



Report from the Workpackage meetings
during the Annual meeting week
with list of participants
at
Finnish Meteorological Institute
8 – 12 January 2018

Monday 08 January: 1300 - 1800	WP2 workshop day 1
Tuesday 09 January: 0900 - 1800	WP2 workshop day 2
Wednesday 10 January: 0900- 1700	General Assembly (separate minutes)
Thursday 11 January: 0900 – 1200 0900 – 1200 0900 – 1200 0900 – 1200 1315 – 1500 1315 – 1630	WP3 meeting WP5 meeting WP6 meeting Advisory Panel meeting (separate minutes) WP1 meeting WP5 and WP6 joint meeting
Friday 12 January: 0900 - 1200	Steering Committee meeting (separate minutes)

(The documents from the Annual meeting week are available at <https://intaros.nersc.no/>)

Report on WP1 including Advisory Panel meeting

Thursday 11 Jan. 0900-1200 (Advisory Panel) 1300-1500: WP1 meeting including the Panel members

The Advisory Panel had its first meeting on 11 January, 0900-1200. The members who attended were: Peter Pulsifer, Lars-Otto Reiersen, Marianne Kroglund and Claire Courguff. It was decided to merge the two panels (Scientific and technical advisory panel and the Stakeholder and innovation advisory panel) into one panel with 7 – 10 members and also to revise the terms of reference accordingly. The Advisory Panel members attended the GA and agreed to prepare the first report within ≈ 6 weeks after the 11 January.

Regarding the work on Requirements and Strategy, it was decided at the previous SC-meeting in June 2017 that the Requirement document needs to be updated during the project. Next steps should be to include and follow the requirements defined by WMO (OSCAR). Furthermore, it will be beneficial for INTAROS to follow the upcoming Copernicus process where user requirements for Arctic observations will be reviewed.

Collaboration with Arctic organisations, in particular AMAP and SAON will be strengthened with the members of the Advisory Panel. Also collaboration with ENVRI PLUS should be strengthened after talking with Sanna Sorvari at FMI, who is one of the Theme leaders of ENVRI PLUS and one of the FMI personnel working on INTAROS.

The Advisory Panel proposed that INTAROS should initiate a community paper as input to the Arctic Ministerial in October. The Panel will be active in formulating the letter proposed organisations, programmes and projects who should sign it.

The POLAR 2018 in Davos in June will be the Arctic research gathering event in 2018. There will be the Arctic Science Summit Week and Arctic Observing Summit, INTAROS will be well represented in both events. INTAROS partners will prepare and submit several statements and posters.

Report on WP2 workshop

Monday 08 Jan. 1300- 1800: Plenary sessions on progress of the work in WP2

The objective of the first day of the workshop was to get an overview of what each partner has done and still need to do to complete the planned work in Tasks 2.1, 2.2 and 2.3. First, WP2 leader and Task leaders presented an overview of the WP2 survey, illustrating its purpose (gap assessment, maturity analysis, data catalogue, data input to iAOS), its content, and the answers given so far. The main issue was the rather low number of answers to QB and QC, and the fact that often single answers to QB included variables with heterogeneous characteristics, while an answer should include only those variables that have common characteristics (in spatial and temporal coverage and resolution, accuracy, etc.). After this first presentation, almost all partners presented their work either orally or as poster. The oral sessions were divided by sphere and chaired by the Task leaders: M. Tjernström led the atmosphere session, I. Schewe the the ocean and sea ice session and A. Ahlstrøm the land and terrestrial cryosphere session. Oral presentations were given by J. Sedlar (MISU), E. Asmi and others (FMI), A. Devasthale and D. Gustafsson (SMHI), G. Heygster (UB), I. Schewe (AWI), H. Sagen (NERSC), G. Lyn (UHAM), C. Ludwigsen (DTU), F. Ardhuin (IFREMER), A. Ahlstrøm (GEUS), M. Pallandt (MPG), F. Navarro (UPM), K. Kohnert (GFZ). The poster session was chaired by D. Gustafsson and presentations were given by K. Atakan (UiB), A. Renner (IMR), A. Beszczynska-Möller (IOPAN), R. Storvold

(NORUT), A. Mahura (U Helsinki), D. Zona (USFD), T. Wawrzyniak (IGPAN), M. Grabiec (U Slaski) M. Goeckede (MPG). M. Sejr (AU) presented the poster the following day. In the oral session chaired by R. Pirazzini cross-sphere activities were presented by E. Buch (EuroGOOS) and P. Thorne (NUIM).

Tuesday 09 Jan. Plenary/working groups: structure and content of the WP2 deliverables due in May 2018

The objective of the second day of the workshop was ensure that each partner clearly get to know 1) to which deliverable he/she needs to contribute, 2) what is the structure, content, and purpose of the deliverables he/she contributes to, and 3) which content he/she needs to write in each section of the deliverables. In a first plenary session R. Pirazzini introduced the content and structure of the deliverables, explaining the division of responsibilities among contributing partners, deliverable leaders, theme leaders and task leaders. The participants were then split into six working groups, one for each deliverable, which were led by the corresponding deliverable leaders: in the morning three working groups worked on D2.1, D2.4, and D2.7, and in the afternoon on D2.2, D2.5, and D2.8. The discussions occurred in each working group were reported by six rapporteurs in the final plenary session. The workshop reached its objectives, a thorough clarification of the work to be done for the completion of the deliverables was achieved, and a timeline was decided:

- **As soon as possible:** all deliverables will be placed in google docs and made accessible to the partners contributing to them
- **31 January:** ultimate deadline for input to questionnaires A, B and C
- **1 March:** 1st draft of Sect.2 (Data description) and Sect.3 (Requirements)
- **15 April:** 1st draft of Sect.4 (Assessment) and Sect.5 (Recommendations)
- **25 May:** final version of the deliverables → Submission

The final discussion focused on the opening of the survey to external collaborators. It was decided that by **31 January** a final, concrete plan will be made, and external collaborators will be informed about it. The session was closed by I. Schewe, who presented the needs of WP5 to include the assessed data into the iAOS, and the results of the WP2 survey concerning the information required by WP5.

Report on WP3

WP3 presentation at GA on January 10 by Agnieszka B. Möller

WP3 activities during the first year of the project were reported. The status of the pilot field experiments in 2017 and the fieldwork planning for 2018 was shortly addressed. The application for ship time on KV Svalbard was submitted and collaboration with the Chinese institutions was initiated to get access to ship time on MV Xue Long in 2018. The WP3 started in month 6 and the following six months were mostly devoted to design, acquisition and preparation of components of observing systems for deployment during the first INTAROS field season. In Task 3.1 the oceanographic and acoustic moored systems in the Young Sound were deployed in summer 2017 for testing the new instruments. The systems for high accuracy GNSS AWS positioning and AWS radiation measurements were specified, designed and their prototyping started in 2017. In Task 3.2 the deployment of four moorings equipped with new instruments for ocean and sea ice measurements took place in September 2017 north of Svalbard at 22°E and 31°E. In Task 3.3 the arcFOCE system was designed for Fram Strait and carbon observatory in Kongsfjorden was upgraded with pH measurements in 2017. Under Task 3.4 the first glider mission was achieved in Fram Strait and two SIMBA buoys were deployed in the central Arctic.

Seven BGC-Argo floats were also deployed in Baffin Bay in July 2017. The IAOOS ice-tethered system was selected and commissioned for deployment in 2018. Under Task 3.5 the automated flask system for GHG was designed/customized and ordered at ICOS. The high-resolution temperature sensing system was prepared for installation in a new location in 2018, also to evaluate possibility to resolve the water table level. For de-icing of sonic anemometers the heated CSAT-3 will be acquired in 2018 and tested in field in 2019. For measurements of snow spectral albedo, a new dual-sphere spectro-albedometer was acquired in 2017 and will be tested in the lab and in the field in winter 2017/18. A system for stable isotope measurements in water vapour was developed in 2017 to be installed during selected cruises in 2018. The first deliverables in WP3 are due end of May 2018 and include reports on technology development and system design in each of five WP3 tasks.

WP3 meeting on January 11, by Agnieszka B. Möller

During the half-a-day long WP3 meeting on January 11 the activities that took place in 2017 in each WP3 task were reported and the field work plans for 2018 were reviewed by the tasks leaders. A short summary is provided below. The discussion during the meeting was focused on collaboration and possibilities for joint fieldwork, in particular during the planned INTAROS cruise on KV Svalbard in summer 2018. The plan for preparation the deliverables for all tasks, due in month 18, was also shortly discussed. The templates for reports on technology development and system design will be agreed by the task leaders and distributed to all WP3 partners in February.

Summary of 2017 work and 2018 plans for each Task

Task 3.1 Coastal Greenland

AU: Mikael Sejr: work on moorings in the Young Sound, monitoring of snow and sea ice in the Young Sound, pCO₂ and ocean acidification baseline around Greenland.

Test deployment of one mooring in 2017 to monitor surface waters. Test of two camera systems and light loggers. ICOS CO₂ eddy co-variation tower for marine system. Cruise for collection of CO₂ data. In 2018 retrieve and redeploy the mooring outside the Young Sound. Upgrade sensor package (PAR, fluorescence, turbidity). Continue time series on underwater light in the Young Sound.

GEUS: Andreas Ahlstrom: in-situ ice sheet albedo measurements, positioning of ice-sheet stations, snow-water equivalent measurements

Weather stations around Greenland, measuring all energy fluxes and surface mass balance in the PROMICE network. High accuracy GNSS AWS positioning and improvement of AWS radiation measurements: in 2017 systems specifications and conceptual designs, start of prototyping, in spring 2018 prototype production and lab tests, and deployment in summer.

FMI Roberta Pirazzini: snow albedo observations over Greenland ice sheet

Contribution only includes laboratory work. New lab at FMI established in 2017 to characterize and calibrate pyranometers.

UPM Francisco Navarro: ground-penetrating radar system

Work slightly delayed due to problems with personnel availability. Now problem solved, improved ground penetrating helicopter-borne radar system to measure ice thickness is under development.

CNRS-IUEM: acoustic observatory in the Young Sound

Passive acoustic observations for biogeochemical environment in the Young Fjord. Collaboration between CNRS-IUEM and *University of Québec at Rimouski* (UQAR). Deployment in autonomous mode for routine operations during summer 2017. In 2018 the long-term cabled version deployment for year round operations.

Task 3.2 North of Svalbard towards deep Nansen Basin

IOPAN: Agnieszka B. Möller: moorings north of Svalbard with MMPs, ADCPs and TS sensors

Two moorings deployed in September 2017 north of Svalbard at 22°E (depth 890 m) and 31°E (depth 1200 m). Instruments include two Moored McLane Profilers (MMPs), TS sensors SBE37, a combination of upward-looking Nortek ADCP Signature 250 with a downward-looking long-range Nortek ADCP Signature 55 mounted together in a floatation buoy to measure ocean currents in the upper 800m, ice draft and ice velocity and once combination of Nortek ADCP Signature 250 with TRDI QM ADCP (similar up/down configuration for ocean currents and sea ice). Moorings will be recovered and redeployed in 2018 during KV Svalbard cruise. One additional mooring with temperature sensors and possibility to host BGC instruments from UiB, AWI and NIVA will be also prepared.

CNRS-LOCEAN: Marie-Noelle Houssais: ADCPs and TS sensors for the slope north of Svalbard

Two moorings including a mooring line with TS and T sensors and the bottom frame with one TRDI LR ADCP and TSDO sensor deployed at 500m depth in September 2017 north of Svalbard at 22°E. Moorings will be recovered and redeployed in 2018 during KV Svalbard cruise. An additional double mooring (mooring line and bottom frame) is also considered for deployment farther off-slope in 2018 (depending on instruments availability).

UiB-GFI: Truls Johannessen: pH and pCO₂ sensors for moorings north of Svalbard

One Nortek Signature 250 for ocean current and sea ice measurements deployed at one of A-TWAIN moorings at 31°E in September 2017. SAMI2 pCO₂ and SUNA V2 nitrate sensors will be added to INTAROS moorings to be deployed during KV Svalbard cruise in 2018. Number of sensors to be decided, targeted depths are the subsurface and AW layers.

NIVA: Luca Nizzetto: autonomous passive contaminant samplers for moorings

Plan to deploy simple passive sampler (sorbent) at the INTAROS mooring to be deployed in 2018. After recovery sample brought to the lab for analysis to get quantitative information on concentration (e.g. antibiotics or pesticides).

IMR: Angelika Renner: echosounder for biological observation

Plan to acquire one Nortek Signature 250 ADCPs in configuration with the fifth beam, which is echosounder, covering approx. 70 m. Measurements of ocean current, backscattering (zooplankton), ice draft and velocity. To be added on one of INTAROS (or A-TWAIN) moorings.

AWI: Anya Waite: underwater vision profiler, sediment trap, fluorometer and nitrate sensor for moorings

Main interest in nutrient fluxes and primary production related to the AW inflow and changes. Three sensors considered for deployment in 2018 north of Svalbard: nitrate sensor, the underwater video profiler (UVP 5HD) and fast fluorometer. UVP already acquired and being adapted for one-year deployment, cleaning the sensor is an issue.

UNIS: Frank Nilsen: bottom pressure recorders (BPR) north of Svalbard

BPR will be added to selected INTAROS moorings for deployment in 2018. The mooring anchors have to be adapted to install the instrument.

UiB-GEO: Mathilde Sørensen: ocean bottom seismometers (OBS) north of Svalbard

3 bottom seismometers to be deployed from KV Svalbard in 2018 (if tender not concluded then instruments can be rented from GEUS.) No ROV for deployment.

Task 3.3 Fram Strait

AWI: Thomas Soltwedel: autonomous arcFOCE system in Hausgarten

In 2017 system designed and in particular adapted to greater water depths (4000 m), extremely low temperatures, and autonomous operation. Main issues: energy demand, seawater acidification, sensors stability, using glass electrodes. First deployment in September/October 2018 from RV Maria S. Merian.

CNRS-UIEM: Laurent Chauvaud: acoustic observatory in Kongsfjorden

In 2017 system choice for Kongsfjorden observatory: hydrophone RTSYS (HTI-92-WB 50 Hz model), acoustics recorder RTSYS EA-SD414-320 and pressure/depth sensor/recorder (RBR Solo3 D model). Test and calibration in Brest (April 2017). Test and calibration of similar system in Young Sound (May 2017). Deployment in autonomous mode in springtime and summer 2018, and recovery in autumn 2018. Implementation site validation.

CNRS-LOV: Jean-Pierre Gattuso: carbonate chemistry measurements in Kongsfjorden

AWIPEV-CO2 first time-series of carbonate chemistry, autonomous system, water pumped from 12 m, since 2015 two pCO₂ sensors, since 2016 total alkalinity analyser. In August 2017 an underwater, high-precision pH sensor (SeaFET) with measurements every min and depth profiles twice a day, and a high-precision Durafet sensor in the Ferrybox (kept on land and measuring pumped water) added. Tasks in 2018: to fix issue of power supply of the seaFET sensor, re-install the alkalinity analyser, and evaluate consistency of measured parameters.

Task 3.4 Distributed systems for ocean and sea ice

IOPAN: Agnieszka B. Möller: ITPs in the Arctic Ocean

In 2017 evaluation of existing systems for ice-tethered platforms to measure ocean physical variables. The IAOS ice-tethered system, equipped with a profiling CTD, a surface package for atmospheric measurements (microlidar, atmospheric pressure sensor, temperature sensor) and a SIMBA instrument for sea ice measurements was selected and commissioned for deployment in 2018.

FMI: Roberta Pirazzini: SIMBA buoys in the Arctic Ocean, measurements of surface properties, near-surface radiation and turbulent fluxes

Three SIMBA buoys with new design deployed in 2017 during the CHINARE cruise in the central Arctic. Eight SIMBA buoys will be deployed from MV Xue Long during the CHINARE cruise in 2018. An autonomous ceilometer will be installed and operated during KV Svalbard cruise north of Svalbard in 2018. If possible, measurements from SOOs (broadband albedo, snow observations, broadband and spectral albedo from quadrocopter).

NIVA: Kai Sørensen: New sensors and samplers for Ferrybox systems in the Arctic

Multiwavelength spectral absorption sensor developed for absorption of DOM and other inherent optical properties, including phytoplankton taxa (to improve validation of satellite remote sensing algorithms) and 3 size-fraction microplastics sampler (50, 300, 500 μm filters; large volume throughput of $\sim 10\,000$ L/hr; quantification and characterization via IR spectroscopy). Laboratory work started in 2017 and deployment is expected in 2018.

CNRS-LOCEAN: Marie-Noelle Houssais: endurance glider lines

The first Slocum glider mission in Fram Strait achieved in July-September 2017. Standard glider payload included Seabird GCTD, oxygen optode, ECO Puck fluo Chl-a, fluo CDOM, optical backscatter. Deployed from RV Oceania, recovered by SHOM from N/O Pourquoi Pas? Glider preparation and piloting by DT INSU. In 2018 deployment of 1 or 2 gliders planned, in Fram Strait and north of Svalbard in summer. In Fram Strait to repeat the 2017 cruise track (August-September), deployment and recovery from Kongsfjorden. For north of Svalbard, deployment/recovery during the KV Svalbard cruise.

CNRS-Takuvik: Marcel Babin: BioArgo floats in the Baffin Bay Observatory.

Seven BGC-Argo floats were also deployed in Baffin Bay in July 2017. 4 BGC-Argo floats to be deployed during the Canadian scientific icebreaker Amundsen's 2018 campaign.

Task 3.5: Distributed systems for atmosphere and land

MPG Mathias Göckede: automated flask sampling system at Ambarchik site

A network of circumpolar atmospheric towers for greenhouse gas monitoring, in INTAROS activities focused on Ambarchik site on the far northeast of Siberia. In 2017 the automated flask system for GHG designed/customized and ordered at ICOS. Test runs with prototypes underway in collaboration with ICOS to

upgrade software environment. Delay in production requires re-scheduling (original installation planned for late summer 2018; now, instrument likely be completed ~Jul 2018,extensive test runs planned in Jena for 2018/19 and installation in Ambarchik in early summer 2019).

GFZ: Torsten Sachs: Aircraft campaigns for trace gas exchange

Activities based on existing data to support MPG work. GFZ will provide vertical data to MPG. Main regions of previous measurements include *Sodankyla-Pallas site*, Lena River Delta and primarily the north slope of Alaska and Mackenzie Delta. Products to be used in WP3 are gridded maps of CO₂ and CH₄ fluxes.

UNEXE: Walter Oechel: eddy-covariance towers with de-icing system and soil diffusivity system

De-icing system to reduce power consumption for remote areas and reduce data loss and to implement a diffusivity system to estimate CO₂ and CH₄ soil concentration and define the contribution of different soil layers. Three sites in Alaska, in Barrow in different vegetation regions. For de-icing of sonic anemometers the heated CSAT-3 will be acquired in 2018 and tested in field in 2019.

USFD: Donatella Zona: High-resolution temperature sensing systems

OU and USFD will deploy at the same site, a joint fieldwork coordination and campaign. Install high-resolution temperature profiles in several locations in Alaska and use these high-resolution data to define water table & thaw depth continuously, and the soil freezing. Plan to deploy the system in 2018.

MISU: Michael Tjernström: Semi-autonomous system for atmospheric observations from the icebreaker Oden

One of the main obstacles has been the uncertain future for the funding of the icebreaker Oden. Need to deal with the reduced budget (compared to the submitted proposal; note the infrastructure is not funded by INTAROS, but by the Knut & Alice Wallenberg Foundation in Sweden). The first pilot will be late summer 2018 (August/September), on the Arctic Ocean 2018 research cruise.

FMI: Roberta Pirazzini: observations at Sodankylä-Pallas site

At Sodankylä- Pallas in Northern Finland several systems for improved ground-truthing of satellite remote sensing products, including an automatic spectro-albedometer covering the full solar range (350-2500nm) at high temporal resolution, and a VNA-based radar system to monitor soil, snow and surface vegetation properties. For measurements of snow spectral albedo, a new dual-sphere spectro-albedometer was acquired in 2017 and will be tested in the lab and in the field in winter 2017/18.

UiB-GFI: Harald Sodemann: stable water isotope measurements in water vapour around Svalbard

The stable isotope measurement of water vapor system for a ship developed in 2017. Needs to build in the heated inlet system to mount the Picarro Cavity Ring-Down Spectroscopy analyser. Instrument already in place (mobile rack-mounted analyzer) but the heated inlet needs to be built. Calibration is a challenge. The system will be used during the KV Svalbard cruise in 2018.

Report on WP4

WP4 did not have a dedicated workshop-session but just face-to-face meeting with only a few involved people. WP-lead Finn Danielsen was not able to attend the GA on Wednesday, but the WP4 overview presentation was given by Lisbeth Iversen.

Report on WP5

The main items addressed at the WP5 meetings were

Single Sign-On (SSO) capacity:

- a SSO capacity is available on the Cloud Platform, to easily access all the platform's services.
- then when running processing jobs on Cloud resources, a federated Identity Provider (IDP) can be used to federate the user accounts required by some remote repositories.

Data Products licenses:

- some data products require “non-commercial use”.
- some data products require agreements between producer/distributor
- For the iAOS web portal’s “data exploitation” tasks, the user interface would ask users to read and confirm the terms of use for each data product (per session ? once for all for a user profile ?).

Tracking data products availability and usages:

- via a federated catalog (from the INTAROS Portal)
- when datasets are fetched (from Processing service API calls, from Portal data access services)

Data providers and Logos:

- iAOS will access IMR (check new logo) data via NMDC (use logo).

Catalogues and/or registries:

- Providers catalogue level (registry): information on who provides what (similar to the GEOSS Registry <http://geossregistries.info/>)
- Data collections catalogue level: machine readable information (standard protocol and encoding, standard metadata formats) on where to find data collections, based on categories/collections of data products
- Data products catalogue level: machine readable information (standard protocol and encoding, standard metadata formats) on how to actually fetch data products

Decisions

WP2 and WP5 shall define joint communication within project: iAOS has a focus on integration of remote data repositories, and not on the creation of a new data store. This shall be done along with data management & sustainability best practices for federated repositories (data remains and is curated in external infrastructure, with data owners). Task 5.3 has resources to support partners with exposing their data services (implementing standards and protocols) and join the iAOS federation.

New data shall be stored in existing data repositories. In some cases (e.g. known data processing campaigns), iAOS will store internally a copy, for performances purposes.

Need WP5 demo services as soon as possible, to be showcased to potential users, even if not final version. Follow-on meetings with WP6 to be planned for April-May.

Actions

- NERSC to consider the possible use of Ishmael tools (for Acoustic service) and contact the Ishmael team lead.
- NERSC to find some CTD dataset(s) for ARMINES to test geostatistics (kriging) for interpolated fields.
- Terradue and NERSC to study iAOS Data Catalogue and iAOS Portal solution to advertise on the iAOS Portal the data access policies of federated data providers, so that users accept the terms of use and agree to respect related data policy.

Report from WP6

WP6 is yet to start, but coordination and planning is started. The objectives and progress reported per task by WP lead in plenary GA presentation.

Time and a good meeting room were allocated for WP6 activities on the morning of Thursday Jan 11. There was no intention of a joint WP6 meeting, smaller dedicated task meetings were held. Several tasks (at least WP6.2 and 6.8; 6.3; 6.4) used this opportunity for planning and coordinating activities. Task 6.4 discussed and updated their work plan during this session. Some WP6 task leaders also have important roles in other WPs (WP1, WP3, WP4). As there are deliverables with deadlines to meet there before those of WP6 priority had in some cases to be given to other parallel meetings. Some informal WP6 task meetings were held at other times during the week.

A revised work plan for Task 6.1 had been developed before the GA. Also the data needs and variables of highest interest of Task 6.1 had been described. A joint work plan for WPs 6.2 and 6.8 had been developed by task members from IMR, AU and DTU aqua prior to the GA. The plan details activities with dates, institution responsible, data needs, and targeted deliverables. A list of potential stakeholders for these two tasks had also been prepared.

The WP5 leaders organized a workshop with WP6 on the afternoon of Thursday Jan 11. WP6 scientists got a good insight in what we can expect to get from WP5, but also that they require input from us. WP5 acts as a link between WP2 (and 3 and 4) and WP6. Sea ice statistics and acoustics (WP6.3) were used for demonstration purposes. More information on data requirements was required from other WP6 task leaders.

Report from WP7

The WP7 discussed several strategies to increase visibility of the project, increase science education in high schools, and to communicate the project results with the native communities.

Discussion on Engaging with the native community

Peter Pulsifer participated to the discussion, and presented his prospective on key things learned on working with indigenous communities and data, the importance of respect, reciprocity and responsibility, which are key to establish and maintain a good relationship between scientists and local communities. There are differences within and between regions, we need to understand the local environment. Other economic options may mitigate against participation in some projects. A critical point raise was the engagement fatigue; communities also don't have capacity to engage with lots of different groups of researchers. In recent year, given more projects have started in the arctic, many scientists want to engage the local communities, but do not know how. This takes a lot of time; building trust takes time. Scientists should not expect instant return on investment.

We discussed in practical term on how can INTAROS present itself to the local communities, what is the value proposition. To avoid overlap and duplication on topics where the local communities are already engaged, we discussed how we can build on the Fairbanks report as a starting point for identifying organisations to engage with. There is a cluster of organisations. IARPIC involves all federal agencies – so would be a good platform at which to raise INTAROS. We need more co-ordination. Hajo Eicken at University of Alaska is already involved in INTAROS - so need to look at coordinating across different networks is vital.

Another crucial point raise is the need to establish relationships before proposal submission. This was partly achieved in INTAROS. Timing of engagement with the communities is also important. Social media can be effective in certain communities, but might not work in more remote communities.

Discussion on social media

We discussed about increasing the visibility of INTAROS in the social media. Angelika suggested involving more directly active twitter users included in INTAROS in better publicizing the events related to the project, including meetings (GA?), and upcoming field campaign. Connected to this we should make sure to use the correct handles and tags, and possibly set up a blog system as well. To address this points, Eurocean will request the consortium for volunteer twitter/facebook posters. Also to search twitter for active users if no volunteers. Eurocean will put a blurb on the twitter profile about the project, and investigate the setting up of a simple blogging system that will allow easy input and connection to website.

Discussion on high school education

IGPAN mentioned that they are planning to put together educational packages by September 2020, disseminated via webinars and workshops, planned to be conducted by the end of November 2020.

One year of CISCo WebEx Tool available to Feb 2019. It is critical that some of the participants of INTAROS would deliver 30 minute live presentations to schools. These presentation will be carried out via the Edu-arctic website <https://edu-arctic.eu/>

Piotr will send Dona and Ned an email regarding the WebEx courses and a request for volunteers from the INTAROS community, so we can co-ordinate the messaging, and will set up a template for the requirements for the educational packages. A first version of an educational package by end of 2018, although final delivery is not until the end of 2019.

Participant list

Monday 08 January 1300-1800: WP2 Workshop day 1

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**Tuesday 09 January 0900-1815:
WP2 workshop day 2**

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Wednesday 10 January 0900 – 1700: General Assembly

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Thursday 11 January 0900-1200: WP3 meeting

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Thursday 11 January 1315-1500: WP1 meeting

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Thursday 11 January 0900-1200: WP6 meeting

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Thursday 11 January 1315-1630: WP5 + WP6 meeting

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