### Module title
Advanced On-Board Data Processing

### Abbreviation
10-I=ADP-182-m01

### Module coordinator
holder of the Chair of Computer Science VIII

### Module offered by
Institute of Computer Science

### ECTS
6

### Method of grading
Numerical grade

### Only after succ. compl. of module(s)
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### Duration
1 semester

### Module level
Graduate

### Other prerequisites
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## Contents
On-board payload data processing encompasses the data acquisition, transfer, storage, data compression or reduction and transmission to ground of instrument and sensor data. Quite often the amount of raw data generated by modern instruments is in excess of what can be transmitted to ground. This makes it necessary to use various signal processing and compression techniques to reduce the amount of data. It is equally important to have high-speed data links, large on-board storage capabilities and digital signal processors available that are fast enough to handle data in the range of gigabytes per second.

## Intended learning outcomes
The student learns how to use an on-board computer (OBC) that is reliable, usually with redundant processors and to enable this processing power for other applications which support the spacecraft bus, such as attitude control algorithms, thermal control, failure detection isolation and recovery.

## Courses
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Module taught in: English

## Method of assessment
- Written examination (approx. 90 to 120 minutes)
- Language of assessment: English
- Creditable for bonus

## Allocation of places
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## Additional information
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## Referred to in LPO I
(examination regulations for teaching-degree programmes)

## Module appears in
- Master's degree (1 major) Satellite Technology (2018)