

Summing up, position of the United Kingdom on the world arena will depend on negotiation results with the European Union and conditions of UK withdrawal. Nevertheless, Brexit outcomes have international impact as Great Britain is deeply integrated to the global economy. Despite the pessimistic forecasts, British GDP showed 0,6% growth within last 6 months. Unfortunately, British pound appeared to be more sensible and reached 30-year minimum. Such a plunge endangers future position of London as a main financial center of Europe.

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## **CYCLONE GLOBAL NAVIGATION SATELLITE SYSTEM**

NASA has successfully launched an entire constellation of CYGNSS (Cyclone Global Navigation Satellite System) satellites from a rocket that itself was launched from an airplane.

It was decided to use the L-1011 Stargazer carrier. It's an airplane that reaches the flight altitude of 12 kilometers. There, the Orbital ATK Pegasus XL rocket detaches from it. Next stage – a freefall of a rocket for about five seconds, with a further activation of the main engine, that then carries the rocket with several satellites in it to the Earth orbit.

After 14 minutes of the flight the Pegasus rocket sends its precious cargo to do its work. All this process takes place at the height of 508 kilometers from the Earth surface.

The useful cargo of a rocket is a special delivery capsule, where the satellites were stored. On a certain altitude, the satellites detach from a mother ship and start to execute their functions.

It's worth mentioning, that the project took the agency \$157 million. Despite the humongous budget, contributed by the Congress' special commission, NASA couldn't have completed that project. That's why the agency needed the help of the partners. They were the Michigan and the South-West San-Antonio institutes.

Initially, the entire launch sequence was planned on Monday. But it needed to be postponed until Thursday, because of the hydraulic detach system failure and the unpleasant weather conditions.

Eight of the CYGNSS satellites are now working on meteorological and climatic researches of several regions of our planet. For example, the devices will help to predict the hurricane and tropical cyclones' intensity with a precision, that's been never seen before. The satellites will only spectate the area of the tropical hurricanes, monitoring of the other areas is not incorporated into their program.

Delay Doppler Mapping Instrument is installed onboard of every CYGNSS satellite, that includes a multichannel GPS receiver, zeniths antenna of the low-level amplification and 2 nadir antennas with a high coefficient of amplification. These instruments will allow the satellites to spot and measure the reflected GPS signals from the oceans' surface. In case if there are any hurricanes, the radio signals will help to measure the speed of the wind in that region, and predict the type of the hurricane itself. The system of satellites is able to conduct up to 32 measurements per second, providing the best accuracy of the hurricane intensity. The satellites also receive direct signals, allowing to trace their accurate position in space. Only DMSP can make observations at night. Some of the most spectacular photos have been recorded by the night visual sensor; city lights, volcanoes, fires, lightning, meteors, oil field burn-offs, as well as the Aurora Borealis and Aurora Australia have been captured by this 450-mile-high space vehicle's low moonlight sensor.

Thanks to the new system, the specialists now can analyze the development of the hurricanes, staying far away from them.

CYGNSS is the first NASA's completed mission in the Earth Venture program. This program includes the projects that can be developed without spending millions of dollars. The main aim of the program is to research the actual state of our planet, including atmosphere and hydrosphere, to learn how to predict possible changes on Earth.

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## **CROSS-DOCKING IN LOGISTICS AND EFFECTIVENESS OF ITS APPLICATION**

Nowadays logistics has globally widespread as an important process of goods flow management (material, information, service, financial), storage of goods from the point of origin to the point of consumption to satisfy customers' needs. Every company tries to optimize delivery time, storage space, costs and to get maximum profit, and here cross-docking strategy is one of the optimal solutions.

The main feature of cross-docking is that the goods are unloaded from a semi-trailer truck or railroad car and are loaded into outbound trucks for further transportation to intermediaries or end user with little or no storage in between. Such a system allows unloading, sorting goods and then determining the point of destination. The aim is to decrease en route time, to keep goods range in