

IAF SPACE POWER SYMPOSIUM (C3)
Wireless Power Transmission Technologies and Application (2)

Author: Mr. Kenji Sasaki
Japan Space Systems, Japan

Mr. Hirotaka Machida
Japan Space Systems, Japan

Dr. Koichi Ijichi
Japan Space Systems, Japan

Mr. Osamu Kashimura
Japan Space Systems, Japan

Dr. Kosei Ishimura
Waseda University, Japan

Dr. Ryo Ishikawa
The University of Electro-Communications, Japan, Japan

Dr. Kazuhiko Honjo
The University of Electro-Communications, Japan, Japan

Mr. Yuichiro Ozawa
IHI Aerospace Co, Ltd., Japan

Dr. Koji Tanaka
Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan

THE OUTLINE AND THE CURRENT STATUS OF THE POWER TRANSMISSION SYSTEM
DEVELOPMENT PROJECT FOR THE REALIZATION OF THE SSPS

Abstract

The outline of the project and the current status and the progress of the power transmission system towards the realization of the Space Solar Power System (SSPS) will be presented.

Japan Space Systems and organized team have been engaged in the Space Solar Power System (SSPS) for more than 30 years and have succeeded in the microwave power transmission test from the ground to the up in the air about 100 m above from the ground in the year 2019 according to the development road map established by Ministry of Economy, Trade and Industry (METI), which taking over the result of the successful horizontal power transmission experiment in the year 2014.

As the following development phase according to the road map, the power transmission system development project was started under METI. The project consisted of three major tasks. The first is to develop system and to establish necessary technologies for so called power generation and transmission panel whose size is about 50 cm square and 10 cm thick, and the target weight should be less than 9 kg. This panel is going to be a unit to consist the practical power generation and transmission system from the space for the operational SSPS in the GEO as the goal. The second is to improve the total efficiency from DC input to output RF power to exceed 60

All these three development and test activities including 1km distance vertical direction power transmission demonstration is for necessary steps to realize the GEO operational SSPS as the goal.