



MASTERING ONBOARD VISION INTELLIGENCE AND QUALITY

Flemish project to research artificial intelligence for space applications

The project MOVIQ is currently under development by a consortium of five Flemish companies and the support of Flanders Space and VLAIO

Mastering Onboard Vision and Intelligence (MOVIQ) will develop an onboard, autonomous, and intelligent remote-sensing solution for rapid, in-orbit analyses for small satellites. By using artificial intelligence, satellites can become autonomous and therefore more efficient. For example, they can “learn” to identify certain parameters like whether they are flying over ground or over sea, they can detect changes in the vegetation colors, and they can help fight forest fires by detecting them quickly and providing critical information to fight them. The ultimate objective for MOVIQ is to be a flexible and extensible platform that can support a wide-range of remote-sensing applications.

MOVIQ will conclude with a proof of concept in December 2024 and comprises of the following Flemish industrial and research collaborators: imec, Magics Technologies, OIP Space Instruments, Redwire Corporation (NYSE: RDW), and VITO. To achieve the project’s ambitions, these partners have committed €2.12 M worth of research and development activities through a mixture of private financing and public funding from Flanders Innovation & Entrepreneurship (VLAIO) and Flanders Space.

This project will be key in solving the challenges that have arisen with the rapid growth of capabilities in the field of Earth Observation, which include analyzing and transmitting the massive volumes of high-resolution imagery collected, and meeting the exigent demands for efficient and timely results from a wide range of sectors. To address these pressing challenges, advances in artificial intelligence (AI), edge computing and inter-satellite communication are expected to fundamentally change the way satellite missions and their operations are conceived.

“The MOVIQ project's space-grade AI processor is a critical catalyst in unlocking the full potential of space-domain awareness applications and securing long-term European strategic independence.”

– Jens Verbeek, CEO of Magics Technologies NV

“The MOVIQ project will enable OIP to implement AI capabilities within its space based hyperspectral sensors, allowing to transmit much higher

volumes of high-resolution imagery, and performing on-board decisions based on change detection. It will position OIP at the forefront of optical payload capabilities.”

– Bart Desoete, Business Development Manager Space of OIP

“MOVIQ represents the pinnacle of IDLab’s extreme low-power and next-generation AI research for this ambitious and exciting application domain. It is our launchpad for further AI innovations in new ways of exploring Space.”

– Erik Mannens, director of imec-IDLab Antwerp

“The MOVIQ project seamlessly integrates our expertise in earth observation mission design, image processing, and cutting-edge AI applications. We are excited to contribute to the next generation of intelligent EO space missions, pushing the boundaries of what's possible in this field.”

– Steven Krekels, Unit Manager, Vito Remote Sensing

“MOVIQ is the first ICON-project funded by the Flanders Space cluster organisation established in 2021. The development of innovative solutions and associated technologies for a large number of applications entirely fits the roadmap of Flanders Space. The project will support the competitiveness of the Flemish space actors at European and international level which is a key objectives of Flanders Space.”

– Kris Vanderhauwaert, Flanders Space cluster manager

"At Redwire, we are excited about the possibilities and new applications that open up as a result of exploring and integrating edge computing and advanced image recognition technologies on-board our small satellite platforms. These first steps help us not only to evaluate and improve the new ways to leverage what is already a family of highly autonomous platform systems, but also takes us closer to our vision to provide our customers with un-precedented on-board image processing capabilities which will play an instrumental role in the definition and development of the next generation of small satellite missions"

– Juan Pablo Ramos, Business Development Manager, Redwire

 **MAGICS**

 **OIP**
Space Instruments

 **REDWIRE**

 **umec**

 **vito**

 **FLANDERS**
SPACE

 **AGENTSCHAP**
INNOVEREN &
ONDERNEMEN