

# **IONOSATS - ionospheric satellite cluster**

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The IONOSATS project is proposed by National Space Agency of Ukraine for First European Space Program, as well as for Space Weather (SW) Program as a part of GMES. As it commonly accepted, Space Weather means the changes of the conditions on the Sun, in solar wind, magnetosphere and ionosphere which may affect the operation and reliability of on-board and ground technological systems and threaten human health.

In this chain ionosphere is specific and integral part of SW formation. Moreover, namely in the ionosphere main part of the energy absorption of Sun-activated sporadic corpuscular and radiation fluxes takes places. Short-wave part of solar flares radiation (ultraviolet and roentgen) dissipates mostly at ionospheric regions E and D heights triggering ionospheric storms. The corpuscular fluxes energy absorption occurs in the polar parts of the ionosphere, as a result in the auroral regions the current system of aurora causes the neutral atmosphere heating at the E and F regions heights. In its turn this produces generation of a set of plasma instabilities, including equator-spread large-scale ionospheric disturbances, and electromagnetic waves emissions. In other words, the excitation of ionosphere by falling corpuscular and radiation fluxes produces its “luminescence” in wide frequency band - from radio waves till ultraviolet - and by this ionosphere works as an efficient “screen” or SW indicator.

The proposed project goal is long-term spatial-temporal monitoring of main field and plasma parameters of ionosphere with aim to further develop fundamental conceptions of solar-terrestrial connections physics, nowcasting and forecast of Space Weather (SW) and diagnostics of natural and technogenic hazards with the help of scientific payload installed onboard a cluster of 3 LEO microsattellites (tentative launch data - 2009 year).

The main project tasks are formulated. The success of the mission is confirmed by a long-term experience in Ukraine of preparation and launch of scientific satellites. It is enough to say that majority of numerous INTERKOSMOS satellites were designed in Ukraine at “Yuzhnoye” Design Office. These works are continued now to create new generation of spatial platforms. The state of the project proposal and realization plans are discussed.

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