

Smart City Solutions by «Shvabe» Holding Company

World Trends

Trends

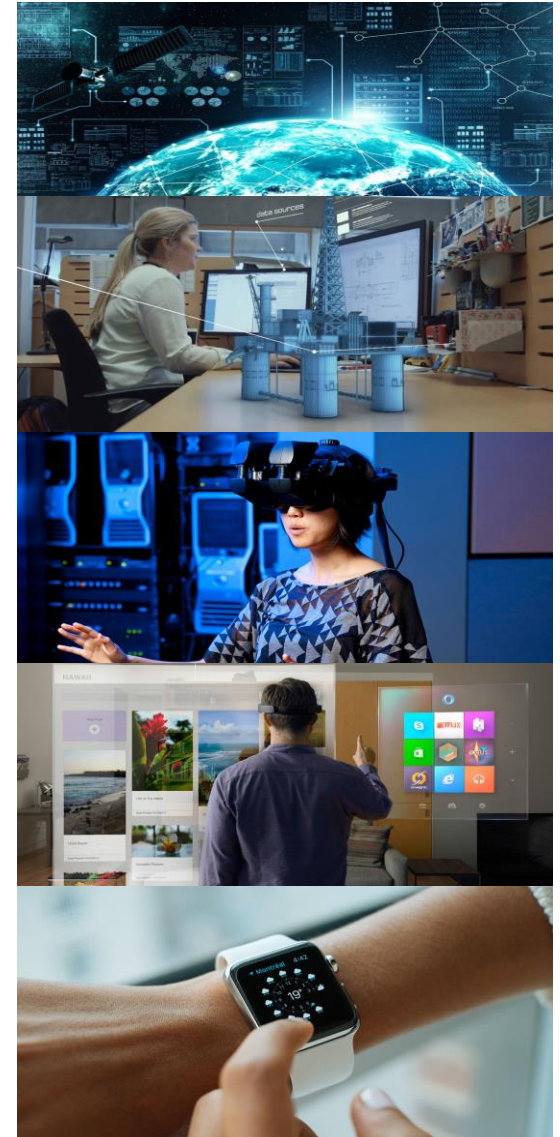
Internet of things - the concept of a computer network of physical objects ("things"), equipped with built-in technologies for interaction with each other or with the external environment

A digital twin - is a cloud-based virtual representation of an object created in addition to a physical "sibling". Existing throughout the life of its real duplicate, the digital twin serves as a virtual pattern that grows and develops identically to the real object in real time.

Virtual Reality (VR) refers to computer technologies that use software to generate realistic images, sounds and other sensory data that create a copy of the real environment and simulates the physical presence of the user in that environment.

Augmented reality - is a technology that imposes an image generated by a computer on the world as it is presented to the user, thereby creating an enlarged view of the world around them.

Wearable devices - may be accessories or parts of the clothes. One of the main features of portable electronics is the ability to connect to the Internet, which allows you to exchange data between the device and the network.



World Trends

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Unmanned vehicles handle a huge amount of data from built-in radars, cameras, ultrasonic rangefinders, GPS and stored maps to navigate on a route in conditions of a complex and constantly changing road situation without human participation.

Drone - is an unmanned aerial vehicle that can move autonomously without human control or out of line of sight.

Biohacking – genetic improvement.

nootropics / medications that stimulate mental abilities

- high life expectancy
- implants

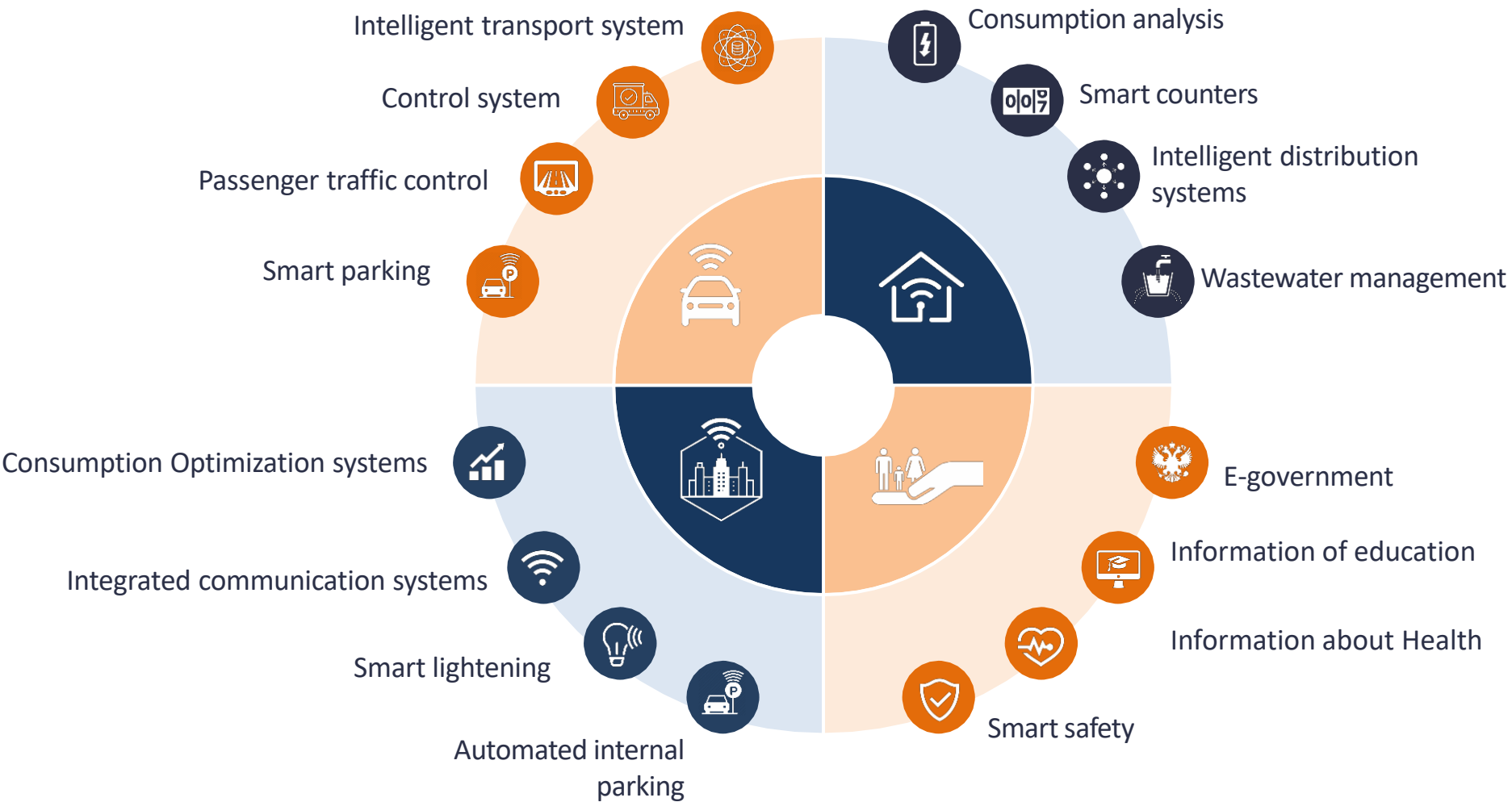
Artificial Intelligence. An attempt to create machines with reason, thinking like a man acting like a man, thinking rationally and acting rationally.

Multivariate printing refers to the processes of synthesizing objects, in which successive layers of material are formed under the control of the computer. This applies to 3D and 4D printing, with which you can create drugs, portable electronics, implants and biotissues.

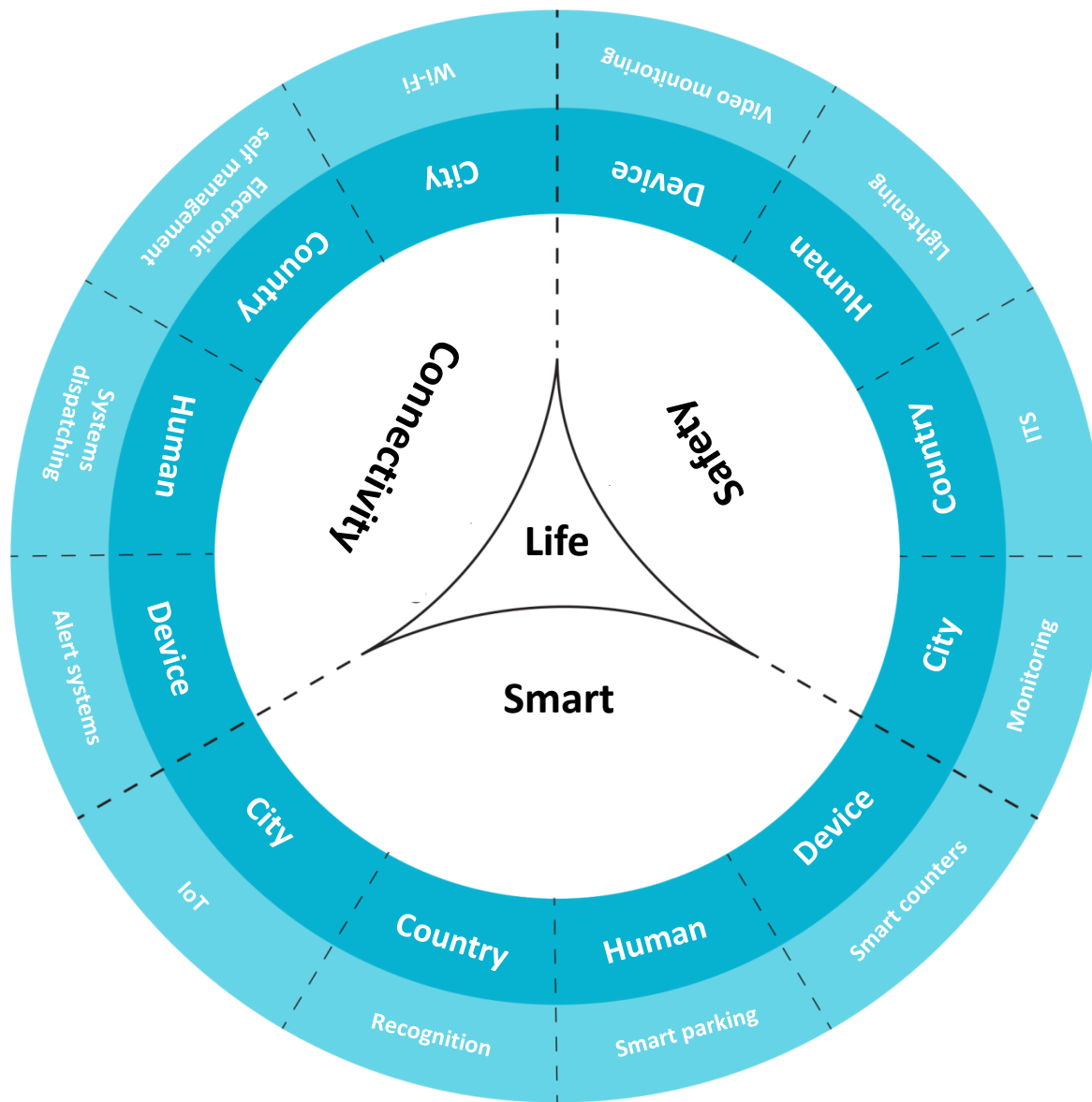
Radical atoms. Vision of human interaction with future dynamic materials, which can be changed with the help of computers.



TODAY SMART CITIES ALL OVER THE WORLD INCLUDE 4 BASIC TRENDS



Functional matrix of Smart City



CONCEPT OF «SMART CITY» OF JSC «SHVABE» INCLUDES BASIC BLOCKS OF ALL TRENDS

«Smart City»

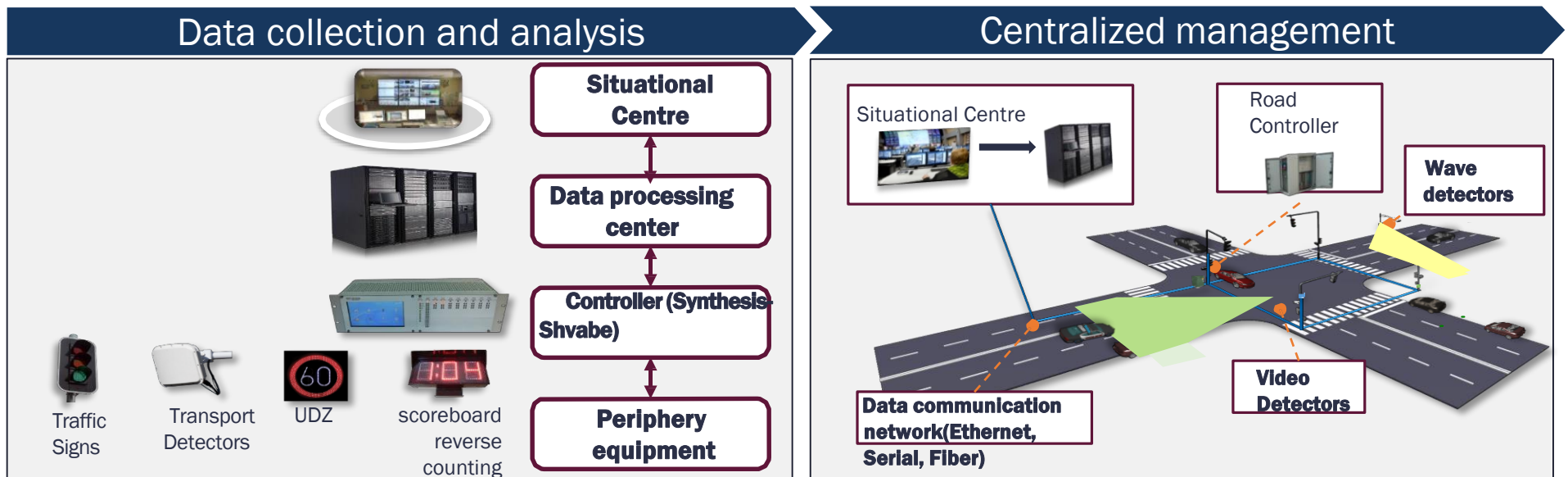
UNIFIED INTEGRATION PLATFORM

Transport	Housing and utilities	Safety	Tourism	Software and hardware complex for supporting infrastructure in the spheres of Education and Healthcare
Photo and video fixation	Bright City	Video fixation	Map	
Weight control	IT systems	Threat Monitoring	Wi-Fi	
Parking		Coordination Systems		
E-ticket		Eco monitoring		
Automated traffic management system				

A single integration platform allows to increase the number of directions and subsystems

... AND GIVE THE POSSIBILITY OF MODELING, ANALYSIS AND MANAGEMENT OF TRANSPORT FLOWS

- **Automated traffic management system** is a tool for integrated centralized dispatch control of traffic:
- Collection, provision and analysis of data from transport detectors
- Dynamic network and local adaptive management based on the transport model of the city
- Providing information on the transport situation on the display panel

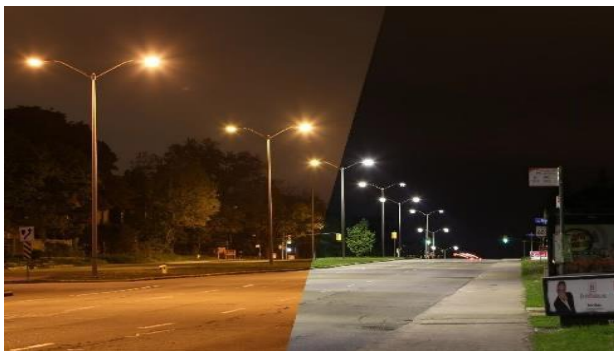


- SpetsDorProject (SDP) is the leader on the market of intelligent transport systems (ITS) of the Russian Federation, the key contractor of Moscow in the development, management and modernization of ITS:
- The lowest accident rates for 10 years are reached
- Increased speed of traffic by 12% against the background of a growing fleet of cars

THE FIRST STEP OF INTRODUCTION OF INTELLIGENT COMMUNAL SERVICES IS «THE BRIGHT CITY»

«THE BRIGHT CITY»

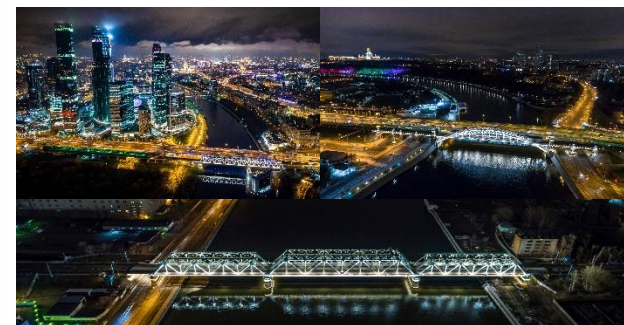
Replacing obsolete fixtures on LED



System implementation intellectual management



Installing an additional lighting



Main functions

- Automation of electricity metering
- Dimming
- Data exchange with the data center in real time
- Independent control and monitoring of each lamp
- Forecasting accidents and planned replacement
- Arbitrary grouping of objects

«ROSTEC» HAS ADVANCED DEVELOPMENTS IN THE FIELD OF DEVELOPMENT OF ELEMENTS OF SMART LIGHTING SUPPORTS

Intelligent lighting

- Power distribution according to the level of illumination and requirements
- Intelligent control (dimmer, controller)
- a solar panel

Sensors

- Light sensor
- Temperature / humidity sensor
- Air pollution sensor
- Noise Sensor

Video monitoring

- Control of urban infrastructure
- Data transfer to a single center
- Analysis of auto traffic
- Fixing of events
- HD Camera
- Face Detection

Controller block



Wireless network

- Low power base station
- GLONASS base station
- Access point wi-fi

InfoDisplay

- Interactive Indexes
- Weather forecast and time
- Advertising

Traffic light

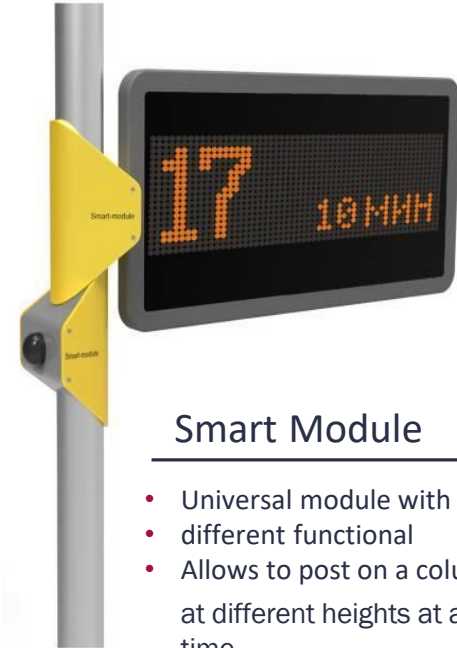
- Adaptive feed signal system

Services

- Charging for cars
- Charging for phones
- Geo-tags for the visually impaired
- Sound notifications

Citizen-Police System

- Alarm button
- Active communication channel with rapid response services



Smart Module

- Universal module with different functional
- Allows to post on a column at different heights at a time

PLATFORM INFORMATION-NAVIGATION SERVICES INCITY - COMPLEX OF ELEMENTS OF INTERACTION WITH URBAN ENVIRONMENT

Information display

- Advertising
- Events poster

Police-Citizen System

- Alarm button
- Active communication channel with rapid response services



Point of Wi-Fi access

Video and
audio monitoring

Navigation

- Interactive map
- City Identity
- Reference information about city services

Services

- Charging for phones
- Geo-tags for the visually impaired
- Calling a city taxi



InCity - a complete system from simple street signs to high-tech information terminals

Complex approach – is a synergy of product lines

100 million \$
of investments

Up to **35 million \$**
additional budget income

Up to **20 million \$**
additional income from taxes

You can save up to
60 million \$
on operating costs

Up to **7 years**
approximate
Payback period

Up to **300**
workplaces

Thank you for your attention.