4. Maintenance Schedule

It is expected that service trips to the new section of the Fraser River Array will take place (at a minimum) once a year, at which time batteries will be changed if needed in the receivers and acoustic releases, and biofouling will be removed from the receivers and acoustic releases. Maintenance checks and upgrades (at a minimum batteries and corroded parts will be replaced, where applicable, full replacement units will be provided) will be performed during those trips. It is expected that during maintenance trips, equipment at each station will be recovered, maintained and redeployed in a timely manner as to avoid any prolonged absence of acoustic receivers on the acoustic array.

5. Data Retrieval Schedule

Data will be uploaded from the receivers once a year, and submitted to OTN in the manner outlined in the OTN Data Management Policy.

6. Mooring Design

Not applicable.

7. Shipping Details

Dalhousie University will cover costs of shipping the equipment to Department of Forest Sciences, UBC, attention Dr. Scott Hinch. Roles and Responsibilities

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Roles and responsibilities for the deployment of this array are divided as follows:

Fraser River Array – Deployment Team:

- Design array;
- Set deployment schedule(s);
- Design Moorings;
- Reserve and provide shiptime;
- Test tags prior to implantation (Dalhousie will not be testing tags prior to shipping);
- Test receivers prior to deployment(Dalhousie will not be testing receivers prior to shipping);
- Perform range testing during initial deployment;
- Lead deployment activities;
- Upload and provide data to OTN as specified in section 5

OTN Technician(s):

- Review array design;
- Review mooring design;
- ;
- Provide training and assistance (as required) during deployment (OTN staff will be available for the initial deployment);

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Both teams are required to coordinate and order parts/equipment with enough lead time, such that both teams will have all required items at time of deployment.

8. Receiver Replacement

Lost or damaged receivers may be replaced at Dalhousie's discretion.

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9. Risk Management

The table below identifies the risks associated with the deployment and also identifies how/if the OTN team plans to address these items.

RISK FACTORS	IMPACT	RISK LEVEL	MITIGATION STRATEGIES
Faulty Receiver and/or Acoustic Release discovered after partner takes possession of the equipment	1. a hole in the curtain 2. the curtain could be shorter than originally planned 3. Lost equipment 4. Dalhousie could be in non-compliance with the collaboration agreement	Medium	1. In instances where the equipment cannot be tested before they are shipped to the partner, the agreement will be modified to indicate the partner is responsible for testing.
Faulty deployment vessel and/or positioning	1. Inability to deploy equipment at desired	Low	1. Maintain communication lines with partners so alternate cruise plan can

equipment	locations		be developed, if required. 2. OTN technicians carry independent GPS positioning equipment and navigational software.
Inclement weather forces deployment crew to stay on shore	1. OTN technicians may not be available for the deployment of the entire line (quality of deployment may be an issue)	Medium	1. Plan deployment window when the partner is most likely to have favorable weather conditions 2. Assess the skill level of the partner and adjust the length of OTN's Technician's travel to the region accordingly
Poor mooring design	1. Lost equipment and/or hole(s) in the curtain 2. Environmental hazards	Medium	1. Obtain partner's mooring design well in advance of deployment and have it reviewed by a panel of like-minded and experienced individuals. 2. Collaborators should think about range testing their line with various types of tags in various weather conditions
Line can't be deployed in the planned position because of unknown obstacles and/or regional embargoes/environmental concerns	1. The line cannot be deployed and OTN technician travel is wasted	Medium	1. Engage NSERC and regional authorities to review the environmental impact of the line placement 2. Ensure line placement is approved by an appropriate regional body. 3. Maintain communication lines with partners so alternate deployment locations can be

			developed, if required.
Collaborator does not provide data and/or metadata or data/metadata of poor quality	1. Data from the line is meaningless or non-existent 2. Data quality compromised	Low	1. Partner required to sign and comply with OTN data policy 2. Examine collaborator's existing systems 3. Employ OTN data quality control procedures

University of British Columbia

By: Scott Hinch

Title: Professor, UBC OTN Pacific Arena Leader.

Signature: Scott Hinch.

DALHOUSIE UNIVERSITY

By: Frederick Whoriskey

Title: Executive Director OTN

Signature: