

## VISUAL MODELLING SPACECRAFT MOTION

The development of the satellite decelerating large space debris objects by the ion beam shepherd is one of advanced ways for resolving the problem of low earth orbits debris. The development of a dynamic model of a similar satellite is conducted for the EU funded FP7 LEOSWEEP project.

A special feature of this model is to use tools for visual modelling.

The work objective is to create a model of the orbital and angular satellite motion and analyze the problems associated with its development by tools for visual modelling.

The model of the satellite motion is developed considering disturbances due to earth's non-central gravitational field, earth and lunar gravity, resistance due to atmosphere and solar radiation pressure.

The approach to verification of similar models is proposed. Difficulties associated with visual modelling for realization of disturbance models and ways for obviating those difficulties are examined.

**Keywords:** *space debris, visual modelling, LEOSWEEP, Xcos, orbital motion of satellite, angular motion.*

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