**Economical and environmentally friendly solutions on the commercial satellites market**

**We are observing a considerable increase in the demand for satellite systems around the world. Various independent sources forecast that the nano- and microsatellite market will grow from $1.5 billion in 2019 to $3.6 billion in 2024, and will keep growing – to even slightly more than just over 5 billion by 2027. Consequences of such growth include orbits getting crowded, and technological competition developing. At the same time, space missions have always been marked by high operating costs and a high degree of risk.**

One of the solutions to this problem is the use of steam thrusters – a solution that is rapidly breaking through into the mainstream satellite market. Steam drive **will expand current mission capabilities**, enabling satellites to stay in the proper orbit longer.

**The British company SteamJet Space Systems has developed a water-based propulsion system designed for small satellites and CubeSats**, that will be demonstrated on a commercial nanosatellite of the Polish company SatRevolution. It will be launched in the third quarter of this year on board of a Soyuz launcher.

The main benefits of using such an engine include the optimisation of orbit congestion, operation in constellations and efficient deorbiting. Thanks to the system high thrust and low power consumption, satellites can be operative sooner and using less power than with traditional electric propulsion. The small size of the propulsion unit, whose volume is compared to a tuna can, also makes the satellite lighter than typical devices, which in turn contributes to the reduction of the costs of launching a spacecraft.

*‘Our client's product can be safely described as eco-friendly – thanks to the possibility of deorbiting, the satellite using such a drive will not become another piece of space debris. Also, water fits in perfectly with the current global trend of non-toxic fuels. Throughout its existence, our company has been involved in innovative solutions, and that is what we are looking for in our clients,*’ says Tomasz Poźniak, Chief Development Officer at SatRevolution*.*

With the launch of SW1FT, another commercial satellite at the turn of 2020 and 2021, SatRevolution has started implementing its vision of shared satellite missions. SW1FT uses its proprietary NanoBus 3U platform to demonstrate several external payloads at once.

**Sharing satellite platforms, which can be compared to travelling by bus rather than driving a car by yourself, provides an opportunity to divide costs into several independent entities and allows you to place several innovative sensors or experiments on the satellite at the same time.** The phenomenon began when the first commercial satellites were equipped with peripheral transceivers from other suppliers. By reducing costs, space is becoming more and more available to new, small businesses. Larger companies and government agencies are also eager to use such a solution, intending to test the specific functionality without involving large technical or financial resources. Both the NASA and ESA increasingly enter public-commercial partnerships.

*‘The nanosatellite market is growing dynamically – over 2,500 launches are forecast within the next 6 years. It is also becoming more and more diverse, which reduces the advantage of major players. As SatRevolution, we support our clients comprehensively: from making space available, through mounting the load on the platform, satellite integration and full functional and qualification tests, to arrangements for the necessary permits and campaign related to the launch of the satellite and initial support of the orbit operations,’* declares Grzegorz Zwoliński, SatRevolution’s CEO.

Moreover, SatRevolution offers its clients participation in the instrument creation process.

**SatRevolution, a Polish company specialising in the design and production of nanosatellites, which was a start-up until recently, is successfully operating on the business market and selling its products. Based on the experience of Światowid, the company technology demonstrator, SatRevolution plans to launch four satellites, including two for commercial customers, in 2020. At the same time, SatRevolution strives to meet the challenge of reducing costs and being green in space.** The company is working to gradually increase the volume of its satellites, thereby increasing the volume available for payloads, and is planning to launch other shared commercial satellites in 2021.