Plan for Initiation of the Operational Phase of SAON

September 23, 2010 (draft)

Executive Summary

To be prepared by co-chairs.

1. Introduction and Drivers of SAON

The Sustaining Arctic Observing Networks (SAON) process has been underway since early 2007. Its purpose is to support and strengthen the development of multinational engagement for sustained and coordinated pan-Arctic observing and data sharing systems that serve societal needs, particularly related to environmental, social, economic and cultural issues. SAON promotes the vision that users should have access to free, open and high quality data that will realize pan-Arctic and global value-added services and provide societal benefits. Its goal is to enhance Arctic-wide observing activities by facilitating partnerships and synergies among existing observing and data networks ("building blocks"), and promoting sharing and synthesis of data and information. SAON also wants to facilitate the inclusion of Arctic Indigenous peoples in observing activities, in particular by promoting community-based monitoring (CBM) efforts. SAON itself will not undertake observations, archive data, or provide funds for these efforts, which will remain the responsibility of either the ongoing networks or the organizations that support them.

The history of development of SAON parallels the development of the International Polar Year 2007-2009. The scoping document for the IPY called for a legacy of sustained Arctic observing. The Arctic Council recognized its potential role in creating this legacy and included in its Salekhard Declaration (2006) the request for Arctic states and partners to work toward such a capability, leading to creation of the SAON Initiating Group and its report. The Council reiterated its desire for an international approach to sustained Arctic observing in the Council's Tromso Declaration (2009), which established a defined SAON Steering Group to guide the effort.

The final report of the SAON IG provided the rationale for SAON: "Climate change, contamination, biodiversity loss and changes to the physical environment of the Arctic have serious impacts both inside and outside the Arctic. Trends indicate that the severity of the impacts is projected to increase in the near future. Natural capital and prospects for human development may be undermined. Arctic countries and their people are faced with new environmental, economic and societal challenges. Global activities affect the Arctic environment while changes in the Arctic environment have global consequences. Hence, the broader global community must be engaged in improved monitoring of the

43 Arctic to better understand the changes and their affects, and must address the social and human
44 dimension in Arctic observation. The need for comprehensive, sustained and interdisciplinary Arctic
45 observations and data management has been identified previously in the Arctic Climate Impact
46 Assessment (ACIA) and the report of the International Conference on Arctic Research Planning (ICARP
47 II), among others. Although the International Polar Year 2007-2008 (IPY) has provided an opportunity
48 to implement new observing activities in the Arctic, and even though there are a wide range of
49 ongoing observing programs, networks and existing observational platforms, many Arctic observing
50 activities are still fragmentary and exist in varying stages of development. From the present
51 fragmentary state, there is a need to fill spatial, temporal and disciplinary gaps in observing records,
52 to strengthen the sustainability of observing programs, and make data readily available."
53
54 More recently the State of the Arctic Conference (2010) noted the environmental drivers for an
55 observing effort in its Conference statement: "The Arctic is changing rapidly. Human activity is a
56 contributing factor to the changes that are observed across the Arctic, including increased air
57 temperatures, changing ocean circulation, rising sea level, reduced sea ice cover, and thawing
58 permafrost. These changes are affecting ecosystems, living resources, and people, including
59 those outside of the Arctic. The speed of change has surprised scientists, exemplified by
60 events such as the large sea ice retreat and record minimum in summer of 2007. Given the
61 non-linear nature of many processes that govern the physical, biological, and human systems
62 in the Arctic, further surprises are likely." The SOA Conference Statement included as one of two
63 goals: "To leverage the capacity of arctic nations, organizations, and agencies to expand support
64 and coordination for arctic science". The Statement made four recommendations, of which two
65 are: "Fully Implement a Coordinated, Multi-Disciplinary Arctic Observing System" and "(Allow)
66 Open Access to Arctic Areas and Data".

> **Comment [jac1]:** Check on final version.

67
68 Most recently, the Arctic Council held its first meeting of Deputy Ministers, who reviewed the
69 status of SAON. The report from this meeting states that "the task oriented, step wise approach was
70 applauded" and that the "SAON SG was encouraged to work towards consensus on an institutional
71 framework to present to SAOs in October 2010".
72
73 **2. Review of SAON Initiating Group Process and Report**
74
75 The Sustaining Arctic Observing Networks Initiating Group (SAON-IG) was formed in January 2007,
76 and consisted of 13 international organizations representing the Arctic Council, Arctic residents, the
77 Arctic research community and operational and funding agencies.
78
79 The SAON-IG agreed as its <u>mission</u> *to develop a set of recommendations on how to achieve long-*
80 *term Arctic-wide observing activities that provide free, open and timely access to high quality data*
81 *that will realize pan-Arctic and global added-value services and provide societal benefits.*
82
83 The first step towards achieving this mission was to solicit input from a broad community. The
84 group facilitated three international workshops and two regional meetings that were broadly attended
85 by representatives of the science community, operational agencies and indigenous peoples.
86
87 Building on the contributions from approximately 350 experts and participants at these workshops
88 and meetings, the SAON-IG developed the following Recommendations:

1: *The Arctic Council (including permanent participants and observers) should lead the facilitation of international collaboration among government agencies, researchers, and northern residents, especially indigenous peoples at the community level, to promote a sustainable pan-Arctic observing system.*

2: *The governments of the Arctic Council member states should commit to:*
- *Sustaining their current level of observing activities, and data and information services, and making every reasonable effort to increase the scope of those activities in the future;*
- *Creating a data dissemination protocol to make data and information freely, openly and easily accessible in a timely fashion at minimal costs to users, taking into account relevant national legislation, and seek to ensure that relevant national organizations adhere to similar policies.*

3: *The Arctic states are urged to increase inter-governmental cooperation in coordinating and integrating Arctic observing activities, and associated data and information management. In order to facilitate this and the efficient operation of an Arctic Observing Forum, each of the Arctic states is encouraged to create a national interagency group to coordinate and integrate their Arctic observing activities, and resulting data and information services.*
These groups shall form the basis for increased inter-governmental communication and cooperation on Arctic observing.

4: *Recognizing that the Arctic issues are of global common concern and that they are of scientific interest to all states, the Arctic Council member states are urged to welcome non-Arctic states and international organizations as partners to the inter-governmental cooperation that will be necessary to sustain and improve Arctic observing capacity, and data and information services.*
Non-Arctic states are therefore also encouraged to adopt, support and implement actions that are recommended to the Arctic states in 1-3 above.

Timeline and Actions

(i) The SAON IG Report was delivered to the Arctic Council and partners in December 2008 and was on the agenda for the Arctic Council Ministerial Meeting in April 2009. (All SAON-IG recommendations were agreed, except for establishing the Arctic Observing Forum)
(ii) AMAP, IASC and SAON-IG members to actively communicate SAON Recommendations to people and agencies in the Arctic and non-Arctic countries. (In addition to using the web site – www.arcticobserving.org – this action was followed up by presentations at numerous international meetings, such as the EU Monaco meeting, the UNESCO Monaco meeting, Arctic Parliamentarians etc.
(iii) The SAON Helsinki workshop provided guidance as to next steps and actions:
- An inventory of existing networks and programs
- Support for the development of long-term data management systems
- Encourage commitments for sustained coordination and funding of observations, and
- Establishment of an organization to continue the work of the SAON-IG

In conclusion, the SAON process initiated by the SAON-IG was very successful and paved the way for the SAON-IG successor.

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139   3. **SAON SG Priorities and Accomplishments**
140 At their meeting in Tromsø in April 2009, Arctic Council (AC) Ministers agreed:
141
142   -   That the Arctic Council should take the lead in implementing the SAON process together
143   with the International Arctic Science Committee (IASC) and the World Meteorological
144   Organization (WMO).
145   -   To establish a SAON Steering Group (SAON SG) consisting of representatives of each of
146   the 8 Arctic Council member states, AC Permanent Participants, AC Working Groups,
147   IASC and WMO, to develop an institutional framework and a work plan.
148
149 They further recommended that:
150   -   Arctic Council member states should:
151   - sustain and increase current level of observing activities and data and information
152   services,
153   - create a data dissemination protocol,
154   -   Each Arctic state should create a national inter-agency group, which should form the
155   basis for increased inter-governmental cooperation.
156   -   Each state should welcome non-Arctic states in this intergovernmental cooperation, and
157   adopt, support and implement the recommendations above.
158
159 Establishing a new SAON body (SAON SG) was a challenge as many new persons came in, and only a
160 few had a SAON background.
161 However, in June 2009 the first teleconference was held at which four priority areas were agreed:
162
163   -   Inventory of existing networks
164   -   Data access and sharing
165   -   Community-based monitoring
166   -   Multinational collaboration among funding and implementing agencies.
167
168 In addition, it was agreed that a SAON Brochure should be worked out as well as up-grading the web
169 site and moving it to become a part of the Arctic Portal.
170
171 3.1 Inventory of existing networks
172
173 The SAON IG had made a preliminary listing of international/multinational networks undertaking
174 Arctic observing. However, less was known on a national basis and with national representatives being
175 present on the SAON SG, we had a unique opportunity in finding out.
176
177 The main objective of this task was to ensure that each country knew which networks they already
178 had, and thereby prepared to discuss cross-border cooperation.
179
180 It turned out to be more demanding than initially anticipated, partly because some national

181 representatives only represented their own agency as no national inter-agency group was formed.
182 Consequently, the national representative had to collect information from other agencies without a
183 formal authority to do so.
184
185 After some guiding, support and help national inventories are available and can be accessed on the
186 web site: www.arcticobserving.org
187
188 Lessons learned:
189
190   - All countries <u>must</u> comply with the recommendation on creating a national inter-agency
191   group, or at least a similar mechanism supported at national level. Working out these
192   national reports demonstrated the need for them, and when starting on inter-
193   governmental observing cooperation even more so.
194
195   - The most useful lesson learnt was at national level discovering all their national
196   observing networks with overlaps and gaps, and consequently an interesting
197   opportunity for coordination and savings. In some countries, it started a national
198   process as various agencies got to know more about each other Arctic observing and
199   the potential for cooperation.
200
201 As mentioned, these inventories are important tools for inter-governmental cooperation, and should
202 be supplemented as non-Arctic states and international organizations/networks join the SAON.
203
204 3.2 Data access and data sharing
205
206   The SAON SG joined with the IPY Data Management Committee to conduct a data
207 management workshop in Oslo, Norway on June 7-8 prior to the start of the 2010 IPY Conference. The
208 goal of the workshop was to reach a common understanding on the goals and scope of the SAON data
209 management activities; address the question of how to ensure relevant stakeholder input; identify key
210 areas for further work; establish a work plan (including responsibilities for implementing one or more
211 demonstration projects on inter-network data collaboration, focusing on identified key issues); outline
212 the recommended approach for developing the SAON data strategy and related SAON data policy; and
213 propose concrete activities to address identified 'key issues'.
214
215 Outcomes of the Oslo workshop:
216
217 • The initial focus of the SAON data strategy should be on primary/raw observational data (as
218   opposed to summary data/data products/metadata). As well, data access should focus on the
219   scientific community (as opposed to the wider public) during the initial phase. This will enable
220   the first level of capability to be established making the next step of serving data products to
221   policy makers and other decision makers possible.
222 • When developing SAON data management activities there are four specific areas that the
223   SAON SG should focus on. These include data sharing; interoperability; preservation of data
224   through sustainable, long-term archiving that has dedicated funding; and governance.

225   • Additionally, the SAON SG should identify national points of contact for participating SAON
226   network affiliations that will be accountable for coordinating national data.
227   • Not all disciplines handle data collection, labeling, or management in the same way. Therefore
228   it is recommended that the SAON SG propose specific definitions regarding data collection,
229   labeling, and management requirements for various disciplines. These requirements should be
230   inclusive and comprehensive according to a common framework, and take into account
231   relevant existing data management procedures.
232   • The SAON SG, assisted by data management experts, should develop some form of statement
233   outlining the principles/guidelines for SAON data management. This statement could take the
234   form of a charter or something similar; SAON should not attempt to define a 'SAON data
235   policy'; presenting only a list of 'best practices' was considered too weak.
236   • The SAON data statement should support and promote the concepts of *'free, open, and timely*
237   *(i.e. shortest possible time for) access to high-quality data ….'* at the same time recognizing
238   legitimate restrictions and practicalities.
239   • SAON should acknowledge the need for sustained long-term data archives; promote efforts to
240   ensure that data are archived in these repositories. If such archives do not exist, SAON should
241   promote efforts to establish (and fund over the longer-term) such archives. Every SAON
242   network must have access to one or more long-term sustained data archive.
243   • The SAON data management strategy should acknowledge that different data types (TEK,
244   research data, operational monitoring data, etc.) require different solutions (there is no one-
245   size-fits-all data solution).
246   • SAON needs to recognize that affiliated networks/program have their own established data
247   policies that apply to providers of data and users of data. SAON should endeavor to ensure
248   that, as they are developed over time, the data policies operated by SAON partner
249   programs/networks aspire to and are compatible with the general SAON data management
250   principles as stated above.
251   • Funding for data management should be an integral part of funding for all data collection
252   activities. Funding needs to be allocated to both project/program (i.e. data collection)-related
253   expenses and long-term data archiving expenses. If necessary (to ensure open and timely
254   access to data) funding agencies should consider using holdback of funding until data have
255   been appropriately archived and are accessible.
256   • SAON should support standardization of metadata and could attempt to define its own (high-
257   level) metadata standard based on existing activities (e.g. extension of IPY activities in this
258   respect).
259   • SAON should encourage publication (of data) in open access journals.
260   • SAON could consider a data dissemination protocol based around the (Arctic) member states
261   and national SAON implementation approaches.
262   • SAON needs to conduct additional work to gain perspectives relating to data management
263   associated with social-economic sciences as these groups were under-represented at the data
264   management workshop.
265
266
267 3.3 Community-based monitoring

268
269   As requested by the SAON SG, a group was formed consisting of Arctic Council Permanent
270 Participants (PPs), CAFF and SAON representatives, which worked out a proposal on how to move
271 forward on the inclusion of local traditional knowledge (LTK) and CBM into SAON. The group proposed
272 to first conduct an inventory to evaluate current use of LTK and CBM projects. As another step a
273 workshop was recommended which would bring together experts on CBM and the use of LTK to
274 discuss experiences so far and propose next steps. The SAON CBM/LTK group got further support from
275 the project ELOKA (Exchange for Local Observations and Knowledge of the Arctic). A workshop was
276 held in Ottawa which brought together people involved in ELOKA, SAON, and other CBM/LTK projects
277 it was discussed how interested groups can work together. Representatives from ELOKA provided a
278 proposal for the SAON Agency Officials workshop in Miami, and were also part of the data
279 management workshop organized by SAON. Details on outcomes of those meetings are outlined
280 below.
281
282 Outcomes of the Miami workshop with regards to CBM/LTK:
283   • It was suggested that ELOKA should be used as an initial project that can be promoted within
284   SAON.
285   • It was determined at the SAON funding agencies meeting in Miami that in order to ensure
286   successful sharing of health data, guidelines for standards and health ethics need to be
287   developed early on. Especially health data from Arctic communities is very sensitive, and it is
288   unlikely that communities would want to make the data publicly available, unless certain
289   standards are being met.
290
291 One urgent area that needs development for supporting community-based monitoring is data
292 management. Currently, data management for CBM is done on a project by project basis, with varying
293 outcomes and products. Priority should be placed on developing a circumpolar network for
294 supporting CBM and data management services for Arctic LTK and community based observations so
295 that this information can be protected and shared within and across projects, communities, and
296 nations.
297
298   Members of the polar data management community met while in Oslo to discuss the
299 development of a metadata profile for both Arctic and Antarctic polar data. Metadata is a set of
300 information that captures the basic characteristics of a data resource. A metadata profile is a set of
301 required fields and vocabularies for a given metadata standard.   The need to consider CBM and LTK
302 requirements in such a profile was raised in the meeting. Peter Pulsifer of the ELOKA project
303 volunteered to contribute to the metadata profile working group to help identify and meet these
304 requirements.
305
306   Specific recommendations to SAON regarding CBM and LTK
307
308   • LTK and CBM need a prominent role and priority in SAON
309
310   • One priority can be the development of a strategy to strengthen and expand a comprehensive
311   CBM program
312
313 ELOKA, in consultation with the emerging circumpolar network described, should be used to take a

314 leading role in the development of this international strategy, with a focus on support services for LTK
315 and CBM projects (as the needs and goals of CBM around the Arctic vary).
316
317 3.4 Multi-national collaboration among funding and implementing agencies
318   The SAON SG organized a workshop for representatives of observing funding and implementing
319 agencies to seek their views on feasible mechanisms for harmonizing actions involving priority-setting,
320 decision-making, and implementation regarding long-term observing activities in the Arctic. The
321 participants view on priorities for SAON greatly influenced the content of this implementation plan.
322
323   In summary, the agency officials stated that SAON needs to demonstrate value added to
324 activities already underway. Key activities could focus on drawing connections between groups or
325 disciplines, promoting standardization, promoting data sharing and access, and developing
326 information products useful to end users. They also stated that there needs to be a central
327 component of SAON in some form and that governmental commitments would be required if SAON is
328 to be successful. They confirmed that within country coordination would be essential to the success
329 of SAON.
330
331   Participants suggested several possible tasks for SAON, many of which are reflected in the task
332 proposals that have been submitted to the SAON SG. It was suggested strongly that an initial set of
333 priorities be established along with an "institutional framework" for the long-term conduct of SAON.
334
335 3.5 SAON web site
336
337   The SAON SG agreed that the SAON website needed a permanent home and to be updated on
338 a regular basis. An offer from Iceland was accepted to house the SAON website as part of the Arctic
339 Portal complex, and this has worked very well. As part of the transition to an operational state,
340 additional effort will be needed to make the SAON website be a primary source of information on
341 Arctic observing and data sharing.
342
343 4. Relationship Between SAON and Other Polar Initiatives and Priorities
344
345   4.1. Arctic Council IPY Legacy Project
346
347 The Norwegian Polar Institute convened a workshop during the IPY Conference in Oslo in June,
348 2010 to gather information on priorities for inclusion in the Arctic Council's contribution to the legacy
349 of the IPY. Several of the ideas discussed fall within the scope of the operational phase of SAON. For
350 example, the Chair's Report from the Workshop on the legacy of the International Polar Year, includes
351 the following recommended follow-up actions:
352
353 • National authorities and funding agencies should be encouraged to develop and use
354   procedures which require data management and sharing.
355 • The development, support and use of the Polar Information Commons (PIC) should be
356   encouraged to be used as the mechanism for sharing of data and information from the IPY and
357   spin-off activities.

358   • Arctic collaboration on logistics, science and monitoring should be strengthened, aiming for
359   developing the Arctic Ocean as an "Ocean of Science" and the Arctic area as a whole as an
360   "Area of cooperation".

361
362   These are the recommended actions from the workshop that relate to data access and sharing,
363 and to collaboration on monitoring. Creating the operational phase of SAON would be a significant
364 step toward initiating these actions.

365
366   4.2. International Polar Decade

367
368   The World Meteorological Organization has proposed establishing the International Polar Decade
369 (IPD) to capitalize on the science, technology, and infrastructure employed during the IPY, and to
370 maintain the level of international cooperation displayed during the IPY. But the IPD would be more
371 focused on a small set of themes and projects. These projects still need to be defined, but likely
372 would be confined to those that would benefit from a decadal perspective, require international
373 cooperation, and address important societal needs.

374
375   If the IPD is established as an international activity, then the operational phase of SAON could be a
376 significant contribution by the AC and the IASC to the IPD. The countries providing support to SAON
377 likewise could count SAON as one of their contributions to the IPD.

378
379 **5. Transition of SAON to an Operational Activity**

380
381   5.1. Scope of the operational phase of SAON

382
383   The SAON Steering Group proposes that the SAON process be transitioned from a planning phase
384 to an operational phase and that SAON be recast from the "Sustaining Arctic Observing Networks
385 process" to the "Sustained Arctic Observing Networks Program". The purpose of the SAON Program
386 will be to continue to advance the SAON goal - to enhance Arctic-wide observing activities by
387 facilitating partnerships and synergies among existing "building blocks", and promoting sharing and
388 synthesis of data and information - and SAON will do so through a task-oriented approach intended to
389 produce specific improvements in Arctic observing and data sharing. In order to be clearer about the
390 scope of effort to be undertaken by SAON, the SG proposes the following "rules" for SAON tasks:

391
392   SAON <u>will not</u> undertake observations, conduct research, perform scientific analysis or
393   assessment, nor be a source of funding for these activities. SAON <u>will</u> identify issues, gaps and
394   opportunities related to Arctic observing and data sharing and take a multi-national approach
395   to demonstrate improvements to the current situation. SAON <u>will</u> work with a broadly defined
396   Arctic observing community and with national and multi-national organizations and non-
397   governmental partners to define and undertake its tasks.

398
399   Given this scope and the nature of the tasks already submitted, it seems that the immediate
400 future of SAON work will focus on metadata standards, data integration and access, decision-support
401 tools, and workshops aimed at improving the state of Arctic observing and data management. The
402 SAON SG also has agreed that SAON should focus on multinational approaches, meaning that any task
403 undertaken by SAON should involve participants from at least three countries, with both Arctic and

404   non-Arctic countries invited to participate on an equal basis as their interests and resources allow.
405
406   Recognizing that the ultimate aim of SAON is to provide societal benefits, the SAON SG developed
407   the following "logic model" to demonstrate how specific SAON tasks could lead to societal benefits.
408   Four societal benefits were chosen, one or more key need(s) identified for each, and specific
409   submitted SAON tasks aligned to show how SAON would help meet the need and produce the benefit.
410

411 1. Improve the management of Arctic natural resources
412   • Key Need: Describe the status and trends of key ecosystems and natural resources
413   • SAON Task: Demonstrate use of existing databases for development of ecosystem
414   services for decision makers (Improve integration of and access to data on key species,
415   resources, and environmental variables; examine existing CBMP data bases as a test
416   case for SAON)
417   • SAON Task: Improve GIS based mapping tools to support resource management
418 2. Sustain and enhance quality of human life in the Arctic
419   • Key Need: Describe status and trends of human health; and of social, cultural, and
420   economic conditions
421   • SAON Task: Improve integration of and access to data on human health and on social,
422   cultural, and economic variables
423 3. Enable effective societal response to a changing Arctic environment
424   • Key Need: Improve observations of the Arctic environment
425   • SAON Task: Create electronic geospatial depictions of existing observing
426   platforms and their sensors and samplers (build upon existing national
427   observing inventories)
428   • SAON Task: Promotion of CBM and access to CBM data (for example through
429   ELOKA), convene topical workshops focused onCBM and inclusion of LTK
430   • Key Need: Improve integration of and access to data bases of key climate and
431   environmental variables (SAON)
432   • SAON Task: Improve interoperability of metadata and data online archives
433   • SAON Task: Define a common polar metadata profile in association with SCADM
434   • SAON Task: Integrate and make available data describing the Arctic Ocean
435   structure during the period of the IPY
436   • SAON Task: Integrate Nordic databases on hazardous substances to enable a
437   regional perspective; seek to include data from other Arctic countries
438   • SAON Task: Demonstrate integration and visualization of data related to sea ice
439   and permafrost
440   • SAON Task: Integrate existing datasets describing the state of the Pacific sector
441   of the Arctic
442   • SAON Task: Enhance data access and data sharing capability of the web portal
443   serving the International Arctic Systems for Observing the Atmosphere
444   • SAON Task: Integrate and compare data from Arctic components of the Global
445   Atmosphere Watch sites
446   • Key Need: Improve modeling and predictive capability for natural and socioeconomic
447   systems
448   • SAON Task: Convene workshop on to agree on key social and economic variables
449   amenable to modeling and prediction

450   • SAON Task: Identification of data gaps that need to be filled
451   4. Inform SAON Partners and Stakeholders
452   • Key Need: Improve communication among data providers and data users
453   • SAON Task: Organize existing national observing inventories into a web-
454   searchable format to increase public knowledge of existing activities
455   • SAON Task: Convene Arctic Observing Summit (2 year intervals)
456   • SAON Task: Organize workshops on specific topics of interest to segments of
457   Arctic observing and user communities aimed at improving observing or data
458   handling capabilities (e.g., atmospheric chemistry and processes; polar data and
459   imformation management; polar observing technologies; classification of
460   knowledge from indigenous sources; community based monitoring;
461   strengthening existing networks; etc.
462   • Key Need: Increase use and effectivenees of electronic communication
463   • SAON Task: Enhance and maintain SAON website
464   • SAON Task: Create and maintain "active" communication tools (e.g. electronic
465   newsletter, social networking, webinars)
466
467   During spring and summer of 2010, the SAON SG called for submission of ideas for tasks that
468 SAON might undertake during the coming few years. Not surprisingly, there were a variety of tasks
469 proposed of vastly different scope and content. Now that the SG has better defined the scope of
470 SAON and stated the desire to link SAON to the four benefits described above, it will ask that task
471 proposals be updated and enhanced. To this end, the SG has agreed to the following process for
472 updating or developing new task proposals:
473
474   1. Alert Task authors of the need for more complete proposals, with outputs aligned
475   with the SAON focus areas described above (SG will define format and
476   requirements and time line)
477   2. Task authors will entrain others to help with the work, and strive to engage
478   participants from at least three countries, and will consult with potential sponsors
479   to gauge interest
480   3. The SG will determine the need for coordination among proposals and arrange for
481   joint teleconferences and email consultations
482   4. Updated or new task proposals will be included in final SAON plan for
483   implementation of operational phase
484
485   5.2. Institutional framework for the operational phase of SAON
486
487   The work of SAON must be defined, organized and managed by a small group of people who have
488 been given that responsibility. The SAON SG proposes that the Arctic Council and the International
489 Arctic Science Committee jointly establish the SAON Program Board, and give it the responsibility for
490 defining and directing the SAON Program, under Terms of Reference and Rules of Procedure to be
491 prepared by the Board, with the Arctic Council having a greater policy oversight and the IASC having a
492 greater scientific oversight of the Board. The SAON Program Board would be co-chaired by a
493 representative each from the AC and from the IASC. The Board would be composed of one
494 representative from each participating country, one representative from each participating AC
495 Working Group, representatives from the AC Permanent Participants, and one representative from the

496   IASC.
497
498   All Arctic Council Member States, all Arctic Council Observer States (formal and ad hoc) and all
499   IASC Member States are invited to have a member on the SAON Program Board, <u>if that country desires</u>
500   <u>to take an active role in SAON</u>. This inclusiveness reflects the Arctic Council's statements that both
501   Arctic and Non-arctic States are encouraged to contribute to sustained observations of the Arctic.
502

Proposed SAON Structure
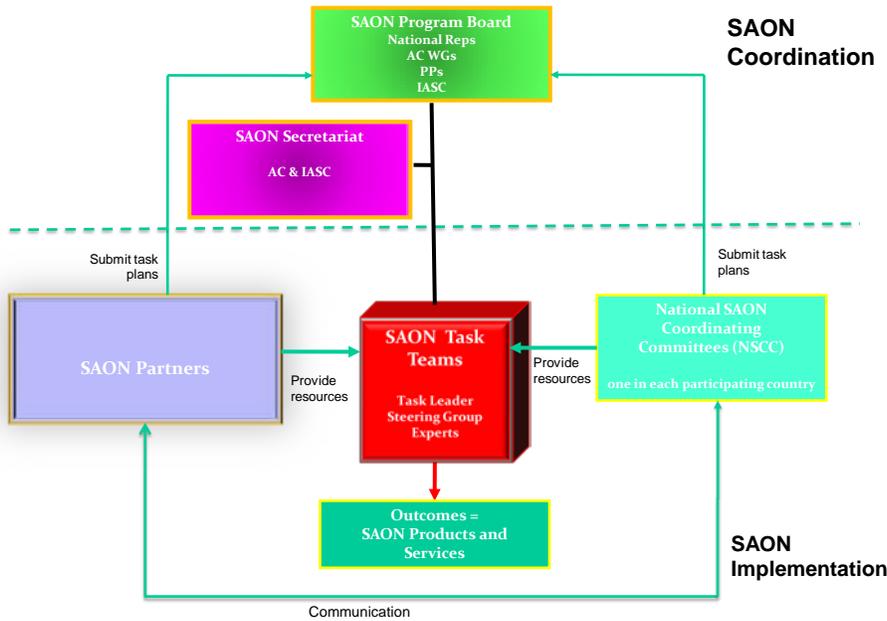
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506   Figure 1: Proposed structure of the SAON Program. Key elements include: establishment of the SAON
507   Program Board by the AC and the IASC, supported by the SAON Secretariat; establishment of a SAON
508   coordinating function within each participating
509   country that would send a representative to the Board
510   and communicate national priorities and interests; and
511   creation of a number of "task teams" to implement
512   agreed tasks, with both governmental and many other
513   types of organizations involved in tasks.
514
515   The important work of SAON is conducted by
516   the various Task Teams. There will be a self-forming
517   team for each Task, with membership from the

Potential Partner Organizations

√Observing Networks (SAON
        "Building Blocks")
√IASC Working Groups
√International Arctic Science
        Organizations (CliC, IASSA, etc)
√International Global Science
        Organizations (WMO, IOC,
UNEP, GEO, etc)
√Private Industry
√Non-profit organizations
√Sub-national governments

518 participating countries, AC organizations, IASC, and other partners. The Task Team members will be
519 responsible for providing the resources to complete the Task. The criterion for membership on a Task
520 Team is that the country or organization contributes to the completion of the Task.
521
522   The National SAON Coordinating Committees (NSCC) (or whatever name is preferred in each
523 country) are also critical to the success of SAON. These committees will be the means for determining
524 national priorities for SAON and for identifying resources for implementation of Tasks. Each
525 committee will send a spokesperson to serve on the SAON Board.
526
527   The SAON Board is the international coordinating body for SAON. The Board would be
528 composed of representatives of countries (Arctic and non-Arctic on an equal basis), AC organizations,
529 and IASC Council. The criterion for membership is that the country or organization should be actively
530 involved in the work of SAON. Both the AC and the IASC will nominate a Co-Chair to the Board, in
531 addition to their other representatives.
532
533   5.3. Process for definition and implementation of SAON Tasks
534
535   The SAON SG, starting in spring 2010, solicited ideas for SAON tasks from members of the SG and
536 from a small number of existing observing networks and a variety of ideas were submitted. Most of
537 these tasks are used as examples of SAON Tasks in a previous section of this report, and all are
538 summarized in an appendix. The SG has already committed to including a full description of high
539 priority tasks in the final version of this plan. To prepare these descriptions, the SG will inform authors
540 of the existing task statements of the need for more complete proposals to include budgets and
541 expected outcomes. The authors will be encouraged to entrain others to broaden the participation in
542 each task, and to consult with potential sponsors to gauge interest in supporting the work. The SG will
543 determine the need for coordination among proposed tasks and initiate coordination activities as
544 needed. The SG also will continue to work within their country or community to attract additional
545 task ideas.
546
547   Following review (and hopefully approval) of this plan by the IASC in March 2011 and by the AC in
548 May 2011, tasks will be initiated as resources permit. The SAON Board will prepare progress reports
549 for IASC and AC review on a periodic basis or as requested.
550
551   As work progresses, it is likely that members of the SAON Board, the national coordinating bodies,
552 and the many SAON partners will develop ideas for additional tasks for SAON. The SG proposes that
553 an "Arctic Observing Summit" be held every two or so years as a primary means of gathering new
554 insight from the broad community on future priorities for SAON. The working groups of the AC and
555 the IASC also will be a source of recommendations for SAON. The Board will form Task Teams for
556 those new ideas that appear to have broad interest and potential for support.
557
558 **Appendices**
559
560   1. Compendium of submitted tasks
561   2. Report from Agency Officials Workshop
562   3. Report from Data Management Workshop
563   4. Status Report on Inclusion of Community-Based Monitoring in SAON

564