Contributions within Sentinel

Earth observation programme Copernicus

How is our planet changing? How is the climate changing? Which role does humankind play in it? On the answers to these questions depend the future, the existence and the welfare of humanity. On the answers to these questions depend the measures which will be taken and decisions which are going to be made. The “Copernicus” program is a central element helping to find the answers and marks the beginning of a new era of imaging the earth from space. Copernicus is coordinated by the European Commission and the space segment of the program is financed and developed by the European Space Agency ESA. The “Sentinel” satellites will deliver an unprecedented wealth of earth observation data. They all have technology from Jena on board.

It is the aim of Copernicus to make use of already existing earth observation satellites and to establish a more powerful global satellite system. Copernicus will be continuously observing the global changes as well as identifying and developing solutions and counter measures for the dramatic environmental changes.

Contributions from Jena-Optronik

- **Sun Sensor FSS for Sentinel-1 -** Objectives: land and ocean monitoring
- **Star Tracker, electronics and optical filter for Sentinel-2** - Objectives: land monitoring
- **Opto-mechanical structure, subsystems, telescope and scan systems of for Sentinel-3** - Objectives: marine observation
- **Optics for Sentinel-4** - Objectives: air quality monitoring
- **Optics and filter for Sentinel-5** - Objectives: air quality monitoring

Sentinel-2

Jena-Optronik’s contribution in the framework of Sentinel-2 compasses the design of the overall instrument electrical architecture of the main payload MSI (Multispectral Imager) as well as the development, manufacturing and testing of the Video Compression Unit VCU, a key subsystem of the MSI.

Sentinel-3

Within Sentinel-3 Jena-Optronik is significantly involved in the main instrument SLSTR (Sea and Land Surface Temperature Radiometer) by developing essential components for it. Beside the thermal and mechanical engineering of the SLSTR, the Jena-Optronik GmbH is responsible for the opto-mechanical structure, several subsystems, telescope and scan systems of the Sentinel-3 family.

Sentinel-4

Europe developes ist next generation of weather satellites, to be part of the global weather forecast network.

Jena-Optronik is part of it, with its star sensors, optical filter assemblies, control electronics.

The Sentinel-4 mission is dedicated to monitoring the composition of the atmosphere for the COPERNICUS programme. This mission will be carried on the MTG satellites operated by Eumetsat.