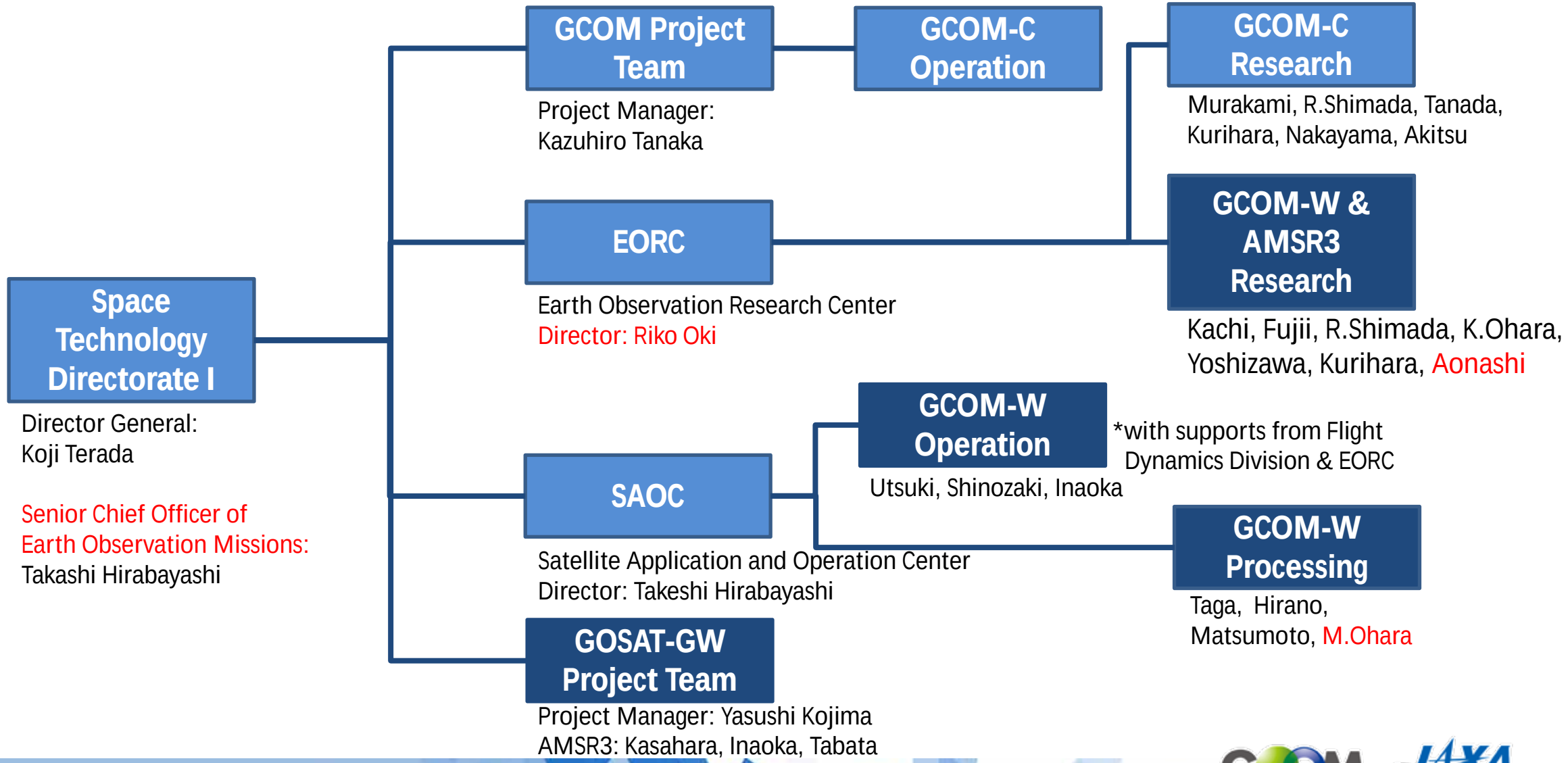
GW003

Status of GCOM-W & AMSR3 Researches

Misako Kachi
JAXA/EORC

JFY2021 Joint PI Workshop @ Jan. 17, 2022

JAXA GCOM & AMSR3 Project Organization (as of Jan. 2022)



GCOM-W & AMSR3 Science Team (FY2019-2021)

- Lead: N. Ebuchi (Hokkaido Univ.)

- Algorithm Development (14)
  - Kohei Cho (Tokai Univ.)
  - Akira Shibata (RESTEC)
  - Kazumasa Aonashi (JAXA/Kyoto Univ.)
  - Masahiro Kazumori (JMA)
  - Noriaki Kimura (The Univ. Tokyo)
  - Yohei Sawada (The Univ. Tokyo)
  - Kazuyoshi Suzuki (JAMSTEC)
  - Hideyuki Fujii (JAXA)
  - Richard Kelly (University of Waterloo)
  - Rajat Bindlish (NASA/GSFC)
  - Simonetta Paloscia (CNR-IFAC)
  - Guosheng Liu (Florida State Univ.)
  - Chelle L. Gentemann (Earth and Space Research)
  - Georg Heygster (University of Bremen)

- Calibration/Validation (7)
  - Naoto Ebuchi (Hokkaido Univ.)
  - Jun Asanuma (Tsukuba Univ.)
  - Kohei Mizobata (TUMSAT)
  - Fumiaki Kobashi (TUMSAT)
  - Edward Kim (NASA/GSFC)
  - Vencataraman Lakshmi (Univ. South Carolina)
  - Jefferey Walker (Monash University)

- Application Research (8)
  - Keiichiro Ohshima (Hokkaido Univ.)
  - Keiji Imaoka (Yamaguchi Univ.)
  - Hiroyuki Tomita (Hokkaido Univ.)
  - Kazutaka Tateyama (Kitami Inst. Tech.)
  - Koji Shimada (TUMSAT)
  - Kumiko Tsujimoto (Okayama Univ.)
  - Xiaosu Xie (NASA/JPL)
  - Walter N. Meier (Univ. Colorado)

GCOM-W & AMSR3 Research Status (1/3)

- GCOM-W Highlights
  - GCOM-W standard product updates
    - Updated in Jun. 2021: Total Precipitable Water & Cloud Liquid Water V2.2 (by M. Kazumori)
    - Will be updated in Mar. 2022: Precipitation V3 (by K. Aonashi), SST V4.1 (by A. Shibata)
    - Details will be presented by R. Shimada/K. Ohara at GW004.
  - GCOM-W research product updates
    - Released in Apr. 2021: High-resolution Sea Ice Concentration V1 (by G. Heygster)
    - Will be released:
      - In Feb. 2022: Sea Ice Motion Vector V1 (by K. Shimada, N. Kimura)
      - End of JFY2021/early JFY2022: Soil Moisture & Vegetation Water Content by using Land Data Assimilation technique (by Y. Sawada), (research) Snow Depth (by R. Kelly), (research) Soil Moisture (by H. Fujii)
    - Evaluation ongoing: Vegetation Water Content (by S. Paloscia)
    - Details will be presented by R. Shimada/K. Ohara at GW004.

GCOM-W & AMSR3 Research Status (2/3)

- AMSR3 Highlights
  - Algorithm Selection
    - Selection perspectives include retrieval performance, AMSR-E/AMSR2 experience, computation load, supports from PI, communication, and so forth
    - Comparison Results will be presented and discussed at the Algorithm Selection session on Jan. 19
    - After considering the results and discussion/comments at the session, JAXA and Science Lead (Prof. Ebuchi) will select one algorithm for standard (and other for research) in February
  - Algorithm development
    - Developments are underway along with GCOM-W
    - High-resolution TB product is tested by using AMSR2 data
    - "At-launch" module will be submitted to the Mission Operation System by November 2022, so PIs can submit the latest one by June 2022 if needed
  - Validation for AMSR3
    - Validation plan of each area (Atmosphere/Land/Ocean/Cryosphere) is discussed and updated among the science team and user committee members

Algorithm Selection Status

Parameter	Algorithm PI	Procedure
TPW (ocean & land)	Kazumori	No comparison
CLW	Kazumori	No comparison
PRC (liquid, solid)	Aonashi (liquid) & G. Liu (solid)	Collaboration with GSMaP
SST (6G, 10G & MB)	Shibata	No comparison
SSW	Shibata	No comparison
ASW (all-weather SSW)	Shibata	No comparison
SIC	Cho	No comparison
HSI (high-res SIC)	Heygster	No comparison
SMC (soil moisture content)	**JAXA (Fujii), Bindlish**	**Need Comparison**
SND	Kelly	No comparison
L1C (FOV-center matched TB)	JAXA	No comparison
L1H (high-resolution TB)	JAXA	No Comparison
HST (high-resolution SST using L1H)	JAXA & Shibata	No comparison
SIM (sea ice motion vector)	**K. Shimada, N. Kimura**	**Need Comparison**

Algorithm Selection/Development Schedule

Date	Who	Action
Feb. 2021	EORC	Assign Area Leads
Mar. 31, 2021	Interested PIs	Send interest to submit algorithm code
Apr. 30, 2021	EORC	Announce products that need comparison
Jun. 31, 2021	Area Leads	Propose comparison procedure for each area
Jul. 31, 2021	Entered PIs	Submit algorithm code for comparison
Jul. 2021	EORC, Team Lead	Define detailed comparison procedure
Nov. 2021	*EORC*	*(Submit tentative algorithm modules for MOS development)*
Dec. 2021	Team Lead, EORC, Area Leads	Discuss integration/comparison results and prepare report for the PI workshop
★ Jan. 2022	EORC, Area Leads	Report results of algorithm comparison at the PI workshop
Feb. 2022	EORC, Team Lead	Selection of standard/possible-standard algorithms
Jun. 2022	**Selected PIs**	**Submit final algorithm code for launch (if needed)**
Nov. 2022	EORC	Submit beta-version modules for launch for integration to MOS
Mar. 2023	EORC	Submit final-version modules for launch with evaluation to MOS
Launch + 6-mon	**Selected PIs**	**Submit algorithm code for the first release**
Launch + 12-mon	Project Team	AMSR3 Ver.1 Release

GCOM-W & AMSR3 Research Status (3/3)

- 3rd EO Research Announcement
  - Selection completed in Dec. 2021
  - Notification of selection results have been sent to applicants in the end of Dec. 2021
    - 26 PIs (18 domestic, 8 oversea) are selected in the AMSR3&GCOM-W research project area
    - 5 PIs (3 domestic, 2 oversea), who are mainly use AMSR data, are selected in the multidisciplinary application research area
  - New Science team period will be from Apr. 2022 to Mar. 2025
    - Above 31 PIs will be the AMSR3 & GCOM-W science team member
    - Other multidisciplinary application PIs, who will use AMSR data subsidiarily, may join the AMSR3 & GCOM-W science team

AMSR Series Web Site

released in November 2021

- New website to integrate information of AMSR series (AMSR, AMSR-E, AMSR2, and AMSR3) and a few information of MSR.
- This website has been started as a portal site to EORC's AMSR/AMSR-E and GCOM-W web sites as the first step. We plan to migrate the contents of these homepages sequentially.
- Information about AMSR3 research will be posted on this website.
- Newly developed content
  - Ø AMSR Data Catalog
  - Ø AMSR Viewer (released in June 2020)

https://www.eorc.jaxa.jp/AMSR/

Site Map

- Monitoring
  - AMSR Earth Environment Viewer
  - JASMES for Water Cycle
  - Sea Ice Extent Trends
  - JASMES Greenland Monitor
  - Sea Ice Distribution in the Sea of Okhotsk
  - All-Weather Sea Surface Wind Speed
  - Tropical Cyclone Monitoring
  - Tropical Cyclone Database
  - JAXA GLOBAL RAINFALL WATCH (GSMaP)
  - JAXA GHRSST Server (SST)
  - EL Niño Watch
  - AMSR Data Product Catalog
  - GCOM-W Validation Web
  - Observation Area of AMSR2
- Learning
  - About AMSR
  - Quick Guide to AMSR
  - AMSR Utilization
  - Enjoy AMSR!
  - About MW Remote Sensing
  - AMSR in the World
  - Retrieval Algorithm
  - Calibration $ validation
  - Reading Materials
  - Publication List
  - Science Plan
  - Related Projects
- Resources
  - Data Product Type
  - Data Format
  - Tools
  - Data Handling
  - Reference Web Sites
  - TB Calibration
  - Product Validation
  - Satellite/Sensor Status
- Downloads
  - Data Catalog
  - Standard Product
  - Research product
- News & Events
  - News
  - Operation Information
  - Events
  - Research Announcement
- Contact us
- Site Policy

AMSR Data Catalog

released in November 2021

- Information about AMSR data products (product list, download sites, verification results, etc.) has been consolidated.
- In the AMSR Data Catalog, each data product is categorized by item, and the summary and verification results are posted so that you can easily access the information of the product you want to know.

https://www.eorc.jaxa.jp/AMSR/datacatalog/

Site Map

- Level-1 Product
  - Product Type
- Atmosphere
  - Total Precipitable Water over Ocean
  - Cloud Liquid Water Content
  - Precipitation
  - Total Precipitable Water over Land
- Ocean
  - Sea Surface Temperature
  - Sea Surface Wind Speed
  - All-weather Sea Surface Wind Speed
  - 10G Sea Surface Temperature
  - Multi-band Sea Surface Temperature
- Cryosphere
  - Sea Ice Concentration
  - High-reso Sea Ice Concentration
  - Thin Sea Ice Detection
  - Sea Ice Motion Vector
  - Sea Ice Thickness (< 20cm)
  - Sea Ice Thickness (>=20cm)
- Land
  - Snow Depth
  - Soil Moisture Content
  - Land Surface Temperature
  - Vegetation Water Content
  - Land Data Assimilation
- News & Events
  - News
  - Operation Information
  - Events
  - Research Announcement
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