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Author: Mr. Samuel Peterson

Swedish Space Corporation, United States, Samuel.Peterson@sscspace.com

Mr. John Taylor

Swedish Space Corporation, United States, John.Taylor@sscspace.com

Mr. Eduardo Díaz

Swedish Space Corporation (SSC), Chile, Eduardo.Diaz@sscspace.com

LUNAR EXPLORATION GROUND STATION: REFURBISHING A HISTORIC ANTENNA SYSTEM  
AT SSC'S SANTIAGO SATELLITE TRACKING STATION**Abstract**

As humans return to the moon, improvements are required to keep supporting systems at the leading edge of technology. The Santiago Ground Station owned by the Swedish Space Corporation (SSC) dates back to early space missions including the National Aeronautics and Space Administration (NASA) Mercury, Gemini, and Apollo programs. To support future missions, NASA has turned to the commercial sector with a set of requirements for Lunar Exploration Ground Stations (LEGS). SSC developed the first commercial lunar communications service more than a decade ago, and will rebuild a historic VHF array then S Band receive antenna in Santiago tracking station to become the first LEGS terminal to support the next phase of human lunar exploration. This paper will describe the planned full antenna refurbishment project including the NASA specifications for LEGS designed to support the Artemis program and upcoming commercial lunar missions. The global ground network will also be described paying close attention to sites which will feature LEGS terminals, either as new construction or upgraded apertures, in the coming months.