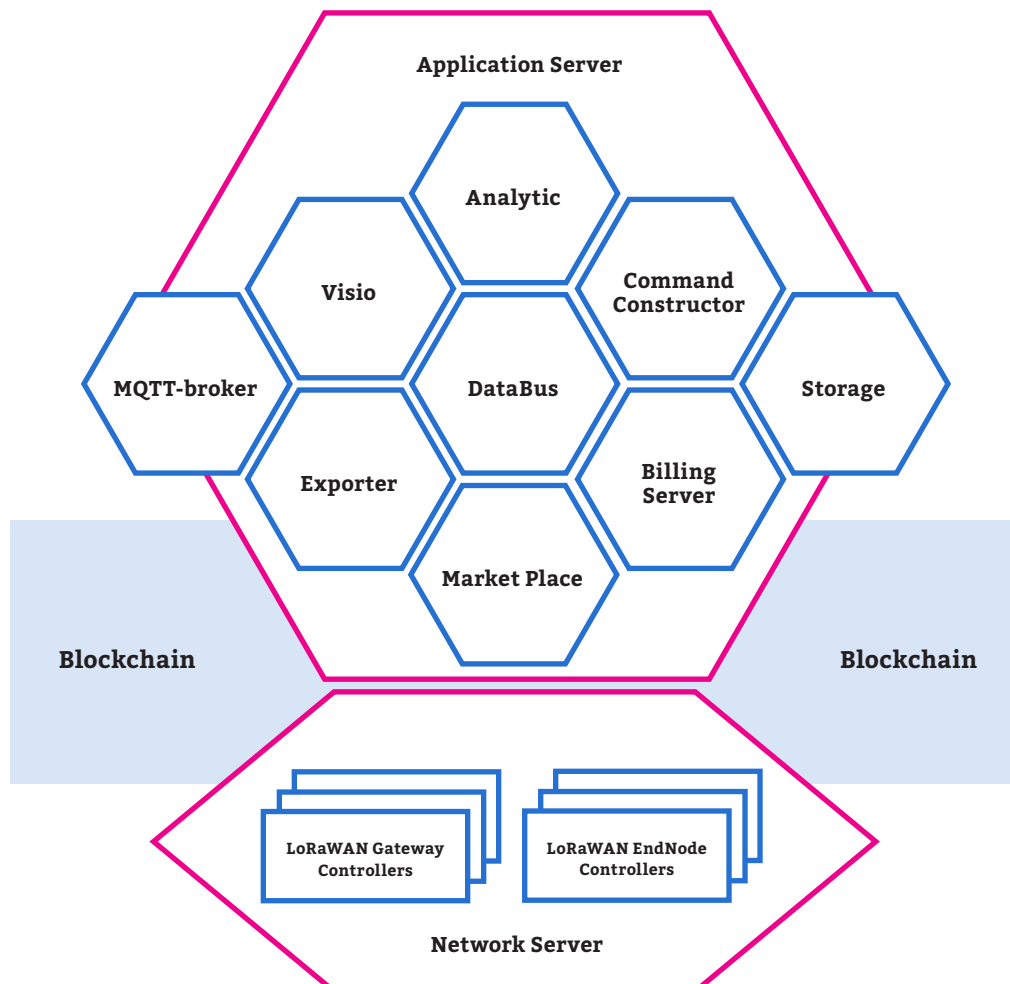
It consists of two major subsystems: Network Server and Application Server:

Network Server. A subsystem of lower level, working 2-3 layer of the OSI model which manages and controls a data transfer subsystem of base stations based on the LoRaWAN technology;

Application Server. The Application Server is a higher-level server that works above a Network Server architecture on the 3-7 level of the OSI model.

The main functions of Application Server:

1. Data aggregation from LoRaWAN Gateways. Checking the integrity, and if necessary submitting commands to the Network Server to request information;
 2. Processing and analyzing the data in accordance with laid algorithms for each Client.
 3. Storing data in the Blockchain;
 4. Sending the results of the processed data to the OSS/BSS subsystem of the Client;
 5. Providing information in the personal Client's account on the IIoT Platform.
 6. Performing billing companies to calculate finances for each Client on the IIoT Platform.
- The implementation of the reception and control of cryptocurrency transactions for rendered services.



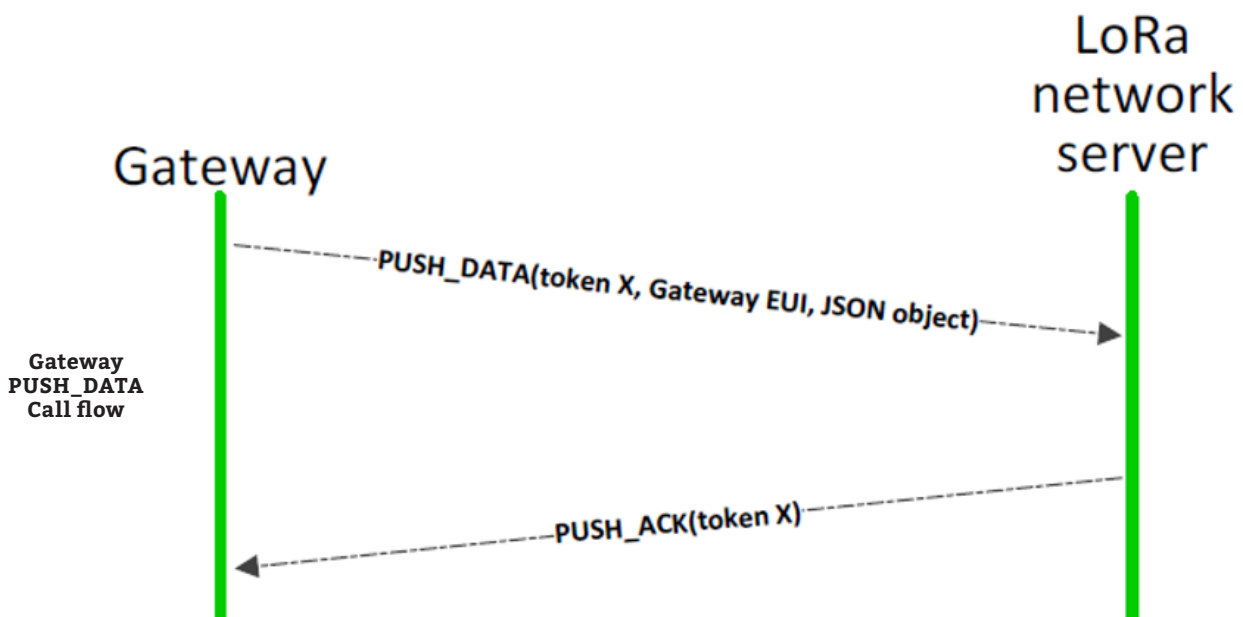
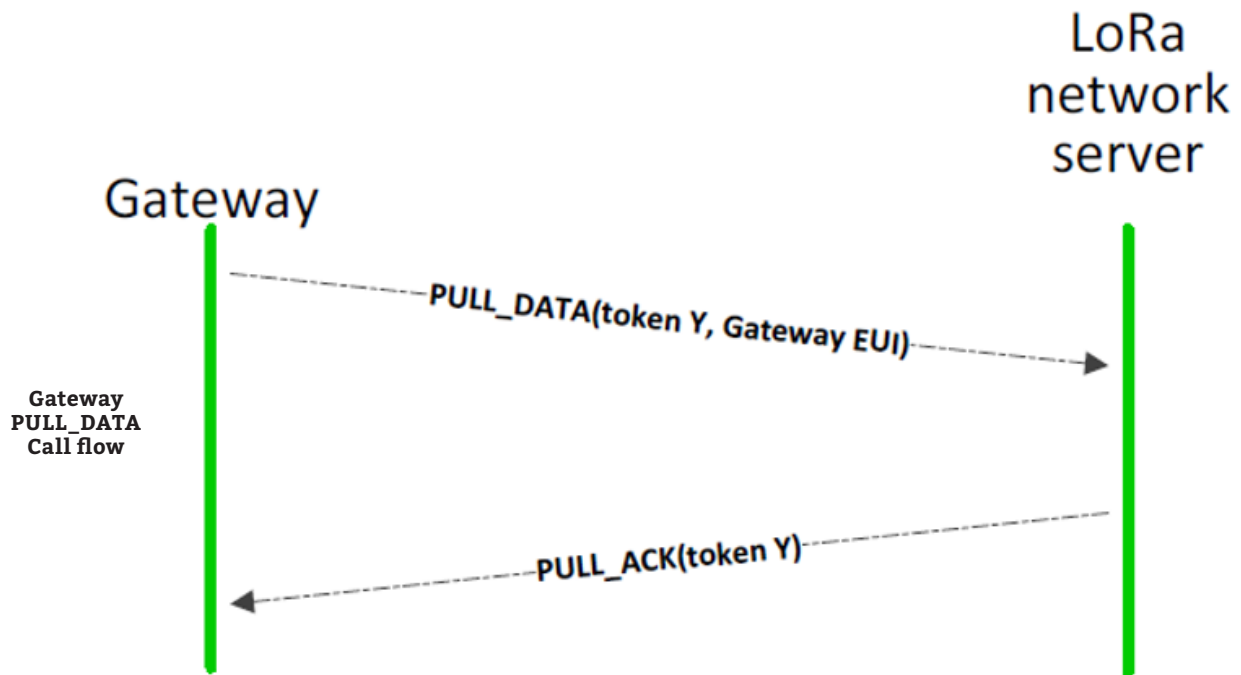
IIOT PLATFORM. SUBSYSTEM NETWORK SERVER

The issue of possible conflicts with simultaneous data transmission of multiple End Nodes of the LoRaWAN network is solved by the Network Server, which sends the control commands to the End Node network Node via LoRaWAN Gateways, allocating time slots for transmission and reception for each endpoint (End Node). The addressing is 32-bit DevAddr, unique for each node (End Node).

All communication between the Network Server and the End Node is processed by UDP Protocol. A special Protocol Gateway message protocol (GWMP) uses UDP ports:

GWMP message type	Direction	Gateway UDP source port	Network server UDP port	Gateway UDP destination port
PUSH_DATA	To server	Arbitrary	Server GWMP port (default 1700)	
PUSH_ACK	To gateway			The source port of the PUSH_DATA message to which this message is an acknowledgement
PULL_DATA	To server	Arbitrary		
PULL_ACK	To gateway			The source port of the PULL_DATA message to which this message is an acknowledgement
PULL_RESP	To gateway			The source port of the most recent PULL_DATA message received by the network server from the destination gateway

The Network Server of the LoRaWAN network makes decisions concerning the necessity of changing the transfer rate of data points (End Node), the transmitter's power, the selection of the channel, the start and time duration. It controls the battery end nodes, and it completely controls the entire network and manages each customer's premises equipment individually.



Each LoRaWAN data packet that is sent by the End Node, is composed of a unique AppEUI application identifier belonging to the application on the Application Server for which it is intended. This ID is used by the LoRaWAN network Network Server for further routing of the packet and its processing by the IIoT Telecom Application Server.

PUSH_DATA message format

Offset (from start)	Number of octets	Function	Value or description
0	1	Protocol version	0x01 or 0x02
1	2	Token	Arbitrary value set by Gateway
3	1	PUSH_DATA identifier	0x00
4	8	Gateway EUI	
12		JSON object	

PULL_DATA message format

Offset (from start)	Number of octets	Function	Value or description
0	1	Protocol version	0x01 or 0x02
1	2	Token	Arbitrary value set by Gateway
3	1	PULL_DATA identifier	0x02
4	8	Gateway EUI	

IIOT PLATFORM. SUBSYSTEM APPLICATION SERVER

The IIoT Platform Application Server (“IIoT Platform”) provides data retrieval from different data sources, its temporary storage in the Blockchain, and the processing and transfer of various external technical systems.

The IIoT Platform is not receiving data directly from the device — primary means of instrumental control (sensors, etc.). Data has been received from senders or MQTT-controllers — primary data aggregators — both are LoRaWAN Gateway wireless base stations. The LoRaWAN base station associates the data sources with the IIoT Platform and is able to transfer the data through MQTT Protocol.

The MQTT-Controller sends data in JSON format on the MQTT Protocol + TLS to the IIoT Platform. For data col-

lection and transmission, the Platform IIoT uses the following Open Source libraries:

- ◆ pyserial 3.3 - <https://pypi.python.org/pypi/pyserial>
- ◆ crcmod 1.7 - <https://pypi.python.org/pypi/crcmod>
- ◆ paho mqtt 1.2.1 - <https://pypi.python.org/pypi/paho-mqtt/1.2>

The IIoT Platform provides data reception from senders through the MQTT version 3.1.1, running on top of TCP/ IP stack. The sender of the data is determined, its validity is confirmed by authentication using TLS Protocol; all data that is transferred from the device is encrypted. The IIoT Platform is suitable for further expansion of the list of data transfer protocols from unlimited sources from the MQTT Protocol.

Information security requirements for data authenticity (validity and immutability) and transmitting or receiving devices (or software systems) can be achieved by encrypting traffic and two-way authorization on the transmitting or receiving devices (or software systems) on the basis of the transport layer Protocol Transport Layer Security (TLS) version 1.2.

In the initial stages (the "pilot project"), it's allowed to use the self-signed electronic certificates for application in TLS.

The IIoT Platform supports guaranteed QoS (Quality of Service) mode data exchange.

An important feature of the platform is the possibility of its use in various applied solutions, through flexible configuration and settings of its components.

Specially designed services for infrastructure component Infrastructure will be responsible of ensuring the continuous operation of the components, automatic updates, monitoring, access control, etc.,.

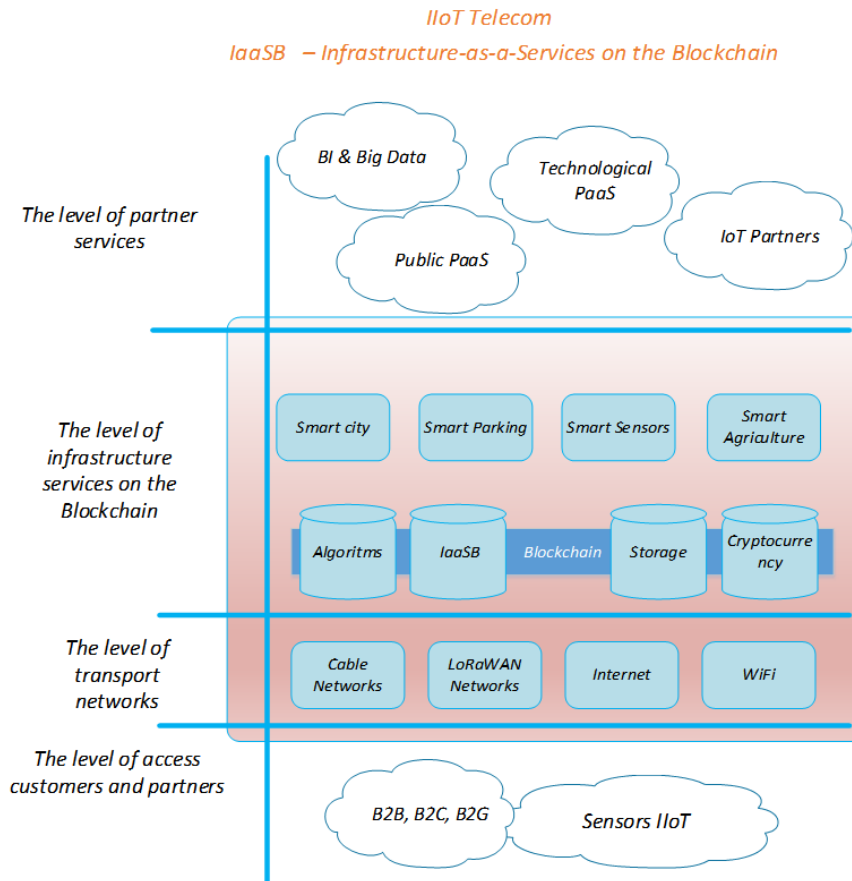
Components of the IIoT Platform are easy to scale: the number of running instances of the component in the Blockchain automatically adjusts to the right amount of data and number of sources. The IIoT Platform is able to automatically distribute these instances of the components in the Blockchain environment. In the event of a malfunction of a component, it restarts automatically.

The IIoT Platform includes the following main components:

- ◆ **MQTT-broker** — gateway input data, performing reception of data from MQTT Protocol.
- ◆ **DataBus** — bus and temporary storage data with a tree structure of headings. The DataBus stores the data for 24 hours only. The IIoT Platform provides a temporary storage of the received data in the component DataBus, operating as a bus to transfer messages with a high level of redundancy, including by placement in the environment of the Blockchain. From the DataBus, data can be queried directly by other components of the IIoT Platform or sent to long term storage — the Storage.
- ◆ **Exporter** — a component for converting the “raw” source data, stored in the DataBus, suitable for further processing. Data from the Exporter can take in component Storage storage inside the IIoT Platform and external OSS/BSS systems.
- ◆ **Storage** — a component designed for long-term storage of data in the Blockchain.
- ◆ **Visio** — a component that provides a tool to visualize and display data as a primary received from the DataBus, and processed, stored in the Storage.
- ◆ **Analytic** — this component analyzes the primary data. It monitors certain trigger events received from the DataBus; the data flow is analyzed for the presence of specified events (such as exceeding a specified value of the parameter), when an event that is specified in a trigger function handler occurs (such as sending alerts or data migration to a different topic). Triggers are assigned and configured programmatically using a special set of commands; triggers can be assembled into chains.
- ◆ **Command Constructor** — a component that provides a GUI interface to the Analytic functionality, and that allows you to create triggers and to manage their settings through the convenient interface designer.
- ◆ **Marketplace** — a component that implements an area for the placement and sale of the final solutions created by Partners. The Marketplace provides external developers with the tools to host the solution and a customer-convenient way to use them and connect to the existing infrastructure. Solutions available in the Marketplace can also include external system developers working with the IIoT Platform.
- ◆ **Infrastructure** — a set of platform components, ensuring its technical functioning: managing devices, users, and organizations, integration testing, automated deployment and scaling components in the environment of the Blockchain, the gathering of metrics and monitoring of logs, network management, management of access rights for devices and users, accounting of resource consumption of the IIoT Platform.
- ◆ **Billing** — a component that implements the company for the calculation of cryptocurrency Customer payments, invoicing, automatic debiting of an account for the availability of such an option at the Client, and disable/warn the Client in the case of receivables.

IAASB – INFRASTRUCTURE-AS-A-SERVICE ON THE BLOCKCHAIN

Built in each city LoRaWAN infrastructure and the decentralized IIoT Platform have a huge functionality and scalability. This infrastructure may contain not only data from IIoT Telecom, but also a large number of various other traffic sources.



IaaSB from IIoT Telecom provides the infrastructure to the Blockchain and tokenization for any IIoT solution from any Dealer. The level of support networks and level of IIoT Telecom infrastructure services on the Blockchain form the IaaSB service.

The company offers mutually beneficial partnership with any Partner in the field of Internet of Things. Any Dealer with solutions in the field of IoT can use the available infrastructure in any city in the world.

On the one hand they will include their own IoT sensors to the existing LoRaWAN transport network, on the other hand –

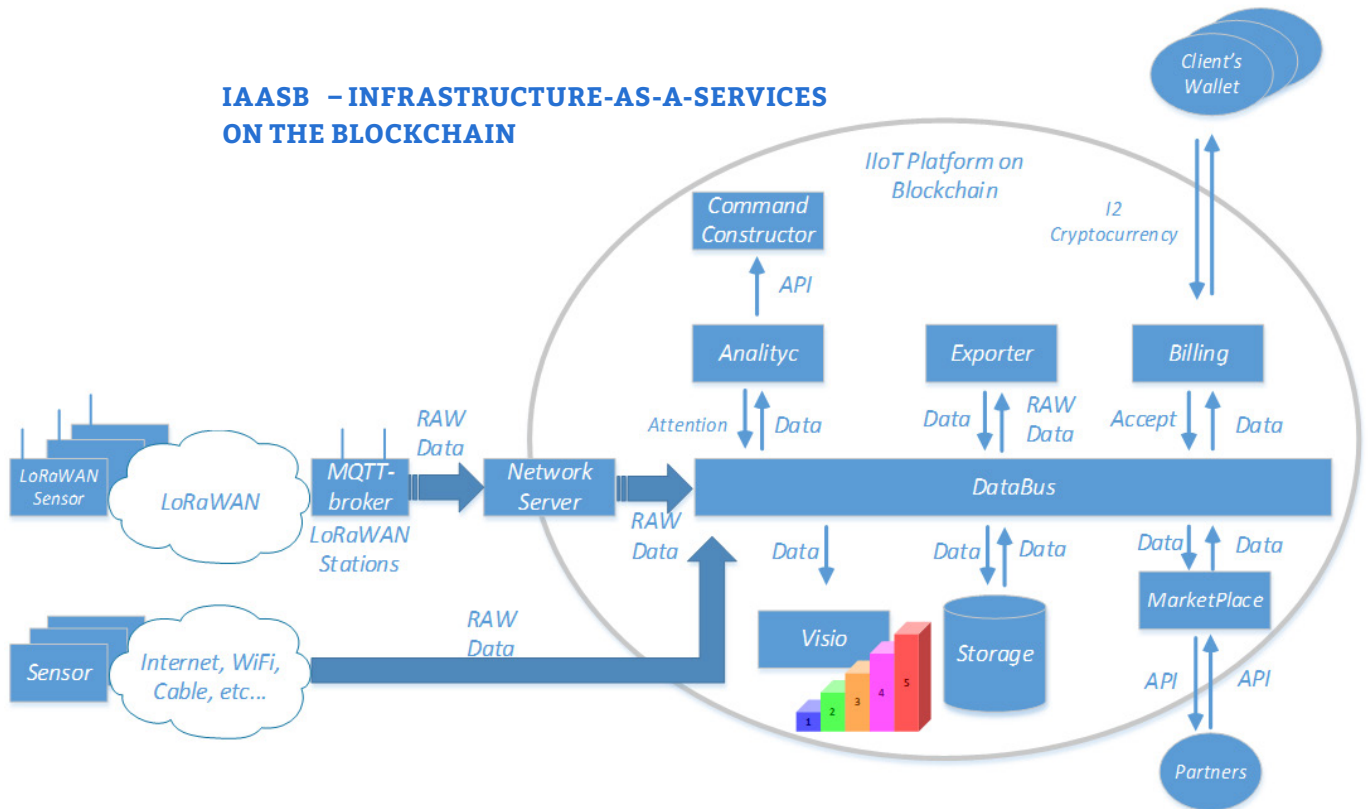
through a special component in the IIoT Platform – they will receive raw collected data on their own Platform. IIoT Telecom holds raw data in the Blockchain as an option. Also, the Partner will receive the opportunity to receive and send out payment in I2 cryptocurrency.

In fact, it is a universal tool to the Blockchain and tokenization of any decision of the Industrial Internet of Things, even if it was not initially planned to be used on the Blockchain.

There is a special Marketplace component in the IIoT Platform to connect Partners to each other.

IIOT TELECOM

IAASB – INFRASTRUCTURE-AS-A-SERVICES ON THE BLOCKCHAIN

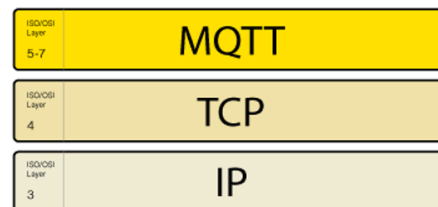


THE INTERACTION BETWEEN THE IIOT PLATFORM AND IIOT END DEVICES

The main features of the interaction between the IIoT Platform and the MQTT broker (the MQTT broker acts as the LoRaWAN base station) for the MQTT Protocol:

- ◆ Compact messages;
- ◆ Support for multiple levels of quality of service QoS;
- ◆ Asynchronous communication;
- ◆ Ability to work in unstable lines of communication – error-correction coding;
- ◆ Easy integration of new devices.

The MQTT Protocol works in the application layer over TCP/IP and uses the default port 1883 (8883 when connecting over SSL).



The MQTT broker sends a message to the IIoT Platform, indicating in it a certain topic. Topics represent characters with UTF-8 encoding. The hierarchical structure of topics is in the format “tree”, which enables easy organization and access to data. Topics consist of one or several layers, which are separated by a “ / ” character.

MQTT message consists of several parts:

- ◆ A fixed header (present in all messages);
- ◆ Variable header (present only in some messages);
- ◆ Data “load” (present only in some messages).

The variable header contains the fields User Name and Password to identify the unique MQTT broker:

Bit	7	6	5	4	3	2	1	0
Byte 8	User name	Password	Will Retain	Will QoS		Will Flag	Clean Session	Reserved

Security in MQTT Protocol provides the following methods of protection:

- ◆ Authentication of clients. The CONNECT packet contains USERNAME and PASSWORD;
- ◆ Access control and restriction, if necessary, clients using a Client ID;
- ◆ Connect to the broker using TLS/SSL.

RECEIVE DATA WITH IIOT PLATFORM FROM METERING DEVICES

The data model represents the format of data transmission from the LoRaWAN meters to the LoRaWAN base station; data structure, and a description of the fields is represented in JSON in the following form:

```
{
  "meterUUID": "e81f216b-9604-39e8-a014-bac1ff1e71ea",
  "meterDescription": "Counter-200, ID=0008/0008, S/N=21559745, bus=CAN1",
  "transmittedAt": "2017-04-12T08:18:48Z",
  "data": {
    "_spec": "electricity_meter",
    "A+0": 2037520.0,
    "A+1": 1433880.0,
    "A+2": 603640.0,
    "info": {
      "SNUM": "21559745",
      "BUS": "CAN1",
      "DEV": "Counter-200",
      "INT_ID": "0008/0008"
    }
  }
}
```

Field meterUUID, meterDescription, transmittedAt are mandatory for all types of devices

- ◆ meterUUID - unique identifier of the device.
- ◆ meterDescription - custom description; content may vary depending on the instrument, project, etc.
- ◆ transmittedAt - timestamp (ISO8601 UTC) of transmission device information, the presence and efficiency of synchronization of the internal clock of the device.
- ◆ data - field with the data from the device
- ◆ _spec - specification of the case
- ◆ a description of the other fields to the info given in the table below.
- ◆ info field contains sub-keys, additional information; content may vary depending on the instrument, project, etc.
- ◆ explanation of the parameter names in the data, info
- ◆ (additional symbols can be added in the future)

Marking	The name of the parameter	Units
A+0	Total active energy from reset	Watt*H
A+1	Total active energy from reset from the tariff N°1	Watt*H
A+2	Total active energy from reset from the tariff N°2	Watt*H
A+3	Total active energy from reset from the tariff N°3	Watt*H
A+4	Total active energy from reset from the tariff N°4	Watt*H

DATA TRANSFER FROM IIOT PLATFORM TO OSS/BSS CUSTOMER

Data transfers to OSS/BSS have to work on the Web API Protocol. Web API needs to be agreed in working order for each kind of energy resource with representatives of the Client company.

Example query:

DEBU[2017-04-28T13:43:21.242531Z] Sending request:

POST /api/meters/add_value/a5d1034e-682b-58c1-8da7-7e383b4cc80c HTTP/1.1

Host: IIoT Platform

User-Agent: IIoT Platform Application Server

Content-Length: 260

Content-Type: application/json; charset=utf-8

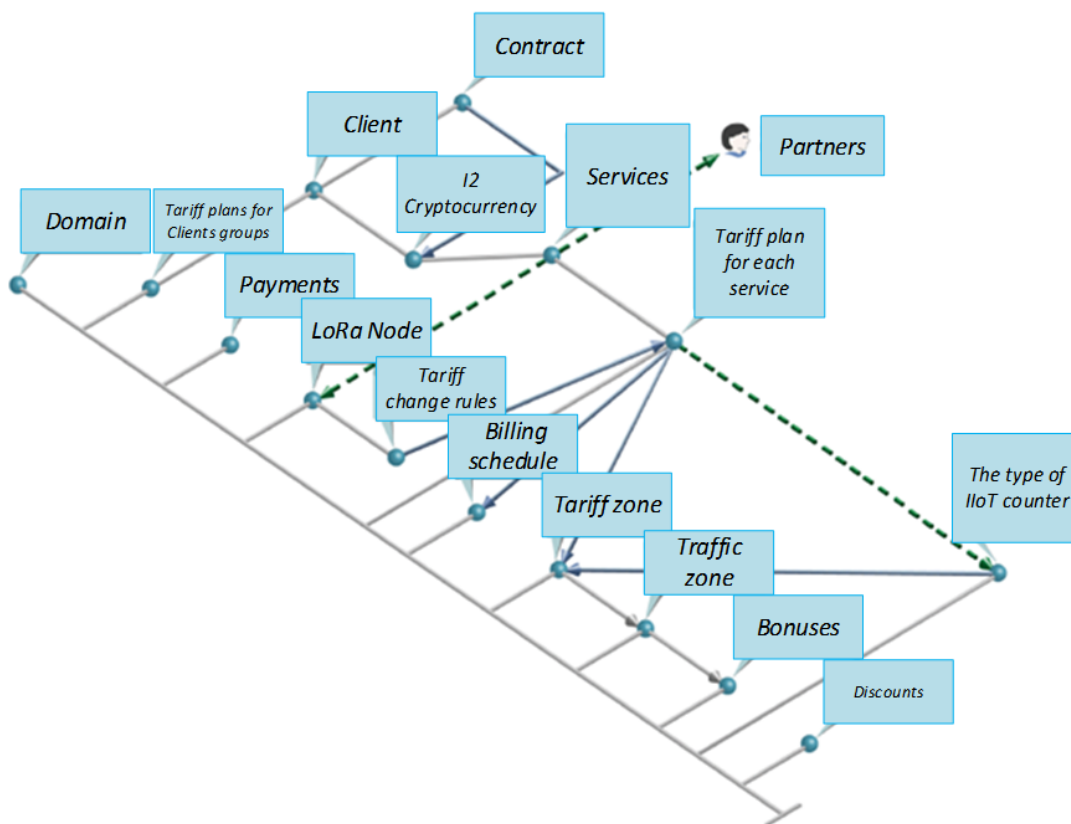
X-Auth-Token: AAALAS5eE1dUXVw=

Accept-Encoding: gzip

```
{
  "meterUUID": "a5d1034e-682b-58c1-8da7-7e383b4cc80c",
  "meterDescription": "USB_Pult.KIR-221.Channel10",
  "transmittedAt": "2017-04-22T03:13:47Z",
  "data": {
    "_spec": "tekon_water",
    "value": 3865.0,
    "quality": true
  }
} component=webhook
```

IIOT PLATFORM. COMPONENT BILLING.

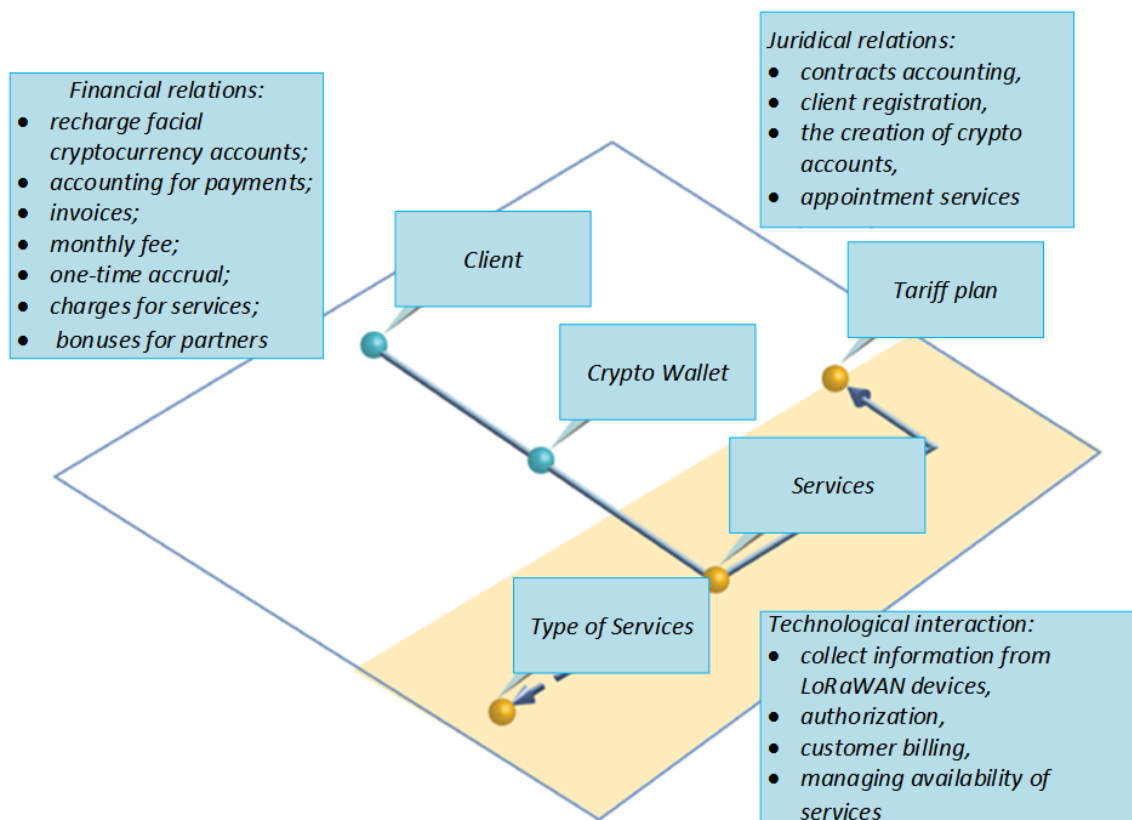
Component Billing organized in an object-oriented system. The billing component consists of a base module, which is the core of the system, and a set of plug-ins corresponding to different types of services.



The billing component performs the following functions:

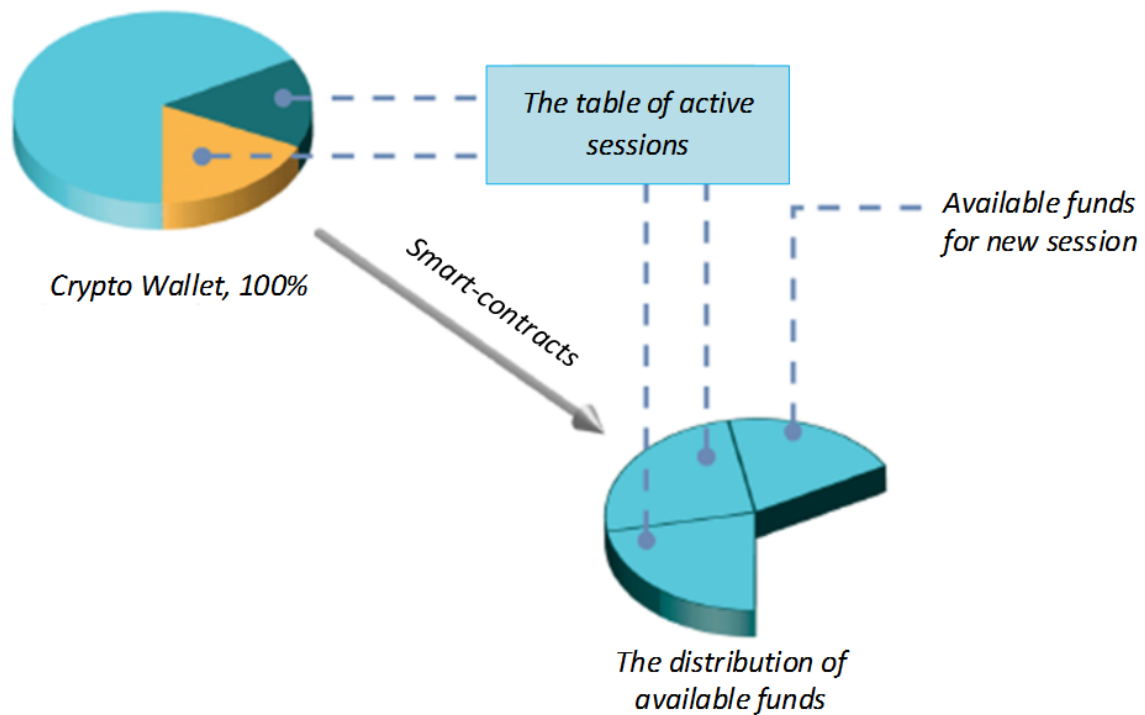
- ◆ Registration of clients, registration and storage, smart contracts, accounting of movement of crypto-currency and fiat funds for each Client, creation of financial documents and reports;
- ◆ Client authorization in the personal Cabinet;
- ◆ Gather information on services provided, billing, and managing availability of services;
- ◆ Organization of technical support of the Customer's integration with external financial systems.

The main objects that implement a financial and legal relationship with the Client are presented in the diagram below.



For each Client the system checks periodically whether the financial resources are available to initiate new sessions of data transmission in the IIoT Platform. If there is sufficient

funds for a new session, the amount is calculated, based on the value of existing sessions. The following figure shows how the account funds are reserved for active sessions.



This system component is responsible for the cryptocurrency transaction between the Client and the IIoT Platform. Thanks to the smart contract, 12 cryptocurrency is sent from the wallet Client to the IIoT Platform on a monthly basis.

If there is not enough available funds or the funds will soon be exhausted, a reminder will be sent to the Client in any convenient way.

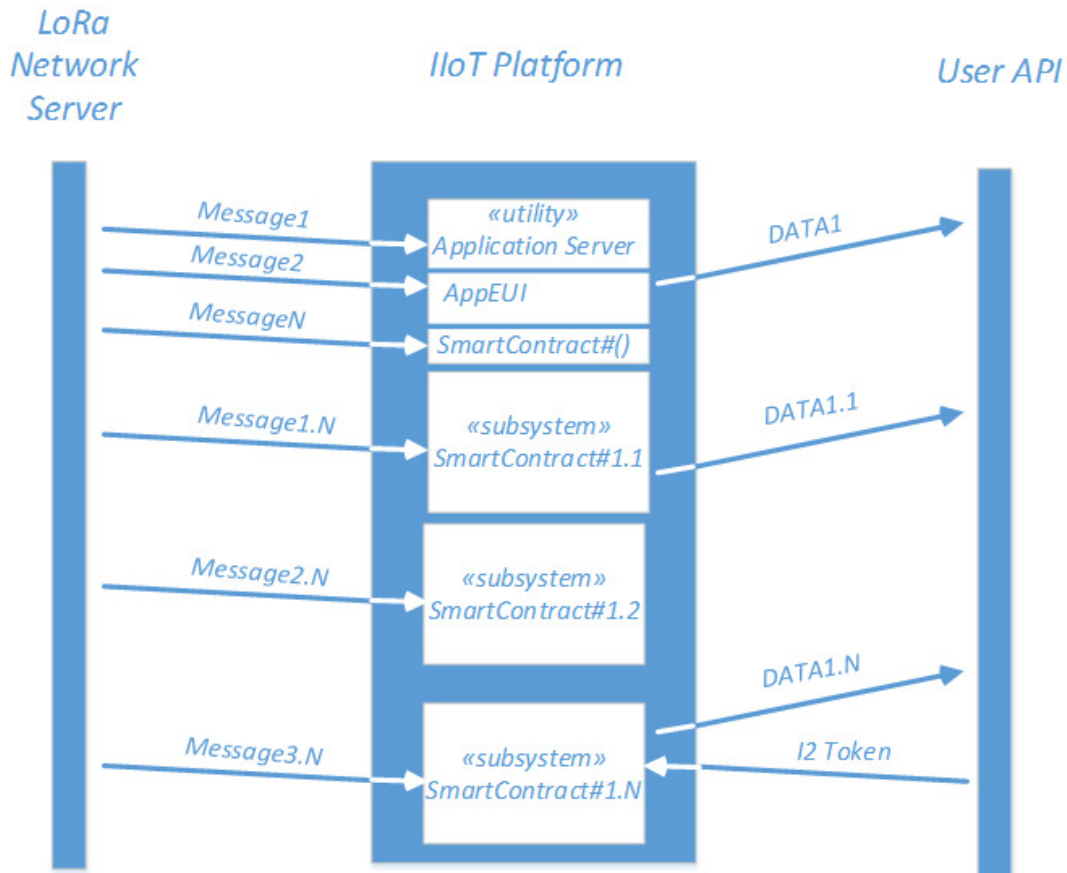
DECENTRALIZATION IIOT PLATFORM ON THE BLOCKCHAIN

It is necessary to provide the IIoT Platform on a wide scale. The only right option is to decentralize it and to store its data in the Blockchain. In the case of traditional centralized placement of the IIoT Platform in a data center, we have to transmit and store the data in a single center and as a result, we will have a constant need rather rapid upgrades of newer computing power and data storage, or lease such resources from processing and storage centers. At the same time, the IIoT Platform is depending on all recipients of services and data from a centralized system, which resources are always finite and subject to overload with a rapid increase in the number of customers and flow through the system data.

A large part of the system is essentially just an aggregator and serves as temporary storage of the data of their Customers. Of course, we can use traditional cloud models for high availability and redundancy for the IIoT Platform, but the dependence on the limited resource system of one service provider in this case is not desirable.

A striking example of having to depend on the finite resource is the permanent modernization of Internet service provider networks, from the beginning of the rapid growth of the Internet since the late 80-90s of last century. Traffic on the Internet grew by more than 100% annually and in some years up to 150%, which forced Providers at all levels, especially the major ones, to radically upgrade the network at least once every two years by investing heavily in a network. Experts predict growth of the IoT will be similar to the growth of the Internet that took place in the beginning of this century. Therefore, we must be prepared for rapid deployment and scaling.

IIoT Telecom plans to decentralize and place some components of IIoT Platform in the Blockchain through the decisions of third-party Blockchain startups such as SONM, EOS and perhaps others like them. Some funds from the ICO will be spent to develop and test interfaces to such systems, and to smart contracts, which will provide IIoT data transfer to the customers and will send I2 tokens in exchange for the obtained data.



IIoT Telecom customers will get access to their data, and will pay for the Services by sending tokens I2 through smart contracts, included in the Blockchain. It is not possible to do so when using fiat currency, because the cost of Bank payment systems fees will be comparable or even higher than the cost of the payment for IoT services. The minimum payment in I2 will be at the rate of 0.0000001* I2 with zero fee to the user. For frequent transactions, a smart contract will not require immediate payment. The payment will be made for a certain amount of trans-

actions, which depends on specific characteristics of the IIoT solution.

For data that can be directly monetized, for example, meter readings of water, transmitted once a month, the payment will be made simultaneously with the receipt of the data packet. The number of possible Subcontracts will be limited to 10-12 to avoid the risk of debt accumulation. In addition, payments can be combined within a single SmartContract for the data set obtained from a group of similar sensors over a certain interval of time.

The IIoT Platform scalability for IIoT Telecom on the Blockchain-based supercomputer will be done by purchasing the appropriate platform Tokens. The more Tokens available, the more computational resources will be available to the IIoT Platform.

Of course, according to our calculations, the revenue of the IIoT Platform services will be significantly higher than the fee paid to third-party platforms.

IIoT Telecom will use at least two different Blockchains to build its IIoT Platform:

1. Third-party decentralized Blockchain platforms that allow to decentralize any application – the products of the EOS or SONM companies;
2. Ethereum Blockchain for the distribution of the ERC-20 compatible I2 token.

DESCRIPTION OF OUR SERVICES

Our open IIoT Platform on the Blockchain will allow you to connect and arrange almost any service of the Industrial Internet of Things, while the IIoT Platform implies a modular structure that allows high speed and low costs to bring promising services to the market. At the moment; some services are already practically implemented, and we are modifying and testing the alpha version of the IIoT Platform.

Services that run on the IIoT platform:

1. Smart automated collection of water meter readings. The developed service is in alpha testing in the lab. Developed prototypes of the water meters with a LoRAWAN modem.
2. Smart remote electricity meter reading. The developed service is in alpha testing in the lab. Developed prototypes of meters with a LoRAWAN modem, together with Russian and Chinese partners.
3. Smart remote gas meter reading. The developed service is in alpha testing in the lab. Developed prototypes of gas meters with a LoRAWAN modem, together with Russian and Chinese partners.
4. Smart Parking. Monitoring of available Parking spaces, booking of available spaces through a special application.
5. Smart lighting. Street lighting made adaptable to weather conditions and seasons, to save energy.
6. Identification of probable locations of leaks in oil pipelines/gas pipelines. The Developed Analytics system to predict the breakthrough system is being tested in the laboratory.
7. Managing export and recycling of waste.
8. Watering the soil depending on its humidity.
9. Reduction of rotting during storage of crops.
10. The detection of pregnancy of cows through automated methods
11. The detection of pregnancy of cows automated methods.

DETAILED DESCRIPTION OF SERVICES

All devices with integrated LoRaWAN modems work about 10 years on ordinary AA batteries (or other, depending on modifications).



SMART AUTOMATED WATER METER READING

The most simple and understandable service. There will be no more need to communicate your meter readings to the Management company yourself. Water meters with an integrated LoRaWAN modem (or regular water meters with pulse output + our LoRaWAN modem) send by itself accurate data to the IIoT Platform on a monthly basis. Consumption is being analyzed (e.g. all of a sudden the meter broke, or it was stopped on purpose); aggregation of data and direction in the OSS/BSS system Management company. It automatically sets the correct expense for the water consumer. At the same time, the subscriber can always see his water consumption rate in his personal account, as well as consumption statistics and graphs, and recommendations to reduce his consumption, depending on the tariffs.

SMART REMOTE METER READING OF ELECTRICITY

Power is the key source of consumer spending. It is necessary to register readings of the meter on a regular basis, in order to make it possible for the power company to calculate the consumer's amount of consumed electricity.

From now on, that's ancient history.

The meter of our own design with an integrated LoRaWAN modem (or an existing meter with a digital output, connected to our LoRaWAN modem) communicates consumption data. The IIoT Platform also analyzes determined possible fraud from the side of the consumer.

Everyone benefits: the owner of the energy resource always receives accurate info and is not losing any profits, and the consumer will not have to worry about being charged too much, but also doesn't have to worry any longer about communicating his meters every month.



SMART REMOTE GAS METER READING

Gas consumption during winter for heatings in houses, has always been essential. Our services solve the problem of meter registration. The gas meter of our own design with an integrated LoRaWAN modem (or an existing gas meter with an output for connection to our LoRaWAN modem), sends the data concerning the consumed gas. The IIoT Platform also analyzes determined possible fraud from the side of the consumer.

Everyone benefits: the owner of the energy resource always receives accurate info and is not losing any profits, and the consumer will not have to worry about being charged too much, but also doesn't have to worry any longer about communicating his meters every month.



SMART PARKING

It is no secret that it is very difficult to find a Parking space in a busy city centre.

The driver, entering into the Parking, can download a special app, with which he can see the free space and its location, and reserve it.

The sensor that registers the presence of the vehicle is installed in the pavement under every Parking space. It analyzes the movement, either light flux or magnetic changes from the car, thus detecting the presence of the car. Data is sent to the IIoT Platform, which contains the pre-loaded Parking plan. This location is marked as busy or free.

The presence of video cameras with license plate number recognition allows you to control the correctness of the designated classes.

It counts vehicles and their parking time and compares with the actual payment that was made for it.

THE DETECTION OF PREGNANCY OF COWS AUTOMATED METHODS

Pregnancy of the cow is its ability to reproduce. The more often a cow gives birth, the more calves there will be, and the higher the profit of the farmer will be. An experienced farmer determines the willingness of a cow to mate, with a high degree of probability. But what about others?



Now imagine that instead, the cow itself tells you through WatsUP that it is ready to mate! Fiction?

No. Sensors continuously monitor the movements of the cow, using a three-axis accelerometer which detects increased activity (in the development of a mathematical model ready). It is fixed on the cow's collar and has a number in the database, to determine which cow it belongs to. The sensor sends the information to the IIoT Platform via the LoRaWAN base station, according to the farmer via his messenger. Now the farmer only has to find an agreement with the bull.



SMART WATERING SOIL

None of the farmers know exactly whether there is enough moisture in the soil or not. They just regularly turn on watering every day. It is quite expensive, but how can we determine at which place watering is not yet needed?

It's solved by just using the soil moisture sensor + LoRaWAN modem. Sensors are installed across the field at sufficiently large distances. The range of the LoRaWAN base station up to 15 km allows maximal cost reduction of the process.

Each sensor periodically sends data to the IIoT Platform. There is analysis of the parameters (dryness, acidity, temperature) of the soil. Also included is the possibility of watering only the required sections (automatically or manually by the Operator). The profit is significant!

DECREASE THE AGRICULTURAL PRODUCTS ROT IN A WAREHOUSE

When storing the harvest rot in the warehouse maintain a certain temperature. Violation of the storage technology leads to a crop loss of 20%. How can you avoid this? It's simple. When crops rot, the temperature rises. There are a necessary number of IIoT sensors to detect temperature increase in the warehouse. The sensors send information to the IIoT Platform, which draws a zone of rotting on the warehouse map. Timely reordering harvest allows you to keep it intact.





IDENTIFICATION OF PROBABLE LOCATIONS OF BREAK OF THE OIL PIPELINE/GAS PIPELINE

Sensors with integrated LoRaWAN modems are installed on a pipe of oil/gas pipeline. The sensors analyze the vibration, noise, temperature, etc. and transmit this data to the IIoT Platform. The platform analyzes the data, builds a spatial-temporal model and does a predictive data analysis. It identifies the probable locations of breakthrough and possible not sanctioned tie-in pipe.

SMART MANAGING WASTE

Trash cans with mounted sensor showing the level of fullness, report data overflow to the IIoT Platform.

The IIoT Platform shows the data on the city map, and allows you to give an appreciation to the fullness of trash cans and plan a route to clean.



SMART LIGHTINGS

The possibility of organizing and controlling the light:

- ◆ scheduled
- ◆ event
- ◆ support for different colors depending on the time of year
- ◆ on the instructions of the Operator



This overview only describes the existing facilities, planned to be implemented. However, as the market is growing, the needs become greater and the number of these services will perhaps change exponentially.

OUR ADVANTAGES

Using our open IIoT Platform on the Blockchain of own design and LoRAWAN-standard base stations/devices provide a unique opportunity for rapid deployment of wireless, easily scalable LoRAWAN network, with the ability to connect any subscriber to any compatible device and to receive services through the Internet of Things IIoT Platform anywhere in the world!

KEY BENEFITS:

1. THE OPEN PLATFORM OF OWN DESIGN BASED ON THE BLOCKCHAIN

Each client can connect to our IIoT Platform. However, he may either use his own compatible customer equipment or purchase the equipment of our own production with integrated LoRaWAN sensors. Or simply connect to our IIoT Platform in any way – through the Internet, any wireless connection (WiFi, 3G/4G technologies) – there are no limits! Order a service performed at the website, and there is no need to go to an office to sign the contract. And it does not require any knowledge of the complex architecture of our platform.

2. UNLIMITED SCALABILITY OF THE PLATFORM

The platform is hosted in a cloud data center during the first phase of work. While the number of subscribers grow as well as Blockchain technologies develop, we plan to deploy the IIoT Platform in the environment of the Blockchain – if there is such a technical possibility at that point. The suitable project SONM with the idea of creating a world supercomputer, would be ideal to install the IIoT Platform. By using third-party platforms, we will significantly save on CAPEX and reduce the initial costs of development of the IIoT Platform.

3. LORAWAN DEVICES OF OWN DESIGN, BASE STATIONS AND TRANSMITTERS

Will ensure consistent quality of devices, and also low prices in comparison with similar products on the market. The dealership model will allow to extract additional profit.

4. PROTOTYPES

Developed prototypes of devices – LoRaWaN base stations. And on the basis of production, Chinese and Russian plants will produce a variety of LoRaWaN sensors/devices. At the same time, a complex testing of functional and load devices is conducted (room in the freezer, on water, etc.). As partners we are considering the Chinese manufacturers are one of the cheapest options.

5. LOW COST NETWORK DEPLOYMENT

LoRaWAN-standard base stations have cost about 1100\$ (which is hundreds of times lower than 3G/LTE base stations). The range of about 5-15 km allows you to set the minimum number of such stations in the city (about 12-15 for a city of 1 million people). The planned output standard of the Internet of Things NB-LTE-M/NB-IIoT, involves the upgrading of existing base stations from 3G/LTE operators, and requires substantial investment. For example, Vodafone is upgrading its network to a standard NB-IIoT, which will cost hundreds of times more than our solution to deploy our own base station (for the same number of subscribers);

6. LOW-COST SENSORS LORAWAN

Through the use of capacities of the Russian and Chinese plants partners, we can produce various types of sensors with prices 1.5-2 times lower than similar devices for the Internet of Things. The price of one sensor will be significantly reduced while increasing their number;

7. HIGH SPEED DEPLOYMENT OF THE NETWORK

A small number of LoRaWAN base stations will be sufficient to get access very quickly in the major cities.

8. HIGH RESISTANCE TO INTERFERENCE

The high penetrating power of radio sub GHz range ensures stable communication even in buildings and basements, where ordinary Mobile communication experience serious problems.

9. SECURITY

To protect against unauthorized access and distortion or interception of data transmitted to endpoints (end-node), the LoRaWAN networking standard includes a mandatory two-level encryption in two different AES-128 keys according to RFC-4493.

10. LOW POWER CONSUMPTION

Working time of the subscriber's devices with an integrated LoRaWAN sensor – about 10 years.

11. HUGE COVERAGE AREA OF ONE BASE STATION

A coverage distance of 15 km allows to reach subscribers living in the countryside, such as fields of agriculture, connecting IIoT sensors with the ability to analyze soil moisture and irrigation, exactly where it should.

12. MINIMAL COMPETITION ON THE MARKET.

Industrial Internet of Things is rather poorly developed, however, the niche market is very promising. By 2020, the world will be connected to the Internet of Things, using between 20 and 50 billion devices, and by 2025 – about 85 billion. Now we have a unique opportunity to occupy the market and capture a large part of those billions;

13. TWO WAYS OF MONETIZATION

Firstly, the subscription fee for accessing the IIoT platform, or for each connected sensor. The second - sale of equipment (devices with integrated LoRaWAN sensors and the base station). Sale of equipment will be carried out through dealers. Direct sale of equipment is not planned.

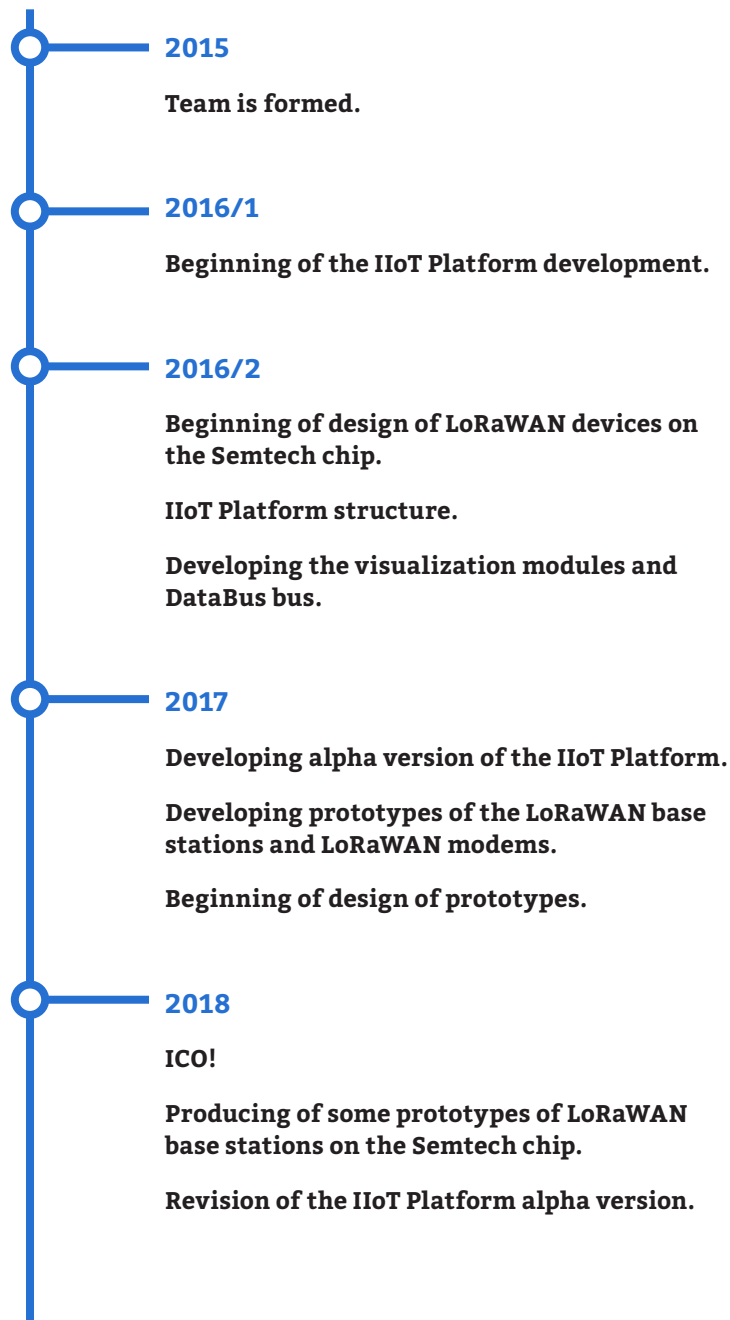
14. USE YOUR OWN CRYPTOCURRENCY I2 FOR PAYMENT

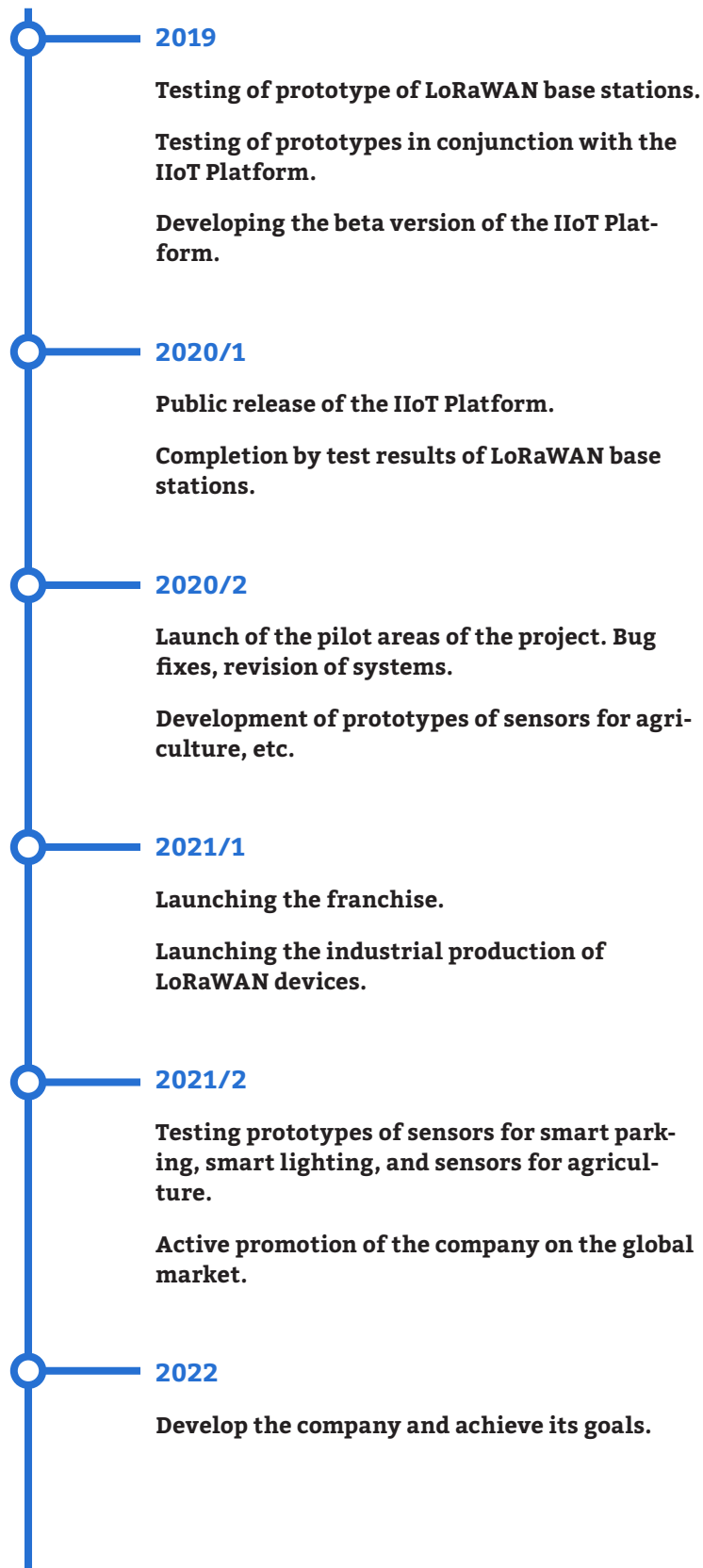
To simplify and speed up interaction with the customer, we plan to accept payment in our own I2 cryptocurrency. The transaction will be carried out only between the Customer account and the IIoT platform and will be as simple as possible.

15. THE DEVELOPMENT OF THE NETWORK AT THE FRANCHISEE'S EXPENSE.

It is planned that 99% of the wireless LoRaWAN network and installation of LoRaWAN in the cities will be deployed by the sales franchise on their use/construction.

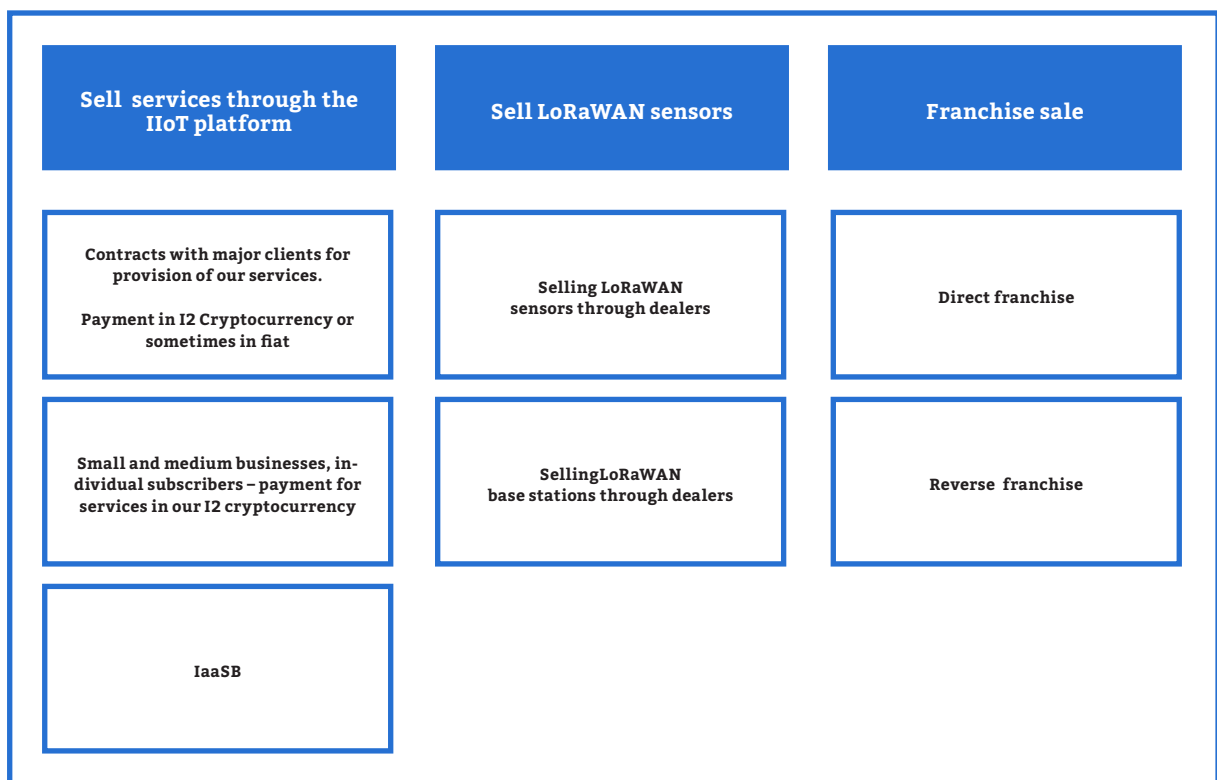
ROADMAP





IIOT PLATFORM MONETIZATION AND PROFIT

**How are we planning to make a profit from our platform,
and how it does it relate to the Blockchain and our I2 Coins?**



SELLING THE SERVICES THROUGH IIOT PLATFORM.

Each Client connected to the IIoT Platform will pay only for the consumption of services. Payment and accounting of cash flow will be synchronized on the basis of the IIoT Platform. From the connected residential meters (gas, water and electricity), the money will be taken from a Resource Provider. For subscribers, service will be free.

- ◆ Contrary to the standard methods of payment, we only accept payments in the I2 cryptocurrency. But the prices for services will be calculated in the fiat currency of the country/city in which our services are provided. Receiving our I2 cryptocurrencies is a great key feature of our Platform, thanks to which we will operate very quickly around the world. I would like to say even more: without this feature a fast and dynamic development of the IIoT Platform is impossible. The cryptotransactions will be as simple as possible – between the IIoT Platform and the Customer's wallet.

- ◆ Payments for services in the cryptocurrency will be carried out instantly. And automatically, on the basis of smart contracts. Accounts receivable will tend to zero.

- ◆ I2 Coins will be freely traded on crypto-asset exchanges. The more Customers of our system there will be, the higher the demand for I2 cryptocurrency will be.

SELLING SENSORS/BASE STATIONS IIOT.

The monetization model is standard. The money obtained through the ICO will also be invested in the creation of industrial LoRaWAN sensors/ base stations. They will be sold through dealers around the world. The dealership model is currently under development. We will use GPL prices and discounts for partners, depending on the volumes. The production of devices will be running for a specific customer and for specific needs.

SELLING IAASB SERVICE.

Service Infrastructure-as-a-Service will be in high demand only after a complete infrastructure will be built by IIoT Telecom. For the provision of IaaSB, which decentralizes, and the Blockchain, every IoT third-party partner application will be charged a fee for each transmitted amount of information in I2 cryptocurrency.

FRANCHISE SALE

This is one of the interesting ideas with which we plan to cover IIoT customers very quickly and with minimal investment. Two options of cooperation:

STRAIGHT FRANCHISE

The Franchisee purchases the franchise. Size of initial contribution has not yet been determined and will be discussed. The Franchisee receives the rights to use our brand, the IIoT Platform as an administrator, and LoRaWAN devices and sensors at the dealer price (with significant discount). He is assigned a group of engineers providing technical aspects. The Franchisee receives the exclusive right of a city/district. At the expense of their own funds the Franchisee is building a network of LoRaWAN on the territory of your city/area. He sells services and hardware and connects clients to our company. For each transaction of payment, he pays to our company a royalty fee of around 25%.

REVERSE FRANCHISE

Very similar to a straight deductible, but with one caveat. It actually does not involve any payment from the Franchisee. The Franchisee also purchases the franchise. In return, he receives the right to use our brand. The Franchisee searches Customers and contacts our company. Our company builds a LoRaWAN network in the city/district, which buys IIoT devices for our expense. The Franchisee makes the arrangements for the installation of the IIoT sensors with the Customer and supports them in the future. Our company collects the Customer payment independently and pays the Franchisee's remuneration, which depends on the number of attracted Clients and can vary from 10% to 85% a month. The size of the initial contribution is calculated at that moment.

Since we are interested in the success of the Franchisee, approximately 30% of the profits of franchising will be invested in advertisement and promotion of the company on the market.

Franchisees will receive full tested sets of equipment – LoRaWAN Base stations, the LoRaWAN device. He can be sure that all equipment is 100% compatible with the IIoT Platform.

SHORT COMMERCIAL CALCULATION

Detailed calculations of the Franchisee profits, payback period etc. are presented in the Business plan. Let's look at a simple example of profit and payback period of the Franchisee for one service. We calculate one service for one 100 apartment building – water meters. Imagine that to you – the resident of the house – somebody came and offered to change your old meter to the modern one FREE of charge. Would you Agree? Yes, of course!

EXPENSES FRANCHISEE:

1. Water meter = 9\$. So, 100 meters = 900\$
2. The cost of the base station we get, like 1% of the total cost of one LoRaWAN base station, because it allows to get data from several thousands of sensors simultaneously. The cost of BS = 11\$.
3. Total cost = 911\$. Round up to 1.200\$ including the cost of the installation.

INCOME FRANCHISEE:

4. 1. In a month the monthly fee is about 1\$. 100 units per month will pay 100\$. It is easy to calculate that in this case the payback period is 12 months.
5. 2. Monthly income for 12 months – 100\$ with 100 apartments.

100\$ is not so much, but we are talking about only one building.

How many are there in a city? 100 buildings? 1.000 buildings?

Well, even if we connected only 15 houses: a total revenue from 15 homes – 1.500\$ per month or 18.000\$ per year. After paying out the 25% royalty fee, 13.500\$ remains to the Franchisee. And this is with only one service. They can assist in the whole system – electricity meters, gas meters... And we are not going to remain limited to 15 houses, because there are many households in the world – hundreds of millions!

In this case, to extend the LoRaWAN network, for a city of 1 million people (approximately 3.500 homes), about 10-15 LoRaWAN base stations are sufficient. At a cost of 1 BS = 1.100\$, we have to pay 16.500\$ to cover a city of 1 million people.

Covering the whole city with a wireless network, and connecting only 12-15 houses to one service, the payback period to the Franchisee will take an estimated 14-18 months.

IIoT Telecom will receive 20% of the profits of the Franchisee = 3.600\$ for 15 homes a year. Why 20% and not 25%? Because 5% will be given to anyone who is referring a new Customer to our company.

The “IIoT Telecom” company plans during the years 2019-2023 at the expense of the Franchisee:

1. To cover all the major cities of the world (from 100 thousand people and more) with LoRaWAN wireless networks;
2. To connect at least 50 million households to the IIoT services, as well as at least 1.000 large enterprises and farms.
3. Planned average ARPU per subscriber is about 0.65\$ per month. We plan to reach a profit of 530 million dollars a year in 5 years. Of course we are not planning to quit after that.
4. To ensure the free circulation of our I2 Coins on the crypto-asset exchange in the world.

WHAT PROFIT DOES THE INVESTOR GET?

**All that has been written above is good for the company.
What will an Investor get, by investing in our ICO ?**

Remember the primary use of I2 Coins from the “Telecom IIoT” Company – automatic instant payment for services by the Client IIoT-based smart contracts for the transfer of data sensors in the IIoT Platform. The so-called M2M (Machine To Machine) interaction, but supplemented by a system of payment.

What it gives?

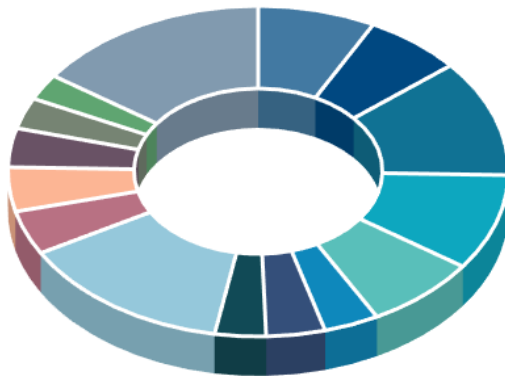
1. The capacity of the market of the Internet of Things at the end of 2025 – 85 billion devices worldwide. So the potential growth of subscribers and the required coins are simply endless at the moment (2018).
2. IIoT Customers who have to pay for our IIoT Platform will buy our I2 Coins on the cryptocurrency exchange and the Investors and the “Telecom IIoT” Company - will sell;
3. We are interested in maintaining the rate of our currency, because we also receive it as a payment. Accordingly, we are most interested in the growth of the value of our currency.
4. Due to the huge number of connected devices to the IIoT, there will be a high turnover of our I2 Coins;
5. Due to the high turnover of I2 Coins and the growth of the IIoT Company, the course of the I2 Coins will inevitably increase.
6. Additionally, we paid a lifelong compensation in I2 Coins to any person, who led the Client to our IIoT Platform. The remuneration is paid in the amount of 5% of monthly Customer payments and will be as long as the Customer pays for the Service.

ICO

Name: IIoT Telecom

Ticker: I2

Based on: Ethereum.



The need for investment for the full development of IIoT Telecom is \$34 million. To understand where we plan to spend investments, the following table, calculated in dollars.

Revision IIoT Platform alpha version	3 (7.61%)	Pilot runs of the system, test prototypes and refinement	1.3 (3.30%)
Develop beta version of IIoT Platform	2.5 (6.35%)	Produce the 5000 base stations LoRaWAN	5.5 (13.96%)
IIoT Platform Testing, using industrial version of software in the Blockchain	4.5 (11.42%)	Develop the sensors IIoT "Control of CO2".	1.7 (4.31%)
Modification prototypes of devices in the part of elements and program code for the microcontrollers for the base stations and IIoT modem LoRaWAN technology	3.7 (9.39%)	Develop the sensors IIoT "Measurement of soil moisture".	1.7 (4.31%)
Run some base LoRaWAN stations and test the IIoT prototypes	2.9 (7.36%)	Develop the sensors IIoT "Smart Parking".	1.5 (3.81%)
Develop the chips for end IIoT devices and IIoT sensors	1.4 (3.55%)	Develop the sensors IIoT "The definition of pipes broken".	1.2 (3.05%)
Integrate the chips in the final water, gas, electricity counters. Develop the shell	1.5 (3.81%)	Develop the sensors IIoT "Filling garbage cans".	1 (2.54%)
		Integrate the IIoT sensors "Cow activity" IIoT Platform.	6 (15.23%)

The distribution of investments,
\$34,000,000

Investments, collected higher than \$34 million, go to the reserved pool of equipment - for the client IIoT sensors.

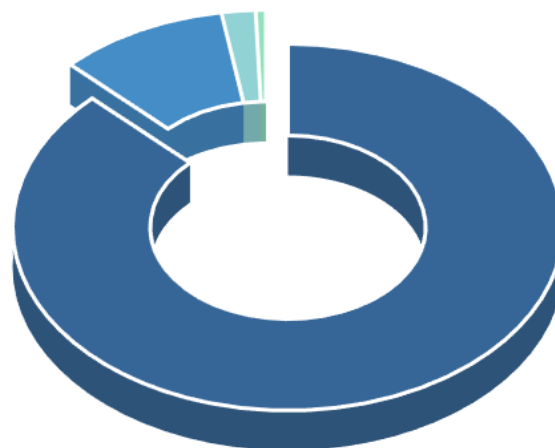
In 2018, 500 million I2 Coins will be issued. These coins will be sufficient according to our calculations, to implement the 50 million subscribers of cryptocurrency payments and transactions.

We haven't planned any additional issue of coins.

On ICO it is planned to withdraw an order of 441 million I2 Coins. The rest will remain in "IIoT Telecom" or will be spent on promotion.

The cost of 1 I2 Coins will be 0.1\$. We will prepare special offers for Investors who are willing to invest significant amounts. Details will be explained in the personal Investor Cabinet on the website <https://iiot.tel>

I2 token distribution



Will sold out on ICO	437,000,000 (87.40%)
Property of founders	50,000,000 (10.00%)
Will sold out on PRE-ICO	10,000,000 (2.00%)
Will spent on ICO promo	3,000,000 (0.60%)

TEAM



IVAN PETEK

CEO / Co-founder

20+ implemented IoT projects for the enterprises
10 yrs in IIoT
18 yrs of software & hardware
development & architecture business
MBA: London School of Economics



FRANK NOVAK

**CTO / Co-founder
project Architect**

Massachusetts Institute of Technology
ex CTO at Academia
50+ implemented IT & IoT projects
23 yrs of software & hardware
development & architecture



PETER TOMAZIC

CFO

MBA: SDA Bocconi School of Management, finance expert



ANTON KOROSEC

CMO

Ex Marketing Director
at Actual IT



LUKA KAVCIC

Event Manager

office fairy

**SUDHEER KUMAR****Blockchain Evangelist**

Smart Contract Developer

**PETER KNEZ****Developer**

C++, PHP, JS, SQL,
Bash, Python

**EVGENIY EREMIN****Lead Developer**

Blockchain expert,
10+ blockchain projects
participant

**JOZEF KOROSEC****Lead Hardware**

Lead hardware & microcode
Developer,
Crypto-mathematician
ASM, C++
Faculty for electrical engineering
- Ljubljana
Master of Science (M.Sc.) Electrical
Engineering - Telecommunications

**MARKO HOCEVAR****Lead Developer**

10 yrs in cryptography
C++, JS, JSON, Ruby, Solidity
data scientist
algorithm development

SUMMARY

Industrial Internet of Things is one of the most innovative, fast growing industries with huge potential for growth.

Once in our life became the Internet, social networks, instant messengers, so is the Industrial Internet of Things will become a part of our lives in the near future.

Investments at the moment for all are minimal, and the opportunities – are huge.

To be with us or to watch the development of events – only you can decide. In any case – I'll meet you in the future in the Industrial Internet of Things, as Investors or Customers – it doesn't matter! The main thing that the world will certainly change.

Our motto: Innovation squared is $I^2=IIoT+Blockchain$.

The decision is yours!

CEO IIoT Telecom Ivan Petek.