



# Japan's Update to FARO for 2021 on Arctic Science Activities

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### Arctic Challenge for Sustainability II



#### **Project Goal**

"Towards the realization of a sustainable society, we promote advanced research to understand the current status and process of environmental changes in the Arctic and to improve meteorological and climate prediction in order to assess the impact of rapid environmental changes in the Arctic on human society, including Japan, as well as to implement the results of this research into society. We also provide domestic and international stakeholders with our scientific knowledge that will be a basis for legal and policy for the formation of international rules in the Arctic."





### **Research Infrastructures**





Oceanographic research vessel, the Mirai ©JAMSTEC

Earth Observation Satellite Data







### **R/V Mirai Expedition in the Arctic sea** for the ArCS II project (October 2020)



(Top): R/V Mirai cruise route in 2020 (Right): Observation activities on Mirai (collecting plankton, mooring increase)

https://www.nipr.ac.jp/arcs2/mirai2020/



# Ny-Ålesund Visit under COVID-19 situation

Most of the projects in April-September have been suspended, but two NIPR researchers successfully visited Ny-Ålesund in October after 10-days quarantine in Oslo, supported by the Norwegian Polar Institute and the Royal Norwegian Embassy in Tokyo.

These planned activities in Ny-Ålesund have been all suspended

JUNE

**Man-days** 

APRIL

MAY

Plans from November 2020 to March 2021 have been suspended as well.

JULY

AUGUST



SEPTEMBER

15

15

OCTOBER



#### Access Analysis of ADS Page View number

| FY2016             | 2.25 Million |
|--------------------|--------------|
| FY2017             | 2.62 Million |
| FY2018             | 3.00 Million |
| FY2019             | 3.85 Million |
| FY2020(Apr.to Feb) | 3.52 Million |

Approximately 80% of users are international (Netherlands, USA, UK, Spain, etc.).
VISHOP is used by 61% users, followed by KIWA with 30% users.



#### Registration number

| International Collaborative Research (Registration number of arDirectory) | <mark>126(ArCS)</mark><br>325(Total)  |
|---|---|
| Data Publication<br>(Registration number of data to ADS<br>KIWA)          | Metadata : 270<br>(ArCS)<br>: 860 (Total)<br>Real Data : 243<br>(ArCS)<br>: 398 (Total) |

- ADS lectures are effective to increase data registeration
- KIWA users are increasing mainly due to DOI's.



## **EISCAT (European Incoherent SCATter)**

*The EISCAT Scientific Association* is an international research organization operating the world's largest-class incoherent scatter radar system to undertake cutting edge sciences for atmospheric, ionospheric and geospace studies, space weather and global change. *Affiliated in the Association in 1996, Japan* has jointly contributed to the operation and sciences with the EISCAT radars in collaboration with member countries.



**<u>EISCAT\_3D</u>** is the major upgrade of the existing EISCAT mainland radars, with <u>a</u> <u>multi-static phased array system</u> composed of **one central** active (transmitreceive) site and **4 receive-only** sites to provide us 50-100 times higher temporal resolution than the present system.



The EISCAT Scientific Association has officially decided to start the construction of the 1st stage of EISCAT\_3D in 2017 to be completed by the end of 2021 (delayed to 2022) including the commissioning of the full radar system.

Since 2014 NIPR has been developed, manufactured energy-efficient High Power Amplifier units for Core site, and offered to EISCAT3D-PfP, which has been transferred to a test sub-array system for EISCAT\_3D.

Since 2018 NIPR has been contributing to a massproduction of Transmitter units for Core site.



# **Budget for 2021**

## **Arctic Research Program of MEXT**

Intiating construction process for a new Arctic <u>Research Vessel</u>

450 MJPY (3.5 MEUR for 2021)

- Arctic Challenge for Sustainability II (ArCS II) 953 MJPY (7.3 MEUR for 2021) 5-year program until 2025
- ASM3 (Tokyo, May 2021) Logistics
   96 MJPY (0.74 MEUR)\* May 8-9,'21
   \*Carry-over budget from previous year with postponement of ASM3 caused by COVID-19

