



INNOVATIVE CLUSTER “PARK OF INNOVATIVE TECHNOLOGIES”

Автономный кластерный фонд
«Парк инновационных технологий»
Almaty Tech Garden



INNOVATION CLUSTER - ALMATY TECH GARDEN



63 STEP «National plan
100 precise steps»

233

participants



RESIDENTS SEZ «PIT» (**70% - IT-companies**), UNIVERSITIES, RESEARCH LABS, TECHNOPARKS, SMB

**Special Economic Zone «PIT»
163 sq km near Almaty City**



**Downtown Almaty IT-Quarter
facilities 17,000 sq m**

SEZ INCENTIVES

Tax exemptions (social, corporate, property and land) – 0%

Exemptions from custom duties

Free land use for up to 10 years

Extraterritorial regime for IT companies

Simplified procedure of hiring foreign labor

Cluster Focus

- INDUSTRY 4.0 & SMART CITY
- FINTECH
- GEO-MINING & NEW MATERIALS
- ADDITIVE MANUFACTURING
- LOGISTICS

118

ACTIVE MEMBER COMPANIES, including 66 extraterritorially

47

Partner UNIVERSITIES, RESEARCH LABS, TECHNOPARKS

COFINANCING Program

- Joint Technology Development Centers
- Startup Kazakhstan – seed VC



JOINT TECHNOLOGY CENTERS AND R&D CLUSTERS

Mining & Industry 4.0 | **2017**

Model factory
Investment Advisory
CRISCO standards

New Materials | **2017**

Nano augmented
Composites
3D printing materials

Additive Manufacturing | **2018**

Model factory
Center of Competency
3D printing

Smart Tech LABs | **2017**

Industry 4.0

BIM+

IBM Lab

IntelliSense.io®
IBM redline communications
McKinsey&Company
materia® DELL EMC
O C Si Al SGS
AUTODESK.
Google Яндекс

Financial Technologies | **2018**

Blockchain, ICO,
National Bank

Urban Industry | **2018**

BIM
Smart City
Sustainable city



REDIRECTING 1% TAX LIABILITY OF SUBSOIL USERS FOR R&D

FINANCED

41 projects

ATTRACTED (starting last year)

\$8,3 M from **28** subsoil users



PROJECTS' DIRECTION

Plant optimization

Up to **\$25 M/year** savings

Energy efficiency

10x effect

Exploration/Recuperation

Increase in the resource-base



INDUSTRIAL CLUSTER IN SEZ "PIT"

INTERNATIONAL MASTER'S AND PHD PROGRAMS
on specialties Industrial & Mechanical Engineering



GEO CLUSTER
(National Database of Mineral Resources, Geo Labs)



MODEL FACTORY
(3D printing metal powder production)



CERTIFICATION LAB
(materials, products)



ADDITIVE MANUFACTURING CENTER
(Metal, polymer powders, and 3D printers)

MMC OPTIMISATION



STANDARDS
for materials

FINANCING SOURCES:

- 1% of total revenue liability on R&D
- 50% co-finance of labs
- Revenue share



INDUSTRY 4.0 LAB



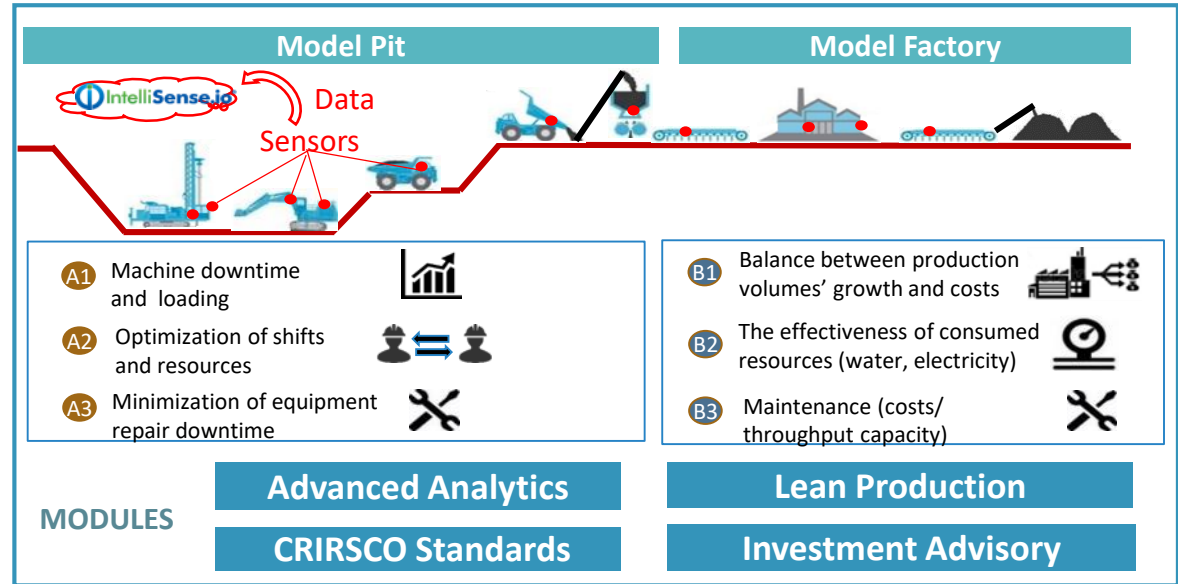
NEW MATERIALS CENTER
(composites and polymers)



MINING COMPETENCE CENTER

Effect

- Productivity improvement by **3-5%**
- Cost reduction from **10% - 20%** on geological exploration
- Machine downtime reduction by **30-50%**
- Cost reduction on maintenance services by **10-40%**



SMOC

(●) Focus only on **Mine to Mill processes** covered by IntelliSense.io OaaS applications (e.g: Flotation, Thickener, SAG Mill, Pipeline Pumping etc). **Local** first line of support where a team of trained personnel will proactively monitor process performance predictions, system alerts and answer all queries from the mine team on IntelliSense.io applications.

📊 Generate monthly / quarterly performance report / audit of the individual sites and the target processes where the Innovative technology has been deployed. This can be done through local engineering services (Local Content**) trained by the SMOC.

🏆 Deliver **courses** for Mine Management, Supervisors and Operators targeting specific processes with an aim to complement existing company training department.

🌐 **Best Practices sharing** between IntelliSense.io customers from different geographies like **Chile**.

Partners



TRANSTELECOM



SIEMENS





SMART INDUSTRY CENTER (MMC). INDUSTRY 4.0 LAB

Monitoring and optimization center

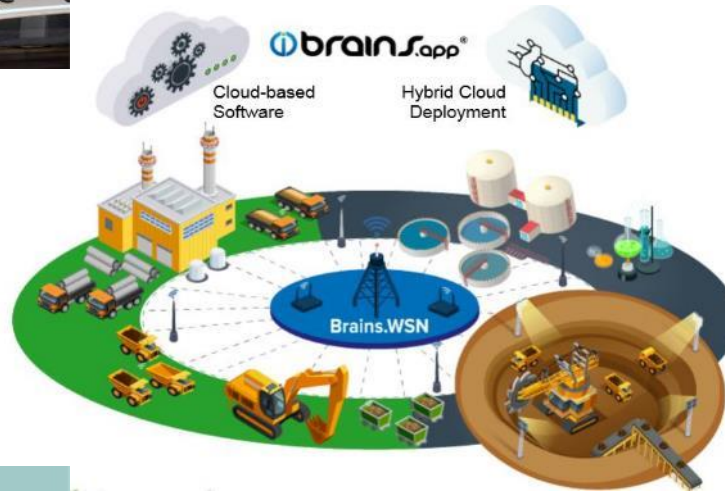
IoT prototyping

LoRaWAN



Artificial intelligence in automated control systems.

Forecasting, Simulation, Optimization of technological processes.



The Project's Goal

A comprehensive solution to built basic infrastructure for Industry 4.0 projects

Project Objectives

1. Launching Smart Industry Center in cooperation with TNCs;
2. Building environment for implementation of digital industry projects on 10 enterprises and 1 SEZ (Internet, Internal IoT network, Data processing cloud);
3. Implementation of automation pilot projects on 10 enterprises and 1 SEZ



Training of the developers

IoT prototyping

ARM



Expected terms

✓ 2018-2021



Effects

- ✓ Efficiency improvement at production by 10-20%
- ✓ Machine downtime reduction by 30-50%
- ✓ Improvement of industrial safety and reduction of accident rates by 50%
- ✓ Attraction of \$100 mln. of private investments to the mining industry



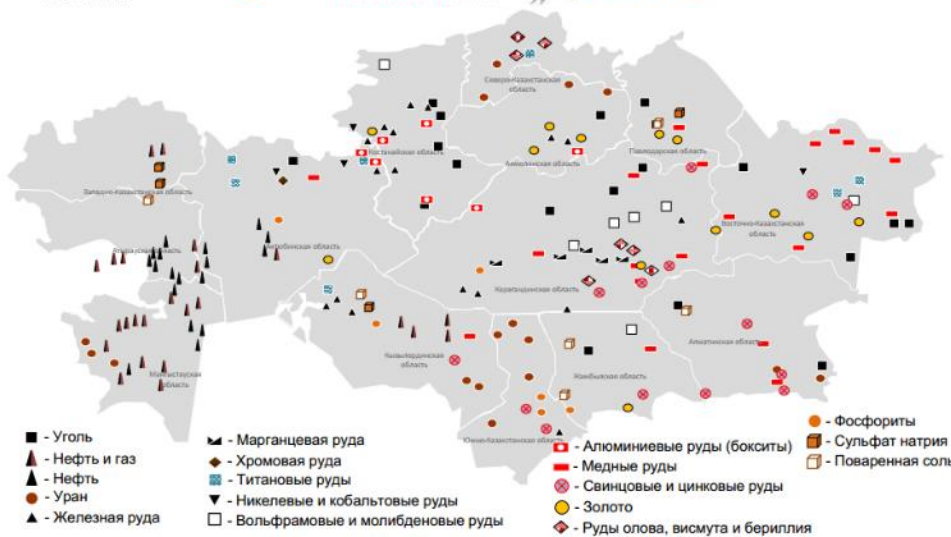
Mining Plants

Bestobe
 Varvarinskoe
 AltynAlmas
 Kazzinc
 Boshakol
 Semizbai
 Satpaev etc.

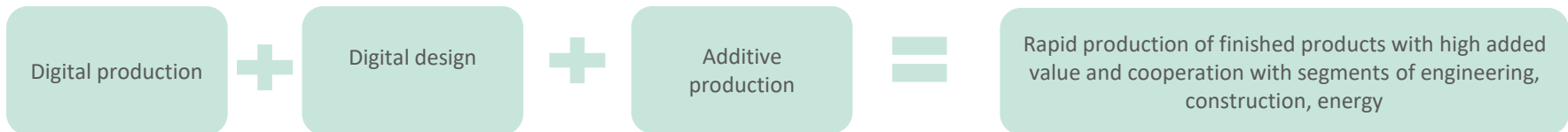


MATERIALS FOR ADDITIVE PRODUCTION – PERSPECTIVES IN KZ

Total companies – **1997**
 Small – **1778**
 Medium – **113**
 Large – **106**



	Rank in the world by stocks	Rank in the world by extraction
Wolfram	1	-
Chrome ore	2	3
Manganese ore	4	8
Silver	4	10
Lead	5	11
Zinc	5	8
Bauxite (aluminum)	10	8
Titanium	10	19
Tin	10	-
Iron ore	11	13
Copper	12	11
Gold	15	21
Rare materials	20 leaders in the world	



Key factor for ensuring project success is the speed of entering a market, since due to expected saturation of the market it is forecasted the decrease in prices for powder nomenclature in the next 5 years



MODEL FACTORY AND LABORATORY MODULE (PRODUCTION OF 3D POWDER)

Production of 3D powder in the MMC Center (focus on mining enterprises of the Republic of Kazakhstan)

Grinding process

Concentration

Drying

Metallurgy

Product of processing

Crushing

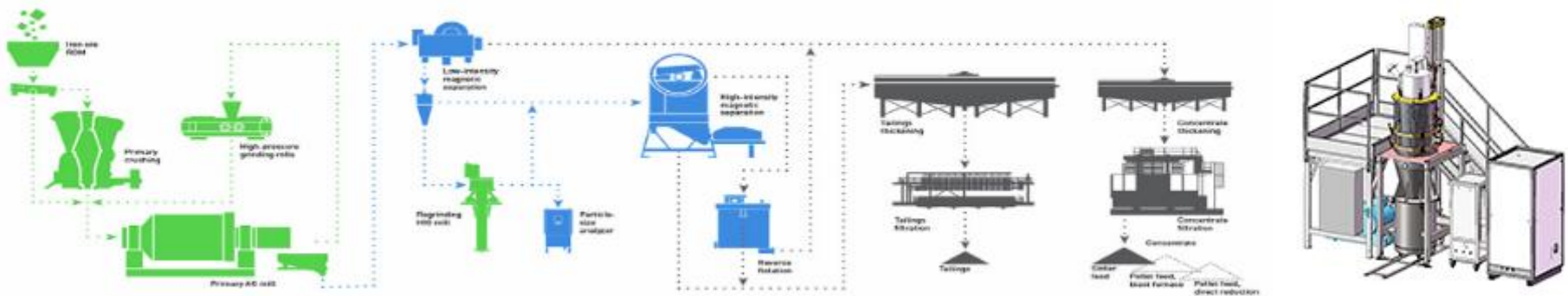
Different concentration methods
Agglomeration

Condensation

Filtration

Pyro metallurgy

Obtaining 3D metal powder



Main elements of the module :

- Lean production of 3D powder of different alloys at the mine (from PIT to Port)
- Analytical sensors and devices allowing to monitor the physical parameters of equipment condition (temperature, vibration, etc.)
- Analytical approaches for determining correlation between different parameters of ore mass to increase the yield of useful elements
- Study of incoming ore to explore possibility of producing 3D powder and alloys
- Training in Additive Engineering



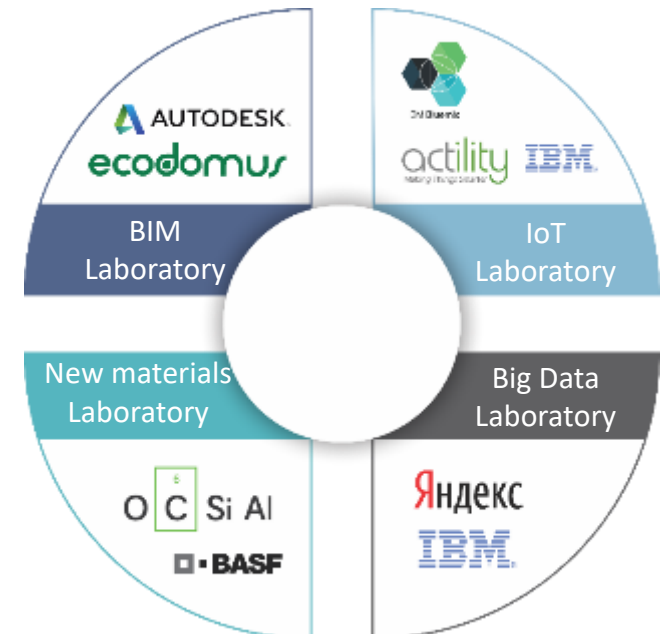
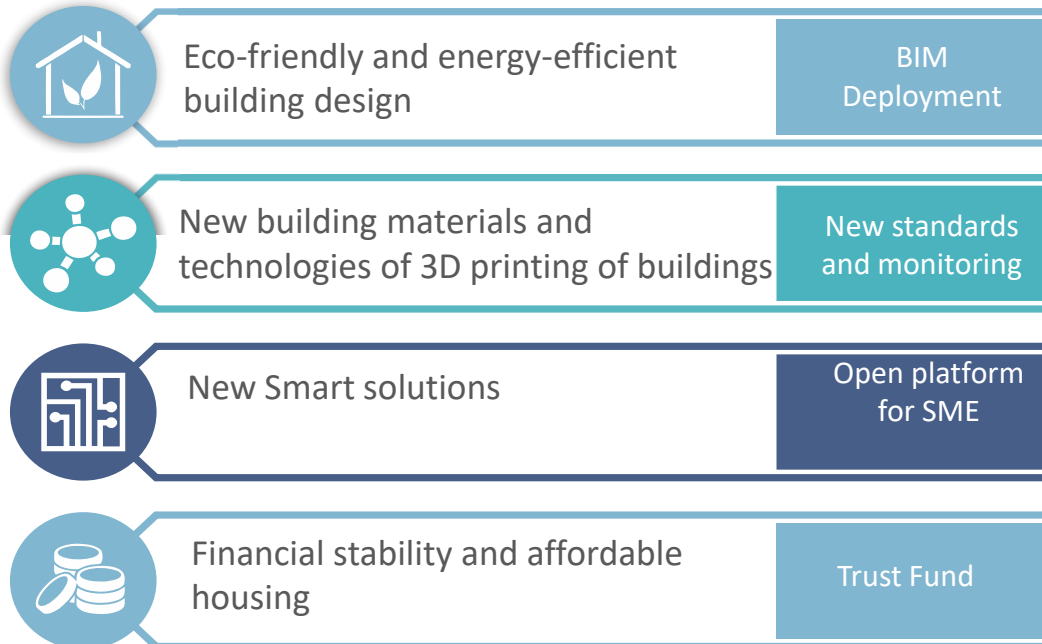
URBAN TECH CENTER



Digitalization of the full cycle of urban development to reduce costs and increase the speed of building construction



Urban planning and design of comfortable environment





IBM SMART TECH OPEN LAB

PROJECTS:

- An open Smart City platform to collect and analyze data for urban planning and sustainable city – IBM Blue Mix, Tririga
- Financial transparency and VAT tracking - IBM Hyperledger
- Development and implementation of IBM Watson Health for oncology
- Cloud infrastructure based on IBM Bluemix



Participants

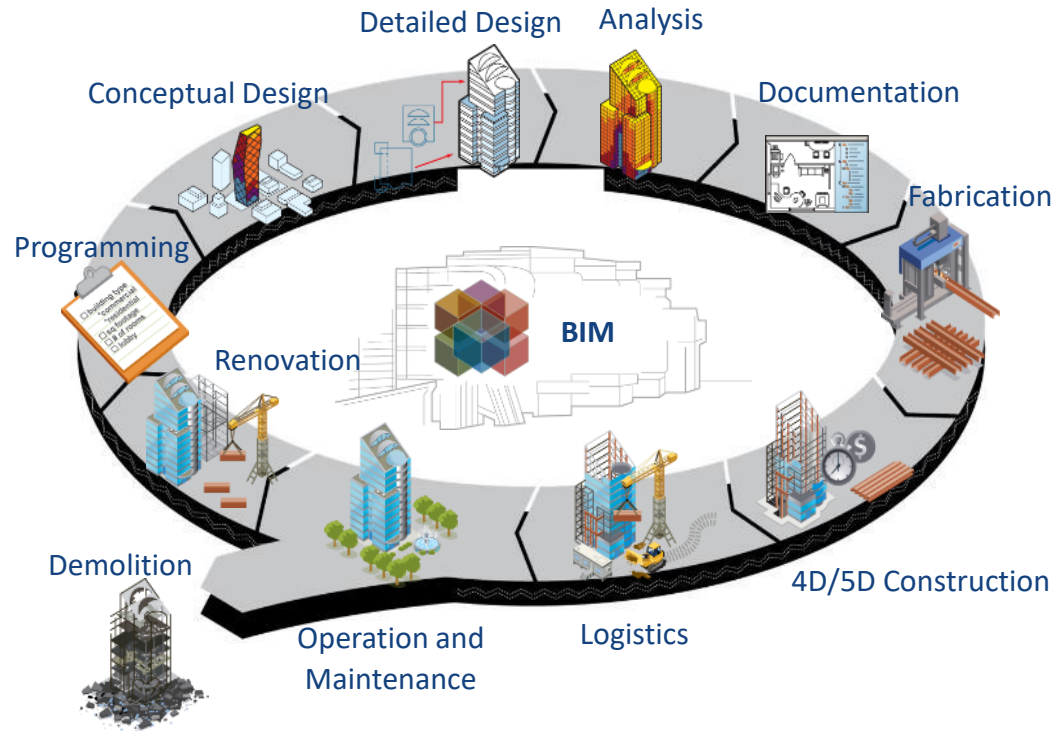


МІНІСТЕРСТВО
ЗДРАВООХРАНЕННЯ
РЕСПУБЛІКИ КАЗАХСТАН

LABORATORY BIM+

BIM (Building Information Model):

- The process of creating and managing complete information about an object (3D model, details, estimates, etc.)
- Construction at all stages of the life cycle of the facility
- Managing the entire life cycle of an object



Energy efficiency (BIM 6D):

- Conceptual energy analysis
- Detailed energy analysis
- Sustainable element tracking
- LEED tracking

Facility Management (BIM 7D):

- Provides real-time integration of BIM with Building Automation Systems and others. Keeps data up-to-date across the applications and databases (building assets, sensor data tracking, 3D tracking mechanical, electrical, plumbing systems and etc.)

EFFECTS

- 15-20% reduction of building project time
- 20% reduction of building costs
- 70% reduction in operating costs
- 80% reduction for cost estimates development
- 30% reduction of waste and spoilage



Participants

ecodomus

AUTODESK





IT QUARTER AS A PLACE FOR IT COMPANIES (exterritorial principle)

FIRST STAGE

BUSINESS CENTER "ZHIBEK ZHOLY" IN THE CENTER OF ALMATY-CITY



LAUNCH
IN
OCTOBER 2017

SECOND STAGE

IT QUARTER CONSTRUCTION

SOUTH SIDE VIEW
(AL`-FARABI Ave)



*Under the auspices of the Education Foundation
Of Nursultan Nazarbayev*



Was signed MOU with International
IT University for IT Quarter
development (2nd Stage)



IT QUARTER OFFICES – OPENED CAPABILITIES FOR YOU

OUTSIDE IT QUARTER



Customers and Partners in the neighborhood



Communication with international Venture Funds and IT Hubs

Hall rental from 200 000 KZT/day, ticket payments

Conducting events and visiting conferences



Services for IT companies

Revision of conditions, relocation

Scalable areas

INSIDE IT QUARTER










TECHNOLOGICAL PARTNERS SERVICES



 Боб Дорф Серийный предприниматель, автор книги «The Startup Owner's Manual»	 Тим Николь Основатель RussABS	 Билл Рейхерт Управляющий директор, Garage Technology Ventures	 Камран Элахян Председатель Global Catalyst Ventures
 Джон (Гризз) Дил CEO, IX Power	 Гэри Фаулер Основатель, Fowler International	 Шомит Госе Партнёр Onset Ventures	 Питер Лукянов – основатель Silicon Valley Data Science
 Бас Годска Основатель, управляющий директор Acrobator.com	 Томас Гэд Генеральный директор BrandFlight	 Стьюарт Гюнтер Со основатель Venture Capital – Private Equity Roundtable	 Эрик Бенхамоу Основатель и генеральный директор Benhamou Global Ventures
 Даниил Козлов Директор по развитию бизнеса GVA Launch Gurus	 Йоси Туркаспа Вице-президент M&M VeamMed Ltd	 Стефани Маррус Бизнес-консультант Кремниевой Долины, Директор UCSF	 Павел Черкашин Партнёр vestor.in

	Preferential access to products of "1C" (cloud, box)
	Cloud Products from Microsoft (Bizpark etc.)
	Big Data Tools from DELL-EMC
	IBM Bluemix (IoT)
 techgarden.kz	Tools for development and equipment IoT



Internet access and hosting (**1 Gbit/sec**)



Master-classes and specialized events



DEVELOPMENT OF STARTUP ECOSYSTEM. STARTUP KAZAKHSTAN

GVA ALATAU SEED FUND

- Approved by Management Committee of ACF "PIT" (June 2017)
- Jurisdiction – State of Delaware (USA)
- Goal: 500 startups (among them 150 on the stage II)

Stage I Stage II
\$20 k \$100 k

Budget 

6 mln. USD – as of today
20 mln. USD – forecast

Acceleration



Examples of startups (Startup Kazakhstan)



LPWAN next-generation wireless network on the basis of LoRa/LoraWAN



Date of foundation: 2016.
Capital: 400 K USD
Employees: 14 ppl



Calculation of stock prices, portfolio management, robot investor



Date of foundation: 2013.
Capital: 600 K USD
Employees: 30 ppl



Virtual reality simulator for training of engineers



Date of foundation: 2013.
Capital: 150 K USD
Employees: 15 ppl



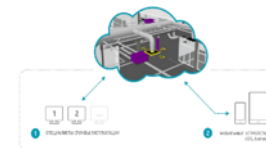
Industrial Internet platform: aerospace, engineering, transport



Date of foundation: 2015.
Capital: 500 K USD
Employees: 23 ppl



BIM - instruments for management of construction projects



Date of foundation: 2013 r.
Capital: Own funds
Employees: 41 ppl



ACF «PIT» REPRESENTATIVE OFFICE IN SILICON VALLEY

HUB to HUB



Attracting breakthrough technologies and platforms	50% of co-investment	Piloting of 3 platforms in 2017, 10 - until 2020
Joint VC Funds	40% of co-investment	Development of a critical mass of innovative enterprises in the RK