



MOSAiC Status Update Nr. 5/2019

1. **Medical check**
 2. **STCW Basic Safety training**
 3. **Visa**
 4. **EIS – participant registration and freight**
 5. **Freight**
 6. **Network connection**
 7. **Environmental issues – oil spill protection**
 8. **Device management list**
 9. **Shooting courses**
 10. **Upcoming events**
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1. **Medical check / medical questionnaire**

All participants of MOSAIC have to attend a medical examination according to AWI regulations to make sure that they are fit enough to meet the challenges of the expedition and for minimizing the risk to abort the expedition. A successful medical examination is mandatory for participation in expeditions with RV Polarstern as well as RV Federov (meaning those, who only will participate on Leg 1a).

The AWI medical officer decides whether a participant is suitable to take part in an expedition. In case of doubt, the medical coordinator of AWI may be consulted. The check-up is valid for 12 months and has to be repeated thereafter. A participant must not take part in an expedition without the approval of the AWI medical officer.

The AWI medical officer is the relevant authority for AWI employees. All other participants are asked see the AWI medical officer if possible. Otherwise, you can turn to your GP and have to bear the costs yourself. Please send the findings of your GP to the AWI medical officer only (via mail or fax).

A doctor and a nurse are on-board during the expedition. The ship has a fully equipped surgery room, a treatment room with pharmacy and a patient's room. In case you have to take medicines regularly and bring them on-board, you have to inform the ship's doctor about it.

Medical reports of all expedition members are handed over by the AWI medical officer to the cruise leader who takes them on-board. On the ship, they are handed to the ship's doctor.

Information about this can be found on the AWI website and in the MOSAIC Handbook (published soon) : <https://www.awi.de/en/about-us/logistics/information-for-expedition-participants.html>

AWI medical service:

Werksarztzentrum Fischereihafen
Am Lunedeich 115
27572 Bremerhaven
Tel.: +49 471 - 986 931-00
Fax: +49 471 - 986 931-01



2. STCW Basic Safety Training

There will be two *STCW Basic Safety Training courses in English, specifically for MOSAIC participants*. These courses will be held with the 'Maritimes Kompetenzzentrum' in Elsfleth, near Bremerhaven. The costs per course will be 790 Euros.

13.05.2019 – 24.05.2019

05.08.2019 – 16.08.2019

To register please contact Birgit.Johannesmann@windguard.de

Everyone who needs to make the Basic Safety Training, has to pass the medical examination for seamen (in Germany: Seediensttauglichkeit) beforehand. Independent of the medical expedition examination which has to be done by everyone who is participating in MOSAIC. There is no chance to merge both examinations. Therefore all of you who travel on Makarov have to make both, without any exemptions.

For the application form from the BSH (German shipping agency) please use this link:

<https://www.deutsche-flagge.de/de/befaehigung/bescheinigungen/erstaussstellung>

Then choose the following form: Application for the Issuance of Certificates of Proficiency (Deck Department, Engine Department, General Purpose Ratings, Safety, Security)

3. Visa and passport issues

A passport with validity longer than 6 months after the end of the expedition is mandatory onboard. The passport needs to have at least two empty pages for remarks and stamps.

Your passport will be controlled when entering the ship. Afterwards you will deliver it to the communication officer.

Please check whether you need a visa for the departure or arrival from/to Tromø. Information are given by the Federal Foreign Office. Non-German participants have to contact their responsible international representation office. If you do need an invitation to obtain a Visa for Norway, please contact schiffskoord@awi.de and we will try to assist you with this.

A copy of the visa has to be uploaded to the electronic expedition interface system EIS. Thereby port agencies are able to prepare entry or departure.

Responsibility for the visa lies with the participant. Examination of the contents by AWI will not take place.

For **participants of Leg 2,3 and 4** it might become necessary to have a valid Russian Visa as well as a permit for the Russian border region. There are still ongoing discussions with the Foreign Federal Office. If this case arises, AARI will assist with an invitation letter, as well as with the declaration for the border region 2 ½ months before the potential travel. However – every participant has to obtain the Visa individually. More information and requirements will be sent via the Status Updates.



4. EIS – participant registration and freight

Due to some administration difficulties, the registration within EIS is not open yet – but invitations shall be sent out within April.

All freight has to be registered in EIS. You can either do all through EIS; or also use the standard Polarstern freight and packing lists, and upload them to your account once you are registered. The documents can be found on the AWI website:

<https://www.awi.de/en/about-us/logistics/freight-handling.html>

5. Freight: Labels, customs, delivery to AWI harbour storage, delivery to Tromsø

Please use the freight labels you find under [M365/MOSAiC_All/Groups/Logistics](#).

If any of your freight is supposed to go on board of **Federov**, instead of Polarstern, please replace RV Polarstern with RV Federov on the label.

You are required to have a colour code. All institutes/workgroup that have sent freight with/to AWI expeditions before, can use the code they were given. A list with colour codes for all other projects will be sent out shortly.

All freight (regardless if sent via AWI or directly to Tromsø) will be delivered to our agent 'Bring Cargo' and stored in a custom free zone.

Freight sent via the AWI harbour storage, has to be delivered with custom clearance. For AWI participants, AWI will take care of this; all other participants have to take care about customs themselves.

6. Network connection

Available Internet Connection via Satellite System

We will have 4 IRIDIUM Certus systems on board Polarstern.

One system is reserved for email traffic, two systems are dedicated to data transmission and one is kept as a spare. We are currently expecting data volumes of 10 GB per system and month and data rates of 400 Mbit/s.

Furthermore, we are in the testing phase of a nano satellite system (store and forward principal via FTP servers) for transfer of data packages that do not require transfer in real time.

Telephone Communication

Telephone will be routed via 2 IRIDIUM Pilot systems on board Polarstern.

Please refrain from bringing your own IRIDIUM Systems!

From our experience the bandwidth available with IRIDIUM systems used in parallel at the poles cannot simply be multiplied by the number of systems. In the contrary there is a certain overlap where the systems interfere with each other decreasing the theoretically available bandwidth.

There will be several hundreds of buoys transmitting data via IRIDIUM SBD and the other data transmission and communication will be performed via the IRIDIUM Certus system.

Therefore we do not agree with parties installing their own IRIDIUM systems.



Network Connectivity on Board

A internal WiFi is provided on board Polarstern in certain areas.

Cabled LAN (1 Gbit/s) is available throughout the ship. All functional spaces, laboratories and bunk rooms are equipped with network connectors (RJ 45).

Cabled LAN is also available in certain areas on deck via cable bushings.

A DHCP, DNS and NTP and Printing Server are part of the infrastructure on board. Fixed IP-Addresses can be provided upon request. Further details will be posted in upcoming updates.

Network Connectivity on the Ice

The sites Ocean City, Met City, ROV and Remote Sampling Area will be connected to the Polarstern network via an optical fibre link (1 Gbit/s).

There will be 11 main network connectors (RJ 45) in every site. The number of connectors can be extended via own switches. Furthermore, one wireless access point is installed at every site. The coverage of the WiFi will depend on the final configuration currently in planning phase. Further details will follow.

RadioLAN:

We will provide a wireless microwave link system (we call it "RadioLAN") between the crow's nest and the sites ROV (New Ice Area) and BGC Coring.

There will be 11 main network connectors (RJ 45) in every site. The number of connectors can be extended via own switches. Furthermore, one wireless access point can be installed upon request at every site. The coverage of the WiFi will depend on the final configuration currently in planning phase. Further details will follow.

Furthermore, one RadioLAN client is available for additional flexible use in the field. A separate power supply is needed to run the client and is to be organized by the parties planning to use the flexible system.

We will place three antennas at the crow's nest for the RadioLAN. To avoid any conflicts with WiFi-frequencies the system will be configured for the range of 4.9 to 5.1 GHz.

It is very important that your system doesn't interfere the public RadioLAN. Please also enter frequencies of your own devices in the Interference Table available in MS Teams under [MOSAiC_all/Tasks/Interference](#).

The exact coverage is still to be tested. The coverage will depend on the distance to the ship. Estimated values stated by the provider range between approx. 50-200 Mbit/s near Polarstern and 3Mbit/s in 20km distance.

Please contact Peter Gerchow (peter.gerchow@awi.de) or Antonia Immerz (antonia.immerz@awi.de) in case of any questions. Further details will also be provided in the upcoming MOSAIC Handbook.

7. Environmental issues – oil spill protection

Spills of any kind (oil, kerosene, diesel, petrol, chemicals or else) have to be avoided on the ice under all circumstances. Refuelling vehicles or machines should be done on board. If it needs to be done on the ice, a tray has to be placed below to collect liquid in case of a spill. Expedition participants need to bring oil trays for their generators (one for each). The tray must have enough holding capacity for



the whole tank volume of the generator, must be suitable for the liquids in use and it must be placed below the generator at all times, not only for refuelling. Petrol cans have to be equipped with a quick fastener to keep the spill to a minimum.

Shovels and buckets with a lid have to be kept at hand by all teams to immediately remove ice or snow that contains spilled substances. Participants also have to bring absorbent material to remove substances from the water in melt ponds or other areas of open water. The absorbent material must not interact with the environment and it needs to be possible to completely remove it without any residues. Consider using absorbents that can be used several times due to environmental reasons as well as cargo capacities. You can ask AWI logistics staff for advice if you are not sure which spill equipment is suitable.

8. Device management list – Deadline!

Add all your devices and complete existing entries until 15.4.2019!

This includes entries for satellite data products and buoys and sampling devices not directly generating data!

The spreadsheet is available online under [MOSAIC_all/General/Groups/Data/DataPlanning_Lists](#). It is also linked in the MOSAIC_all Wiki at [Data Planning Lists in Wiki](#).

All sampling and measuring devices should be entered in the list. Please also recheck your entries for completeness. The information helps us estimate the amount of data generated, stored and transferred during the expedition. It further helps us to identify possible bottlenecks but also to prepare the infrastructure to meet your requirements.

Support of the integrated data flow and data storage for devices not entered in the list cannot be guaranteed.

Please contact Mohammad Ajjan (mohammad.ajjan@awi.de) or Antonia Immerz (antonia.immerz@awi.de) in case of any questions regarding the list.

Modelling data and other data not originating from sensors or devices shall be entered in the [External and Collaboration Data Management List](#), also linked via [Data Planning Lists in Wiki](#).

9. Shooting courses

Opposed to what was stated in the last update, there will be lunch AND dinner provided during the shooting courses.

For participants of Leg 1, 2, and 3 there are courses in BHV on the following dates: 25.04.19; 16.05.19, 22.08.19; 05.09.19; October (tba), November (tba).

To register for the course please write an email to Elena Tschertkowa-Paulenz (Elena.Tschertkowa-Paulenz@awi.de), stating course date, name, institute, invoice address and which cruise leg you will be on.

10. Upcoming events

Event	Date	Time	Location
Snow & Ice Training 3	7.4.19 – 13.4.19	All day	Barrow, USA
MOSAIC Shooting course	25.4.19	9:00 – 23:00	BHV