



FireBird – a small satellite fire monitoring mission: Status and first results

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The scientific mission FireBird is operated by the German Aerospace Center (DLR) and consists of two small satellites. The first satellite - TET-1 - was successfully launched from Baikonur, Russia in July 2012. Its first year in orbit was dedicated to a number of experiments within the framework of the DLR On Orbit Verification (OOV) program which is dedicated to technology testing in space. After successful completion of its OOV phase, TET-1 was handed over to the DLR FireBird mission and is now a dedicated Earth Observation mission. Its primary goal is sensing of hot phenomena such as wildfires, volcanoes, gas flares and industrial hotspots. The second satellite, BiROS is scheduled for launch in the second or third quarter of 2015. The satellite builds on the heritage of the DLR BIRD (BIspectral Infrared Detection) mission and delivers quantitative information (such as Fire Radiative Power, FRP) at a spatial resolution of 350 m, superior to any current fire enabled satellite system such as NPP VIIRS, MODIS or Meteosat SEVIRI.

The satellite is undergoing a four month validation phase during which satellite operations are adapted to the new mission goals of FireBIRD and processing capacities are established to guarantee swift processing and delivery of high quality data. The validation phase started with an informal Operational Readiness Review and will be completed with a formal review, covering all aspects of the space and ground segments.

The satellite is equipped with a camera with a 42 m ground pixel size in the red, green and near infrared spectral range, and a 370 m ground pixel size camera in the mid and thermal infrared with a swath of 185 km. The satellite can be pointed towards a target in order to enhance observation frequency.

First results of the FireBird mission include a ground validation experiment and acquisitions over fires across the world. Once the validation phase is finished the data will be made available to a wide scientific community.