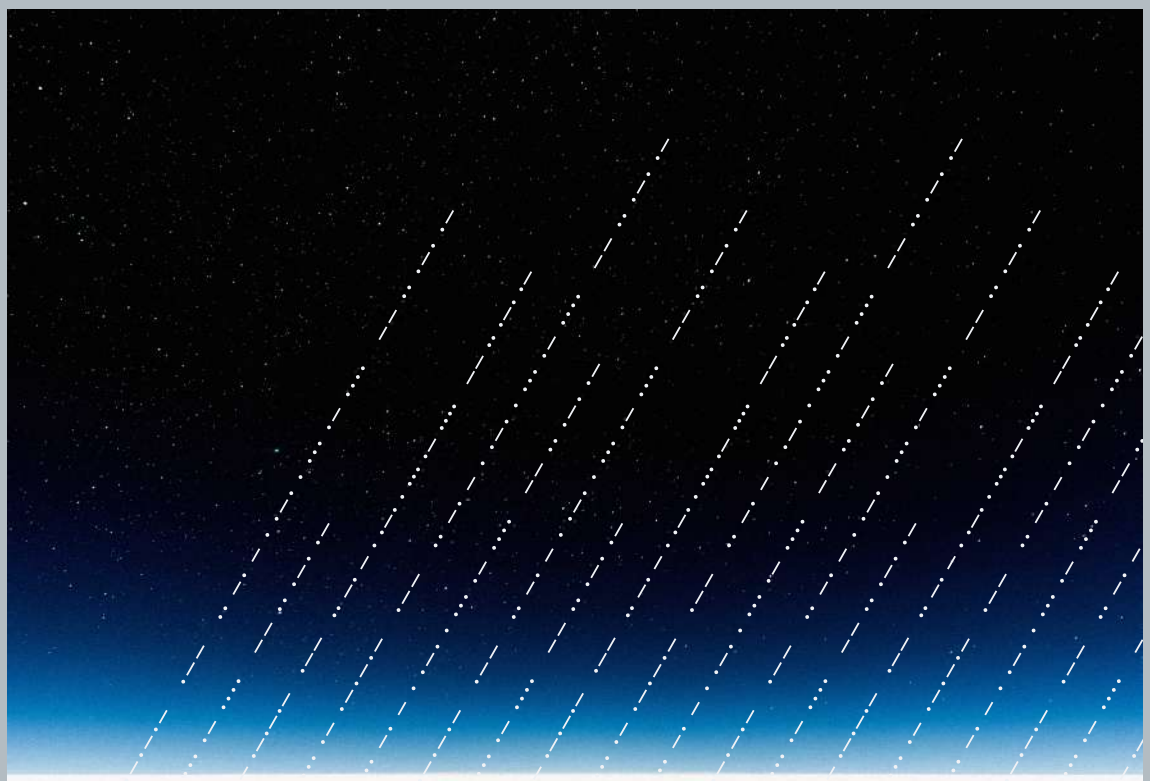
JSC VYMPEL

JSC VYMPEL is a leading company engaged in development, installation and testing of unique air and space defense systems, including early warning and space monitoring systems.

macvympel.ru

Experience — Knowledge — Development — Reliability — Consistency

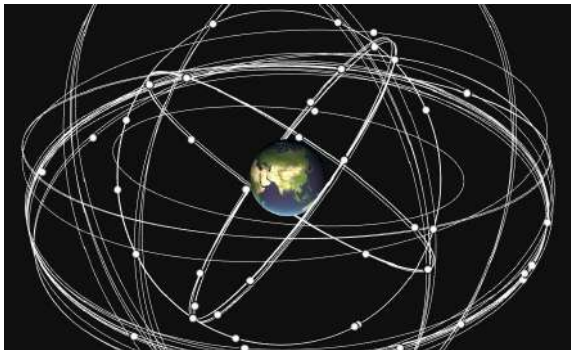


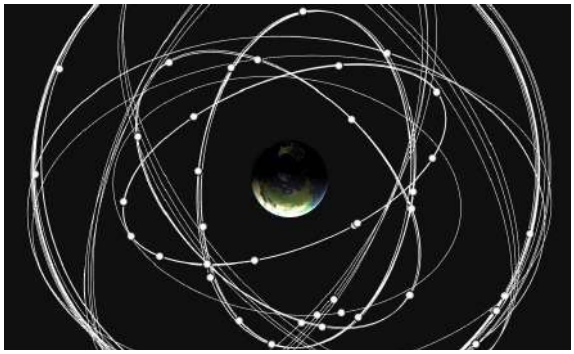
DESIGNING AND DEVELOPING A NEAR-EARTH SPACE OBJECTS MONITORING SYSTEM

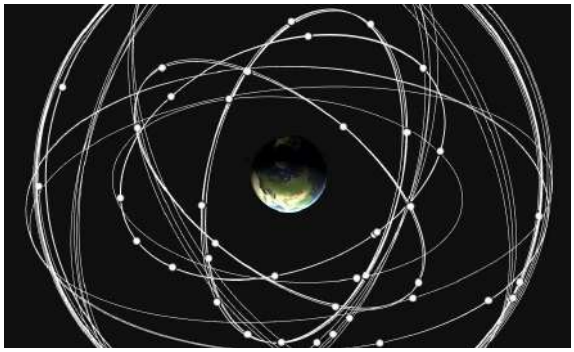
BASED ON OPTICAL, RADIO ENGINEERING AND RADAR FACILITIES

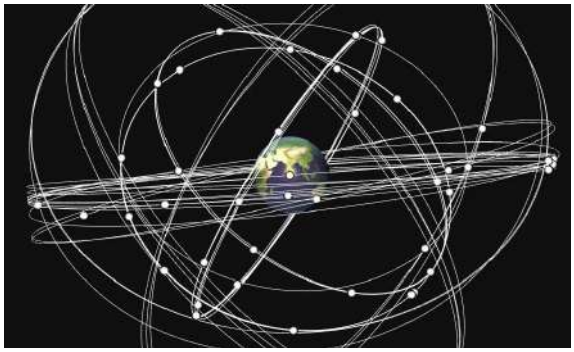
Guarding the cosmos for the world

JSC VYMPEL has unique long-term experience in designing systems for monitoring near-Earth space objects based on optical, radio engineering and radar sensors.









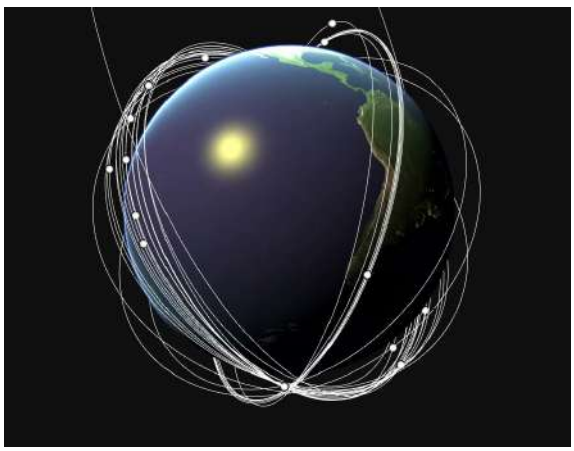
Guarding the cosmos for the world

macvympel.ru

Experience — Knowledge — Development — Reliability — Consistency

VYMPEL has an extensive set of models and software tools, providing:

- design of space monitoring systems and facilities,
- analysis of the effectiveness and functional capabilities of existing and future space monitoring systems and facilities,
- simulation of the space situation and observation conditions for heterogeneous information facilities,
- development and research of characteristics of new algorithms for data processing, decision-making and control according to the existing and future optical, radio engineering and radar facilities of space monitoring,
- 3D-visualization of space situation dynamics and events in near-Earth space.



JSC VYMPEL has a complete set of algorithms for data processing, decision-making and control based on the data of optical, radio and radar facilities of space monitoring, including the following algorithms:

- Planning observations of space objects by heterogeneous information facilities for the sustainable update of the database on space conditions,
- Real-time processing of primary optical, radio and radar data to detect and track space objects and measure their coordinate and signal parameters,
- Joint processing of data from heterogeneous information facilities and solving emerging challenges, including tasks of:
  - identification of measurements with space objects from the database,
  - initial determination of orbits and determination of confidential regions for vectors of their parameters (for orbits of any type, tracks of any length, with or without a priori data),
  - prediction of confidential region of orbit parameters of the space object for a classic and significantly non-Gaussian cases,
  - high-precision prediction of conjunctions of space objects and falling of space objects to Earth.

t: +7 (499) 152 98 08 | macvympel.ru