SMART LIGHTING SOLUTIONS

designed and developed for QATAR

by «ASAP DEMO» LLC

ABOUT US

"ASAP DEMO" LLC are specializing in creating and developing a "SM**ART CITY" concept.**
Our goal is to make devices "SMART", thus creating a touch network that can adjust to the environment and improve the quality of life.

OUR SOLUTIONS:

- "SMART" lighting
- "SMART" buildings
- "SMART" transport
- "SMART" parking
- Collecting data from smart meters (water, electricity, gas)
- "SMART" security system
- Environmental monitoring
- Gas analyzers
- Radiation monitoring
- Smart traffic control
- and others

We are the team of engineers with many years of experience and unique knowledge in the field of wireless data transmission technologies.

Our specialists graduated from the best technical universities in Ukraine:

- The National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”
- National Aerospace University – “Kharkiv Aviation Institute”
- State University of Telecommunications
- and others

We have a memorandum of cooperation with The National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”. Thanks to this collaboration, we could attract young specialists to our team.

Hardware engineers

Software engineers

Product Developers

MORE ABOUT US

As we employ engineers from various fields, we also **design and develop custom-made devices** that match existing hardware and software, we also have a team of engineers who are involved in the integration of other manufacturers into our system.

These can be devices and modules that will simplify daily life, will ensure safety and timely response to danger, the condition of material and non-material objects, calculate gas, electricity, water and others.

In addition to the fact that we develop and implement a variety of devices, we are **high-level authorized partners:**

ASUS EPSON SAMSUNG lenovo PHILIPS cisco Canon xerox UNIoT HIKVISION

DELL hp Microsoft acer LOGIC POWER ..and other.

Since we are professionals in our business, who have an impeccable reputation, we had the **opportunity to cooperate with B2B and B2G**:

Ministry of Defense of Ukraine

УКРПОШТА ГОЛОВНА ПОШТА КРАЇНИ

UKRPOSHTA - the main post of the country

Main Department of the State Fiscal Service in Kyiv

УкрОборонПром Державний концерн

State Concern "UKROBORON PROM" (military)

Kyiv City State Administration

ЦЕНТР ГРОМАДСЬКОГО ЗДОРОВ'Я МОЗ УКРАЇНИ

Public Health Center of the Ministry of Health of Ukraine

Національна служба здоров'я України

National Health Service of Ukraine

НАЦІОНАЛЬНЕ АНТИКОРУПЦІЙНЕ БЮРО УКРАЇНИ

National Anti-Corruption Bureau of Ukraine

укртелеком

UKRTELECOM Public Joint Stock Company

JAGUAR LAND ROVER

..and other.

CERTIFIED ENTERPRISE AND DEVICES

We received an all-Ukrainian reward:

- Best Industry Company in Ukraine in 2019
- Best Industry Company in Ukraine in 2020

Our company complies with the requirements of international standards:

- ISO 9001:2015 - “Quality management systems. Requirements”;
- ISO 14001:2015 - “Environmental management systems. Requirements and guidance for use”;
- ISO 28000:2007 - “Specification for security management systems for the supply chain”.

Our equipment fits the following standards:

- test report;
- certificate of conformity;
- declaration of conformity;
- certificate of photobiological safety;
- calculation of energy efficiency class and energy label.

Our equipment matches the requirements, which are documented in Ukraine.

- DSTU EN 60598-1: 2017;
- DSTU EN 55015: 2017 (EN 55015: 2013; EN 55015: 2013 / A1: 2015, IDT);
- DSTU EN 61000-3-2: 2016 (EN 61000-3-2: 2014, IDT);
- DSTU EN 61000-3-3: 2017 (EN 61000-3-3: 2013, IDT; IEC 61000-3-3: 2013, IDT);
- DSTU EN 61547: 2016 (EN 61547: 2009, IDT);
- DSTU EN 62471: 2017 (EN 62471: 2008, IDT; IEC 62471: 2006, MOD);
- DSTU ETSI EN 300 220-2: 2017 (ETSI EN 300 220-2: 2017, IDT);
- DSTU ETSI EN 301 489-1: 2019 (ETSI EN 301 489-1 V1.9.2 (2011-09), IDT).

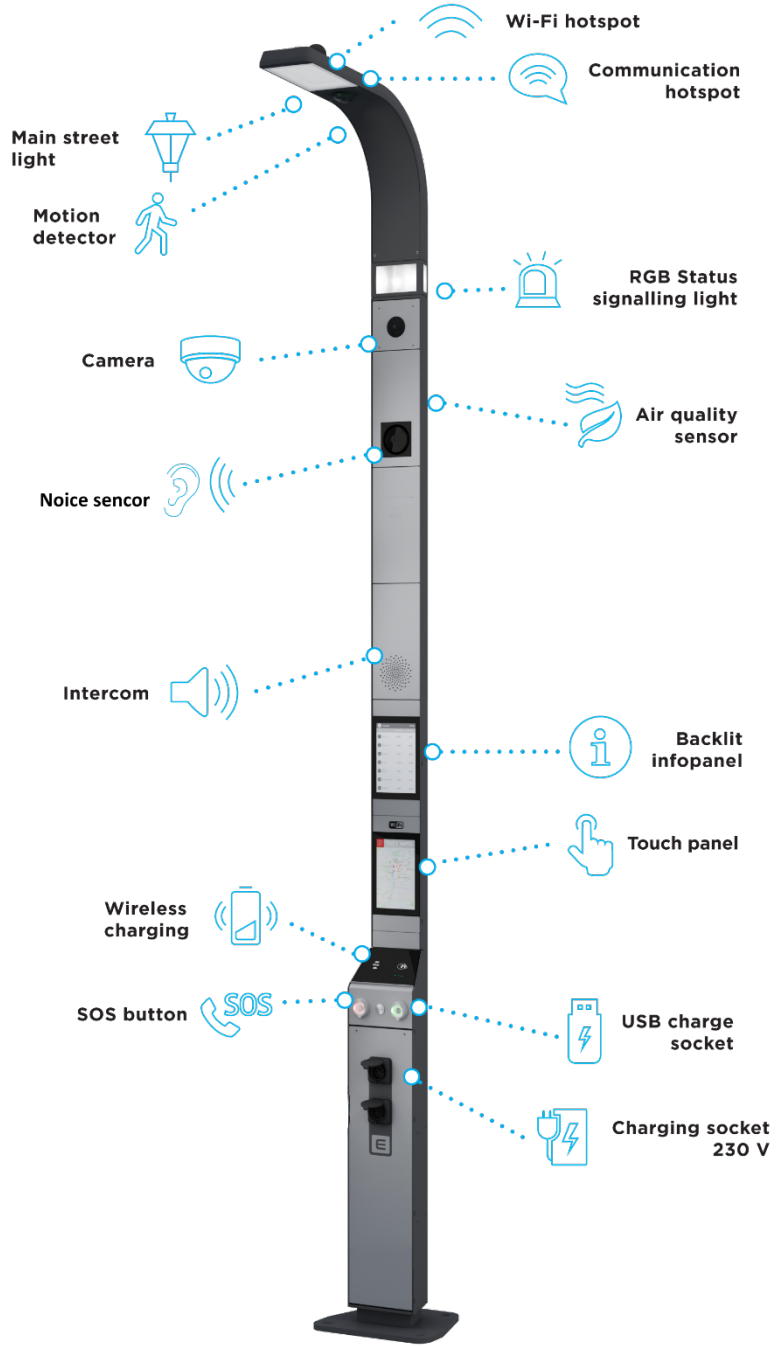
LIGHTING IS NOT JUST LIGHT

As part of the implementation of the «Smart City» concept, we consider street lighting networks as the «arteries» of the city.
Through these networks it is possible to transmit information and data that relate to various areas of the city's security.

ADDITIONAL OPTIONS:

- CO2 Gas Sensor;
- Noise sensor (ability to detect a gunshot);
- Smoke sensor;
- Traffic monitoring sensor;
- CCTV Camera;
- Motion detector;

and others.



RELIABLE PLATFORM FOR GROWTH

Smart Lighting Solution - is conceived as a scalable platform for outdoor lighting projects of any complexity, integrating over time not only street lighting, but also other Smart City functions.

Light fixture

SMART light fixture without LoRaWAN network

Light fixture in LoRaWAN network

Ecosystem Smart City

Single expandable control system

SMART LIGHTING SOLUTION

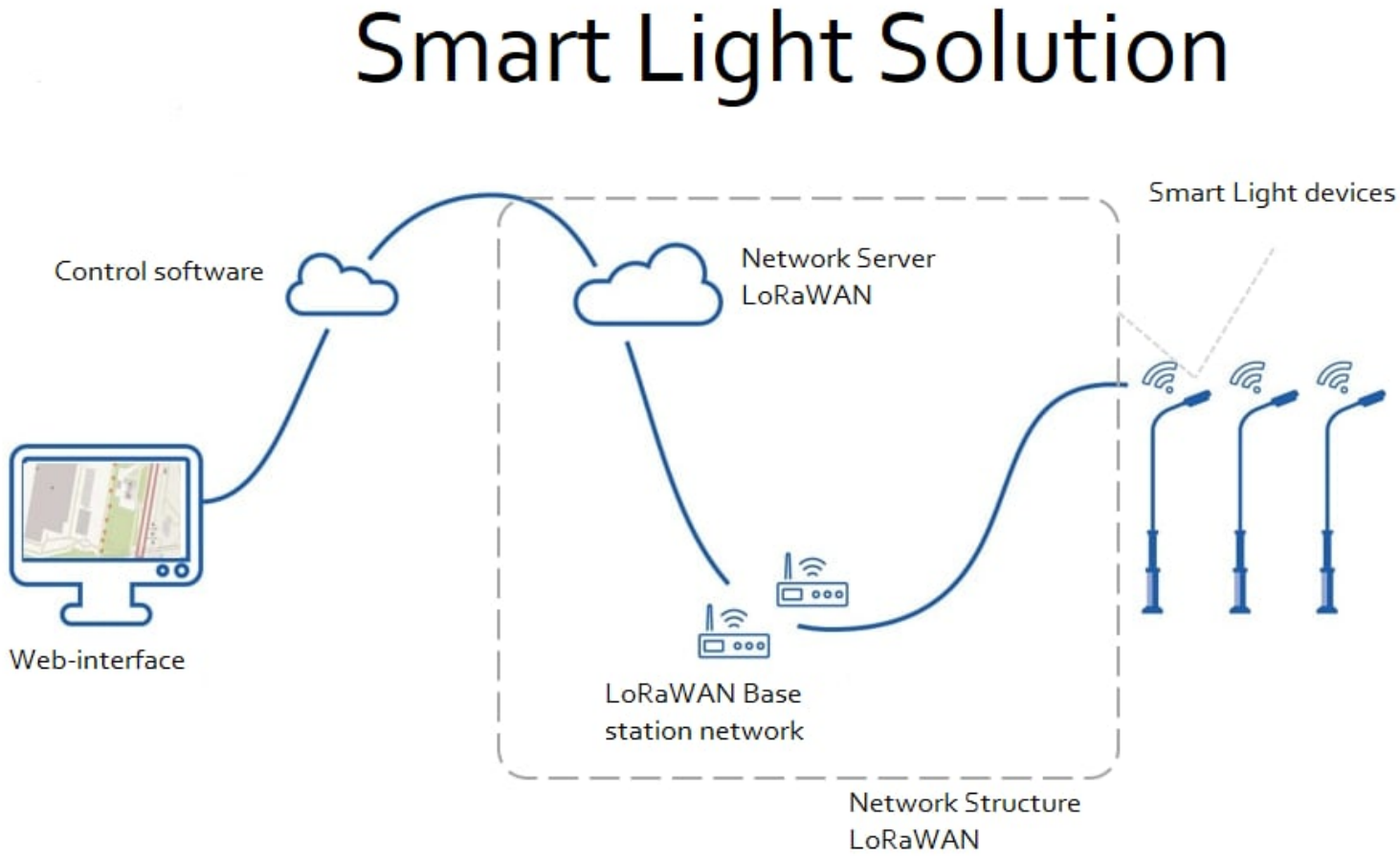
Smart Lighting Solution provides a full range of smart street lighting solutions that are relevant to the size of the project.

Lamp type	Remote ("manual") control	Automatic brightness control on a daily cycle	Presence area lighting	Monitoring of technical parameters	Maintaining constant luminous flux
SMART light fixture in LoRaWAN network	YES	YES	YES (group of lamps)	YES	YES
SMART light fixture without LoRaWAN network	NO	YES	YES (one lamp)	NO	YES
Regular light fixture	NO	NO	NO	NO	NO

SMART LIGHTING SOLUTION

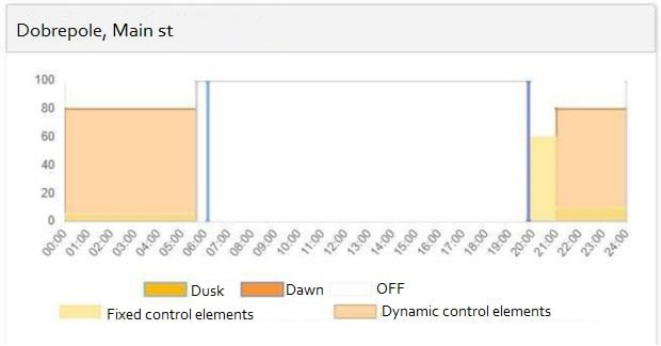
We are currently working on creating and developing a SMART CITY concept.

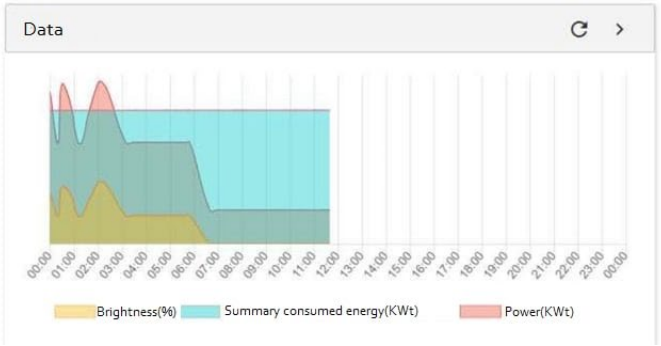
Our goal is to make devices SMART, thus creating a touch network that can adapt to the environment and improve the quality of living.



SMART CONTROL SYSTEM

Smart Lighting Solution is managed by software which was developed by Ukrainian programmers It is easily scalable from level of one facility to the entire city.

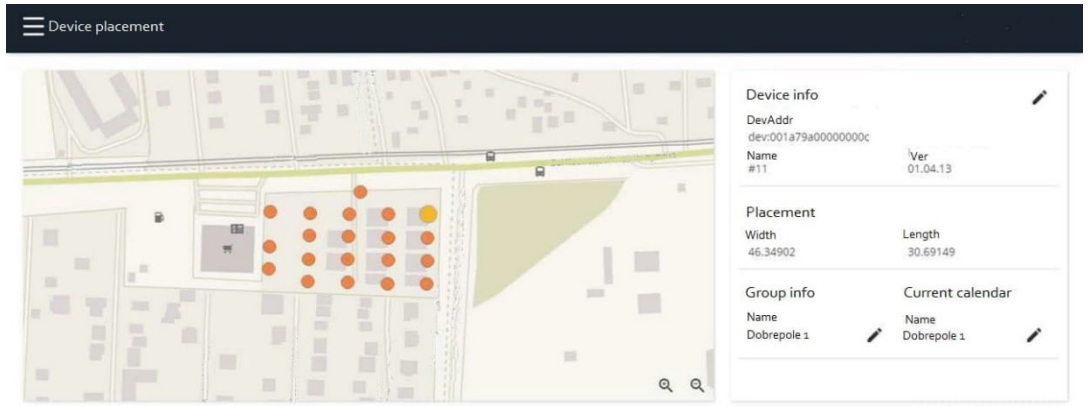




YOU CAN:

- Turn on the light at sunset and off at dawn using the astro-hour algorithm.
- Fix programmable change in brightness depending on the time of day.
- Use execution of the calendar program in offline mode, including in case of loss of connection with the network.
- Choose a daily program for each day of the year according to the specified conditions.

SMART CONTROL SYSTEM



- Devices can be found and selected either by their location using the map view, or by title from a list.
- They can be separated into groups for easier management.
- Users only need a browser and a personal account to access the system.
- No additional software downloading and installation required.
- Access and control can be carried out both from a PC and from a smartphone.
- Luminaires send data reports to network, including various parameters of their operation (power consumption, total power consumption, brightness level, supply voltage, current consumption), statistics of detected movements, light level, and much more.

ADVANTAGES OF SMART LIGHTING SYSTEM

The usage of smart street lighting brings direct financial benefits:

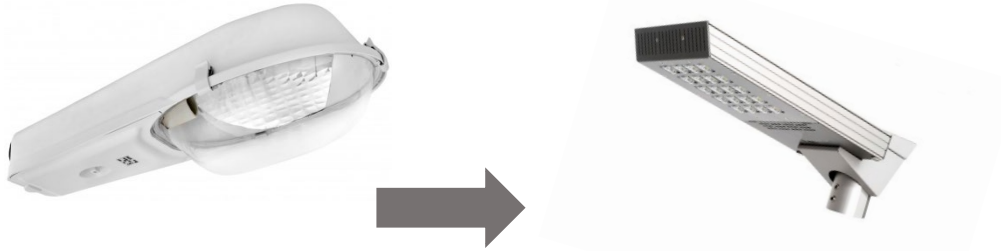
➡ **Reduced energy costs:**
Additional savings through smart dimming lamps.

➡ **Reduced maintenance costs:**
No need to replace lamps, long life and optimization of the work of the repair teams due to constant monitoring of each luminaire.

➡ **Extra profit:**
Monetization opportunities through additional functions: collection of traffic data, IoT network sublease, etc.

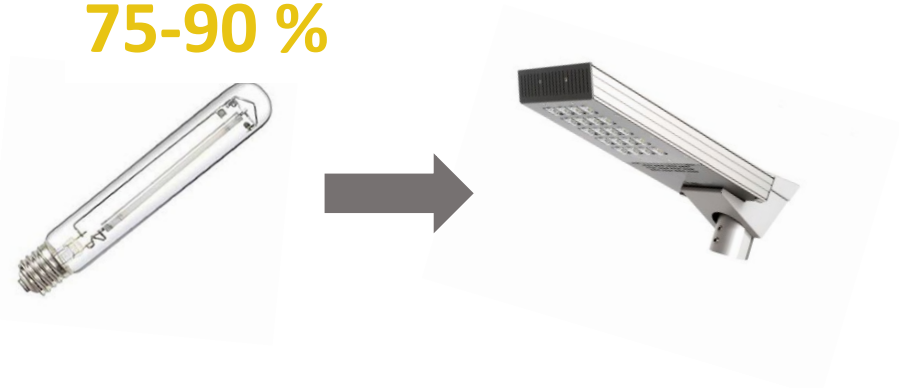
When switching from archaic technologies (incandescent lamps, mercury, etc.)

>90%



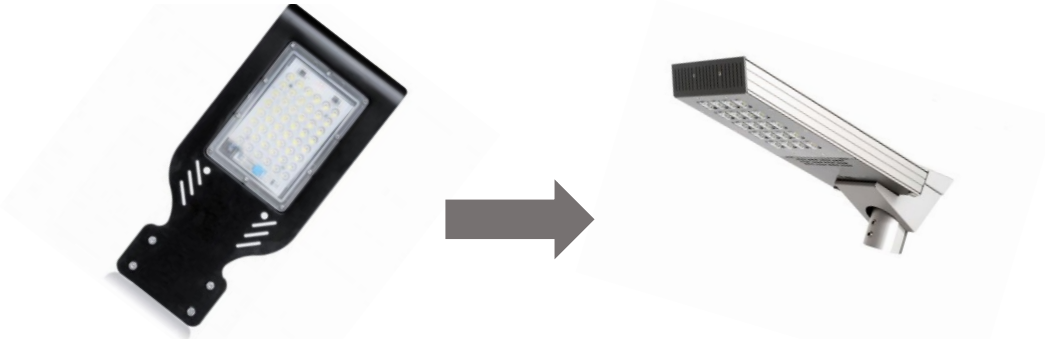
When switching from sodium and metal halide lamps:

75-90 %



When switching from conventional (non-intelligent) LED lighting:

45-70 %



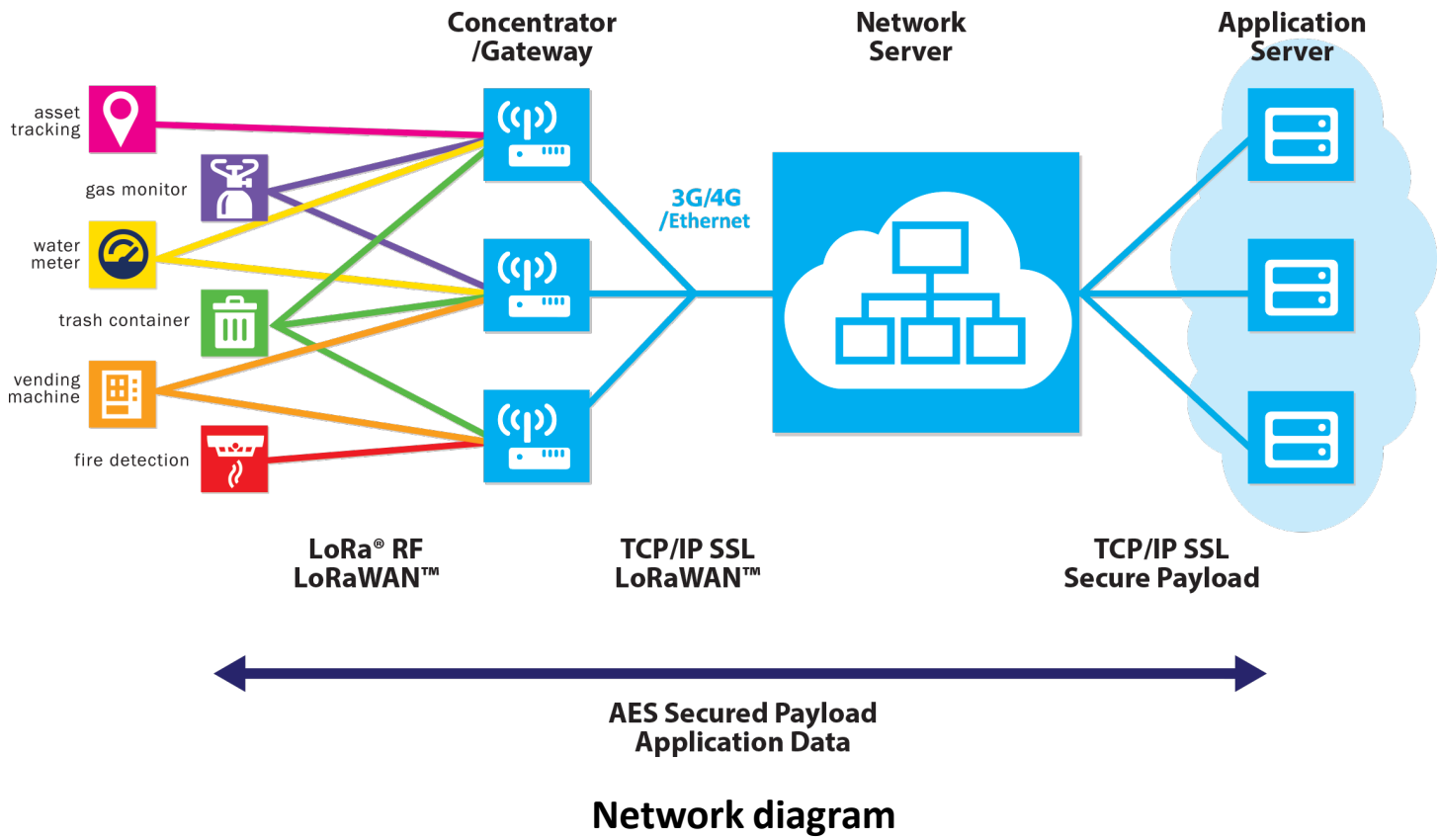
ADVANTAGES OF SMART LIGHTING SYSTEM

- Adjusts the lighting level as needed
- Can serve as a basis for city IoT network
- Ability to remotely control each lamp separately
- Control of energy consumption of each lamp
- Provides remote luminaire monitoring
- Longer LED lifespan by 35%
- Collects data for the entire Smart City system

NETWORK TECHNOLOGY LORAWAN

LoRaWAN wireless network - is a set of gateways (base stations) that send messages between end devices and the central server network.

Deployment of a wireless data network will allow receiving information not only from sensors that are planned to be installed as part of the implementation of intelligent lighting, but also other systems and sensors that work using the LoRaWAN protocol or can be converted to work with it.



Network diagram

To ensure the collection and processing of data from various sensors connected to the LoRaWAN network, it is recommended to create a control room and information processing.

NETWORK TECHNOLOGY LORAWAN

Due to the ability to scale the number of systems that can be connected to the network, significant cost savings will be achieved in the future, due to the lack of need to deploy other wired or wireless networks.

Additional systems that can be connected to the LoRaWAN network:

- Monitoring fullness of garbage cans;
- Monitoring of weather conditions;
- Manhole condition monitoring;
- Control of the presence of harmful substances;
- Collection of data on the state of the environment;
- Fire, burglar alarm;
- Building automation;
- Reading of gas, water, electricity meters;
- Monitoring of vehicles and cargo in a certain area;
- Monitoring the condition of containers/tanks;
- Smart parking.

COMPLETED PROJECTS

Object passport:

- Place of work execution - city of Dobropolye, Donetsk region, Ukraine;
- Execution period – Q2,2020;
- Number of installed street lanterns – 2580 pcs;
- The number of installed base stations LoRaWAN – 5 pcs;
- The number of installed control modules for power lines - 25 pcs;
- Communication type between devices – LoRa, 868 Mhz.

System functionality:

- Opportunity of dimming street lanterns separately;
- Monitoring the operation and technical condition of each individual lamp;
- Collecting energy consumption data;
- Automatically turn on lights in low light;
- Automatic switching on of city lighting according to the astronomical calendar.

COMPLETED PROJECTS

Our company has developed a concept for the development and implementation of modern technologies for the "Service of highways in the Vinnitsa region." As part of this concept, we have developed and will implement the following solutions:

- Deployment of a wireless data network based on the LoRaWAN protocol
- Car traffic control and counting system with license plate recognition function
- Monitoring the condition of bridges, overpasses, overpasses and other bridge structures
- "Smart" pedestrian crossings and road signs
- "Smart" road lighting
- Meteorological and environmenta monitoring on roads and highways
- Road safety system for wild animals
- "Smart" stops for long-distance and urban public transport
- Creating a modern situational center

ASAP DEMO

«20» грудня 2020 року

ПРИЙНЯТО:

СЛУЖБА АВТОМОБІЛЬНИХ ДОРІГ У ВІННИЦЬКІЙ ОБЛАСТІ
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В.о. начальника Служби

_____ /І.І. Жебелев/

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Директор ТОВ «АСАП ДЕМО»

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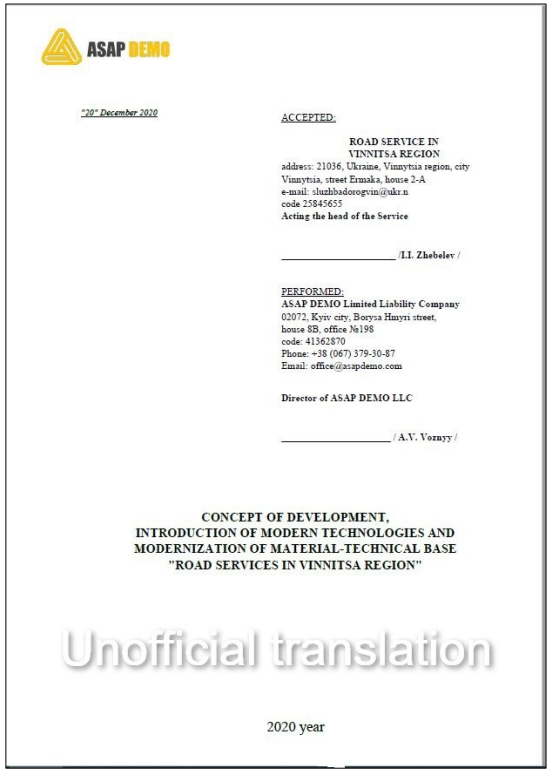
КОНЦЕПЦІЯ РОЗВИТКУ,
ВПРОВАДЖЕННЯ СУЧАСНИХ ТЕХНОЛОГІЙ ТА МОДЕРНІЗАЦІЇ МАТЕРІАЛЬНО-ТЕХНІЧНОЇ БАЗИ
«СЛУЖБИ АВТОМОБІЛЬНИХ ДОРІГ У ВІННИЦЬКІЙ ОБЛАСТІ»

2020 рік



ASAP DEMO

"20" December 2020

ACCEPTED:

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e-mail: sluzhbadorogvin@ukr.n
code 25845655
Acting the head of the Service

_____ /I.I. Zhebelev /

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Director of ASAP DEMO LLC

_____ / A.V. Voznyy /

CONCEPT OF DEVELOPMENT,
INTRODUCTION OF MODERN TECHNOLOGIES AND MODERNIZATION OF MATERIAL-TECHNICAL BASE
"ROAD SERVICES IN VINNITSA REGION"

Unofficial translation

2020 year

According to the developed solutions, the customer approved the implementation project.

<u>This project will be implemented by our company in 2021.</u>

ADVANTAGES OF JOINT COOPERATION

- We offer the possibility of developing a unique design of streetlamps, considering the external characteristics and the "spirit" of the city in which they will be installed.
- A well-designed streetlamp design will make the city more attractive and successful.
- It is possible to elaborate software specifically for your requirements or to adapt the existing one for you.
- At your request, we will integrate a complex solution of smart lighting in any industry or area of the city's life
- Residents of the city will see the concept of development, as well as the government's concern for their lives. Installed safety sensors, as well as other devices that work thanks to the LoRaWAN network, will improve the quality of the world.
- Due to the compatibility of our devices for controlling street lighting with most models of streetlamps from world manufacturers, we are ready to offer the possibility of upgrading almost any device whose design you like.

ADVANTAGES OF JOINT COOPERATION

All data packages are encrypted by secure 128 bits encryption key, our advanced protocol protected from wide set of attacks., even if they intercept packets, decryption is unrealistic today. Only after gaining physical access to the equipment is it possible to read the data by third parties.

Devices have a battery life scenario in case of no connection to the network and/or server. Works on a set schedule until the connection with the base station is established.

Under normal operating conditions, each such product must work at least 70,000 hours.

<u>The system can be customized to satisfy any kind of customer's requirements in very short time.</u>

THANK YOU FOR ATTENTION

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YOUR NEEDS ARE OUR CHALLENGES
TO DO OUR BEST