The mass market of IoT in Ukraine, unlike the industrial one, has not been developed yet.

The main role in connecting the industry to the network is played by mobile operators, while the private sector is operated by gadget manufacturers and sellers. Any IoT-solution starts with a useful program on a smartphone: a pedometer, a physical exercise meter, a calorie counter etc.

Sooner or later, the smartphone's capabilities become small. There is a need for an additional device that would allow you to collect and process a larger array of data. Because the things able to do this are countless, it opens up a new overwhelming market.

Ukrainian enthusiasts-inventors are picking up the trend. Their appearance is interesting for large IT companies.

The main directions for implementing IoT are:

- education;
- sport;
- smart House;
- medicine.

Creativity of our developers is very extensive, so we look forward to the proper level of IoT development in Ukraine.

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AUTOPILOT AS THE FUTURE OF AVIATION

In modern Aviation there are a number of problems that thousands of specialists face every day. One of these problems is weight. The topic that we will touch today, in part, solves this issue, namely the Autopilot, since it minimizes the pilot's interference and simplifies the design of the aircraft in terms of weight, but it’s very complex in terms of structure and aircraft maintenance, as well as its maintenance. Most of the flight, the control of huge passenger airliners is carried out by autopilots. Today the pilots actively participate only in taxiing, landing and take-off of the vessel, after which they transfer control to the autopilot system. The on-board computer greatly simplifies the tasks in control and monitoring. Modern control systems, such as "Fly-by-Wire", provide remote radio control of an aircraft. It allows to ensure the transmission of signals from the pilot himself to the mechanisms of the liner in the form of electrical signals. This means that, instead of using the old hydraulics, the pilots control, sending signals through the computer to individual machine mechanisms. After stabilizing the aircraft about all axes, it is possible to activate the automatic control system, but at the same time it is necessary to carry out regular monitoring of the indicators. Modern autopilot systems, such as the CDS (remote control system), have a number of protective functions against exceeding the maximum speed limits, increasing the angle of attack and many other modes that can somehow affect the safety of the flight.

Nowadays there are many different speed protection algorithms that depend on the

configuration of the aircraft. We will discuss 2 most used algorithms:

• Protecting wing mechanization against exceeding Vfe speed (maximum operational speed with mechanization released).

• Over-speed protection Vmo (maximum operational speed in flight configuration).

If the aircraft is dispersed in the take-off or landing configuration, then with the maximum operating speed achieved and mechanization released, the mechanization is automatically deflected at a smaller angle. If acceleration is performed in flight configuration, with the flaps not released, then when the maximum operating speed is reached in the flight configuration, an automatic release of spoilers will occur. If this occurs in a descent, then simultaneously with the release of the spoilers, the angle of pitch will decrease. The angle of spoilers deflection and the intensity of decrease in pitch will depend on the rate of speed increase. Reducing the thrust of the engines in this algorithm is not provided, since there is no need for this: in the GP, to protect against overspeeding, it is sufficient to release the interceptors. At an emergency reduction in an emergency situation, the engines are preliminarily transferred to the "MG" mode. In this case the spoilers and a decrease in pitch angle will be enough. The same concerns lowering the aircraft in the automatic mode. In case of exceeding the maximum speed, the autopilot will be simply turned off and the CDD protection algorithm will come into operation. According to TsAGI, the number of functions implemented in the CDS (approximately):

An-148 – 12, IL-96 – 15, Tu-204 – 25, RRJ-95 – 32 or 33

Approximately the same number of functions, around 30, is performed in the SDU V-787 and A-380

The ACS is a computer system applied in avionics and interacting with the aircraft and the engine control systems. The automatic flight control system (ACS) is designed to provide automatic and director control in the pitch and roll channels, as well as for automatic control of the engine thrust. ACS provides the following functions:

- automatic stabilization of the angles of roll, pitch and heading;
- automatic altitude stabilization;
- automatic stabilization of the travel angle specified with the PU;
- automatic stabilization of the course value set by the CP.

The control signals generated by the automatic control system are sent to the computer part of the CDS to be tested by the CDS drives.

In conclusion, I can state that the autopilot and full automation of the aircraft are the future of aviation. Though despite this rainbow picture, not a few accidents occur due to the fault of autopilots.

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THE DIFFERENCE BETWEEN SATELLITE AND DRONE MONITORING

Agricultural production is very unstable throughout the world. This is especially noticeable because of global climate change, in countries with a predominance of