Report of the Joint Advisory Group on Data Management (JAGDM) meeting

20-21 May 2015
Halifax, Nova Scotia, Canada

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1. Opening of the meeting

The interim Chair, Ellen Fasmer (Norway), opened the meeting at 09:00 hrs on Wednesday, 20 May 2015 at the NAFO Secretariat Headquarters in Dartmouth, Canada. Participants were welcomed from Canada, Denmark (in respect of the Faroe Islands and Greenland), the European Union, Iceland, Norway, and Russian Federation (Annex 1). The Executive Secretary of NAFO (Fred Kingston) welcomed everyone to the NAFO Headquarters and the Chair encouraged open discussion throughout the meeting.

2. Appointment of rapporteur

The NAFO Secretariat (Jana Aker) was appointed rapporteur.

3. Discussion and adoption of the Agenda

The *adopted* agenda is presented in Annex 2. The EU noted that many of the documents for the meeting were submitted very late allowing insufficient time to adequately review them prior to the meeting. The Chair thanked the EU for their comments and noted that the group should work toward earlier submission of documents prior to the meetings.

4. Election of Chair and Vice-Chair

Brent Napier (Canada) was elected as Chair for a two-year term.

The interim Chair, Ellen Fasmer (Norway) was nominated and elected as Vice-Chair of JAGDM for a two-year term.

Hereinafter, any reference to the Chair in this report is understood to mean Brent Napier.

5. Data Exchange Statistics

a) NAFO

The NAFO Secretariat presented JAGDM 2015-01-22, which included two summary tables of the messages received by the NAFO Secretariat from flag States for 2014 and a summary of the number of messages stored per year since 2001.

Participants reviewed the tables and noted some discrepancies in the summarized data, including an uneven number of COE/COX and ENT/EXI messages for flag States, and a significantly higher number of CAT messages from certain flag States versus others. The Secretariat noted that the data might not be 100% accurate because it was compiled quickly, however, the high number of CAT messages for some flag States is consistent with the fishing activity of those flag States.

b) NEAFC

The NEAFC Secretariat presented JAGDM 2015-01-12, which included summary tables of the messages accepted by the NEAFC VMS database. Contracting parties noted similar discrepancies to those that were pointed out in the NAFO document.

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The Chair encouraged the Contracting Parties to take both the NEAFC and NAFO summary documents back for review and to discuss the submission of the reports and quality control of the submission with the relevant Fisheries Monitoring Centres (FMCs).

It was **agreed** that:

- **Contracting Parties would investigate the discrepancies for their flag States reporting in both the NAFO and NEAFC Regulatory Areas to determine if they are caused by a compliance issue or a technical issue.**

6. NAFO Issues

a) Technical implications of the implementation of recommendations

i) In the 2015 NAFO CEM, new data element Targeted species and Area (TA) was introduced in the Authorization report (AUT), replacing the data element Directed Species (DS).

The Chair referred to JAGDM 2015-01-20 point 2 and opened the discussion regarding the changing of the DS field to the TA field in the AUT messages (JAGDM 2015-01-03). It was noted that the content of the field described in Article 25.5 [a] has not changed from the 2014 version therefore changing the field code should not create extended reporting obligations for Contracting Parties. The format given for TA only gives the Contracting Parties the possibility to know how to report authorization of their **directed** fisheries as already asked for in Article 25.5 [a]. The group was strongly against the creation of new 3-alpha codes as proposed as a way to work around the issue. Authorisation of species for which directed fishery is allowed should be done with FAO 3-alpha codes. The NAFO Secretariat noted that there are issues with the error messages in the database and it is something that the NAFO Secretariat is working to resolve with the service provider.

Discussions continued on JAGDM 2015-01-20 point 1 in regard to the haul by haul submissions. The NAFO Secretariat highlighted some technical challenges with the submissions and noted continuing work with the EU to receive its XML submissions, and with other submissions being received in Excel format. The NAFO Secretariat noted that they are working on getting the formats standardized (in terms of the fields included in the submissions), as they are currently coming in in several different formats which is creating some issues with managing the information. It was noted that it would be desirable to standardize the format and content requirements across RFMOs.

It was **agreed** that:

- **The NAFO Secretariat will continue working with the service provider to resolve the error issue with the TA field.**

- **JAGDM will recommend to STACTIC that XML and Excel submissions are the best format for receiving haul by haul data within NAFO system, but that STACTIC is the appropriate body to provide guidance on what fields should be included in a standardized submission template.**

b) Issues raised by STACTIC

i) Data Sharing Between NAFO and NEAFC

The Chair presented the document JAGDM 2015-01-04 to the group, which included a proposal for JAGDM to review the concept of automated data sharing between NEAFC and NAFO. One of the main objectives of data sharing would be to compare the COE/COX messages that are submitted by vessels moving between the NEAFC and NAFO Regulatory Areas (JAGDM 2015-01-13). It was noted that, before data sharing can occur between the two organizations, the protocols for data collection would have to be aligned. Others noted that alternatively, instead of aligning the protocols, the differences could be taken into account when using the

data. A prime example of this is the difference in reporting requirements within the two organizations related to the COX report. In NAFO COX reports, there is a catch on board (OB) field that requires the vessel to report all catch on board the vessel, while in NEAFC there is only a requirement to report the latest catch (net change) since the last report in the COX report.

There was a discussion of possible technical solutions for data sharing. The idea of a future shared database was mentioned. The NEAFC Secretariat noted that a formal measure agreed by the NEAFC Commission would be required prior to sharing data with any other organisation. It was noted that there may also be other confidentiality issues.

The Chair suggested that Contracting Parties review the management measures for both organizations to determine any potential confidentiality issues. The Chair also suggested that a tiered approach may be the best option for advancing data sharing between the organizations and could start with the addition of an OB field to the NEAFC COX reports, followed by a pilot to share the COE/COX reports between the organizations, and eventually working toward a shared database, but with data quality always being an important component. However, there was no consensus reached on this item and future deliberation on this issue will be required.

ii) JAGDM is asked to look at the Annexes of the NCEM and make some clarifications

The Chair presented the document JAGDM 2015-01-05 and opened the discussion. Norway provided background on the document and noted further clarification is needed on some of the data elements presented in the Annexes of the NAFO CEM, noting that the explanation for some fields are on a separate page and some field descriptions are inconsistent across report types. Participants agreed that for both NEAFC and NAFO, further explanation of the data elements is required on the pages that they are found, and that including examples would increase the clarity of the information that needs to be included in the reports.

It was **agreed** that:

- **Canada and Norway will work collaboratively to develop a proposal with a sampling of some of the suggested changes, and examples for circulation between JAGDM. Contracting Parties are encouraged to submit suggestions to Norway and Canada to assist with this process. This will not be a comprehensive revision, but examples of the types of changes that are necessary, and then JAGDM will provide the examples to the NEAFC and NAFO Secretariats 60 days prior to the respective annual meetings for review.**

iii) Any new issues raised at May 2015 STACTIC meeting

The Chair provided background on the discussion that was had at the 2015 STACTIC Intersessional meeting, as outlined in the third point found in JAGDM 2015-01-13. The NEAFC Secretariat explained that its PSC-1 and PSC-2 forms are filled out online and that the PSC-3 forms are submitted as scanned PDFs. The NAFO Secretariat explained that it is working on a similar platform for submitting PSC forms. The platform is available for the electronic submission of the PSC-1 and PSC-2 forms and the user login acting as the electronic signature for submissions has been accepted in principle by Contracting Parties, however further testing is encouraged.

It was noted that further testing and discussions with Contracting Parties are still required to complete the electronic submission of NAFO PSC-3 forms, as a user login may not be a sufficient substitute for physical signatures on these forms. The NEAFC Secretariat believes it will be difficult to provide for online submission of PSC-3 forms without updating the Scheme to describe conditions for the submission of these forms (for such cases as part-completion, time-frame for completion or agreeing changes between parties) and so have not started to develop an electronic PSC-3 form. These forms are different from PSC-1 and PSC-2 as they require multiple signatures.

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The Chair was encouraged to learn that the NAFO Secretariat was working on a system for the electronic submission of PSC-1 and PSC-2 forms and encouraged the NAFO Secretariat to communicate with the NEAFC Secretariat on the lessons learned from the implementation of its system.

c) Recommendations for adopting an ISMS for NAFO

i) JAGDM is asked to offer guidance and comments on report from recent IT security audit

The NAFO Secretariat recalled that at the 2014 NAFO Annual Meeting STACTIC had agreed that the NAFO Secretariat "*consider an external audit of NAFO's current IT system*". STACTIC also requested "*the assistance of JAGDM to determine guidelines for any ISMS*". On this basis, NAFO's current IT system was audited in 2015 by Deloitte. The Audit Report and Recommendations were finalized in April 2015 (JAGDM 2015-01-19). The NAFO Secretariat then prepared a Working Paper with a table of each of the Recommendations that were made in the Audit Report, along with a check list of which group the Secretariat considered to be the most appropriate body to address each of these Recommendations (JAGDM 2015-01-18). This Working Paper was presented at the 2015 STACTIC Intersessional meeting, but a decision to move forward on the basis of this Working Paper was deferred so that Contracting Parties could have more time for review. However, the NAFO Secretariat considered that it would be useful if JAGDM could also consider the Audit Report's Recommendations.

The Chair suggested that the group consider JAGDM 2015-01-18 by-addressing the Recommendations line by line and providing preliminary comments on each Recommendation to assist the NAFO Secretariat in moving forward. The Chair also noted that a questionnaire to Contracting Parties might be a good way to move forward, but there would need to be some thought put into the content of the questionnaire to take into account NEAFC's experiences with the process. Iceland suggested that the NAFO Secretariat follow ISO Standards, particularly ISO-27000, as a model for addressing a number of the Recommendations. The specific comments made on the Recommendations are in Annex 3. The NAFO Executive Secretary thanked the participants for their input.

It was **agreed** that:

- **JAGDM recommend that STACTIC should revisit the rules of confidentiality (Annex II.B) in the NAFO CEM to see if it is still pertinent, and evaluate what other elements should to be included (in relation to recommendation 1.21/2.2 of Annex 3).**

7. NEAFC issues

a) Technical implications of the implementation of recommendation

i) Scheme of Control and enforcement January to June 30

The NEAFC Secretariat noted that this is the first time that NEAFC will have two versions of the Scheme in one year, and this has been done in order to align with the FAO *Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing*.

ii) Scheme of Control and enforcement July to December 31

The NEAFC Secretariat presented the document JAGDM 2015-01-09, which outlines the decision by PECCOE to give the NEAFC Secretariat the ability and authority to develop the PSC application in a practical and functional manner, with the ability to occasionally add options to the system without requiring formal approval from PECCOE and the Commission in advance of adoption. The role of JAGDM would be to monitor any changes made in such a manner and advise PECCOE or the Commission on updates to the Scheme or Management Measures accordingly.

The NEAFC Secretariat presented JAGDM 2015-01-08, which outlined a request from PECCOE to replace the existing Annex V species list with a reference to the full FAO 3-alpha code list (12,600 entries on the full list and 80 on the species list). The NEAFC Secretariat noted that one downfall of replacing the list would be that it would provide the opportunity to report a species that could not possibly be caught in the NEAFC Convention Area. It was noted that it is best to use standards where they are available, but that some historical data may need translation where new codes have been adopted.

It was **agreed** that:

- **JAGDM recommend to PECCOE that the best way forward would be to build upon Annex V, with the FAO 3-alpha codes where necessary, allowing the Secretariats to build on the list as needed by adding 3-alpha codes from the full FAO list.**

- **The NEAFC and NAFO Secretariats investigate the need for harmonization of species lists between the two organizations.**

The NEAFC Secretariat presented JAGDM 2015-01-15, which outlined the packaging codes used in the NEAFC Port State measures and requested advice on some of the code definitions. The NEAFC Secretariat noted that there may be a need for a new code for "tank", but that it might get covered under "bulk" and that this is being implemented on 01 July 2015, so advice prior to then would be ideal.

It was **agreed** that:

- **Contracting Parties would review their domestic packaging codes to determine if more codes are needed in the NEAFC list.**

- **Moving forward, NEAFC work with the list they have by 01 July 2015 and the list can be reviewed at a later date to determine if it is sufficient.**

The NEAFC Secretariat presented JAGDM 2015-01-21 regarding the EPSC testing with the Russian Federation. The system has been tested and there was a question regarding the transhipment location on the PSC-2 forms, and if multiple transhipments occur in one day, or the same catch is transhipped multiple times, which location to include. The group agreed that all transhipment locations should be recorded and that NEAFC would need to develop a method within the system to capture the information so that a catch can be traced back to the original fishing vessel; however the issue of whether to record all transhipment locations is more of an enforcement issue than a technical one and JAGDM may not be the appropriate body to address it.

It was **agreed** that:

- **JAGDM recommend to PECCOE that all transhipment locations should be recorded and that NEAFC would need to develop a method within the system to capture the information so that a catch can be traced back to the original fishing vessel.**

iii) Implementation of objections to recommendations

The NEAFC Secretariat reported that there have been only two objections, 1) the objection by the EU on daily catch reporting, and 2) the objection by the Russian Federation to the redfish measures.

b) Issues raised by PECCOE

i) ERS questionnaire results

The NEAFC Secretariat presented JAGDM 2015-01-10, which included the results of the ERS questionnaire. Participants noted that the questionnaire was very useful and it was useful to have this information.

ii) ISL proposal on IMO Numbering

The Chair opened up discussions on document JAGDM 2015-01-11 and DFG provided a summary of the document. There was agreement within the group to include the IMO numbers for eligible vessels. The NAFO Secretariat explained that they have made IMO numbers mandatory for eligible vessels, but gave until 01 January 2016 to provide sufficient time for those vessels that currently do not have an IMO number to obtain one. The Chair noted that NEAFC could possibly follow NAFO and allow a period of time (possibly 2 years) before making IMO numbers mandatory. Norway noted that if the IMO number becomes mandatory in all NEAFC messaging, then there would need to be some additional consideration given to transhipment messages, which contain the details of two vessels.

For the TRA report it was suggested two separate NAF codes for IMO numbers, one for the vessel sending the report (IM as in all other reports) and one new field code for the IMO number of either the donor vessel or the receiving vessel. Only one code is needed for these two since there will never be more than one vessel and the Transfer to field code TT or the Transfer from field code TF will show if it is a receiver or a donor.

It was **agreed** that:

- **Norway would provide text to Iceland to add to the proposal (JAGDM 2015-01-11) to make a revision 1 of the document. This new version has to be uploaded to the JAGDM web page and forwarded to PECCOE by JAGDM.**

c) NEAFC Information Security Management System (ISMS)

i) Upgrade to ISO 27001:2013 version (ISMS article 4, last paragraph)

At the last meeting of JAGDM, it was requested that Iceland and the NEAFC Secretariat provide information about the upgrade to the ISO 27001:2013 standards. Iceland shared their experiences with using the new standards and showed some specific examples from the standards on screen. It was noted that while the group saw the updated standards, there was no comparison of the differences between the old version and the new one.

It was **agreed** that:

- **The NEAFC Secretariat would endeavour to complete a review of the changes between the old (ISO 27001:2005) and new (ISO 27001:2013) ISO standards in advance of the next JAGDM meeting.**

ii) The work of the Security systems administrators

The NEAFC Secretariat presented JAGDM 2015-01-07 and explained that the document was originally written for PECCOE to explain the ISMS, which is based on the ISO 270001 standard. There was no further discussion on this item.

iii) Information Security Incident Management (ISMS Article 13)

The NEAFC Secretariat presented JAGDM 2015-01-06 and noted that this is a first attempt at defining a 'security incident'. There was discussion on the definition of 'incident' versus 'event'. The Chair noted that these definitions are a critical starting point for all other mitigation strategies and that the definitions should

be as robust and clear as possible. The NEAFC Secretariat provided updated changes to the definitions based on the discussions, but it was felt it required more reflection.

It was **agreed** that:

- **JAGDM Representatives will review the document (JAGDM 2015-01-06 Revised) and provide comments on the nuances of the definitions and provide some specific examples for events within 3-4 weeks.**

iv) Risk management (ISMS Article 3) status of the work

The NEAFC Secretariat reported that they have yet to make progress on the business case risk assessment of their data, and may require guidance on what the practical risks and consequences might be before they are able to move forward. The NEAFC Secretariat has a plan to move forward by the end of this year to assess some of the practical consequences of a breach of their data, but will not be undertaking their own technical risk assessment.

v) Annual Review of the NEAFC Inventory (ISMS Article 7.1)

The NEAFC Secretariat presented JAGDM 2015-01-14 and noted that under their ISMS, they are required to provide an update to JAGDM on an annual basis. The NEAFC Secretariat noted that though the ISMS was a long process to implement, now that it is in place it is really useful.

d) Status of other NEAFC projects

i) Vessel Transmitted Information (Vti) pilot project

The NEAFC Secretariat presented JAGDM 2015-01-17 while simultaneously walking participants through live examples of how the system works. The NEAFC Secretariat explained that this system will allow the FMCs to have access to the database, but data that isn't specific to their Contracting Party will be hidden. This will allow the FMCs to review their submissions and see if there were any rejected reports, and if so make the appropriate corrections and resubmit. The system maintains a record of all messages submitted or cancelled.

ii) Flux Transport Layer Testing

The NEAFC Secretariat noted that they are still trying to set up the connection with the Directorate-General for Maritime Affairs and Fisheries (DG MARE). The EU provided an explanation of the Flux Transportation Layer. The Chair thanked the EU for their explanation.

8. Management of the North Atlantic Format (NAF)

a) Issue raised by NAF users

There was nothing discussed under this Agenda Item.

9. Management of the websites

a) NAFO and NEAFC – How to present JAGDM documents to users other than JAGDM participants

The discussion revolved around access to JAGDM documents on the websites, and whether or not STACTIC and PECCOE members should have access. The Chair noted that it is best to remain transparent and that JAGDM should have a presence on both the NEAFC and NAFO websites. Participants agreed, but noted that if the documents are made available, they should have disclaimers on their use so that discussions at the meetings are not taken out of context. Under the Terms of Reference for JAGDM, there are 8 functions defined,

and those should be made clear. The Chair encouraged participants to further reflect on where and how JAGDM should have a presence within the websites of NAFO and NEAFC.

It was **agreed** that:

- **JAGDM Representatives will reflect on where and how JAGDM should have a presence within the websites of NAFO and NEAFC.**

b) JAGDM

Contracting Parties noted that there is no automatic logout feature on the JAGDM website and that one should be established. Discussions were had regarding document availability, e.g. STACTIC working papers being available to JAGDM participants. The NAFO Secretariat noted that any pertinent documents to the JAGDM meetings are made into JAGDM documents, and any other relevant documents would be printed and made available at the meeting. The Chair suggested that a way forward might be to make all relevant documents available on the JAGDM website prior to the meeting, and following the meeting only keep the JAGDM documents on the website. The Chair encouraged Contracting Parties to consider other ways of moving forward. The NAFO Executive Secretary noted that NAFO is planning on updating the website in the next few years and welcomed suggestions.

It was **agreed** that:

- **The NEAFC Secretariat will add an automatic log out feature on the JAGDM website that would be initiated if users are idle for an extended period of time.**

- **Any relevant PECCOE or STACTIC Working Papers required for JAGDM deliberations will be made available on the website prior to meetings.**

c) NAF

The Chair noted that it had been recently posted that no changes be considered. Norway noted that the website states that is does not contain all of the possible codes, NAFO and NEAFC have new two letter codes and the website should be updated.

It was **agreed** that:

- **Contracting Parties will submit their active NAF codes to the NAFO Secretariat, who will update the website as necessary.**

10. Any other business

a) Official Certificates – Signature algorithm and RSA key strength

Norway provided JAGDM 2015-01-16 as a reference for the group and noted there have been problems with the implementation of the official certificate signature algorithm (SHA256) in 2013, and that they have created a "work around" as a short term solution, but it is still used. The NAFO Secretariat noted that they had a similar issue. Norway asked that the meeting participants review the links that are in the document, and that they please inform their Contracting Parties about the fact that Norway will remove the "work around" in the near future.

b) JAGDM Logo Proposal

The NAFO Secretariat had drafted two possible logo designs for review. Participants made several comments on the possible designs.

It was **agreed** that:

- **The NAFO Secretariat would take all of the comments into account and develop further design proposals for the JAGDM participants to review.**

11. Report to the Annual Meetings

The Chair noted the draft report will be distributed to participants for review before it is finalized. The final report will also be presented at both the NEAFC and NAFO Annual meetings.

12. Date and place of the next meeting

The location of the next JAGDM meeting was tentatively set for the NEAFC Secretariat Headquarters in London, England. The time of the next meeting was tentatively set to follow the next STACTIC and PECCOE meetings, potential the early spring of 2016. It was noted that potential agenda items coming out of STACTIC and PECCOE be discussed between NEAFC, NAFO and the Chair shortly following those meetings. It was also noted that the timing of this meeting, occurring shortly after both the STACTIC and PECCOE meetings, created problems with the size and number of revisions to the agenda and contributed to the late availability of some of the documents.

13. Closure of the meeting

The meeting was adjourned at 14:50 hrs on 21 May 2015. The Chair thanked the NAFO Secretariat for hosting the meeting and the meeting participants for a productive meeting.

Annex 1. Participant List

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Annex 2. Agenda

1. Opening of the meeting
2. Appointment of the rapporteur
3. Discussion and adoption of the Agenda
4. Election of the Chair and Vice-Chair
5. Data Exchange statistics
   a. NAFO
   b. NEAFC
6. NAFO issues
   a. Technical implications of the implementation of recommendations
      i. In the 2015 NAFO CEM, new data element *Targeted species and Area* (TA) was introduced in the Authorization report (AUT), replacing the data element *Directed Species (DS)*
   b. Issues raised by STACTIC
      i. Data Sharing Between NAFO and NEAFC
      ii. JAGDM is asked to look at the Annexes of the NCEM and make some clarifications
      iii. Any new issues raised at May 2015 STACTIC meeting
   c. Recommendations for adopting an ISMS for NAFO
      i. JAGDM is asked to offer guidance and comments on report from recent IT security audit
7. NEAFC issues
   a. Technical implications of the implementation of recommendation
      i. Scheme of Control and enforcement January to June 30
      ii. Scheme of Control and enforcement July to December 31
      iii. Implementation of objections to recommendations
   b. Issues raised by PECCOE
      i. ERS questionnaire results
      ii. ISL proposal on IMO numbering
   c. NEAFC Information Security Management System (ISMS)
      i. Upgrade to ISO 27001:2013 version (ISMS article 4 last paragraph)
      ii. The work of the Security systems administrators
      iii. Information Security Incident Management (ISMS article 13)
      iv. Risk management (ISMS article 3) status of the work
      v. Annual Review of the NEAFC Inventory (ISMS article 7.1)
   d. Status of other NEAFC projects
      i. Vessel Transmitted Information (Vti) pilot project
      ii. Flux Transport Layer Testing
8. Management of the North Atlantic Format
   a. Issues raised by NAF users
9. Management of the websites
   a. NAFO and NEAFC – How to present JAGDM documents to users other than JAGDM participants
   b. JAGDM
   c. NAF
10. Any other business
    a. Official Certificates – Signature algorithm and RSA key strength
    b. JAGDM Logo Proposal
11. Report to the Annual Meetings
12. Date and place of the next meeting
13. Closure of the meeting

Annex 3. NAFO IT Security Audit Recommendations

The Recommendations resulting from the NAFO IT Infrastructure Security Assessment conducted by Deloitte. The comments provided by the JAGDM participants are noted below the recommendation in green text. Any specific recommendations noted during the discussion are also included in the body of the report.

Ref #	Recommendation	STACTIC	Secretariat	Sect. & Host Country
1.1	Member countries should establish a period of time that is a tolerable period for NAFO to recover systems and data, and return to normal operations. Depending on that tolerance, the appropriate infrastructure should be established to allow NAFO to recover from a disaster in an acceptable time-frame. • The NAFO Secretariat highlighted the importance of this Recommendation and needed input from Contracting Parties on an acceptable time-frame. It was noted that this would be a good item to include in a questionnaire with some options for timeframes, but that some work, such as data classification and potential costs, would need to be done prior to sending the questionnaire.	✓		
1.2	NAFO should establish an Acceptable Use Policy, which should be updated annually, after which all employees are required to sign. • The NAFO Secretariat noted that this can be handled internally, and participants noted that the NAFO Secretariat should look to the ISO Standards and ISMS Controls as guidelines when developing the Acceptable Use Policy. The NEAFC Secretariat asked to see the Policy once it was developed.		✓	
1.3	NAFO should consider expressing to VISMA the need to perform a background check on individuals prior to hiring. • The NAFO Secretariat noted that this has already been completed.		✓	
1.4	All portable devices, including laptops, should encrypt data for storage. • The NAFO Secretariat noted that this is not currently done, and first they would have to write a policy on device encryption, and then implement the policy. The Chair noted that there is a lot of information sharing done at international meetings and an encryption policy would be useful.		✓	
1.5	Although the risk of loss or theft is inherent with the use of portable devices, policies should be developed to explicitly state the precautions that individuals are expected to follow. This could be incorporated in an Acceptable Use Policy. • The NAFO Secretariat noted that they would need to develop the policy.		✓	
1.6	NAFO should develop a BYOD (bring your own device) policy to address if, how and when it is acceptable to access any corporate information assets using personal devices. • The NAFO Secretariat noted that they would need to develop the policy.		✓	
1.7 / 1.13/	NAFO should consider implementing a Security Information and Event Monitoring (SIEM) system that would either prevent, or detect		✓	

Ref #	Recommendation	STACTIC	Secretariat	Sect. & Host Country
1.15 / 1.22	and warn of the presence of installed malware. • The NAFO Secretariat noted that they did not think this was needed, and that it would be very expensive to implement and may require training. The Chair noted that it would be good to provide Contracting Parties with the potential costs for reference.			
1.8 / 2.9	Maintain NAFO servers in a room with a door made from materials difficult to breach, such as metal. The door lock should be set up so that it is always locked from the outside and it should have a mechanism that forces the door closed. • The NAFO Secretariat noted that this is dealing with physical security of the in-house server. The NAFO Executive Secretary noted that they have been working with the Host Country on some possible short and long-term solutions. The Chair suggested that the NAFO Secretariat look into alternatives and the costs associated, such as the possibility of outsourcing the server.			✓
1.9 / 2.12	NAFO should consider encryption of backup media, as well as any portable storage media used. In addition, the weekly backup tape should be kept in a more secure location, such as the safe deposit box. Another alternative may be to make arrangements with an appropriate Canadian member country entity to use one of its secure locations that it uses for a similar purpose.		✓	
1.10	NAFO should validate with the Government of Canada that the cleaners assigned to NAFO offices have had background checks performed. NAFO should consider requesting that cleaners wear identification issued by the Government of Canada. • The NAFO Secretariat explained that this was out of their control because the Host Country is responsible for staffing the cleaners. However, the Secretariat understands that the cleaners are security-checked by Canada.			✓
1.11 / 2.7	Best practice for password change is every 90 days, at a minimum. • The NAFO Secretariat explained that the current practice is to change passwords on an annual basis. The group noted that it was important to identify which information is more sensitive and would require a more frequent password change.		✓	
1.12	A tool that implements data loss prevention could be considered as a means to ensure that even authorized users of data assets are performing only authorized actions with such assets. • The NAFO Secretariat noted that this recommendation might not be practical.		✓	
1.14	NAFO should conduct an impact assessment that includes all critical system components. This may be an initial step in the development of a full Business Continuity Plan, but as a stand-alone exercise should result in the identification of any requirements for redundant components. • The NAFO Secretariat noted that this is an important recommendation, however they are unsure of the costs and resources that would be needed to complete the assessment.		✓	
1.16	NAFO should consider performing a background check on individuals prior to hiring.		✓	

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	• The NAFO Secretariat noted that this could easily be implemented and they are looking into it.			
1.17	NAFO should consider the use of dual firewalls to create a DMZ for internet traffic visiting NAFO hosted web sites. • The NAFO Secretariat noted discussions on this recommendation might be better suited for STACTIC.		✓	
1.18	Member countries should advise NAFO on whether the potential for disclosure of email to the US Department of Homeland Security is an issue. If so, NAFO should identify an acceptable alternative.	✓		
1.19	Logical access to any mechanism that identifies an individual for the purpose of acting on behalf of NAFO should be controlled in a manner that restricts access to only those authorized to have such access and prevents all other access.		✓	
1.20	A policy and procedure should be developed to provide the appropriate direction, guidance and expectations for the management and resolution of information security incidents. Timely resolution is essential to minimize exposure. • The NAFO Secretariat noted that a policy would need to be developed.		✓	
1.21 / 2.2	Member countries should agree on a process that ensures access requirements are appropriate. • The NAFO Secretariat noted that they would have to classify the data prior to determining access rights, and this needs to be done in conjunction with Contracting Parties, possibly including the questionnaire approach. It was noted that in the NAFO CEM, some of the information has a classification associated with it, and that it would be a good starting point to look at the classification levels within the NAFO CEM. • STACTIC to revisit the confidentiality in the annexes of the NAFO CEM to see if it is still pertinent and what other elements need to be included.	✓		
1.23	NAFO should raise awareness through periodically providing information, such as through training sessions, aimed at making the staff more aware of the value of the assets they safeguard, both physical and data, and an appropriate level of wariness to maintain in order to effectively guard those assets. • The NAFO Secretariat noted that they could accomplish this by sending out general reminders to staff.		✓	
2.1	Member countries should agree on a process that ensures changes in access requirements are reflected in a timely manner. The process should be enforced by policy and should explicitly describe the responsibilities of each party involved in the process. • The NAFO Secretariat noted that they are currently operating in this manner, but a policy would need to be developed to document it.		✓	
2.3	This recommendation relies on providing NAFO IT with clear direction on the information that can be included on the general member country site. There may be no need to maintain any password control if none of the information is of sufficient sensitivity to require protection. If, however, member countries decide that the information on the general members tab is sufficiently sensitive to require	✓		

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	protection from the general public, then they should also agree on a means to provision individual user accounts and strengthen password protection. • The NAFO Secretariat explained that this recommendation relates to the NAFO Members website. Canada noted that if documents require a username and password to access, there should be disclaimers on the documents noting their level of security, there was agreement on this.			
2.4	Member countries should establish an acceptable frequency for review of user accounts at all levels and monitor to see that such reviews have been performed and were effective (i.e. changes, if identified, were actioned). • The NAFO Secretariat noted that this could be accomplished by requiring users to confirm their access on a yearly basis. It was also noted that another possible solution could be to deny access after a certain period of inactivity of the account.	✓		
2.5	Member countries should agree on a data classification. Based on the classification, the data access needs for each job, or class of jobs, should be determined and used for provisioning access. • The NAFO Secretariat highlighted the importance of this recommendation. Many of the other recommendations rely on having the data classified in order to implement. The Chair agreed and noted to take guidance from the NAFO CEM as previously discussed.	✓		
2.6	Manual review of logs can be ineffective as logs can be sizeable and tend not to be user friendly. NAFO should consider implementing a Security Information and Event Monitoring (SIEM) system. • The NAFO Secretariat noted that this was a low priority.		✓	
2.8	Member countries should establish the appropriate security configuration for NAFO IT to implement. Any proposed changes should be agreed by member countries following current processes to accomplish such agreement. • The NAFO Secretariat noted that this is an important recommendation, however, a lot of work is needed before it can be addressed, e.g. data classification. All Contracting Parties would have to agree on the final classification. The NEAFC Secretariat noted that they are still awaiting responses from Contracting Parties on their data classification.		✓	
2.10	NAFO should consider implementing a system that monitors the environment inside the room where servers are maintained and send alerts for such environmental hazards as flooding, heat and humidity. • The NAFO Secretariat noted that this recommendation should be addressed following the resolution of the current server room situation. If an environment monitor is set up for the current server room, it would be setting off regular alerts because the current environment is suboptimal.			✓
2.11	Member countries should establish the appropriate frequency and retention period for backup media. NAFO IT should implement the	✓		

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	schedule and then monitor for and correct any deviations. • The NAFO Secretariat noted that this is currently being done and the backups are tested monthly, there is just no policy stating this, so one will need to be drafted.			