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SPACECRAFT OF INTEGRATED MONITORING GEOPHYSICAL FIELDS "GRAVISAT".

Abstract

Over the past fifteen years Ukraine has actively worked on researching the possibility of measuring the gravitational and magnetic fields of the Earth to change phase-frequency characteristics of the navigation signal. The work was carried out as supported by European investors, and with the support of the national space agency of Ukraine (NSAU). In the year 2016 under experimental-design works (EDW)"Navigation-RNIIS" was created and successfully put into operation the first control and correction station (S) "Gravika". CCS "Gravica" not only provides precise positioning, but the magnitude of the acceleration due to gravity. To expand the network of such stations will build changing across time and space 3D model of the gravitational and magnetic fields of the Earth. However, terrestrial network of such stations do not allows to solve the problem of global monitoring. To accomplish this, you must create an space system spacecraft geophysical destination. Original technology of measuring gravitational frequency offset navigation signal was developed by the specialists of JSC "NPK" Kurse "and put in the ground control and correction station EDW" Navigation-RNIIS ". To use differential measurement method of the gravitational frequency offset navigation signal allows you to use this device for any moving objects, including spacecraft. It is the principal competitive advantage of radiophysical gravimeter before all existing inertial gravimeters. JSC "NPK" Kurse "was designed by the design of the spacecraft (SC)" Gravisat ", based on the method of measuring apparatus of a gravitational offset navigation signal. The spacecraft has an original design, which is protected by the patent of Ukraine. SC "Gravisat" is the passive gravitational orientation system, which is ensured by a sliding design of solar batteries. Magnetic attitude control system provides guidance on the third axis. Used SC "Gravisat" design is simple, reliable and not expensive to manufacture.