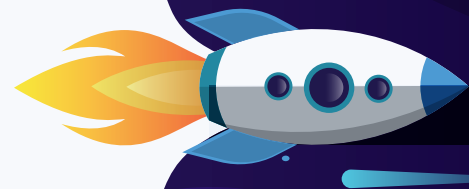


Space Systems **Software**

N7 Space is a Warsaw based software house dedicated for space industry.

We specialize in on-board software for advanced satellite systems.

Our software is customizable and can be used on various small and medium scale satellites, including hi-tech scientific missions.



System & software design

Our development processes are based on ECSS standards. We are experienced in architecture and detailed design of on-board software applications. Our workflow is extensively supported by MBSE (Model Based Systems Engineering) tools and automation.

Embedded software engineering

On-board software development for Leon and ARM architectures. We provide pre-qualified software components (Bootloaders, BSPs) and dedicated application software development. Our solutions can be based on available real-time operating systems (RTEMS, FreeRTOS).



Testing & validation

Automatic validation test suites and dedicated Software Validation Facilities. Our solutions are compliant with ESA PUS-A and PUS-C standards and allow efficient testing of on-board units.

MBSE

We actively use and contribute to European MBSE tools. We have proven experience with various modelling languages and methods (such as SDL, ASN.1/ACN, AADL, Promela, SEDS, Object Role Modelling, UML and Arcadia) and in using toolchains based on Capella and ESA's TASTE.

taste

◆ On-board software development

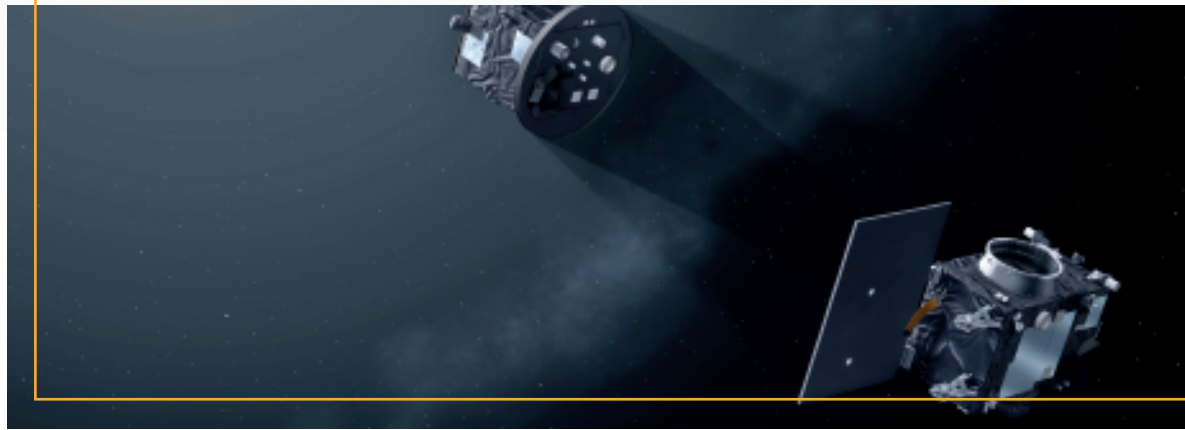
N7 Space offers custom software development services for the space industry. We can provide design and engineering services compliant with ESA ECSS standards for low level and high level software components for on-board systems. We have broad experience with:

- ARM and Leon based systems
- V&V activities
- Software quality management
- PUS-A and PUS-C TC/TM standards
- Real-time operating systems (RTEMS, FreRTOS)
- Automatic testing and preparation of validation facilities
- ECSS qualification processes

Supplier of on-board
software for ESA PROBA3

ASPIICS instrument.

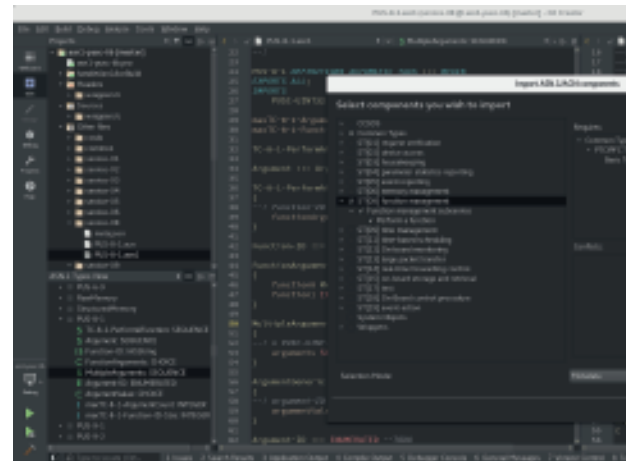
(Photo: ESA)



Model Based Systems Engineering

N7 Space has rich experience in MBSE based software engineering. We actively use ESA tools which support formal model design and code generation. We are also a part of ESA TASTE Steering Committee and contributor to various open-source tools supporting MBSE.

- ASN.1 modelling IDE with PUS-C model templates
- Ongoing development of Electronic Data Sheets integration with TASTE
- Model checking
- TASTE integration with dedicated or custom toolchains
- ASN.1 and AADL generator from Capella models
- Co-creator of ESA OPUS toolchain allowing PUS-C tailoring, as well as generation of documents and ASN.1/ACN packet definitions



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