

Press Release

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MOONWALK - Simulation - Rio Tinto

MISSION ACCOMPLISHED

MOONWALK is an exciting step further into the future of human space exploration, where humankind pairs with technology to transcend known boundaries.



credit: Moonwalk Consortium, photo: Airbus, 2016

The MOONWALK team has completed a two week long Mars Simulation campaign in Rio Tinto near Seville, Spain between 16 and 29 April 2016.

This was one of the very few **integrated mission simulations conducted on European grounds**. The Rio Tinto tests present the next step further in preparing

exploration to extra-terrestrial planetary surfaces such as Mars and moon.

Special features demonstrated and tested in Rio Tinto included **SHEE, a Self-Deployable Habitat for Extreme Environments**. SHEE was utilized in each simulation. It's **suitport** (an airlock in which the astronaut can step into the spacesuit) allowed the simulation astronauts (10 from France, Austria, Belgium, Italy, Spain, United States of America and Germany) to step into the suit before undocking and exploring the surface. SHEE also included the local mission control, which was connected to the **Mission Control Centre** located in Zaventem near Brussels. In addition SHEE hosted an **astrobiology lab** where the samples taken on the astronaut excursions could be analysed.

The main scenarios tested included surface excursions to two different sites, one of which presented a cave which was explored by the rover. **Astronaut-astrobiologist** and **rover-astrobiologist** scenarios were conducted with the different simulation astronauts and with the rover guided through gesture control. The astronauts wore a new **space simulation suit** based on the NASA Z1 series and used different tools to gather solid samples and loose material. The **tools** such as a pantograph scoop and a foldable pick-up claw **could be used single-handed**. The astronauts had to follow very specific procedures that were communicated to the astronauts via a touch pad mounted on the space simulation suit. All astronauts were equipped with a **bio-monitoring system**, which observed their heart rate and would have indicated any destabilisation of their health. The rover was equipped with a 360 camera and controlled by the arm movements of the astronaut. It also carried the tools and samples for the astronaut in a payload box.

Experiments from **external invited researchers** in Europe and the US were conducted including 360 degree video panning, a bio-monitoring system, takeover of mission Control from the US and a psychologically oriented survey about human robot perception.

More than 300 visitors in addition to three school classes came to view the simulations on the public day. The children competition winner was present and spoke her first sentence to be said on Mars while being in the space simulation suit:

“Today Mars, tomorrow the stars.”

Press reports from all over the world including Europe, North and South America

and others in print and on TV including Spanish news documented the last two weeks.



SHEE habitat; credit photo: Bruno Stubenrauch, 2016



ASTRONAUT-ROVER collaboration; credit: Moonwalk consortium, photo: Comex, 2016



ASTRONAUT-ASTRONAUT cooperation; credit: Moonwalk consortium, photo: LIQUIFER Systems Group, 2016



ASTRONAUT-ASTRONAUT cooperation, all female crew; Moonwalk consortium, photo: FH-WS, 2016