

Press release 2021-662

Wi-Fi goes Mars

Austrian Space Forum simulates Mars mission with network technology from LANCOM

Aachen/Negev Desert, Israel, 20 October 2021 – In preparation for future manned missions to Mars, the Austrian Space Forum (OeWF) is simulating a Mars expedition on Earth for the 13th time. The test site for the current AMADEE-20 mission is located in the Negev Desert in Israel. Network components from the German infrastructure supplier LANCOM Systems are to ensure communication without a hitch and stable data transmission in the field. Today marks the beginning of the second half of the three-week isolation phase for the six astronauts.

It is still written in the stars when the first manned Mars mission will become a reality. Preparations for the journey to the Red Planet are in full swing, however. As part of the AMADEE research program, the Austrian Space Forum simulates a Mars expedition every two to three years under conditions that are as realistic as possible. Since 2012, LANCOM Systems has been supporting the research team with extremely sturdy radio and network technology made in Germany.

Mission-critical infrastructure

LANCOM hardware is also providing the foundations for the mission-critical communications infrastructure in the field during the current expedition in the Machtesch Ramon Crater in the Negev Desert in southern Israel: Powerful routers and climate-stable outdoor access points mounted on photo tripods use radio links to generate a Wi-Fi network that covers the entire area. Both communication between the astronauts and data transmission to the "base station" take place via the wireless network.

Spacesuit transmits vital data

Sensors in the analog spacesuits continuously monitor vital data such as CO₂ and oxygen levels, body temperature and heart rate. WLAN antennas integrated onto the back of the spacesuits transmit the vital data as well as live videos recorded by the helmet camera via the wireless network. Data from the 25 planned scientific experiments is also transmitted via the Wi-Fi network.

Until 31 October, the astronaut team – one woman and five men from Austria, Germany, Israel, Spain, Portugal and the Netherlands – will be conducting research for future manned space missions to Mars in complete isolation from the outside world. In sum total, more than 200 researchers from 25 countries are involved in the international mission under the auspices of the Austrian Space Forum.

Further information is available on the ÖWF's AMADEE-20 website at: <https://oewf.org/amadee-20/>.

Pictorial material is available for downloading at this [link](#) and can be used free of charge provided that image rights are acknowledged.

About AMADEE-20:

The Austrian Space Forum's next mission will take its crew of six analog astronauts to Israel in October 2021. This simulation of a human exploration of Mars will be hosted by the Israel Space Agency and conducted in cooperation with D-MARS and science teams from nine countries. The crew in Israel will be supported by a Mission Support Center in Austria, mimicking the "ground segment" of an actual Mars mission, including operations teams, flight planners, remote science support and the infrastructure necessary to coordinate the complex set of as much as 16 experiments in the fields of engineering, geoscience and human factors. For more information see: <https://oewf.org/portfolio/amadee-20/>

About the Austrian Space Forum:

The Austrian Space Forum is one of the world's leading institutions conducting Mars analog missions, thus paving the way for the future human exploration of the Red Planet. Experts from a broad variety of disciplines as well as the spaceflight sector constitute the core of the OeWF's continued endeavors that on a regular

basis include national and international institutions from science and industry to work at the cutting edge of scientific research. On doing so, the Austrian Space Forum is using its excellent contacts to opinion leaders, politics and media to further and internationally propagate Austrian top-level research. The Austrian Space Forum also contributes significantly to inspiring and educating young people in the sectors of science, technology and engineering. The OeWF offers internships to students and pupils, its experts supervise scientific papers on a regular basis. www.oewf.org

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About LANCOM Systems:

LANCOM Systems GmbH is a leading European manufacturer of network and security solutions for business and the public sector. The portfolio includes hardware (WAN, LAN, WLAN, firewalls), virtual network components, and cloud-based software-defined networking (SDN).

Software and hardware development as well as manufacturing take place mainly in Germany, as does the hosting of the network management. There is a strong focus on trustworthiness and security. The company is committed to products that are free from backdoors and is a holder of the trust mark "IT Security Made in Germany" as initiated by the German Ministry of Economics.

LANCOM was founded in 2002 and has its headquarters in Würselen near Aachen, Germany. Customers include SMEs, government agencies, institutions, and major corporations from all over the world. Since summer 2018, the company has been an independent subsidiary of the Munich-based technology group Rohde & Schwarz.

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