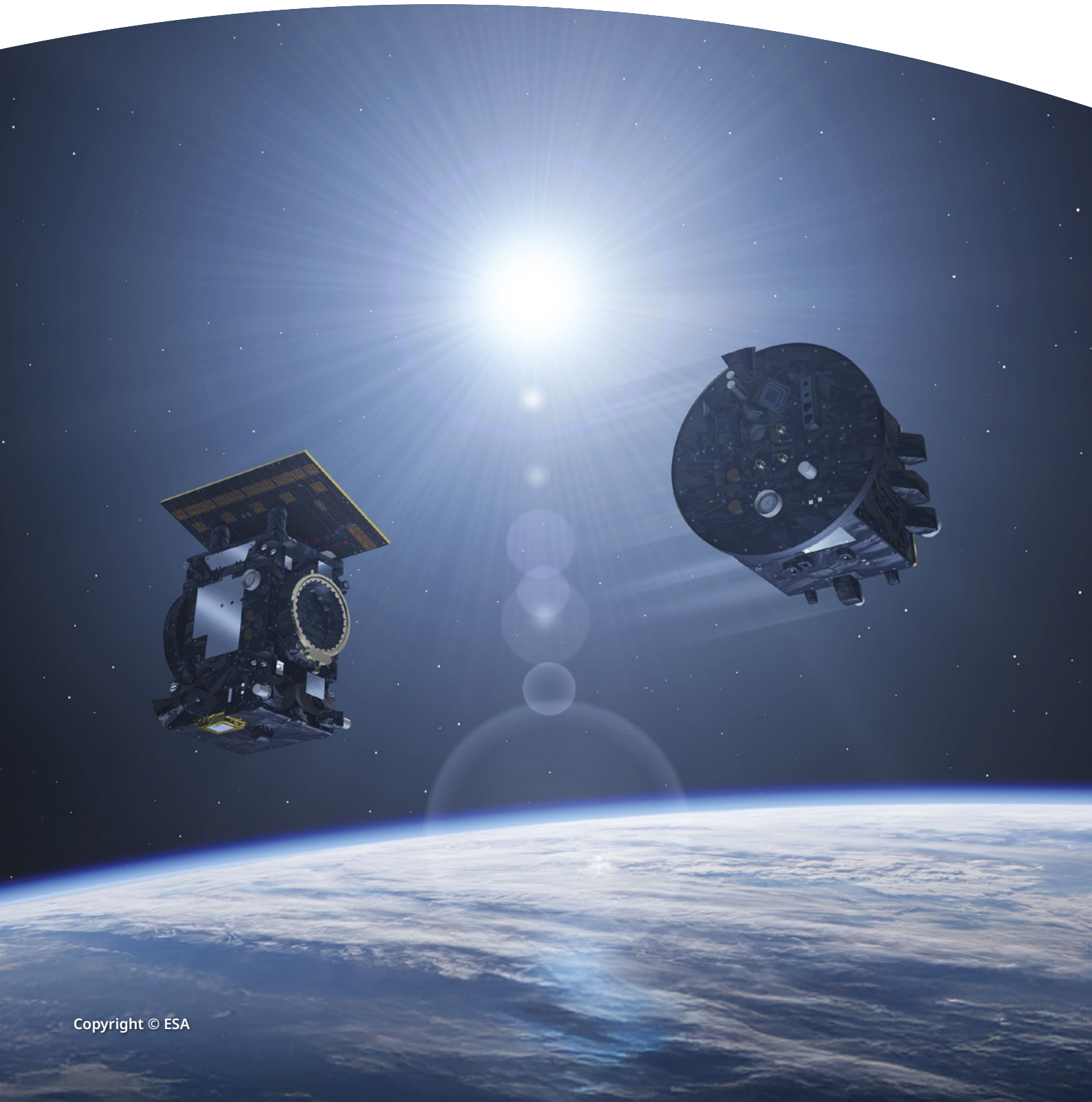
sener

Social Contribution Report 2024

Sener Poland

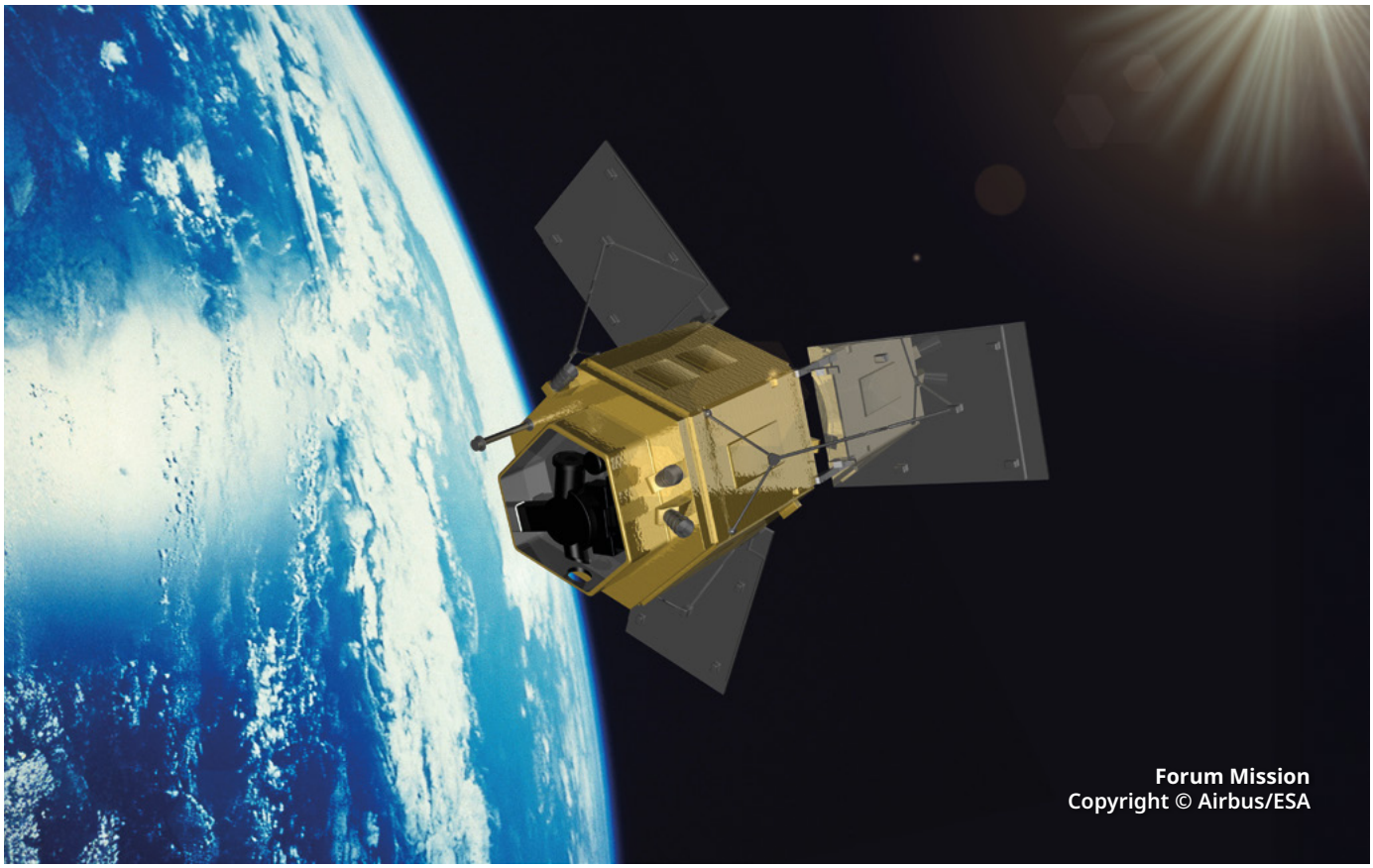


Introduction

Dear Readers,

we would like to present the eighth edition of the Sener Poland Social Contribution Report, summarising the year 2024 – marked by intensive development, ambitious projects and groundbreaking achievements. One of the most important events was the launch of the Proba-3 mission, in which mechanisms developed by Sener Poland engineers flew into space for the first time. This was a landmark moment for our team, proving our high competence in designing and delivering advanced technologies for ESA missions. In parallel, we worked on the implementation of new projects such as Comet Interceptor, FORUM, NGGM Mass Trim Mechanism, FORMOSAT-9, Themis GFS, ExoMars RFM LLA and Vigil DOM, strengthening Poland's position as an important partner in international space missions. We are continuously developing our team – 16 new specialists joined us in 2024, and through internship programmes we enabled three young engineers to gain their first experience in the space sector. We also collaborated with Polish and European suppliers, which allowed us not only to increase the range of projects implemented in Poland, but also to strengthen the local supply chain. Last year was also marked by active participation in industry events and conferences – we took part in the Space Sector Forum, ESA Industry Days at ESTEC, the Futurological Congress and the International Astronautical Congress, presenting Sener Poland's contribution to the development of space technologies. We would like to thank all employees, partners and clients for their commitment. We invite you to read the report and hope it provides insight into our efforts to build the space industry in Poland and Europe.

Beatriz Pérez Galán
General Director
Sener Poland



Forum Mission
Copyright © Airbus/ESA

Sener Poland in 2024

Social contribution objectives

- Contributing to the growth of the country's economy
- Conducting activities related to information and promotion
- Developing internships and apprenticeships
- Building human resources for the space sector
- Strengthening cooperation between industry and science
- Supporting student projects
- Raising competence in the Polish space sector
- Building the image of the Polish space sector on the international stage

Employment structure

32 engineers	**7** Project Managers	**3** people in Procurement	**3** people in Quality
1 person in HR	**1** person in Business Development	**1** person in Finance	**1** person in Office Management

Our team in numbers

56 team members	**11** women in the team	**45** men in the team
16 new team members	**3** trainees in the team	**32** average age
3 people in the course of studies subsidised by Sener Poland	sener	**40%** of the employees took part in trainings

I began working at Sener while I was still studying in 2016, as an assistant engineer. From the very beginning, I was involved in the development of the International Berthing Dock Mechanism (IBDM) for manned spacecraft. As I gained experience, I was promoted to Project Engineer, and since 2022 I have been working as a Project Manager at Sener's office in Warsaw. I am currently responsible for two key projects. The first one is the development of technology for the LISA mission, which aims to study gravitational waves, and the second one is to supervise the work on the IBDM mechanism as a team leader in Poland. These projects have not only enabled me to carry out ambitious engineering tasks, but also to work with international teams, both in Poland and Spain.

Sener stands out for its maturity, prestigious projects and culture of cooperation based on sharing knowledge and experience. Thanks to this, I feel that I can develop both as a leader and as an engineer. Working in this company, I have a unique opportunity to contribute to the accomplishment of groundbreaking space missions, such as JUICE or LISA, and at the same time observe the dynamic development of the Polish space sector.

Mateusz Krakowczyk
Project Manager
Sener Poland

Acquired and ongoing projects

FORUM

As part of the FORUM mission carried out by the European Space Agency (ESA), Sener Poland will manufacture four MGSE devices. The equipment will be used to test and integrate the mission's optical instrument.

NGGM MASS TRIM MECHANISM

For NGGM, our team will create a prototype of the Mass Trim Mechanism, a mechanism used to precisely correct the position of the centre of gravity of an orbiting satellite. The project, carried out as part of the MAGIC mission by ESA and NASA, will provide key data on the Earth's gravitational field.

EXOMARS RFM LLA

As part of the ExoMars programme, we are part of the team responsible for preparing the Landing Legs for the lander of the Rosalind Franklin mission – searching for life on Mars. Sener Poland will perform the FEM analyses for the design of the Landing Legs, prepare the MGSE and a test campaign for the Landing Legs.

FORMOSAT-9

Sener Poland is participating in the SAR antenna deployment systems development project in cooperation with the Spanish branch. This project is part of the Formosat-9 mission, carried out for the Taiwan Space Agency (TASA). Sener Poland is responsible for providing the HDRM equipment, and manufacturing structures and ground support equipment (GSE).

Ariel

As part of this mission, Sener Poland is responsible for the construction of the complete Medium Gain Antenna flight model system, including a control system, which is being developed by the Spanish branch of Sener. At the end of 2024, spacecraft-level tests of the structural model took place, which will serve to validate the system to withstand the exposures associated with the launch stage. Ariel is scheduled for launch in 2029 and will aim to study exoplanets and complement the CHEOPS, Gaia and Webb telescope missions.

Vigil DOM

In December 2024, we started working on mechanisms for the ESA's Vigil mission. Under a contract with Leonardo, the Polish team will design a mechanism for opening the cover for the heliographic instrument (HI), which will protect the satellite from contamination during ground testing and the launch phase. Sener Poland is responsible for developing the structural, qualification and flight models. Work on the project will last until July 2027.

Themis GFS

Themis is ESA's prototype rocket – Europe's flagship demonstrator of rocket recovery and reuse technology. Developed with ArianeGroup, Themis is designed to take off and land vertically and to be used for the next mission. Sener Poland is responsible for manufacturing two devices belonging to the lattice stabiliser system: the main mechanical interface structure (GFAM) and the locking/unlocking device used in the deployed configuration (LLD-D).

Knowledge and competence transfer

Sener Group

- Access to over 50 years of experience in space engineering
- Contracts for international projects for ESA and NASA
- Transfer of technology, solutions and innovations
- Cooperation in international consortia
- Involvement in the organisation of industry events and scientific initiatives
- Financial and logistical support for the implementation of long-term space missions

Sener Poland

Employees

- Creation of new jobs for engineers and specialists
- Opportunities for professional development in an international environment
- Access to modern technologies and specialised training

Employees

Universities

- Internships for students
- Joint research projects with universities
- Hiring technical and scientific graduates

Universities

Public opinion

- Promoting the space sector through media presence and educational activities
- Raising awareness of Polish achievements in space exploration
- Inspiring young generations to pursue careers in engineering and science

Public opinion

Suppliers and partners

- Cooperation with Polish companies within the supply chain for space projects
- Strengthening the position of Polish companies on the international stage
- Transfer of technology and expertise to Polish industry

Suppliers and partners

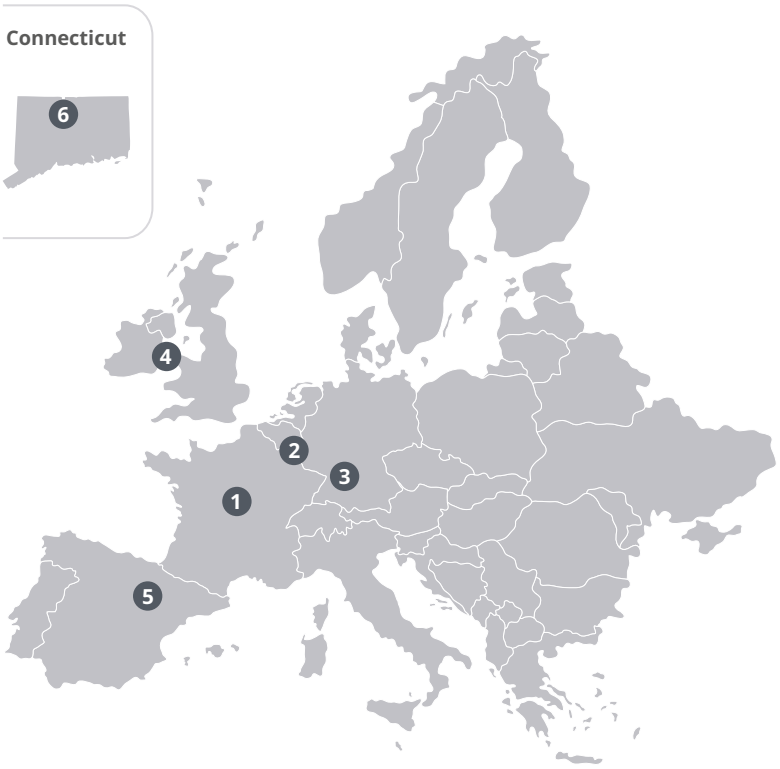
Cooperation in Poland and worldwide

For years, Sener Poland has been consistently expanding its network of cooperation with entities from Poland, Europe and other parts of the world. Our goal is to build lasting business relationships based on trust, complementary competences and a shared ambition to develop technologies for the space sector. We currently work with over 40 companies, both local and foreign, covering a variety of areas of activity – from precision machining, through the supply of specialised components and materials, to engineering and testing services. We believe that through such relationships, we not only strengthen the position of regional partners in the space sector, but also increase the chances of jointly acquiring advanced contracts in international projects.

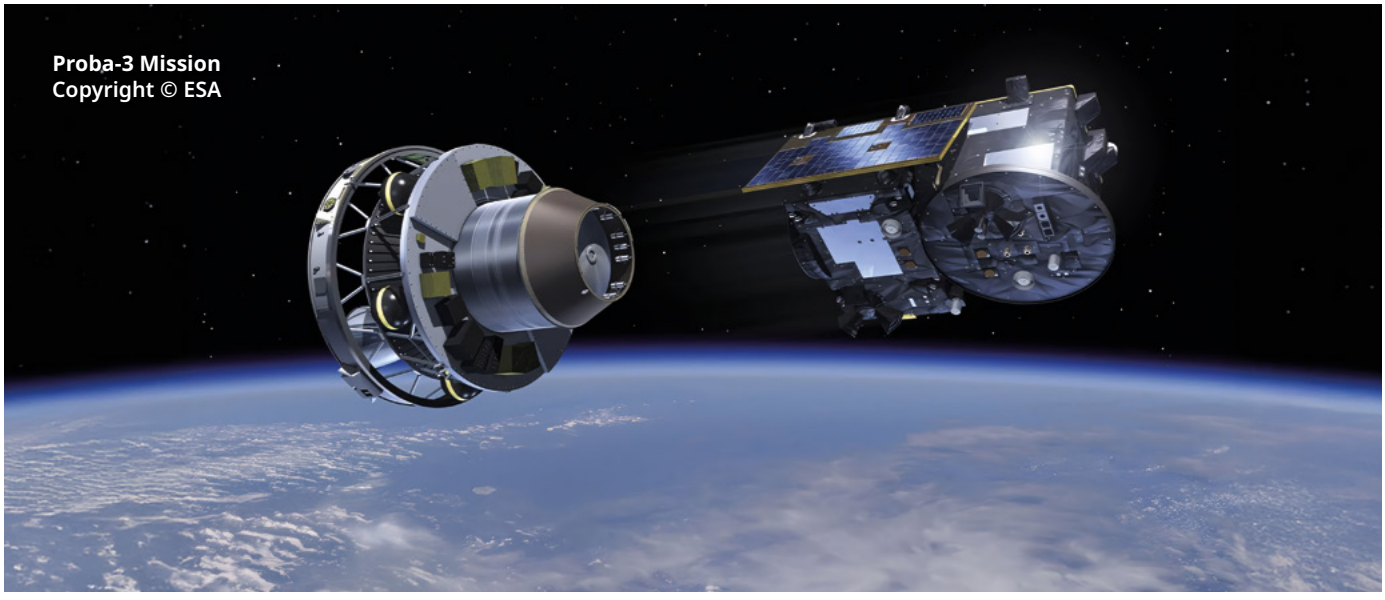
Network of Polish subcontractors / business partners

1. Łukasiewicz Research Network – PIAP (and Institute of Aviation)
   Warsaw
2. Space Research Centre of the Polish Academy of Sciences (CBK PAN)
   Warsaw
3. Spacive
   Warsaw
4. Techniko
   Wyszków
5. Aerospace Dynamic Group
   Czechowice-Dziedzice
6. Zamet Industry
   Piotrków Trybunalski
7. Metal Process
   Rzeszów

Network of global subcontractors / business partners



1. Fluorotechnique
   Montreuil, France
2. CZL Tilburg Surface Technology
   Tilburg, the Netherlands
3. Johann Maier GmbH & Co. KG
   Stuttgart, Germany
4. SPRINGCO NI LIMITED
   Portadown, Northern Ireland
5. GOIMEK, S. COOP.
   Gipuzkoa, Spain
6. EBAD (Ensign-Bickford Aerospace & Defense Company)
   Simsbury, USA


Proba-3 Mission
Copyright © ESA

Project of the Year – Proba-3

The Proba-3 mission is a project carried out by the European Space Agency (ESA) with the aim of demonstrating precise formation flying of two satellites that will be only 150 metres apart. The duo of satellites, one equipped with an occulter and the other with a coronagraph, will jointly enable to obtain new, groundbreaking scientific data about the Sun. The main scientific objective of the mission is to take images of the Sun's corona – its brightest layer – which will be made possible by the occulter covering the solar disk, giving the coronagraph ideal conditions for observation.

Details of the Proba-3 mission

Scope of work

Sener Aerospace & Defence acted as coordinator, supervising the work of companies from all over Europe. The Polish branch of Sener played a significant role in this project – the advanced mechanisms developed by the team, necessary for the operation of the satellites, flew into space for the first time. Sener Poland is responsible for the development and delivery of two advanced mechanisms necessary for the satellites to operate:

- **SAHRM** (Solar Array Hold Down and Release Mechanism) responsible for keeping the solar panel in a folded position during launch. Once the satellite reached orbit, it released the panel, allowing it to continue operating.
- **SADM** (Solar Array Deployment Mechanism), which was responsible for unfolding the solar panel and stabilising it in its operational position, ensuring a continuous supply of solar energy to the satellites.

We also co-developed OBA components:

- **OBAC** (Optical Bench Assembly Coronagraph) containing a coronagraph and Star Tracker essential for navigation purposes.
- **OBAO** (Optical Bench Assembly Optical) containing the Star Tracker and the optical elements supporting the cooperation of satellites in formation flight.

Filip Perczyński, Project Manager at *Sener Poland: These are the first mechanisms developed by our Polish team that have been sent into space. Today, we know that they worked properly and the solar panel opened – this is a huge success for us!*

Technological potential

The Proba-3 mission is testing innovative technologies for the precise formation flying of satellites, which have the potential to revolutionise space research. These mechanisms must function reliably under extreme conditions, while at the same time providing an alternative to the large devices used in such missions. In addition, the images of the solar corona taken during the mission will provide valuable scientific data.

Polish contribution to the mission

One of the unique elements of the Proba-3 mission is the extensive involvement of Polish companies - as many as seven companies from Poland contributed to this project, including the Space Research Centre of the Polish Academy of Sciences, Creotech Instruments, N7 Space, GMV, Solaris Optics and PCO. Their tasks included the development of components for the coronagraph, navigation systems and advanced optical technologies. The cooperation of Polish companies underlines the growing role of Poland in international space engineering.

Project timeline

2016

Formal launch of the project

(Kick-Off Meeting)

November 2016

2019

Completion of the design process

(CDR closure)

March 2019

2021

Delivery of the qualification model

February 2021

2022

Delivery of the flight model

September 2022

Cooperation with the world of science

Direction: Space!

Mateusz Krakowczyk, Project Manager at Sener Poland, participated in the organisation of the “Direction: Space!” student competition. In it, he served as a technical expert, responsible for organising the work of mentors supporting the teams and for coordinating activities related to trips to European space centres. As participants of the project, students had the opportunity to present their ideas at ESTEC and visit leading research institutions such as the Astronautical Centre (EAC) and CERN. The competition, initiated by Sławosz Uznański, promoted the design of experiments with a view to implementation on the International Space Station.

UNIVERSEH

In 2024, we participated in the inauguration of the second edition of the UNIVERSEH European University project, held at the AGH University of Science and Technology in Krakow. Representatives of Sener Poland – Beatriz Pérez Galán, Jakub Pierzchała and Sylwia Sitarek – took part in discussions on the future of space education and innovation in the industry. The UNIVERSEH project, implemented by seven leading European universities, supports the sharing of experience between students, scientists and industry, opening up new opportunities for cooperation with the space sector.

Charity activities

The association “Dom Rodzina Człowiek” (Home-Family-Human)

In 2024, we continued our efforts to support social and charitable initiatives. Once again, we donated computer equipment to the "Home-Family-Human" association. It went to children with disabilities, helping them to grow and making their daily challenges easier. We are glad to have been able to add our contribution to this important cause.

Building the image of Poland and Europe's space sector

Attendance at events

Building the image of the space sector in Poland and Europe is an important element of our long-term development strategy. In 2024, we participated in numerous industry events, during which we had the opportunity to present the achievements of Polish engineers and exchange experiences with representatives of the international community. Our activity was aimed not only at promoting innovation, but also at strengthening Sener Poland's position in the European space sector. We publish the Social Contribution Report in Polish and English, which allows us to reach international stakeholders.

Space Sector Forum

We participated in the Space Sector Forum, which is one of the most important events dedicated to the Polish space industry. During the conference, we took part in the exhibition part, where we presented our innovative technological solutions. We shared our experience and discussed trends and challenges faced by domestic space companies.

Futurological Congress

Sener Poland was one of the sponsors of the Futurological Congress, which took place in Krakow. The event brought together experts from various fields of technology and allowed for active participation in lectures and discussions. As part of the congress, Janusz Grzybowski, Technical Leader at Sener Poland, gave a lecture on the use of space technology in environmental protection and natural resource monitoring.

International Astronautical Congress

Jakub Pierzchała and Mateusz Krakowczyk, as representatives of Sener Poland, visited the POLSA stand at the International Astronautical Congress (IAC) in Milan, where they had the opportunity to present our projects. They paid special attention to the Proba-3 mission, to which Sener made a technological contribution.

Media presence

Sener Poland supports the promotion of the national space sector by raising awareness of its potential and achievements. Through publications and media and social media activities, we bring the importance of space technologies and their impact on everyday life closer to the public.

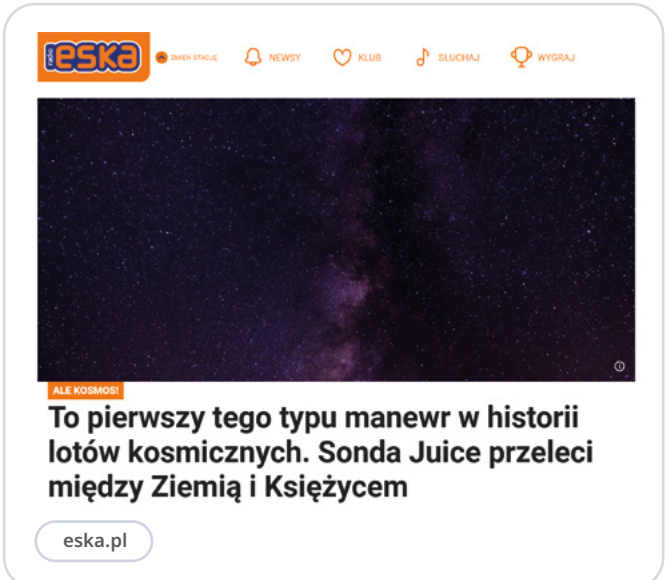
Presence in the media: talking about projects and the Polish sector allows us to reach not only specialists and representatives of the sector, but above all the general public.

300 publications on Sener Poland's activities were released in 2024.

183,6 mln + audience, according to Press Service.

bankier.pl

tech.wp.pl



eska.pl

wnp.pl

Space 24 POLITYKA I PRAWO PRZEMYSŁ BEZPIECZEŃSTWO SATELITY KOSMONAUTYKA

Strona główna / PRZEMYSŁ KOSMICZNY / Sektor krajowy / IAC 2024: polski przemysł podbija międzynarodowe targi

IAC 2024: polski przemysł podbija międzynarodowe targi

Autor: Polska Agencja Kosmiczna

Od 14 października br. w Mediolanie trwa tegoroczna edycja Międzynarodowego Kongresu Astronautycznego (IAC). Swoją obecność zaznaczają również firmy polskiego sektora kosmicznego, które przyciągają niemałą uwagę uczestników wydarzenia.

space24.pl

telepolis

Strona główna › Tech › Kosmos › Polska znów wygrała. Pomoże budować nowy teleskop kosmiczny

KOSMOS

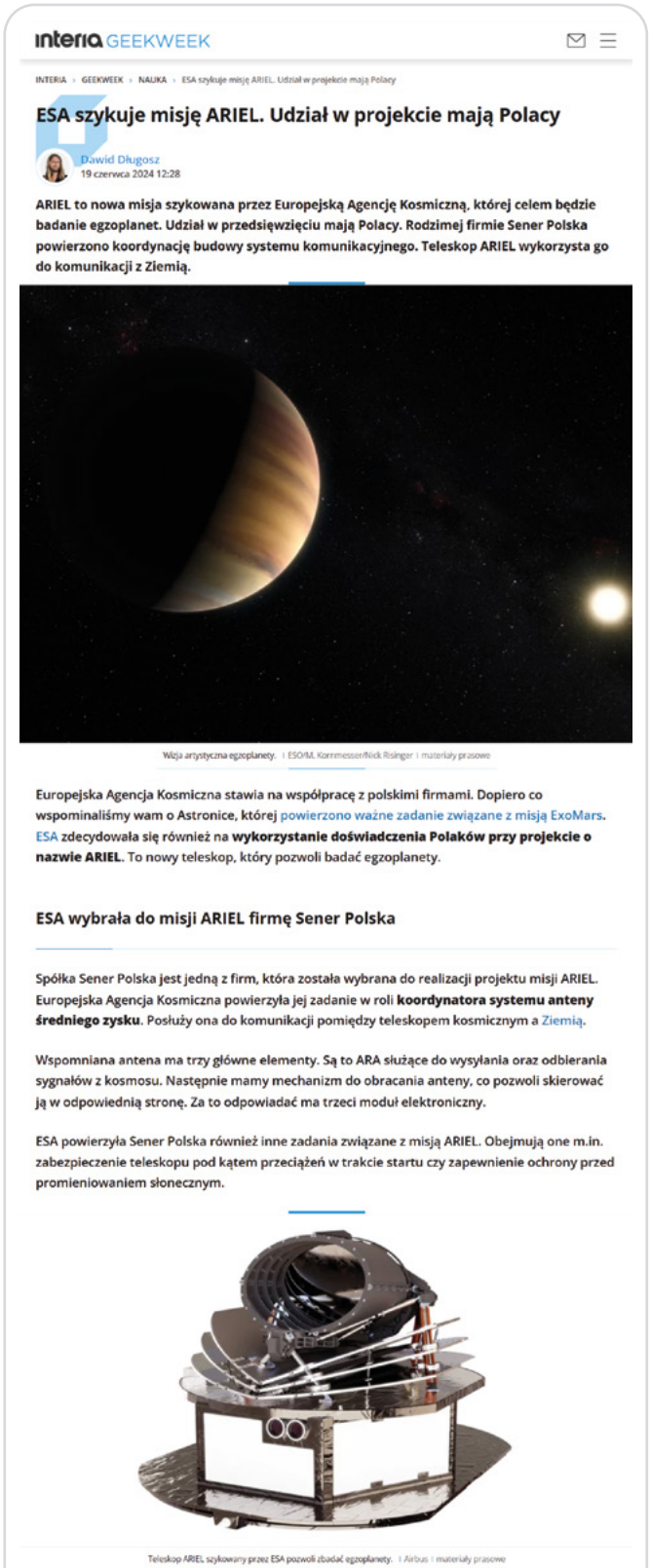
Polska znów wygrała. Pomoże budować nowy teleskop kosmiczny

Polski sektor kosmiczny może świętować Europejska Agencja Kosmiczna podpisała ważny kontrakt z polską firmą.

Mowa o Sener Polska, należącej do międzynarodowej grupy Sener. Polska firma będzie koordynatorem projektu w jednej z najważniejszych misji w dotychczasowej historii Europejskiej Agencji Kosmicznej – ARIEL (*Atmospheric Remote-sensing Infrared Exoplanet Large-survey mission*).

Misja ARIEL ruszy w 2029 roku. Jej celem jest **badanie planet znajdujących się poza Układem Słonecznym** (egzoplanet), a także **Wenus i Marsa**. Na bezzałogowym statku kosmicznym znajdzie się między innymi teleskop zdolny obserwować odległe ciała niebieskie. Badana będzie też budowa chemiczna i struktura termiczna obiektów. Naukowcy chcą w ten sposób dowiedzieć się więcej o powstawaniu i ewolucji planet.

telepolis.pl



interia GEEKWEEK

INTERIA › GEEKWEEK › NAUKA › ESA szykuje misję ARIEL. Udział w projekcie mają Polacy

ESA szykuje misję ARIEL. Udział w projekcie mają Polacy

Dawid Długosz
19 czerwca 2024 12:28

ARIEL to nowa misja szykowana przez Europejską Agencję Kosmiczną, której celem będzie badanie egzoplanet. Udział w przedsięwzięciu mają Polacy. Rodzimej firmie Sener Polska powierzono koordynację budowy systemu komunikacyjnego. Teleskop ARIEL wykorzysta go do komunikacji z Ziemią.

Wizja artystyczna egzoplanety. | ESO/M. Kornmesser/Nick Risinger | materiały prasowe

Europejska Agencja Kosmiczna stawia na współpracę z polskimi firmami. Dopiero co wspominaliśmy wam o Astronice, której powierzono ważne zadanie związane z misją ExoMars. ESA zdecydowała się również na **wykorzystanie doświadczenia Polaków przy projekcie o nazwie ARIEL**. To nowy teleskop, który pozwoli badać egzoplanety.

ESA wybrała do misji ARIEL firmę Sener Polska

Spółka Sener Polska jest jedną z firm, która została wybrana do realizacji projektu misji ARIEL. Europejska Agencja Kosmiczna powierzyła jej zadanie w roli **koordynatora systemu anteny średniego zysku**. Posłuży ona do komunikacji pomiędzy teleskopem kosmicznym a Ziemią.

Wspomniana antena ma trzy główne elementy. Są to ARA służące do wysyłania oraz odbierania sygnałów z kosmosu. Następnie mamy mechanizm do obracania anteny, co pozwoli skierować ją w odpowiednią stronę. Za to odpowiadać ma trzeci moduł elektroniczny.

ESA powierzyła Sener Polska również inne zadania związane z misją ARIEL. Obejmują one m.in. zabezpieczenie teleskopu pod kątem przeciążeń w trakcie startu czy zapewnienie ochrony przed promieniowaniem słonecznym.

Teleskop ARIEL szykowany przez ESA pozwoli zbadać egzoplanety. | Airbus | materiały prasowe

telepolis.pl

www.group.sener/pl/polska/

www.linkedin.com/company/Sener-aerospace

+48 22 380 75 75

www.youtube.com/user/Senerengineering

info.polonia@aeroespacial.sener

Al. Jerozolimskie 202, 02-486 Warsaw, Poland