


## I. ANNEX

# ISA Contract for Exploration – Public Information Template

	Type of resource: Polymetallic nodules
	Name of Contractor: Cook Islands Investment Corporation
Sponsoring State: Cook Islands	Contract Start: 15 July 2016
	Contract End: 15 July 2031
	Location: Clarion-Clipperton Fracture Zone (CCZ)

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## Introduction

The information contained in this ISA Contract for Exploration – Public Information Template is made available to the public in response to the request by the Council of the ISA to make contracts publicly available, subject to restrictions on confidential information, industrial secrets and proprietary data.

The content of the present template is in accordance with the Regulations on Prospecting and Exploration for [*Polymetallic Nodules in the Area*] [ISBA/19/C/17] (the “Regulations”).

## 1. Contract Information

Annex III of the Regulations.

<b>Type of resource</b>	Polymetallic Nodules
<b>Name of Contractor</b>	Cook Islands Investment Corporation
<b>Contract Start</b>	15 July 2016
<b>Contract End</b>	15 July 2031
<b>Location</b>	Clarion-Clipperton Zone
<b>Contract Area (km<sup>2</sup>)</b>	73,177.64km <sup>2</sup>

## 2. Coordinates and Illustrative Chart of the Exploration Area

Schedule 1 of Annex III of the Regulations.

The CIIC Exploration area is located between:

The area under contract is bounded by lines joining the following turning points, the coordinates of which are listed below in decimal degrees following the World Geodetic System 1984 geographical projection system.

<b>Part 1 – CIIC Area A1</b>	
<b>Longitude</b>	<b>Latitude</b>
-128.58333	15.33333
-127.83333	15.33333
-127.83333	15.25000
-127.76667	15.25000
-127.76667	14.33333
-128.00000	14.33333
-128.00000	12.00000
-127.71667	12.00000
-127.71667	11.66667
-128.58333	11.66667
-128.58330	13.57600
-128.25000	13.57600
-128.25000	13.91670
-128.16670	13.91670
-128.16670	14.00000
-128.08330	14.00000
-128.08330	14.25000
-128.15220	14.25000
-128.15220	14.62500
-128.20830	14.62500
-128.20830	14.75000
-128.58330	14.75000
-128.58333	15.33333
<b>Part 2 – CIIC Area A3</b>	
<b>Longitude</b>	<b>Latitude</b>
-126.7000	15.7333
-126.0000	15.7333
-126.0000	13.7500
-126.2500	13.7500
-126.2500	14.3333
-126.7000	14.3333
-126.7000	15.7333

Part 3 – CIIC Area A5	
Longitude	Latitude
-125.3333	16.2333
-124.3333	16.2333
-124.3333	16.0667
-123.9520	16.0667
-123.9520	14.0833
-125.0000	14.0833
-125.0000	13.7500
-125.3333	13.7500
-125.3333	16.2333

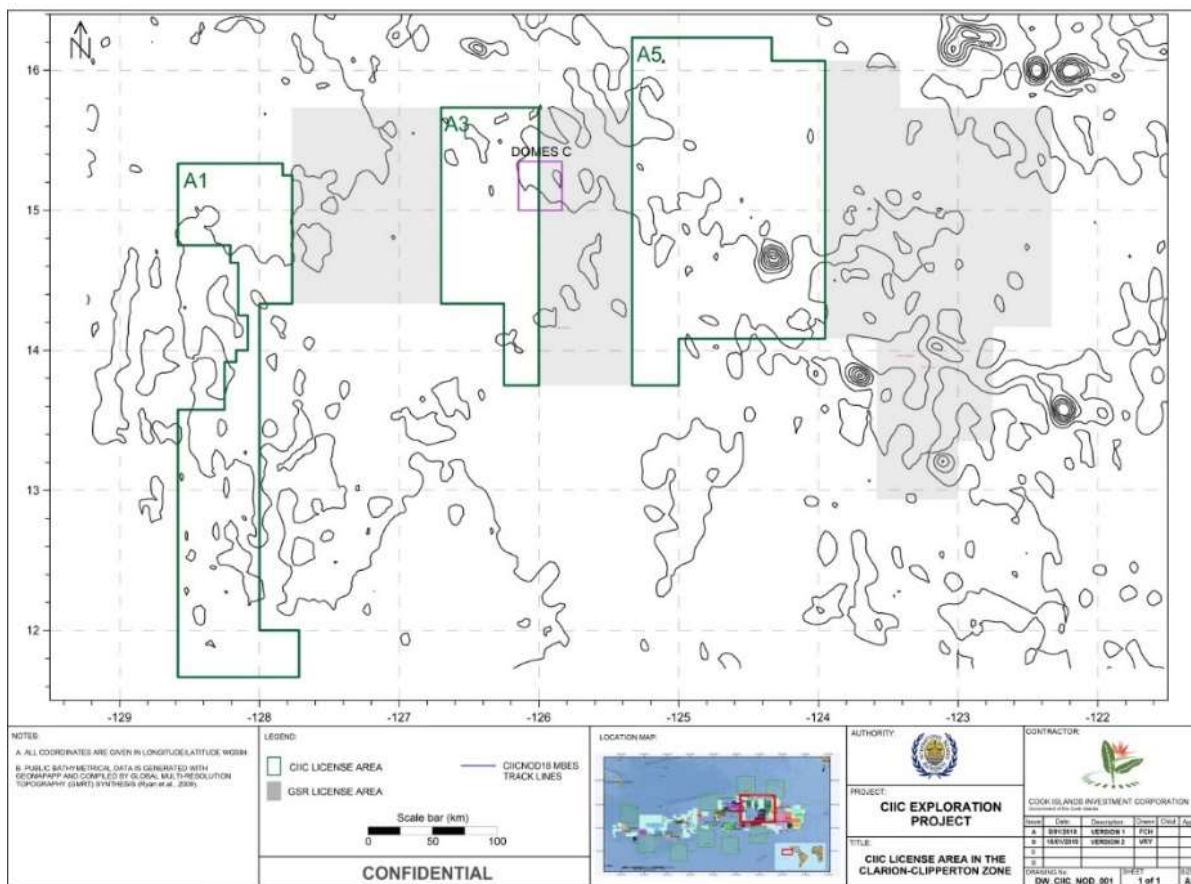


Figure I-1: CIIC License Area in the Clarion-Clipperton Zone

The shapefile format of the entire CIIC Contract Area, including blocks A1, A3 and A5 has been attached together with the electronic version of the submitted document.

### 3. Plan of Work

Summary of Plan of Work for Exploration including the Programme of Activities for the first and/or the current 5-year period (Regulation 18).

The plan of activities describe in the Exploration Agreement and approved by the ISA is summarized below:

- Year 1 (2017): Overview Expedition
- Years 2 and 3: (2018 -2019): Desk and laboratory study
- Year 4 (2020): Detailed Expedition
- Year 5 (2021): Desk and laboratory study

The programme of activities for the first 5-year exploration phase the will consist of physical, morphological and geological as well as environmental exploration.

#### **Physical, morphological and geological exploration**

The programmed aims at determining the factors which control the formation, abundance and composition of the nodules, in order to delineate minable areas. The main factors are the following:

- The water depth with respect to the Carbonate Compensation Depth (CDD).

Most of the area under exploration has a depth range from 4,000 to 4,500 meters which is a favorable range in terms of nodule abundance, but a much more detailed knowledge of the bathymetry over the whole area is needed in order to assess local variations.

- The morphology of the seabed

Mineable areas must have a reasonably flat topography (undulating plains). These areas are typically elongated in the North-South direction, with a length of 10-20 kilometers and a width of 5-10 kilometers. They are separated from each other by North-South trending scraps or slopes and by transverse structures limiting length. The programme for exploration must deliver the combination of bathymetric and morphological information needed for the delineation of such areas.

- The type of sediments and the sedimentation rate which control the abundance and composition of the nodules.

In general, the nodule abundance ranges from 0 to 30 kg/m<sup>2</sup>. Various mining scenarios are possible, resulting in various cut off levels in terms of nodule abundance. It is reasonable to assume, at this time, that minable areas should have abundance above 10 kg/m<sup>2</sup>. Determining the nature, thickness and composition of the sediments is an important part of the Contract and of the delineation of minable areas.

**Environmental exploration**

The programme aims at determining the meteorological, oceanological and biological parameters which control the feasibility and the environmental impact of exploration and mining activities. The main parameters are the following:

- The meteorological and sea state conditions determine the operability of exploration and mining activities.
- The bottom current conditions have a fundamental influence on the erosion sedimentation pattern and thus on the presence and abundance of nodules on the seabed. They are also an important operational parameter for seabed exploration, scale mining and test mining.
- The description of marine life on minable fields and their surrounding constitute the baseline for any future environmental impact assessment. Differences in the marine life may influence decisions on minable areas and techniques to apply.

Since 2016 CIIC has successfully conducted one exploration offshore campaign (CIICNOD18) in the CIIC license area in early 2018 with technical partners GSR surveying the Contract area which include geotechnical and chemical analysis. Proposed off

## 4. Programme of Activities and Exploration Expenditure

Section 4.1 of Annex IV of the Regulations and Schedule 2 of Annex III of the Regulations.

### I. Agreed 5-year Programme of Activities

5-year Programme of Activities	First	Second	Third	Extension
General Objectives	<b>Objective</b>		<b>Description</b>	
	<b>Year 1:</b> Collection and analysis of historical data;		Collect historical data from the CIIC contract area and integrate into GIS software.	
	Metocean Data Acquisition;		Deployment of a long-term metocean buoy in the area.	
	Global Mapping of the area under application;		Hydrographical and geophysical campaign using multibeam echosounder (MBES), side-scan sonar (SSS) and seismic equipment.	
	Data processing;		Data processing to generate bathymetric maps (bathymetry, backscatter, slopes....).	
	Data integration and interpretation.		Selection of zones of interest inside the contract area.	
	<b>Years 2 to 5 (inside the zones of interest):</b>			
	Bottom water conditions;		Current, temperature, conductivity, turbidity and other measurements.	
	High-resolution seabed and sediment mapping;		Using deep-towed equipment and/or Autonomous Underwater Vehicle (AUV) to collect high-resolution MBES/ SSS/ Seismic / Imagery.	
	Camera observation of spot zones;		Imagery of the seabed for morphological, nodule abundance, description of megafauna.	
Sampling on spot zones (survey stage);		With box-corer sampler and multi-corer.		

	Data processing;	Elaboration of digital terrain model and isopach maps + imagery analysis.
	Seawater chemical analysis (survey stage and reporting stage);	Temperature, salinity, total alkalinity, pH and dissolved oxygen, organic & inorganic material.
	Sediment and interstitial water analysis (reporting stage);	Visual description / mineralogy / Geotechnical identification + chemical analysis of the sediment and interstitial water.
	Biological analysis (survey stage and reporting stage);	Phytoplankton, Zooplankton, fish, marine mammals and seabirds, micro-organisms, meio- and macrofauna, megafauna, benthic scavengers, bioturbation, bio/geo linkages and genetic AND identifications
	Nodule analysis (survey stage and reporting stage);	Abundance, visual description, mineralogy, chemical analysis and mechanical properties
	Data integration, interpretation and reporting.	Definition of potentially mineable fields based on geostatistical models for the resource definition, along with habitat mapping. Reports are submitted annually and every 5 years.

## II. Results achieved during reported first 5 years

Annual objectives and activities			
Year	No.	Agreed Objectives	Objective: Completed, Modified, Postponed or Replaced
Year 1 (2017)	1	Collection and analysis of historical data;	Objectives 1 and 2 were successfully achieved during year 1.
	2	Metocean Data Acquisition;	
	3	Global Mapping of the area under application;	Objective 3 (Global Mapping of the area under application) the mapping of the CIIC contract area planned for year 1 through exploration offshore programme was rescheduled for early 2018 due to vessel availability.



	4	Data processing;	Objective 4 (Data processing) of the campaign deliverables consisting of bathymetric maps, backscatter mosaics, box core logs, nodule composition will be processed onboard the vessel and further studied onshore in 2018.
	5	Data integration and interpretation.	Objective 5 (Data integration and interpretation) postponed to 2018, as further analysis of CIIC offshore exploration campaign data were still ongoing. All information has been duly reported to the Authority in the annual report (ISA-CIIC_AR2018)
Year 2 (2018)	1	Analyses input received from cruise in year 1 – (CIICNOD18 Offshore expedition campaign) (bathymetric data and samples)	Objectives 1 and 2 have been successfully completed during year 2, with the successful offshore expedition CIICNOD18. All preliminary results of this campaign were reported in the annual report (ISA-CIIC_AR2019)
	2	Intensive desk and laboratory study (collected data from year 1 and GSR data collected in the Contractor's area)	
	3	Development of the hydrodynamic modelling	Objective 3 - The development of the hydrodynamic modelling has not yet started because the deployment of moorings is necessary to verify current conditions. The operation is best targeted to areas of interest for future mining, which will be delineated in Year 3. Therefore it is anticipated that this aspect will be postponed until the detailed campaign planned in Year 4 (2020)
	4	Data integration in global database (also including data collected by GSR inside the Contractor's areas)	Objective 4 has started but is ongoing.
Year 3 (2019)	1	Participation of a scientist from the Contractor in the GSR cruise during year 4;	Objectives 1 and 5 have been successfully completed for year 3. However, objectives 2, 3 and 4 have been postponed due the cancellation of the GSR Offshore Campaign in 2019.

	2	Analysis input received from GSR's cruise during year 5;	
	3	Intensive desk and laboratory study (with GSR data collected during year 5);	
	4	Development of the hydrodynamic modelling – integration of collected data;	The development of the hydrodynamic modelling has not yet started because the recovery of the GSR environmental mooring is necessary to verify current conditions. Due to the cancellation of the GSR Offshore Campaign in 2019, it is anticipated that this aspect will be postponed until year 4 (2020).
	5	Data integration in global database system (also including data collected by GSR inside the Contractor's area).	All information has been reported in the annual report (ISA-CIIC_AR2020).
Year 4 (2020)	1	Bottom water conditions (survey stage)	Covid-19 has disrupted much of the planned work for year 4 (2020) and it is anticipated that much of the planned work will be postponed to year 5 or year 6.
	2	High resolution seabed and sediment mapping (survey stage)	The year 4 Annual report will be submitted to the Authority in early 2021.
	3	Camera observation on spot zones and traced way (survey stage)	
	4	Sampling of spot zones (survey stage)	
Year 5 (2021)	1	Data processing;	Year 5 work has not started.
	2	Seawater chemical analysis (survey and reporting stage);	
	3	Sediment and interstitial water analysis (reporting stage);	

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	4	Biological analysis (survey stage and reporting stage);	
	5	Nodule analysis (survey stage and reporting stage);	
	6	Data integration, interpretation and reporting.	

## 5. Training Programme

Schedule 3 of Annex III of the Regulations.

### I. Training Programme

A summary of the training programmed for the initial five-year period.

Type of training	Professional: Dredging Technologies Seminar	Educational: Rhodes Academy, Center for Oceans Law and Policy	Internship: Participation to the CIIC offshore expedition	Master of Science: Marine and Lacustrine Science and Management "Oceans & Lakes"	Masters of Science: Master of Science by coursework and thesis in Marine Biology
<b>Institutions</b>	Port Training Centre of Antwerp and Flanders (APEC)	Center for Oceans Law & Policy	CIIC – Cook Islands Investment Corporation	Free University of Brussels, Antwerp University and Ghent University	Victoria University of Wellington, New Zealand
<b>Duration</b>	2 weeks	3 weeks	4 to 6 weeks (depending on the cruise programme)	2 year fellowship	2 year fellowship
<b>Scope of Work</b>	High-Level technical seminar on Dredging Technologies	Ocean Law and policy	Technical participation during the exploration cruise	Master Degree: "Ocean and Lakes"	Master of Science by coursework and thesis in Marine Biology
<b>Fields</b>	Offshore positioning, underwater positioning ROV operations (technical more than scientific).	Law of the Sea	Offshore positioning, underwater positioning ROV operations (technical more than scientific).	Marine Geology/ Marine Environment/ Geophysics/ Hydraulic Engineering	Marine Geology/ Marine Environment/ Geophysics/ Hydraulic Engineering
<b>Qualification required</b>	Technical degree + offshore safety certificate	Legal background/ Masters	Technical degree + offshore safety certificate	Bachelor	Bachelor
<b>Financing</b>	Covered by CIIC	Covered by CIIC	Covered by CIIC	Covered by CIIC	Covered by CIIC
<b>Year</b>	1x training: Year 5 1x training: Year 5 1x training: Year 6	1x training: Year 5 1x training: Year 5 1x training: Year 5	1x training: Year 6 1x training: Year 6	1x training: Year 6	1 x training: Year 6

CIIC will replace the Rhodes Academy, Ocean and Lay policy for a Master in Science Degree through the Victoria University of Wellington, New Zealand.

### II. Trainings conducted up to reported year 1 to year 5

No training candidates to report to date.

Start year	End Year	Name of Trainee	Nationality	Gender	Type of Programme	Details	Duration
[-]	[-]	[-]	[-]	[-]	[-]	[-]	[-]

### III. Completed Trainings per Year

No completed trainings to report to date.

	[Name of the programme described in the Contract]	[Name of the programme described in the Contract]	[Name of the programme described in the Contract]
Year 1			
Year 2			
Year 3			
Year 4			
Year 5			

## **6. Standard clauses**

Annex IV of the Regulations.