

EARTH OBSERVATION SYMPOSIUM (B1)
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PLANS ON DEVELOPING OF THE RUSSIA FEDERATION HYDROMETEOROLOGICAL
CONSTELLATION

Abstract

According to the approved Russian Federation Federal Space Program 2006-2015 one of the most important tasks is the “developing, replacing and maintenance of Earth satellites constellations in the interest of the social-economic sphere, science and national safety, which also include hydrometeorology as a primary area of interest. Principle of the Earth observation constellations developing define “global data acquisition of atmosphere, hydrosphere and land surface for weather forecasts, climate evolution studies and heliogeophysical studies of the Earth and its space environment” as a main goal of the space hydrometeorology. This lead to the two-layer hydrometeorological constellation with “Meteor” satellites constellation on Sun-synchronous orbits as the lower layer and “Electro” and “Arctica” constellations on geostationary and high-elliptical orbits respectively as the upper layer. Due to the low number of missions, insufficient coverage area and a lack of IR and MW instruments one can hardly solve whole set of hydrometeorological problems with Russian Federation satellites constellation. Currently there are two partly functional missions “Meteor-M N1” and “Electro-L N1” on orbit. These missions are the first satellites of corresponding “Meteor” and “Electro” constellations. According to the national program in the year of 2016 Russian Federation will have three fully-functional hydrometeorological constellations: “Meteor” constellation on sun-synchronous orbits (5 satellites), “Electro” constellation on geostationary orbit (3 satellites) and “Arctica” constellation on high-elliptical orbits (2 satellites). This improve will lead to the raise of the number of successfully solved hydrometeorological and scientific tasks, decrease in the observation period and expansion of the coverage area.