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Problems of the development and launch of the satellite at TPU

Not long ago, people started to explore the space expanse area. Nowadays, the development of space industry has become very popular. People conduct a large number of works and the development of various spacecraft. The development of the aerospace industry is very quick. Progress reached such point that we can develop and launch into space satellites of volume 1 liter or less, for example it is cubesat. Cubesat is a nano-satellite. This class of satellites is becoming popular among those who want to design their satellites. But the creation of a satellite is a very complicated process. It requires a special permission.

This area of activity is interesting to many technical universities. They have been actively working in this direction and launch their satellites. For example MSTU, MSU, BSTU launched their satellites. They have been actively working in this direction and even launch their satellites. Because TPU is in step with the time, it needs to launch his satellite. It is planned to do for the anniversary of TPU in 2016. The developer of the satellite is Department of Precision Instrument Making of Institute of Non-Destructive Testing. At the moment, already is working on its development. It is planned to launch the satellite type cubesat. As all projects, the launch of the satellite has some difficulties. We figured out 6 main problems connected with satellite invention in TPU.

First problem is to prepare the documentation, and it is limited in terms. Even the ready satellite is not allowed to go to orbit without the preparation of special documents and contracts. It is very important to obtain the permission for the flight and communications. It will take a lot of time.

To carry out any project, you need to build a team of developers. Since this is a satellite of the University, the team must be of students. However, a group of students can never design the satellite themselves. Therefore it is necessary to involve people working in this industry. Inexperienced developers can make a lot of mistakes, one of which is to buy parts that subsequently don't fit together.

The second problem is a lack of experience in launching satellites. Because of this, the development team must be very careful to study and develop satellites.

Also a question with the financing may appear. The space industry is one of the most expensive industries and launch of cubesat compared with other space projects is cheaper, but still will have a pretty high price.

The hardest part is the output of the satellite into orbit. To do this, you must buy a Poly Picosatellite Orbital Deployer or to launch to the International Space Station. Then TPU will need to send a satellite into series of tests. However, if the satellite does not pass at least one test, it will not go into space. To start you must sign a contract with the Russian Federal Space Agency, or other entity involved in the launch of carrier rockets.

To build the satellite, it is necessary to have a specially equipped room. Just we need a room for the installation of communications equipment. But first it is necessary to make and install the antenna. Though at this time it is absent.

The assembled satellite must be very durable and made for all rules. In case of any problems, it cannot be repaired or modified in space. But as TPU is one of the best technical universities in Russia, we are sure that all problems will be solved, and satellite of TPU will be sent with success into space. The launch of satellites is a very important task for our University, though it has several problems listed above. If we are aware of them all, we can prepare better to overcome it.

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