

PRESS RELEASE

The "umbilical cord" designed in Warsaw will fly to Mars.
The mechanism was created by engineers from SENER in Poland

The engineers of SENER in Poland have just started the final stage, tests of the flight model, of the [Umbilical Release Mechanism](#) (URM), critical to the success of the ExoMars space mission, which in 2020 will set off on a journey to Mars. The device will provide power to the rover after landing on the surface of the Red Planet.



Umbilical Release Mechanism designed and produced by SENER Polska

ExoMars (Exobiology on Mars) is a two-part space mission which aim is to search for traces of life on Mars and better preparation for future manned missions. ExoMars is a joint venture of the European Space Agency (ESA) and its Russian counterpart, Roscosmos. In 2016, a satellite was launched, which is currently orbiting around Mars and is examining its atmosphere and performing telecommunications functions. In the second part of the mission, in 2020, a rover will be launched, which will examine the surface of the planet. For the first time in history, the Earth's mechanism will dig into the surface of Mars in search of hidden traces of life.

SENER, under the contract with Airbus Defense and Space, designed and produced one of the key mechanisms - the "umbilical cord", or Umbilical Release Mechanism connecting the rover and the landing platform. The rover will enter the atmosphere of Mars inside the landing platform. After reaching the surface of the planet, the landing platform



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will unfold the solar panels and start charging the rover. When the robot is started, the power will be transmitted by the "umbilical cord" created by SENER. After charging, the rover will lift itself on the wheels, and then the "umbilical cord" will detach itself to allow the vehicle to go to the surface of Mars and start researching the Red Planet.

The umbilical cord system consists of a primary and backup power system and must operate in extreme conditions of interplanetary space, characterized by high radiation and temperatures close to the absolute zero. In addition, it will be exposed to the heavy conditions of taking off from Earth and landing on Mars, as well as to the dust and atmospheric conditions of the planet.

- ExoMars is one of the most important missions of the European Space Agency and a very important step in space exploration. This is the first such advanced European robot that will land on another planet. We are part of a pioneering project not only for the Polish but also for the entire European space industry. - says Ilona Tobjasz, business development manager of SENER in Poland.

The Warsaw office of SENER in Poland is responsible for the whole URM project - from the concept stage, through production and tests to the production of a flight model, which is currently being tested and in 2021 is to land on Mars. The company cooperates with a group of proven Polish partners. In total, X companies from our country participate in the project.

- The 2015 project of the "umbilical cord" for the ExoMars mission allowed SENER to move from the regional league to the European one. For his needs, we have created a clean room in an office in Warsaw to ensure that no biological contamination reaches Mars. It is true that each project is different, but with the experience we have gained, it is now much easier for us to carry out further contracts. - admits Ilona Tobjasz, business development manager of SENER in Poland.

SENER will be present at the International Defense Industry Exhibition MSPO 2018, which will be held on 4-7 September 2018 in Kielce. This is one of the most important events of this sector in the world. SENER will present its competences in the space and defense industry as an expert in mechanisms for space missions and rocket control sections. We invite you to visit stand 27 in hall D.

O SENER Polska

SENER Polska rozpoczęła działalność w 2006 roku i skupia się na sektorze aerokosmicznym rozumianym jako, obronność, inżynieria kosmiczna i aeronautyka. Głównym obszarem działania SENER Polska w branży aerokosmicznej jest inżynieria mechaniczna, w tym w szczególności mechanizmy rozkładania oraz struktury pojazdów kosmicznych. Pozostałe obszary działalności firmy w Polsce obejmują mechaniczne naziemne urządzenia wspomagające (MGSE) oraz nawigację pojazdów kosmicznych. Mimo, że od przystąpienia Polski do ESA w 2012 roku minęło niewiele czasu, SENER Polska stał się jednym z ważnych uczestników rynku kosmicznego i rozpoczął realizację projektów, dzięki którym ma nadzieję przyczynić się do budowania silnego sektora kosmicznego w Polsce. Wśród istotnych przedsięwzięć warto wymienić misje ExoMars, Proba-3, Euclid, E.Deorbit, Saocom-CS, Athena, JUICE, a także program „ESA Incentive Scheme”, który wspiera rozwój branży kosmicznej w Polsce.

About SENER

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Sposób patrzenia w przyszłość

SENER is a private engineering and technology business group founded in 1956. Its aim is to offer its clients the most advanced technological solutions and to achieve international recognition based on its independence and commitment to innovation and quality. SENER has more than 2,500 professionals across its centres in Algeria, Argentina, Brazil, South Korea, Canada, Colombia, Chile, China, the United Arab Emirates, Spain, the United States, Morocco, Mexico, Poland, Portugal, the United Kingdom and South Africa. The group's operating revenue exceeded 766 million Euros (2017 data).

SENER brings together its own Engineering and Construction and Aerospace activities with industrial holdings in companies working in the field of Energy & Environment. In the field of Engineering and Construction, SENER has become a leading company worldwide in the fields of Infrastructure and Transport; Renewables, Power, Oil & Gas; and Marine.

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