# EMIIA

CONVERGENCE #1

EMIIA – autonomous cyber physical platform for the Internet of Things **IoT/IIoT**

Embedded electromechanical and software-hardware solutions based on Smart controllers and **MONOCLE** modules with integrated self-updating software and autonomous neural network for automation and machine vision based on the principles of cognitive radio optics:

– Foggy/Peripheral (boundary) computing – **Fog/Edge Computing**;
– Machine vision based on the principles of cognitive radio optics – **Cognitive radio optics**;
– Wireless mesh network – **Wireless Mesh Network**.
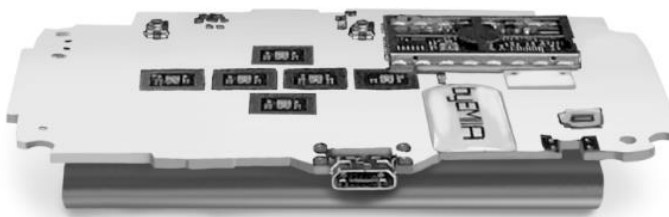
Without Foggy computing it is not possible to build and secure the Internet of things!

Result of implementation of hardware/software and electromechanical components of the platform:

60% reduce capital and operating costs on the Internet of things **IoT/IIoT**

(**automation, information security, Digital twin, Industry 4.0**).

60-80 %
savings on IoT/IIoT infrastructure, cloud computing and information security
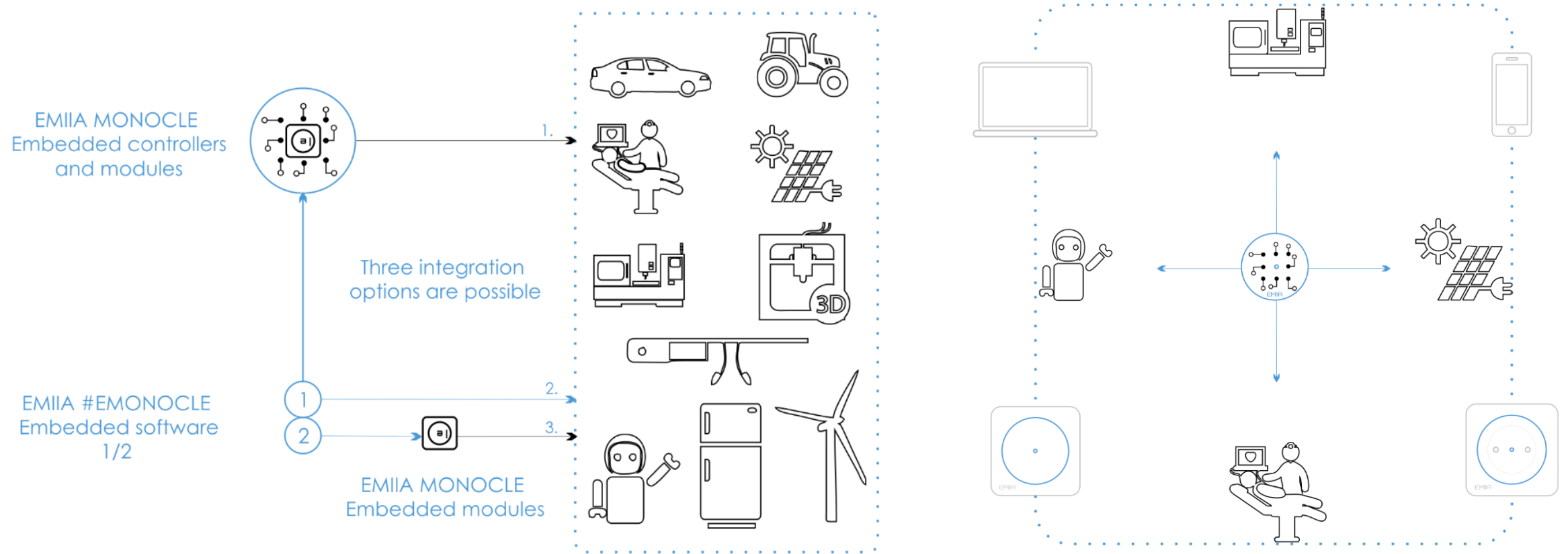
30 %
replacing sensors and network modems (communication module)

10 %
reducing power consumption

THE ORGANISATION OF AUTONOMOUS CYBER PHYSICAL PLATFORM "EMIIA": EMBEDDED SMART CONTROLLERS AND PANELS MONOCLE (CONTROLLERS, LIGHT SWITCHES AND ELECTRICAL SOCKETS)

EMIIA MONOCLE
Embedded controllers and modules

Three integration options are possible

EMIIA #EMONOCLE
Embedded software 1/2

EMIIA MONOCLE
Embedded modules

1.
2.
3.

Fog-Edge Computing/Wireless Mesh Network/Cognitive radio optics

EMIIA Autonomous Cyber Physics Platform IoT/IIoT

Fog Computing
(Central Device)

SSD/SD

SD

Edge Computing
(Peripheral Device)

Edge Computing
(Peripheral Device)

Edge Computing
(Peripheral Device)

Edge Computing
(Peripheral Device)

Edge Computing
(Peripheral Device)

EMIIA MONOCLE Panels
Smart Light Switches

EMIIA MONOCLE
Smart Controllers

EMIIA MONOCLE Panels
Smart Electrical Sockets

Fog-Edge Computing/Wireless Mesh Network/Cognitive radio optics

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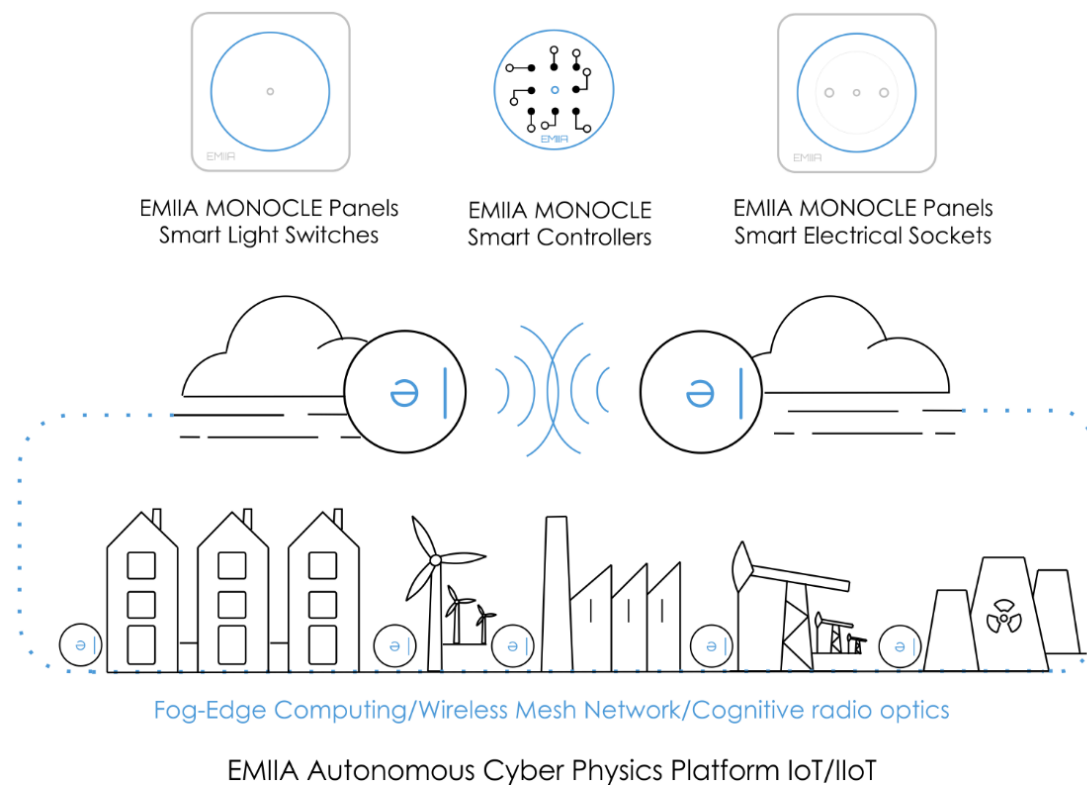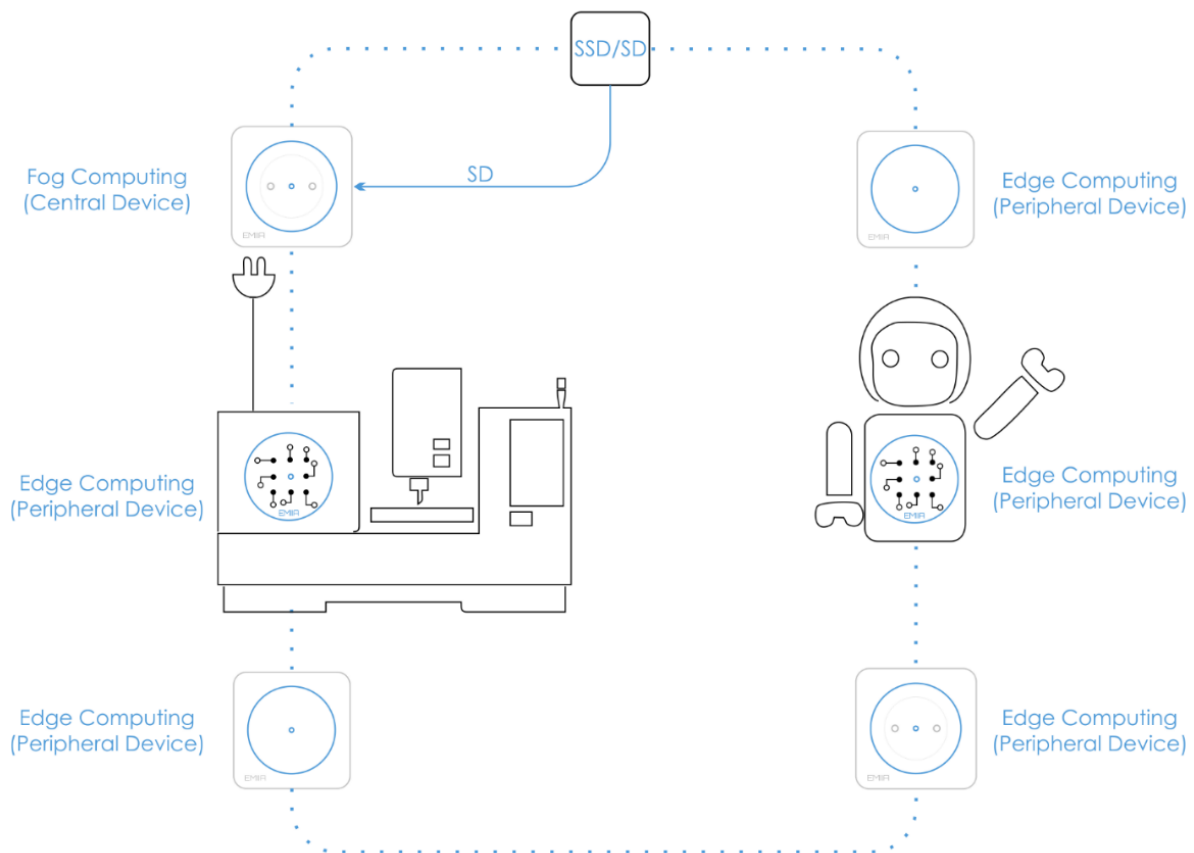
Fog-Edge Computing/Wireless Mesh Network/Cognitive radio optics

EMIIA Autonomous Cyber Physics Platform IoT/IIoT

MARKET, BUSINESS MODEL, STRATEGY

GLOBAL MARKET (B2B, B2C, B2G) SOFTWARE AND HARDWARE PLATFORMS FOR INDUSTRY (IIoT), AS WELL OFFICE AND RESIDENTIAL SPACES (IoT)

Decryption of Electromechanical and hardware and software components included in the IOT platforms for the formation of the IoT/IIoT infrastructure, which are largely replaced by the developments of EMIIA:

Platform IoT/IIoT - electromechanical and hardware:
- Switches;
- Routers;
- Server equipment;
- Uninterruptible power supply;
- Communication modules;
- Controllers;
- Actuators.

Platform IoT/IIoT - software:
- Protection against cyber threats;
- Monitoring and data analysis tools;
- Database management tools.

Sensors: proximity, motion, occupancy, image processing (IPOS), intelligent presence sensors (IOS), light sensors and radar sensors.

EMIIA

Online resource of the project: www.emiia.ru

The project's blog: emonocle.blogspot.com

Github Repository: github.com/EMIIA

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→ Profiles of project participants (team)