

“Communication as important as oxygen”: Mars simulation from the Austrian Space Forum relies on highly robust Wi-Fi from LANCOM

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Aachen/Arماش, Armenia, March 12, 2024—In preparation for future Mars missions, the Austrian Space Forum (OeWF) is bringing the red planet down to Earth in the coming weeks. The 14th Mars Analog mission AMADEE-24 starts today in the province of Ararat, Armenia. From March 12 to April 5, six astronauts will be testing equipment, procedures, and experiments under conditions that are as realistic as possible. Fail-safe communication and data transmission in the field are essential. For over ten years, the OeWF has relied on highly robust Wi-Fi technology from the German network supplier LANCOM Systems.

According to OeWF director Dr. Gernot Grömer, the first manned mission to Mars could be a reality within the next 20 to 30 years. To ensure that everything goes smoothly, the Austrian Space Forum regularly simulates expeditions in Mars-like environments on Earth.

The current test site is located on a high plateau in Armenia near the city of Arماش. Currently, six analog astronauts are rehearsing an emergency situation, isolated from the outside world. They are only allowed to leave the habitat in specially developed spacesuits. Packed with sensors, the suits monitor more than 50 parameters such as heart rate, body temperature, CO₂ and oxygen content. Wi-Fi antennas on the back of the suits transmit the vital data. Communication in the field and to the ground station, the transmission of research data, and the control of various robotic vehicles that demand high bandwidths also operate via Wi-Fi. This is provided by powerful routers and outdoor access points, which—mounted on photo tripods—create a high-availability network via wireless point-to-point links.

Mission leader Dr. Gernot Grömer: *“Reliable communications are just as important for our analog astronauts as the oxygen they breathe. The technology must therefore be absolutely robust and able to withstand sandstorms, heat, or freezing cold. The network devices from LANCOM offer exactly this quality and have formed the backbone of our communications infrastructure for more than ten years.”*

Ralf Koenzen, founder and Managing Director at LANCOM Systems: *“We are proud to be part of this exciting future project and to support the OeWF with LANCOM network technology, now for the sixth time. I wish the entire team, the astronauts, and the over 250 researchers from more than 25 countries every success for their mission.”*

Since 2012, LANCOM Systems has supported the OeWF research team with highly robust radio and network technology. LANCOM hardware was used, among others, on the Mars Analog missions in Morocco in 2013, on the Kaunertal Glacier in Tyrol in 2015, in Oman in 2018, and in the Negev Desert in Israel in 2021.

Further information is available on the AMADEE-24 website of the OeWF: <https://oewf.org/en/amadee-24/>

Images are available for download [here](#) and can be used free of charge provided the image rights are stated.

About AMADEE-24:

AMADEE-24 is a Mars analog simulation in Armenia, managed by the Austrian Space Forum hosted by the Armenia Aerospace Agency. The expedition is the authentic test run for astronautical exploration of the Red Planet and is directed by a dedicated Mission Support Center in Austria. A field crew of six highly trained analog astronauts with spacesuit simulators will conduct experiments preparing for future human and robotic Mars exploration missions.

About the Austrian Space Forum:

The Austrian Space Forum (OeWF) is one of the leading institutions conducting Mars analog missions, thus paving the way for the future human exploration of the other planets. The OeWF plays a leading role in two international Cube-Sat missions that have been detecting space debris in Earth orbit since 2022. Experts from a wide range of disciplines form the basis for this work within the OeWF. In collaboration with national and international institutions from science and industry, the OeWF is working at the cutting edge of scientific research. The OeWF uses its excellent contacts with opinion leaders, politicians, and the media to encourage and promote top-level Austrian research and technology internationally. The OeWF is also one of Austria's most important educational institutions for space travel and for inspiring and educating young people in the sectors of science, technology, and engineering. In addition to supervising graduates at universities, the OeWF also offers practical work experience for school pupils and students. 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, cloud-based software-defined networking (SDN), and solutions for remote and mobile access.

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 a wholly owned subsidiary of the Munich-based technology group Rohde & Schwarz.

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