

Current status of Japanese EISCAT_3D preparation

- (1) Preparation of SSPAs for PET,
- (2) Budget proposal for FY2019, and
- (3) Master plan 2020

SSPA: Solid-state power amplifier

PET: Pre-Engineering Test

FY: Fiscal year (From April to March in Japan)

(1) Preparation of SSPAs for PET

Japan is contributing some budgets and efforts to development of SSPA for technical demonstration of EISCAT_3D radar system.

- **FY2016:** 19 SSPAs and their development (after frequent discussion with EISCAT staff)
- **FY2017:** 55 SSPAs (upgraded ones). They will reach the EISCAT Tromso site early in June, 2018.

A budget for the rest of SSPA (108 SSPAs) for one sub-array module was approved by MEXT this fiscal year (**FY2018**, April 2018 - March 2019). They will be ready in February 2019, and will be delivered to the EISCAT Tromso site in May 2019.

(1) Preparation of SSPAs for PET

Results of the 55 SSPAs made in FY2017

- Output power: 554.8 W on average (Standard deviation: 9.7 W)
- Efficiency: 54.1% on average (Standard deviation: 1.6%)
- Linearity (from 50 W to 500 W): < 3 dB
- Weight: ~4.8 kg



The latest SSPA for the EISCAT_3D Pre-Engineering Test (PET)

(2) Budget proposal for FY2019

- A budget proposal for construction of ~10,000 SSPAs for **the EISCAT_3D second stage** was submitted to ROIS (Research Organization of Information and Systems) in February, 2018.
- For three years (FY2019-2021).
- Several meetings with MEXT (Ministry of Education, Culture, Sports, Science & Technology, Japan) staff will be made in May/June, 2018.

(3) Master plan 2020

- Our proposal entitled “**Study of Coupling Processes in the Solar-Terrestrial System**” was approved as one of the high-priority programs in Master Plan 2014 and Master Plan 2017 (Science Council of Japan (SCJ)). Also, it was selected as one of projects in MEXT roadmap 2014, but not roadmap 2017 (only 7 proposals, no geophysics).
- We plan to submit our updated proposal to **Master Plan 2020**, because its construction budget is not approved yet. Its selection will start around the end of 2018.