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ECCC RRES230170168

INTERDEPARTMENTAL LETTER OF AGREEMENT (ILOA)

BETWEEN

THE DEPARTMENT OF NATIONAL DEFENCE OF CANADA (DND)

AND

ENVIRONMENT AND CLIMATE CHANGE CANADA (ECCC)

CONCERNING

LAND USE AND FACILITIES SUPPORT

TO DND HIGH FREQUENCY RADIO RESEARCH CARRIED OUT AT

EUREKA, NUNAVUT

1 INTRODUCTION

1.1 This Interdepartmental Letter of Agreement (ILOA) between the Department of National Defence of Canada (DND), as represented by the CAF Real Property Operations North (RP Ops North), Ottawa Research Centre of Defence Research and Development Canada (DRDC), and Environment and Climate Change Canada (ECCC), as represented by the ECCC Real Property Management Division, hereinafter referred to as the "Participants", sets out the arrangements in respect to land use and facilities support in regard to High Frequency (HF) radio research to be carried out at Eureka, Nunavut.

1.2 This ILOA is an interim agreement for the DRDC led high frequency radio research project. DND and ECCC have other Memorandums of Understanding related to Eureka that remain valid outside of the ILOA that are due for refresh. This ILOA will become a sub-agreement (Annex) to the refreshed pan-Eureka DND/ECCC MoU.

2 OBJECTIVES AND SCOPE

2.1 The objective of this ILOA is to establish the basic principles under which DND will be granted land use and facilities support, by ECCC in Eureka, Nunavut, for the purposes of HF radio research.

2.2 The scope of this ILOA is limited to activities supporting DND HF radio research and does not replace other DND-ECCC agreements and/or arrangements.

2.3 The Participants acknowledge that notwithstanding the wording used in this ILOA, neither the ILOA as a whole nor any of its parts taken separately are, or ever have been, intended to be a contract and no contractual obligations are incurred by the Participants as a result of the existence of this ILOA.

2.4 This ILOA is in no way intended to be a procurement instrument. Any material procurement resulting from, or required by, the implementation of this ILOA must be accomplished in accordance with the applicable national contracting laws, regulations and financial authorities.

3 GENERAL PROVISIONS

3.1 DND will be recognized as an authorized ECCC Eureka site land user for HF radio research purposes, subject to all the terms of existing ECCC land use agreements with the Nunavut Government.

3.2 DND will install and operate a temporary HF radio observatory at Eureka, detailed in Annex A, to this ILOA.

3.3 DND will be provided meals and accommodations for its project team members involved in HF radio research, as per the ECCC per diem rates provided by email notice from ECCC at the start of the Fiscal Year, subject to the capability of the weather station to provide these meals and accommodations. The project team members will complete and sign the current Eureka Weather Station Visitor Permit Request and Waiver forms. In the event that ECCC cannot provide meals and accommodations, ECCC will reject the submitted Visitor Permit Request and Waiver forms.

3.4 DND will generate most of its own on-site electrical power using diesel generators, detailed in Annex A, to this ILOA.

3.5 DND is responsible for all certifications and approvals to operate the temporary HF radio observatory, including but not limited to:

3.5.1 Aeronautical obstruction, to be cleared with Transport Canada;

3.5.2 Interference to radio navigation equipment, to be cleared with Nav Canada;

3.5.3 Interference to radiofrequency services, to be cleared with Innovation, Science and Economic Development (ISED) Canada.

3.6 DND is responsible for ensuring that electromagnetic radiation measurements are taken and that any safety hazards are adequately addressed consistent with Health Canada Safety Code 6 guidelines.

3.7 DND is responsible for the cost of clean-up and reclamation of their HF radio research projects on the land proposed in Annex B. DND will not utilize any deleterious materials until an environmental baseline study has been completed by DND.

4 PAYMENTS AND COST CONSTRAINTS

4.1 Activities carried out under this ILOA will be cost neutral to ECCC. Any direct, indirect or accessory costs or expenses incurred by ECCC will be reimbursed by DRDC/DND upon presentation of an invoice.

4.2 Should any of ECCC's employees or engineers be required or employed for the project, all salaries including costs associated with the Employee Benefit Plan will be assumed by DRDC/DND.

4.3 DRDC/DND will pay ECCC for all costs and expenses via the government Interdepartmental Settlement (IS) system. Invoices will be provided by ECCC on a monthly basis.

4.4 In all cases, any DND requirements including but without limiting the generality of the foregoing, the ECCC needs will supersede any requirements for equipment, fuel, personnel or services by DND.

4.5 All bona fide costs in this agreement will be covered by DRDC.

5 RUNWAY USAGE

5.1 DND will be permitted to land commercial or military aircraft under 50,000 pounds throughout the year to support DND HF radio research, in consideration for DRDC/DND paying ECCC the aircraft movement fee for light aircraft (under 50,000 pounds) as provided by email notice from ECCC at the start of the Fiscal Year.

5.2 DND will be permitted to land commercial or military aircraft over 50,000 pounds outside of the summer thaw period (with exact dates determined yearly by ECCC) to support DND HF radio research, in consideration for DRDC/DND paying ECCC the aircraft movement fee for heavy aircraft (over 50,000 pounds) as provided by email notice from ECCC at the start of the Fiscal Year.

5.3 The provisions of Paragraphs 5.1 and 5.2 will not prevent DND from paying a portion of ECCC-led runway refurbishment efforts.

6 MATERIALS USAGE

6.1 DND will be responsible for providing all necessary materials for its HF radio research projects.

6.2 DND understands that aggregate currently located at the Eureka site belongs to ECCC and is not available to support DND HF radio research.

7 VEHICLES AND EQUIPMENT USAGE

7.1 Any vehicles and equipment to be employed belonging to ECCC will be identified, requested with adequate lead time and all costs associated with the operation of this equipment will be paid by DRDC/DND. In most cases an hourly rental fee for equipment and operators will be provided by email notice from ECCC at the start of the Fiscal Year.

7.2 DND will also be permitted to use non-operational ECCC pickup trucks to support HF Radio Research if DND provides an operator, the pickup trucks are requested with adequate lead time, the DND use of the pickup trucks does not interfere with the operation of the weather station, and all costs associated with the operation of the pickup trucks are paid by DRDC/DND. In most cases a daily rental fee for the pickup trucks will be provided by email notice from ECCC at the start of the Fiscal Year.

8 PROVISIONS OF ELECTRICITY

8.1 Any electricity provided by ECCC to DND will be metered and compensated for using the kilowatt-hour fee schedule provided by email notice from ECCC at the start of the Fiscal Year. In addition to a metered electrical charge, a fee for incremental maintenance, wear and tear on ECCC generators will be charged.

8.2 The energy requirements of ECCC Eureka from ECCC-owned local generators will always supersede DND requirements.

8.3 DND will be responsible for supplying additional or dedicated generator capacity where DND needs surpass ECCC's capacity.

9 PROVISIONS OF DIESEL FUEL

9.1 Subject to the availability of fuel, ECCC will refill DND generator fuel tanks using ECCC vehicles and fuel at a rate provided by email notice from ECCC at the start of the Fiscal Year.

9.2 The quantity of diesel fuel will not exceed 50,000 L in any calendar year. Usage is expected to occur primarily during anticipated quarterly experiment periods.

9.3 ECCC will be provided notice of fuel usage periods in the Eureka Weather Station Visitor Permit Request.

10 ATTRIBUTION OF GREENHOUSE GASES

10.1 All Greenhouse Gases produced by DND at the Eureka site as a result of DND HF radio research construction, installation, operation and remediation, from the January 2015 start of Phase 1 (see Annex A) forward, will be attributed to DND.

11 DIFFERENCES IN INTERPRETATION AND APPLICATION

11.1 Any dispute between the Participants regarding the interpretation or implementation of this Agreement will be resolved only by consultation between the Participants and will not be referred to any national or international tribunal or third party for settlement.

12 AMENDMENTS

12.1 This ILOA may be amended only with the mutual written consent of the Participants.

13 DURATION, WITHDRAWAL AND TERMINATION

13.1 This ILOA will remain in effect for ten (10) years

13.2 Either Participant may withdraw from this ILOA, at any time, upon one (1) calendar year written notice to the other Participant.

13.3 This ILOA may be terminated at any time, with the mutual written consent of both Participants.

14 EFFECTIVE DATE AND SIGNATURE

14.1 This ILOA will come into effect upon the date of the later signature.

Signed on: 29 June, 2018.

for Kurtis Simpson
Director, Ottawa Research Centre
Defence Research & Development Canada
Project Sponsor
for the Department of National Defence

Signed on: 29 day of June, 2018

Sylvie Ouellet
A/Director, Real Property Management
Real Property Management Division
for Environment Canada

Signed on: 29 JUNE, 2018.

LCol P. Glaicar
Chief of Staff
Real Property Operations North
Real Property Authority
for the Department of National Defence

Annex A: HF Radio Observatory Description

DRDC, a research and development agency of DND, has a requirement to construct, install and operate a temporary experimental Radio Observatory at Eureka, NU.

The Radio Observatory is being built in 3 phases described as follows.

PHASE 1

Phase 1 has already been installed and is operational at the Nav Canada Non-Directional Beacon (NDB) site. It consists of a transmitter located inside the Nav Canada building, and six large antennas located next to the Nav Canada building. There are four transmit antennas (a 35-foot monopole, a 22-foot monopole, a 28-foot quadpole, and a sloping vee antenna) and two receive antennas (a 19-foot monopole and a 6-foot helical antenna).

The Phase 1 system uses metered electricity which is being paid for as per the ECCC rate per kilowatt-hour as provided by email notice from ECCC at the start of the Fiscal Year. The service includes 15 A and 30 A circuits at 120 V.

ECCC Support to Phase 1:

ECCC will continue to bill DRDC/DND for metered services it currently has in place at the NAVCAN building. ECCC will also bill DRDC/DND for occasional visits to the building by the Senior Aerological Observer (SAO) to replace hard drives and do visual checks of the equipment.

PHASE 2

Phase 2 will consist of a 64-monopole antenna array in an 8x8 arrangement covering a space approximately 60 m x 60 m in a flat area to the north of the Eureka airstrip, immediately to the east of the VHF wind profiler radar run by the Canadian Network for the Detection of Atmospheric Change (CANDAC). Local radiofrequency coordination with the nearby CANDAC scientific instruments is currently being negotiated with CANDAC, and wide-area radiofrequency coordination will be done through the normal radio authorization process with ISED. The height of the monopoles is 30 feet and the array will be set back no less than 210 feet from the airstrip as per Transport Canada requirements for no obstructions above a 1:7 sloping plane starting at the edge of the airstrip. This positioning will be confirmed via the normal obstruction assessment process with Transport Canada.

The antenna array will be connected via 64 coaxial cables to a 20-foot sea container shelter that will house radio transmitter equipment. The transmitter equipment will be connected to a DND-provided generator of approximately 200 kW capacity that will be installed near the shelter.

The setup will also require an electrical cable connection to the CANDAC VHF radar shelter to provide heating of the sheltered electronics during dormant periods. The power draw should not exceed 4 kW.

ECCC Support to Phase 2:

During installation in the summers of 2018 and 2019 DND will require rental of ECCC equipment and operators to move equipment to the north side of the airstrip, at rental rates provided by email notice from ECCC at the start of the Fiscal Year,.

During quarterly operation the DND generator will require fuel approximately 4 times during each two-week operation, where operations are expected no more than 4 times per year, in Oct, Jan, Apr and Jul. Fuel consumption is not expected to exceed 4,000 litres per quarter or 16,000 litres per year.

ECCC will bill DRDC/DND for electrical power provided to the Phase 2 shelter via the CANDAC VHF radar shelter.

PHASE 3

Phase 3 will consist of a 256-monopole antenna array in a 16x16 arrangement covering a space approximately 120 m x 120 m in a flat area to the north of the Eureka airstrip, immediately to the east of the VHF wind profiler radar run by CANDAC. Local radiofrequency coordination with the nearby CANDAC scientific instruments is currently being negotiated with CANDAC, and wide-area radiofrequency coordination will be done through the normal radio authorization process with ISED. The height of the monopoles is 30 feet and the array will be set back no less than 210 feet from the airstrip as per Transport Canada requirements for no obstructions above a 1:7 sloping plane starting at the edge of the airstrip. This positioning will be confirmed via the normal obstruction assessment process with Transport Canada.

The antenna array will be connected via 256 coaxial cables to four sea container shelters that will house radio transmitter equipment. One of the shelters will likely be re-used from Phase 2. The transmitter equipment will be connected to a DND-provided generator of approximately 600 kW capacity that will be installed near the shelters.

The setup will also require an electrical cable connection to the VHF radar shelter to provide power for nominal heating of the sheltered electronics during dormant periods. The power draw should not exceed 8 kW.

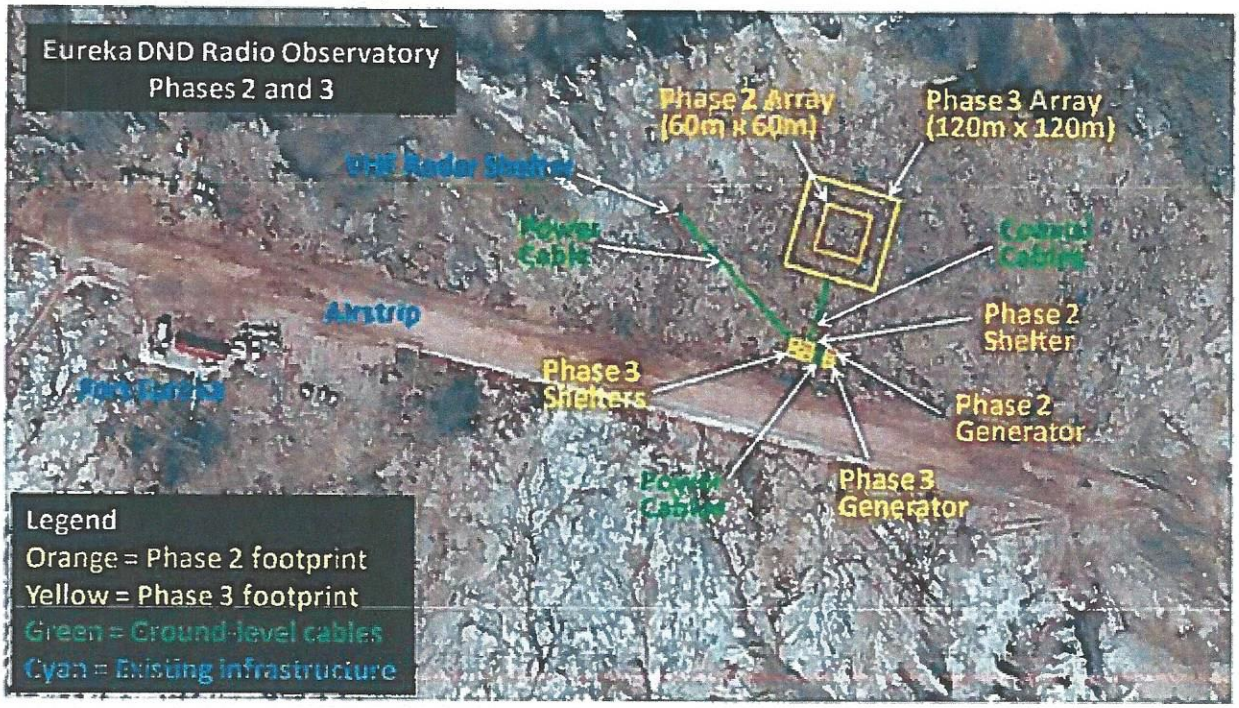
ECCC Support to Phase 3:

During installation in the summers of 2019 and 2020 DND will require rental of ECCC equipment, and operators as required, to move equipment to the north side of the airstrip.

During quarterly operation the DND generator will require fuel approximately 4 times during each two-week operation, where operations are expected no more than 4 times per year, in Oct, Jan, Apr and Jul. Fuel consumption is not expected to exceed 12,000 litres per quarter or 50,000 litres per year.

ECCC will bill DRDC/DND for electrical power provided to the Phase 3 shelters via the CANDAC VHF radar shelter.

Annex B: Eureka DND Radio Observatory Layout



Annex C: Eureka DND Radio Observatory Phase 2 Prototype Array in Ottawa