

HIGH SPEED AND ACCURACY MONITORING IN REAL TIME



Telecom



Energy



Chemistry



Railway



Metallurgy



O&G

Next



TOPIC

Limiting of industrial IOT platform implementation:



Wired sensors cannot be used in extreme conditions



Wireless technologies require regular battery replacement



Sensor electronics can't stand in high temperatures, pressures and electromagnetic fields

COMPETITION



LoraWAN, ZigBee, Bluetooth Low Energy (BLE), etc. standards and protocols use low-power RF modules, but still require power consumption (battery) and electronics inside the sensor



Batteries require regular replacement, which increases maintenance costs



Electronics do not operate near electromagnetic interference and high temperatures



Today only industrial IOT platform based on radar technologies with ultra-resistant, wireless and passive sensors can find the right solution of these limits

VISION AND VALUE PROPOSITION

Industrial IOT platform based on radar technologies with ultra-resistant, wireless and passive sensors on microwave 2,45 GHz frequency band instead of 433MHz



Increase in 2 times the amount of transmitted information



Increase in 2 times the number of identification numbers, the accuracy of the sensors and reader range



Have in 3 times lower cost



Have margin up to 60%

TARGET MARKET AND OPPORTUNITIES

Compound annual growth rate (CAGR) of IOT platform for manufacturing is 40% up to 2024 - \$12B market size.
In Russia we have potential available market size about \$1B for the next sectors:



Energy and smart grid – control of high-voltage line load, increase network capacity - **\$300M**



Railway transport – systems positioning for locomotives and rolling stock - **\$100M**



Oil and gas - accounting of operating time of tubing and drill pipes in well's conditions - **\$400M**



Metallurgy – control of temperature and movement of slag bowls, mixers, slabs and locomotives – **\$50M**



Chemistry - control of temperature and movement of mixers – **\$20M**



Telecom - cell temperature measurement in CORE - **\$100M**

SOLUTION

Increase network capacity - effect of implementation:

30%

Increase network capacity

20_x

Cheaper to build an additional line

24/7

Online status monitoring of the line

Accounting of operating time of tubing and drill pipes in well's conditions – effect of implementation:



Actual accounting of equipment operating time and life cycle control



Sensor operation at +50C and 50 bar CO₂ in the well and resistance to chemistry, hydrogen sulfide, drilling fluids

BUSINESS MODEL



No local competitors



Higher technical characteristics by report to international competitors



Three international competitors Vectron, Wika, Emerson with the higher price level – up to 40%



With new industrial IOT platform with high level of automation in 2020 we will have margin up to 80%



Market opportunity for the next 3 years – telecom, railway transport, O&G, metallurgy, energy, chemistry

ROAD MAP

MAIN CUSTOMERS:

Oil and gas



Metallurgy



Energy and smart grid



Railway transport



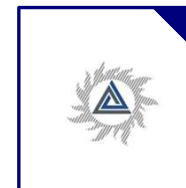
Chemical industry



Communication



Energy



Industrial solutions



GO TO MARKET



Direct to customers – to sign commercial contracts and to start selling with represented customers in **2020 - \$1M**



Prescription in the project – to visit to the specialized project organizations to prescribe solution in the projects for **2021-2022 - \$7M**



Product validation in O&G companies - **\$4M**



Product validation in energy companies - **\$3M**



Product validation in metallurgy companies - **\$1M**



Product validation in chemical companies - **\$1M**



Product validation in natural monopoly – RZHD - **\$1M**



Product validation in telecom companies - **\$1M**

TEAM



General manager



Commercial director



3 technical commercial engineers for energy, O&G, metallurgy sectors



Technical support engineer



Matrix assistant for the tender procedures



Technical director



12 engineers, programmers and circuit engineers

CONTACTS

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