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HABITATOS SENSOR DATA ANALYSIS FOR ANALOG SIMULATIONS AT AATC HABITAT FROM 2016-2020

Abstract

In October 2020 the Analog Astronaut Training Center has completed its 26th analog simulation. Typically multidisciplinary and intercultural/international teams stayed for timespans of one to two weeks while performing scientific and engineering experiments or being a test subjects in bioethical committee approved researches. The habitat itself during those missions was equipped in 47 different sensors and multiple wearable IoT devices. All of those environment, atmospheric and biomedical data were stored in HabitatOS, which is an open source operating system for analog habitats.

System allowed for a realtime data monitoring, anomaly detection and early warning to both mission control center (MCC) and analog astronauts crews. Although concept of environmental data analysis is not new, the systemic approach in AATC case to use atmospheric data collection and constant biomedical monitoring for machine learning algorithms to automate intelligent-building is a unique approach.

In presentation authors will present the summary overview of HabitatOS sensor data analysis for analog simulations at AATC habitat from 2016-2020.