

PROJECT MANAGEMENT




ASTINAVE *EP*
ASTILLEROS NAVALES ECUATORIANOS

***Technical Report on Requirements for the
Acquisition and Commissioning of
Generator Sets for the Corgal, Cororo, and
Coresm Corvettes of the Zeus Project***

INF-ZEU-228

APRIL / 2025

 <p>ASTINAVE ^{EP} ASTILLEROS NAVALES ECUATORIANOS</p>	TECHNICAL REPORT ON THE REQUIREMENTS FOR THE ACQUISITION AND COMMISSIONING OF GENERATOR SETS FOR THE CORGAL, CORORO, AND CORESM CORVETTES OF THE ZEUS PROJECT	INF-ZEU-228 FOR-GLO-002
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Signatures of Responsibility


Responsibility	Name	Public Procurement Operator Code and Expiration Date	Signature of Responsibility
Approves – Project Manager	Engineer Gustavo Matute Redrovan	CmE4b7Hx7W 10-14-2025	
Validate – Project Manager	Engineer Diego Miraba Cargua	ErCwtGYPqt 08-02-2027	
Elaborate – Verify Project Verifier 2	Engineer Christian Freire Vilema	ixY7CQxkyh 08-03-2027	

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1. BACKGROUND

The Ecuadorian Navy, committed to the Defense and Security of our Territorial Sea, in accordance with articles 22 of the Organic Law of the National Public Procurement System -LOSNC- and 43 of its General Regulations -RGLOSNC-, the Annual Procurement Plan of the General Directorate of Material, contemplates the **"RECOVERY OF THE GALÁPAGOS, EL ORO AND ESMERALDAS CORVETTES"**.

Through Official Letter No. **ARE-DIRLOG-PRY-2022-0026-O** of March 18, 2022, the Ecuadorian Navy requests ASTINAVE EP, a commercial proposal for the Recovery of the 03 Corvettes, which is sent through **"DOC-PMO-186-R ROM Commercial Proposal for the Recovery of the Galápagos, El Oro and Esmeraldas Corvettes"** to the ECUADORIAN NAVY, in response to the request submitted by said institution.

On **December 6, 2022**, Contract No. **COGMAR-COT-001-2022** was signed, corresponding to the **"RECOVERY OF THE GALÁPAGOS, EL ORO AND ESMERALDAS CORVETTES"**, freely and voluntarily, by which the parties expressly declare their acceptance of everything agreed in the aforementioned contract and submit to its stipulations.

With Memorandum No. **GDP-PMO-0122-2023** of January 3, 2023, the **"ZEUS" Project is established**, with the scope of "Recovering the operability of the systems and equipment of the Galápagos, El Oro and Esmeraldas Corvettes in the construction groups established in Contract No. **COGMAR-COT-001-2022**; in order to have renovated operational units with a useful life of at least 15 years."

By means of Official Letter No. **ARE-CPFG-EMT-OGE-2023-0001-O** dated **January 17, 2023**, the Contract Administrator No. **COGMAR-COT-001-2022** notifies the General Manager of ASTINAVE EP of the advance payment.


Consequently, the **ZEUS Project** requires the **"ACQUISITION AND COMMISSIONING OF GENERATOR SETS FOR THE CORGAL, CORORO AND CORESM CORVETTES OF THE ZEUS PROJECT"** to satisfy our client's requirements regarding maximum sustained speed and supply of energy capacity within the deadlines established in the contract.

2. POWERS AND ATTRIBUTIONS

CONSTITUTION OF THE REPUBLIC OF ECUADOR

Article 225 of the Constitution of the Republic of Ecuador establishes that the public sector in the country is comprised of the agencies and departments of the Executive, Legislative, Judicial, Electoral, and Transparency and Social Control branches; the entities that comprise the decentralized autonomous system; and the agencies and entities created by the Constitution or law to exercise state authority, to provide public services, or to carry out economic activities assumed by the State. This last point regulates the so-called public companies.

Article 226 of the Constitution of the Republic of Ecuador establishes that: "State institutions, their agencies, departments, public servants, and persons acting under a state authority shall exercise only the powers and faculties conferred upon them by the Constitution and the law.

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They will have the duty to coordinate actions to fulfill their objectives and ensure the enjoyment and exercise of the rights recognized in the Constitution."

Article 227 of the Constitution of the Republic of Ecuador establishes that: " Public administration constitutes a service to the community governed by the principles of effectiveness, efficiency, quality, hierarchy, decentralization, coordination, participation, planning, transparency, and evaluation."

Article 233 of the Constitution of the Republic of Ecuador establishes in its first paragraph: "No public servant shall be exempt from liability for acts performed in the exercise of their functions or for omissions, and shall be administratively, civilly, and criminally liable for the management and administration of public funds, assets, or resources."

For its part, Article 315 of the Constitution of the Republic establishes that: "The State shall establish public companies for the management of strategic sectors, the provision of public services, the sustainable use of natural resources or public goods, and the development of other economic activities..."

Article 425 of the Constitution of the Republic of Ecuador states that: "The hierarchical order of application of the norms shall be as follows: The Constitution; international treaties and conventions; organic laws; ordinary laws; regional norms and district ordinances; decrees and regulations; ordinances; agreements and resolutions; and other acts and decisions of the public authorities."

ORGANIC LAW OF THE NATIONAL PUBLIC PROCUREMENT SYSTEM

Article 4 of the Organic Law of the National Public Procurement System establishes: "Principles. - For the application of this Law and the contracts derived from it, the principles of legality, fair treatment, equality, quality, technological relevance, timeliness, competition, transparency, publicity, and national participation shall be observed."


Article 23 of the Organic Law of the National Public Procurement System establishes: "Studies. - Before initiating a pre-contractual procedure, depending on the nature of the contract, the entity must have complete, final, and up-to-date studies and designs, plans and calculations, and technical specifications, duly approved by the relevant bodies, linked to the entity's Annual Procurement Plan."

Article 99 of the Organic Law of the National Public Procurement System establishes in its third paragraph: "The highest authority of the entity, as well as its officials or employees who have intervened in any of the stages of the pre-contractual procedures of preparation, selection, contracting, as well as in the execution of the contracts themselves, will be personally and financially responsible for non-compliance with the provisions of this Law, without prejudice, if applicable, to any criminal liability that may apply."

GENERAL REGULATIONS OF THE ORGANIC LAW OF THE NATIONAL PUBLIC PROCUREMENT SYSTEM

According to the General Regulations of the Organic Law of the National Public Procurement System, the following is established:

Art. 42.- Preparatory Phase. - The requested administrative body of the contracting entity, in order to satisfy and comply with the institutional objectives, goals, and demands, in

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accordance with its powers and responsibilities, will carry out a specific, detailed, clear, and concrete identification of the contracting need.

Art. 44.-Determination of Need. - The determination of need will incorporate an analysis of benefit, efficiency, or effectiveness, considering the need and the existing institutional capacity. This will be reflected in the contracting needs report, which will be prepared by the requested unit prior to initiating a contracting procedure.

EXECUTIVE DECREE 116 OF MARCH 26, 2012

By Executive Decree No. 1116 of March 26, 2012, published in Official Registry 680 of April 11, 2012, Astilleros Navales Ecuatorianos (ASTINAVE EP) was created as a public company, with legal personality, its own assets, endowed with autonomy and attached to the Ministry of National Defense.


Article 2.- The corporate purpose of Astilleros Navales Ecuatorianos – ASTINAVE EP-, includes:

1. The repair, maintenance, careening, transformation, design, and construction of naval units for the national defense sector and for private national and foreign shipping.
2. Repair, maintenance, design, and construction of dry docks with transfer yards and breakwaters for defense and private-sector vessels.
3. Implementation of new or existing cutting-edge technologies and promotion of design improvements or creations related to shipbuilding and commercial construction.
4. Manufacturing, maintenance, and repair of structures, silos, tanks, propellers, horns, steel and aluminum pipes, and special metallurgical processes.
5. Maintenance and repair of motors, pumps, valves, and hydraulic systems; construction of water treatment plants; and provision of services for the water transport and shipping industries.
6. Production, marketing, repair, and maintenance of electronic, computer, and intelligence systems for naval, military, air, and civil applications, originating from Research and Development Centers or our own.
7. Works or services provided for the metallurgical industry in general, both in the public and private sectors, as provided for in this article and any new ones it undertakes, in accordance with its operational, technical, and economic capacity.

3. SPECIFIC, DETAILED, CLEAR AND CONCRETE IDENTIFICATION OF THE NEED FOR HIRING

The Ecuadorian Navy has the vessels "**Galápagos**", **El "Oro"** and "**Esmeraldas**" of the Missile Corvettes type, which are inoperative due to new developments found in their different construction groups, in accordance with Contract **No. COGMAR-COT-001-2022** , it has been considered to replace the different components that make up the electrical system of the aforementioned vessels.

From the contract **N. ° COGMAR-COT-001-2022 Section 4.4.- Recovery of group 300 – Electrical Systems**: "The recovery, renewal and automation of electrical equipment will increase the reliability, capacity and quality of the electrical system..."

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In point 4.4.2 Replacement of electrical components: “The following electrical components will be replaced” numeral 1.- “Main generators”.

Additionally, it is essential to carry out the Factory Acceptance Tests (FAT) to demonstrate the correct operation of the generator sets of each Missile Corvette according to Section 4.1 “Group 000 - *General Aspects*”, Section 2 “FAT Tests” of contract **No. COGMAR-COT-001-2022**.

Likewise, the supplier is required to provide assistance and technical support throughout the implementation process, operational tests (STW), port acceptance tests (HAT) and sea acceptance tests (SAT) of the equipment and/or components of the electrical system, in compliance with Section 4.1 *Group 000 - “General Aspects”*, Section 3 “STW Tests”, Section 4 “HAT Tests” and Section 5 “SAT Tests” of contract **No. COGMAR-COT-001-2022**.


Likewise, the supplier must provide ASTINAVE EP with the knowledge transfer programs and high technological capacity, which will allow the acquisition of the necessary capabilities for the correct operation and maintenance of the equipment and components acquired from the different systems, as mentioned in Section 4.1 “*Group 000 - General Aspects*”, Section 8 “*Technology Transfer Plan*”, of contract **No. COGMAR-COT-001-2022**.

This procedure corresponds to the deliveries of the fourth phase and has the purpose of acquiring essential electrical components for the navigation and operations of the Missile Corvettes: **"ACQUISITION AND COMMISSIONING OF GENERATOR SETS FOR THE CORGAL, CORORO AND CORESM CORVETTES OF THE ZEUS PROJECT."**

From a technical point of view, this procedure has the purpose of **"ACQUISITION AND COMMISSIONING OF GENERATOR SETS FOR THE CORGAL, CORORO AND CORESM CORVETTES OF THE ZEUS PROJECT"**, This will provide the necessary electrical power for the navigation and operation of the Missile Corvettes at sea. The acquisition of this asset will allow Astilleros Navales Ecuatorianos (ASTINAVE EP) to meet its established goals and satisfy our client's requirements as set out in Contract **No. COGMAR-COT-001-2022 "RECOVERY OF THE GALÁPAGOS, EL ORO, AND ESMERALDAS CORVETTES."**

The Ecuadorian Navy needs to keep its vessels operational. These vessels play an important role in protecting Ecuador's marine resources through surveillance operations. This ensures effective sovereignty over maritime territory and security against threats such as speedboats, semi-submersibles, and vessels engaged in illegal fishing activities within jurisdictional maritime spaces.

For the above reasons, there is a need to carry out the **"ACQUISITION AND COMMISSIONING OF GENERATOR SETS FOR THE CORGAL, CORORO AND CORESM CORVETTES OF THE ZEUS PROJECT"**, In order to provide an optimal service, meeting our client's requirements and thus achieving one of the business and strategic goals of Astilleros Navales Ecuatorianos ASTINAVE – EP.

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4. DETERMINING NEED

4.1 BENEFIT ANALYSIS

The contract for the "**ACQUISITION AND COMMISSIONING OF GENERATOR SETS FOR THE CORGAL, CORORO AND CORESM CORVETTES OF THE ZEUS PROJECT**" will allow for the recovery, renovation and automation of the electrical systems of the Galápagos, El Oro and Esmeraldas Corvettes, offering multiple benefits to Astilleros Navales Ecuatorianos ASTINAVE EP, the Ecuadorian Navy and the general operation of the vessel . These benefits include:


1. Continuous Operation: The installation of new generator sets for the electrical systems will allow for optimal operation and improved operational efficiency, ensuring the safety and reliability of the systems without interruption. This is crucial for ensuring the protection of marine resources and ensuring sovereignty and security over maritime territory.
2. Risk Reduction: Replacing the generators will reduce the risk of electrical and mechanical failures during operations, which could cause significant delays or even the complete halt of ongoing operations. This will contribute to maintaining ASTINAVE EP's reputation as a reliable naval services provider.
3. Resource Optimization: By carrying out this intervention now, institutional resources are optimized by avoiding higher costs associated with emergency repairs or the acquisition of more expensive components in the event of a major failure. Furthermore, the useful life of the equipment is maximized, making the most of the investment made.
4. Compliance with Contractual Obligations: Guarantee the operability of the Esmeraldas Class Missile Corvettes "**Galápagos**," "**El Oro**," and "**Esmeraldas**" allow ASTINAVE EP to fulfill its contractual obligations with the Ecuadorian Navy, avoiding penalties for noncompliance and strengthening long-term business relationships.

the contract for the "**ACQUISITION AND COMMISSIONING OF GENERATOR SETS FOR THE CORGAL, CORORO AND CORESM CORVETTES OF THE ZEUS PROJECT**" offers a comprehensive solution that not only guarantees the operability and efficiency of the vessels; Esmeraldas Class Missile Corvettes "**Galápagos**," "**El Oro**" and "**Esmeraldas**" , but also contributes to sustainable growth and customer satisfaction with the services provided by Astilleros Navales Ecuatorianos ASTINAVE EP.

4.2 EFFICIENCY OR EFFECTIVENESS ANALYSIS

Through the "**ACQUISITION AND COMMISSIONING OF GENERATOR SETS FOR THE CORGAL, CORORO AND CORESM CORVETTES OF THE ZEUS PROJECT**" , Astilleros Navales Ecuatorianos ASTINAVE EP, will be able to provide an efficient service, allowing the institution to fully comply with the objective of Contract **No. COGMAR-COT-001-2022**, recovering the electrical systems of the Galápagos, El Oro and Esmeraldas Corvettes.

In addition, Ecuadorian Naval Shipyards ASTINAVE EP will have the necessary equipment and components to carry out the planned schedule of activities for the development of the ZEUS project, avoiding delays that could result in fines for noncompliance with the terms agreed upon in Contract **No. COGMAR-COT-001-2022**.

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Furthermore, ASTINAVE EP's technical staff will acquire the necessary capabilities to perform the operational and maintenance requirements of the acquired equipment and systems. This will allow ASTINAVE EP to provide a guarantee of the service provided to the Ecuadorian Navy and subsequently provide logistical support according to the terms agreed upon in Contract No. COGMAR-COT-001-2022.

The contract for the **"ACQUISITION AND COMMISSIONING OF GENERATOR SETS FOR THE CORGAL, CORORO AND CORESM CORVETTES OF THE ZEUS PROJECT"** will allow ASTINAVE EP to achieve significant improvements in terms of efficiency and effectiveness of its services in the careening line. The analysis of efficiency and effectiveness is described below:

4.2.1 EFFICIENCY ANALYSIS

Reduced Downtime:

The contract for the replacement of the generator sets of the Galápagos, El Oro, and Esmeraldas corvettes will reduce the vessels' downtime, ensuring their availability for military operations against conventional threats. This will also enhance their capabilities to confront new unconventional or asymmetric threats, such as speedboats, semi-submersibles, vessels engaged in illegal, unreported, and unregulated fishing activities, or any other illicit activity within jurisdictional maritime spaces. They will also be used as vessels supporting search and rescue efforts and other actions to safeguard human life at sea.

Optimization of Financial Resources:

By opting to upgrade the Esmeralda-class missile corvettes with state-of-the-art generator sets, ASTINAVE EP ensures that not only current needs are met, but also future maintenance or replacement costs are minimized, thus optimizing the use of financial resources by the client, the Ecuadorian Navy.

Reduction of Operating Costs:

The installation of new generator sets will reduce the frequency of replacements, which in turn will lower the operating costs associated with the maintenance and operation of Missile Corvettes.

Staff Productivity:

With operational and reliable Missile Corvettes, operators can perform their work without interruption, increasing the overall operational capacity and performance of maritime surveillance operations.

Execution Speed:

The installation of new generator sets will allow maritime surveillance operations to be carried out more quickly, improving the operational efficiency of the Galápagos, El Oro, and Esmeraldas corvettes.

4.2.2 EFFECTIVENESS ANALYSIS

Operational Sustainability:

The replacement of the propulsion engines, generator sets, new control and energy management systems, and fire alarms will allow the Galápagos, El Oro, and Esmeraldas corvettes to remain operational, ensuring that maritime surveillance services in the country remain uninterrupted, which is essential for the operational sustainability of the Ecuadorian Navy.

Regulatory Compliance:

The acquisition of propulsion engines, generator sets, control and energy management systems, and fire alarms will be carried out under the technical specifications required by maritime safety regulations, ensuring that ASTINAVE EP's operations comply with legal standards and avoid penalties.

Improving Service Quality:

With the Galápagos, El Oro, and Esmeraldas corvettes operational, the Ecuadorian Navy's maritime surveillance service will be more efficient, improving customer satisfaction by reducing wait times and ensuring safe operations.

Impact on Institutional Reputation:

The continued and efficient operation of the Galápagos, El Oro, and Esmeraldas corvettes will contribute positively to ASTINAVE EP's reputation as a reliable maritime services provider.

4.3 STORAGE, DISTRIBUTION AND INSTALLATION CAPACITY

Storage:

For the acquisition of the generator sets, the institution has planned to use the internal warehouses as temporary storage space. These warehouses are equipped to properly handle and store the cables until they are shipped for installation. An email to the Warehouse Manager has reviewed and confirmed that there is sufficient capacity available to house the 09 generators without affecting the storage of other critical materials.



Freire Vilema Christian Xavier

Para: Muñoz Cedeño Jose Fernando; Quelal García Miguel Kevin

CC: Miraba Cargua Diego David; Matute Redrovan Gustavo Vicente

Estimados,

Estamos en la etapa preparatoria del proceso “ADQUISICIÓN Y PUESTA EN MARCHA DE GRUPOS ELECTROGENOS PARA LAS CORBETAS CORGAL, CORORO Y CORESM DEL PROYECTO ZEUS”, por lo cual se requiere nos indique el stock Bodega y Capacidad de almacenamiento temporal en las bodegas de la empresa de lo siguiente:



Ítem	Descripción	Cantidad Total	Unidad
1	GRUPO ELECTRÓGENO DE 300KW, 440VAC, 60HZ, 3F, P/CORBETA MISILERA CLASE ESMERALDAS, INCL: KITS DE INST Y MANT	09	und

El proveedor realizará la entrega en la siguiente fecha preliminar:

Fecha Preliminar
Junio 2026

Saludos Cordiales,

Ing. Xavier Freire V.
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Vacas Galindo S/N y Viveros

Distribution:

Once the generator sets are delivered, a distribution plan will be implemented to ensure their efficient transportation from the warehouses to the installation areas. The plan also includes the organization of internal transportation to ensure the generator sets arrive in optimal condition and on time for scheduled tasks.

Facility:

Regarding the installation, the institution has verified that it has the necessary infrastructure to receive and install the new generator sets on the Esmeralda-class missile corvettes. This includes:

Physical Spaces: The designated areas for the installation are adequately prepared and equipped to support the process without interfering with normal operations.


Basic Services: The availability of basic services, such as electricity and adequate tools, has been confirmed to carry out the installation efficiently.

Staff Training: The personnel responsible for installing the generator sets have received specific training on the handling and assembly of these components, ensuring that the installation is carried out in accordance with technical and safety standards.

This approach ensures that the acquisition, storage, distribution and installation of the generator sets for the Esmeraldas Class Missile Corvettes “Galápagos”, El “Oro” and “Esmeraldas” are managed effectively.

5. SELECTING THE TYPE OF CONTRACT

Organic Law of the National System of Public Procurement in its pertinent articles, regarding the special regime of specific line of business provides: “ *Art. 2.- Special Regime.- the pre-contractual procedures of the following contracts shall be subject to the specific regulations issued for this purpose by the President of the Republic, the General Regulations to this law, under selectivity criteria: (...) 8.- ...Also the contracts entered into by public sector entities or public companies or companies whose subscribed capital belongs at least fifty (50%) percent to public law entities, or their subsidiaries, with companies in which the states of the international community participate in at least fifty (50%) percent, or their subsidiaries.*”

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The special regime provided in this numeral for public companies or companies whose subscribed capital belongs at least fifty (50%) percent to public law entities or their subsidiaries would apply only to the specific line of business; Regarding the common line of business, the common regime provided for in this law shall apply. The determination of specific and common lines of business shall be the responsibility of the Executive Director of the National Institute of Public Procurement.

By Resolution No. **RE-ASTINAVE EP-GGE-DJU-046-2024** of December 2, 2024, the General Manager of ASTINAVE EP issued the NEW REGULATIONS FOR CONTRACTS BY SPECIFIC BUSINESS LINE OF ECUADORIAN SHIPYARDS - ASTINAVE EP; which enter into force upon its granting and publication on the Institutional Portal of the National Public Procurement Service and on the institutional website of ASTINAVE EP.

In this regard, Article 5 of the aforementioned Regulation, in TITLE II, CHAPTER I: Types of contracting, mentions:

(...)

"The contracting of goods and/or services, including consulting services, carried out by Astilleros Navales Ecuatorianos -ASTINAVE EP- through a specific line of business will be carried out according to the following types of contracts:

1. Direct contracting for amounts whose value does not exceed the value resulting from multiplying the coefficient 0.0000004 by the Initial State Budget.
2. Contracting through proformas for amounts whose value exceeds the value resulting from multiplying the coefficient 0.0000004 by the coefficient 0.000015 of the Initial State Budget.
3. Contracting through private competition for amounts whose value exceeds the value resulting from multiplying the coefficient 0.000015 of the Initial State Budget by the coefficient 0.00003 of the Initial State Budget.
4. Contracting through public tender amounts exceeding the value resulting from multiplying the coefficient 0.00003 of the Initial State Budget.
5. Exceptional hires.
6. Framework Agreements.


The present contract object corresponds to a specific good as part of the business of ASTINAVE EP, by SERCOP, in accordance with the authorization granted in Official Letter No. SERCOP-SERCOP-2018-0815-OF of July 5, 2018. The registered CPC is:

Good: 461130015 - Acquisition of Motor-Generators.
Service: 542900318 - Installation, Assembly and Maintenance of Control Instruments

The Contract for "**ACQUISITION AND COMMISSIONING OF GENERATOR SETS FOR THE CORGAL, CORORO AND CORESM CORVETTES OF THE ZEUS PROJECT**" will observe the procedure contemplated in TITLE III, CHAPTER IV **CONTRACTING BY PUBLIC COMPETITION** "For amounts whose amount exceeds the value resulting from multiplying the coefficient 0.00003 of the initial budget of the State.

In accordance with the Regulations on Contracts by Specific Line of Business of Ecuadorian Naval Shipyards -ASTINAVE EP- TITLE II, CHAPTER I, Generalities, Art. 6. CONTRACTS

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ABROAD.- “In article 3 of the General Regulations of the Organic Law of the National Public Procurement System, when -ASTINAVE EP- requires to carry out contracts for goods and/or services abroad, it will not apply the rules contained in the Organic Law of the National Public Procurement System or its General Regulations, but will be subject to the legal rules of the country in which the contracts are made or to the commercial practices or business models of international application

6. TECHNICAL SPECIFICATIONS

6.1 TECHNICAL SPECIFICATIONS DETAILS

The following technical specifications are established, ASTINAVE EP will accept equivalent or other similar conditions in accordance with those established below:

No.	CPC	Good	Amount	Unit	Technical Specification Detail: Characteristics, Functional or Technological Requirements.
1	461130015	300KW GENERATOR SET, 440VAC, 60HZ, 3PH, FOR ESMERALDAS CLASS MISSILE CORVETTE, INCLUDING: INSTALLATION AND MAINTENANCE KITS	09	UND	Detailed section in aspect 6.1.1 Technical specifications of the generator sets. Note: 03 generator sets will be installed per corvette


Table 6.1 Technical specifications.

6.1.1 TECHNICAL SPECIFICATIONS OF THE GENERATOR SETS


In Section 4.4.2.1 “*Replacement of Main Generators*” of the Contract **No. COGMAR-COT-001-2022** details the need to acquire generator sets for the Missile Corvettes.

The main features of the generator sets are described below, followed by details of the additional ASTINAVE EP requirements that will be included with these units.


Aspect	Description
Generator set	
Guy	Marine
Generator rated power	300 KW. Continuous power ISO 3046 (overloadable by 10%) (design power DIN 6280, ISO 8528).
Voltage	440 VAC
RPM	1800 RPM
Frequency	60 Hz
Phases	3 PH
Power factor	0.8
Approximate dimensions:	2650x1300x1700 mm
Approximate weight	3500 kg

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Aspect	Description
THD	5%
Generator Type	Synchronous
Tilted positions, standard oil system	Maximum permanent transverse inclined position (dimensioning: maximum service inclined positions) 22.5° degrees or approximate.
Battery	02 units of 12 VDC, 200 Ah batteries (per generator set) to form a 24 VDC battery bank for generator control.
Coupling the engine and alternator	The engine and alternator must be connected through a torsion-elastic coupling and will be joined by flanges through a bell housing.
Engine and alternator bases	Bases are made of structural steel with lifting rings.
Accessories	<ul style="list-style-type: none"> • Manual pump for extracting oil from the crank case. • Thermal strips for coils installed in the generator. • PT100 temperature sensors in stator.
Internal combustion engine of the generator set	
Nominal speed	1800 RPM
Engine cycle	4 times
Engine cylinders	6 in line
Emission control	IMO Tier II, equivalent or higher
Refrigeration	By sea water
Fuel	Diesel
Basic equipment	<ul style="list-style-type: none"> • Crankcase with ventilation filter and oil filter. • Motor steering wheel with SAE 1 flange, suitable for force with coupling.
Starting system	<ul style="list-style-type: none"> • Pneumatic starting system. • Operating pressure 30 Bar. • 24 VDC solenoid valve. • Drying and lubrication filters.
Lubrication system	<ul style="list-style-type: none"> • Lubricating oil pump with safety valve. • Lubricating oil heat exchanger. • Lubricating oil filter with diverter valve. • Piston cooling system through oil spray nozzles.
Fuel system	Low- and high-pressure fuel system.
Refrigeration system	<ul style="list-style-type: none"> • Dual-circuit cooling system. • Coolant circulation pump. • Water pump with bronze impeller.
Exhaust	It will have a total of three exhaust silencers (one per generator set) with an approximate attenuation of 15 dB or more. The approximate dimensions of the silencer are:

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Aspect	Description
	<ul style="list-style-type: none"> - Length: 1250 mm - Diameter: 610 mm <p>Exhaust silencers must have their own vibration-damping bases. These bases must also be thermally insulated.</p> <p>The design and delivery of construction and installation plans for the gas discharge system for each corvette must be considered.</p>
Management and control system of the internal combustion engine of the generator set	<ul style="list-style-type: none"> • Engine control unit (ECU): <ul style="list-style-type: none"> - Data processing logic for analog and binary signals. - Interface for data transfer for the ship's side monitoring system. • Sensors and wiring: <ul style="list-style-type: none"> - Electric speed transmitters for crankshaft. - Temperature transmitters for engine lubricating oil, engine coolant and other systems. - Pressure transmitters (0.5 - 4.5 V) for lubricating oil and other systems. • Local Operating Panel LOP: <ul style="list-style-type: none"> - Control and display elements for starting, stopping, emergency stop, speed increase, etc.
Generator alternator	
Voltage	440 Vac
RPM	1800 RPM
Frequency	60 Hz
Phases	3 Ph
Power factor	0.8
Alternator insulation	Class H
Parallelism module	Integrated
General characteristics	<ul style="list-style-type: none"> • Three-phase synchronous alternator. • Static transformer. • Tropical isolation.
Generator power cable inlet	Antimagnetic connection plate
Basic spare parts kit.	<p>A basic spare parts kit must be provided for the generator sets. To determine the quantity of spare parts to be received in this kit, preventive maintenance up to 3,000 operating hours must be taken into account.</p> <p>The minimum spare parts for the generator sets required for each Missile Corvette are:</p> <ul style="list-style-type: none"> - Oil filters. - Centrifugal paper.

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Aspect	Description
	<ul style="list-style-type: none"> - Primary fuel filter. - Secondary fuel filter. - Air filter. - Engine sensors and switches. - Voltage regulator card. - Diode and varistor plate. <p>Spare parts will be delivered along with the purchased goods.</p>
Special tools	<p>In order to be able to perform assembly, disassembly, and preventive maintenance, the necessary tool kits must be provided. The main tools that must be included as a minimum for each generator set are:</p> <ul style="list-style-type: none"> - Oil filter wrench. (Quantity: 01) - Turning tool. (Quantity: 01) - Torque wrench. (Quantity: 01) <p>Or those necessary to carry out correct assembly, disassembly and maintenance.</p> <p>The tools will be delivered along with the purchased goods.</p>
Documents, manuals and plans	<p>The successful bidder must deliver at least one complete set of printed technical manuals in Spanish per corvette, including their digital backup. These sets of technical manuals must consist of documents similar or equivalent to:</p> <ul style="list-style-type: none"> - Operation manual. - Maintenance manual. - Parts catalog. - Technical certification of the product. - IMO Certification - Installation plans. (In English and/or Spanish) - Diagrams and drawings of various equipment. (In English and/or Spanish) <p>The documents will be delivered along with the acquired goods.</p>
Packing method	<p>Include a packaging method for the generator sets that guarantees the conservation of the equipment during the trip from the port of origin to the port of Guayaquil and its storage for at least 12 months.</p>
FAT factory test	<p>In order to demonstrate the operation of the generator sets, Factory Acceptance Tests will be conducted. These tests will be attended by a minimum of three people per corvette (ASTINAVE EP and Ecuadorian Navy personnel). The factory acceptance test protocols will be proposed by the "CONTRACTOR" and must be submitted to the Contract Administrator for approval at least 30 days prior to the execution of the tests. The results reports will be signed and approved by the ASTINAVE EP and Navy personnel present at the tests.</p>

Table 6.2 Technical specifications of the generator sets.


6.2 DETAILS OF THE TERMS OF REFERENCE

The following terms of reference are established:

No.	Aspect	Details of the terms of reference
	Goals	Restore the electrical system of the Missile Corvettes “Galápagos”, “Oro”, and “Esmeraldas” to operational readiness.
2	Scope	<p>To keep technical staff at the forefront of technological updates or modifications constantly being made to the components of the different equipment and systems, the need to contract knowledge transfer programs are established, which are detailed below:</p> <ol style="list-style-type: none"> Knowledge transfer programs for the Esmeraldas-class missile corvette generator sets. <p>Program Description:</p> <ul style="list-style-type: none"> Equipment: Generator sets. Course: Maintenance Level I and II. Scheme: Operation of the generator set, repair of damage, replacement of subcomponents and execution of maintenance. Location: Training center of the awarded supplier. Technical staff that will attend minimum 08 people (ASTINAVE EP and Ecuadorian Navy personnel). Duration: Minimum of 10 days. Language: Spanish. Documentation: Certificate of attendance given to the technical staff, appropriate teaching materials for the course in physical or digital format. <p>To demonstrate that the systems meet operational requirements, as well as the operation of the system in the various operating modes and its integration with other relevant on-board systems, the need to contract the acceptance tests is established, which are detailed below:</p> STW Commissioning Tests of the Electrical System for the Esmeraldas Class Missile Corvette. <p>The execution of 03 STW tests are established, which are detailed below:</p> <ul style="list-style-type: none"> 01 STW Test of the CORGAL Electrical System 01 STW Test of the CORORO Electrical System 01 STW Test of the CORESM Electrical System <p>Description of the execution of the tests for each Corvette:</p> <ul style="list-style-type: none"> Equipment: 03 generator sets. Documentation: Commissioning test protocols will be prepared and submitted by the "CONTRACTOR" for

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No.	Aspect	Details of the terms of reference																
		<p>acceptance by the Contract Manager. They must also be submitted to the Contract Manager for approval at least 30 days prior to the execution of the tests.</p> <ul style="list-style-type: none">- Operating Instructions: Generator operator instructions will be given in Spanish to at least eight people per unit. These instructions will be given at ASTINAVE EP facilities, and attendance certificates must be issued upon completion. <p>3. Sea Acceptance Tests (SAT) of the Electrical System for the Esmeraldas Class Missile Corvette.</p> <p>The execution of 03 SAT tests is established, which are detailed below:</p> <ul style="list-style-type: none">• 01 CORGAL Electrical System SAT Test• 01 CORORO Electrical System SAT Test• 01 CORESM Electrical System SAT Test <p>Description of the execution of the tests for each Corvette:</p> <ul style="list-style-type: none">- Equipment: 03 generator sets- Documentation: Sea acceptance test protocols will be prepared and submitted by the "CONTRACTOR" for acceptance by the Contract Manager. They must also be submitted to the Contract Manager for approval at least 30 days prior to the execution of the tests.																
3	Working methodology	<p>The work methodology to be carried out on each corvette is detailed below:</p> <p>The provider must coordinate with the contract administrator the dates of the FAT tests and other requested services.</p> <ul style="list-style-type: none">• Training technical staff with knowledge transfer programs for generator sets.• Arrival of the generator sets• Transfer of technical personnel from the awarded supplier to assist in the start-up of the generator sets.• STW and SAT tests.																
4	Information available to the Entity	<ul style="list-style-type: none">• The shipyard will provide electrical diagrams and existing technical specifications of the generator sets.																
5	Expected products and services.	<p>That the goods/services acquired operate in optimal conditions and do not present failures during their operation.</p> <table><tr><th>No.</th><th>Description</th><th>Amount</th><th>Unit</th></tr><tr><td colspan="4">ESTATE</td></tr><tr><td>1</td><td>300KW Generator Set, 440VAC, 60Hz, 3Ph, for Esmeraldas Class Missile Corvette, incl: installation and maintenance kits</td><td>09</td><td>UND</td></tr><tr><td colspan="4">SERVICES</td></tr></table>	No.	Description	Amount	Unit	ESTATE				1	300KW Generator Set, 440VAC, 60Hz, 3Ph, for Esmeraldas Class Missile Corvette, incl: installation and maintenance kits	09	UND	SERVICES			
No.	Description	Amount	Unit															
ESTATE																		
1	300KW Generator Set, 440VAC, 60Hz, 3Ph, for Esmeraldas Class Missile Corvette, incl: installation and maintenance kits	09	UND															
SERVICES																		

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No.	Aspect	Details of the terms of reference																					
		1	Knowledge Transfer Program for the Esmeraldas-Class Missile Corvette Generator Sets	01	UND																		
		2	STW Commissioning Test of the Electrical System for the Esmeraldas Class Missile Corvette	03	UND																		
		3	Sea Acceptance Test (SAT) of the Electrical System for the Esmeraldas-Class Missile Corvette	03	UND																		
6	Technical staff / work team / Resources	<p>Minimum technical staff for STW and SAT tests.</p> <table><tr><th>No.</th><th>Level of study</th><th>Amount</th></tr><tr><td>1</td><td>Mechanical engineer, mechanical technician or related</td><td>01</td></tr><tr><td>2</td><td>Electrical engineer, electrical technician or similar</td><td>01</td></tr></table> <p>Minimum technical staff to deliver knowledge transfer programs.</p> <table><tr><th>No.</th><th>Level of study</th><th>Amount</th></tr><tr><td>1</td><td>Mechanical engineer, mechanical technician or related</td><td>01</td></tr><tr><td>2</td><td>Electrical engineer, electrical technician or similar</td><td>01</td></tr></table>				No.	Level of study	Amount	1	Mechanical engineer, mechanical technician or related	01	2	Electrical engineer, electrical technician or similar	01	No.	Level of study	Amount	1	Mechanical engineer, mechanical technician or related	01	2	Electrical engineer, electrical technician or similar	01
No.	Level of study	Amount																					
1	Mechanical engineer, mechanical technician or related	01																					
2	Electrical engineer, electrical technician or similar	01																					
No.	Level of study	Amount																					
1	Mechanical engineer, mechanical technician or related	01																					
2	Electrical engineer, electrical technician or similar	01																					
7	Minimum experience of technical staff	<p>The required technical staff must demonstrate their experience in similar work within the last 3 years, for which they must present:</p> <ul style="list-style-type: none">• Employment certificates <p>The certificates must endorse the experience of the minimum technical personnel required; therefore, the bidder must attach the experience of its personnel (labor certificates), as well as their resumes with their respective professional titles.</p> <p>The formats of the Labor Certificates of the technical personnel are free to decide as long as the information contained therein complies with the requirements of the bidding documents of this procurement process.</p>																					
8	Minimum equipment or tools	<p>The supplier must have all the necessary minor tools to fulfill the required service to the satisfaction of ASTINAVE EP.</p>																					

Considering that the requested items correspond to goods and services from different units, and these in turn are linked to different work orders, the distribution by vessel is detailed in **¡Error! No se encuentra el origen de la referencia..**

No.	Vessel	OT	Application	Good / Service	Qty. Total	Unit
ESTATE						
1	CORGAL	11MD005P321000	36342	300KW Generator Set,	09	UND

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No.	Vessel	OT	Application	Good / Service	Qty. Total	Unit
2	CORORO	11MD004P321000	36343	440VAC, 60Hz, 3Ph, for Esmeraldas Class Missile Corvette, incl: installation and maintenance kits		
3	CORESM	11MD006P321000	36344			
SERVICES						
4	CORGAL	11MD005P321000	36345	Knowledge Transfer Program for the Esmeraldas-Class Missile Corvette Generator Sets	01	UND
5	CORORO	11MD004P321000	36346			
6	CORESM	11MD006P321000	36347			
7	CORGAL	11MD005P321000	36345	STW Commissioning Test of the Electrical System for the Esmeraldas Class Missile Corvette	03	UND
8	CORORO	11MD004P321000	36346			
9	CORESM	11MD006P321000	36347			
10	CORGAL	11MD005P321000	36345	Sea Acceptance Test (SAT) of the Electrical System for the Esmeraldas-Class Missile Corvette	03	UND
11	CORORO	11MD004P321000	36346			
12	CORESM	11MD006P321000	36347			

Table 6.3 Distribution of goods and services by TO and application number.

6.3 TECHNOLOGY TRANSFER

The CPC: Good: 461130015 Service: 542900318., established for the “**ACQUISITION AND COMMISSIONING OF GENERATOR SETS FOR THE CORGAL, CORORO AND CORESM CORVETTES OF THE ZEUS PROJECT**”, **DO NOT** require technology transfer as required by art. 87 of the Secondary Regulations of the National Public Procurement System.

Therefore, the supplier is **NOT** required to comply with all the requirements and commitments determined according to the level of technology transfer TT 1, TT 2, TT3 and TT4 listed in Annex 4 of the Secondary Regulations of the National Public Procurement System, where the regulations establish that CPC N8 contains all CPC N9 of the same family.

7. CONTRACTUAL CONDITIONS


7.1 DELIVERY TIME:

The execution period for goods and services is **995 calendar days** from the day following written notification by the contract administrator regarding the availability of the advance payment, in the bank account provided by the contractor and according to the following details:

ESTATE:

The delivery time for 100% of the GOODS is **470 calendar days**, counted from the day following written notification by the contract administrator regarding the availability of the advance payment in the bank account provided by the contractor.

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SERVICE:

The delivery time for the delivery of all SERVICES will be as follows:


No.	SERVICE/TESTING	TERM
01	- FAT Testing of the Generator Sets for the Missile Corvettes - Knowledge Transfer Program for Corvette Generator Sets	The delivery time for the FAT tests and the Knowledge Transfer Program for the Missile Corvette Generator Sets is a maximum of 425 calendar days, counting from the day following written notification from the contract administrator regarding the availability of the advance payment in the bank account provided by the contractor.
02	STW/SAT Testing of the Electrical System of the Missile Corvette "Galapagos"	The delivery time of the service corresponding to the STW / SAT Tests of the Missile Corvette "Galapagos" is 695 calendar days counted from the day following the written notification by the contract administrator regarding the availability of the advance, in the bank account provided by the contractor, the written notification by the contract administrator of the availability of the vessel.
04	STW/SAT Testing of the Electrical System of the Missile Corvette "El Oro"	The delivery time of the service corresponding to the STW / SAT Tests of the Missile Corvette "El Oro" is 815 calendar days counted from the day following the written notification by the contract administrator regarding the availability of the advance, in the bank account provided by the contractor, the written notification by the contract administrator of the availability of the vessel.
06	STW/SAT Testing of the Electrical System of the Missile Corvette "Esmeraldas"	The delivery time of the service corresponding to the STW / SAT Tests of the Missile Corvette "Esmeralda" is 995 calendar days counted from the day following the written notification by the contract administrator regarding the availability of the advance, in the bank account provided by the contractor, the written notification by the contract administrator of the availability of the vessel.

Table 7.1 Service delivery time

SCHEDULE OF DELIVERABLES	
DESCRIPTION	CALENDAR DAYS DISTRIBUTED ACCORDING TO THE FOLLOWING:
ADVANCE	
Delivery of FAT tests and knowledge transfer program for the Galapagos corvette	425 Días
Delivery of Incoterm Goods - CIF for the Corvette "Galapagos"	470 Días
Delivery of STW and SAT tests for the Corvette "Galapagos"	695 Días
TOTAL DAYS OF CORGAL DELIVERIES	695 Días
Delivery of FAT tests and knowledge transfer program for the Corvette "El Oro"	425 Días
Delivery of Incoterm Goods - CIF for the Corvette "El Oro"	470 Días
Delivery of STW and SAT tests for the corvette "El Oro"	815 Días
TOTAL DAYS OF CORORO DELIVERIES	815 Días
Delivery of FAT tests and knowledge transfer program for the Esmeraldas corvette	425 Días
Delivery of Incoterm Goods - CIF for the Corvette "Esmeraldas"	470 Días
Delivery of STW and SAT tests for the "Esmeraldas" corvette	995 Días
TOTAL DAYS OF CORESM DELIVERIES	995 Días
TOTAL DELIVERY TIME	995 Días

Table 7.2 Delivery Schedule.

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7.2 DELIVERY METHOD:

The delivery of the goods will be complete, and the services will be partial as follows:

No.	Description	Deadline (calendar)
1	Delivery and receipt of the goods of 09 Generator Sets of 300KW, 440VAC, 60Hz, 3F, for Esmeraldas Class Missile Corvette, incl: installation and maintenance kits.	470 days , counted from the day following written notification by the contract administrator regarding the availability of the advance payment in the bank account provided by the contractor.

Table 7.3 Deliveries of Goods.

The services involved will be performed partially, that is, individually and independently for each Corvette; the Contract Administrator must notify the Contractor in advance of the exact date of execution of the services for each Corvette.

No.	Description	Deadline (calendar)
1	FAT Testing Service and Knowledge Transfer Program for the Esmeraldas Class Missile Corvette Generator Sets.	425 calendar days from the day following written notification by the contract administrator regarding the availability of the advance payment in the bank account provided by the contractor.
2	STW/SAT Testing of the Electrical System of the Missile Corvette "Galapagos"	695 calendar days counted from the day following the written notification by the contract administrator regarding the availability of the advance, in the bank account provided by the contractor, the written notification by the contract administrator of the availability of the vessel.
3	STW/SAT Testing of the Electrical System of the Missile Corvette "El Oro"	815 calendar days counted from the day following the written notification by the contract administrator regarding the availability of the advance, in the bank account provided by the contractor, the written notification by the contract administrator of the availability of the vessel.
4	STW/SAT Testing of the Electrical System of the Missile Corvette "Esmeraldas"	995 calendar days counted from the day following the written notification by the contract administrator regarding the availability of the advance, in the bank account provided by the contractor, the written notification by the contract administrator of the availability of the vessel.


Table 7.4 Partial deliveries of SERVICES.

7.3 DELIVERY LOCATION:

GOODS: The place of delivery of the GOODS acquired according to **Incoterms CIF-Port of Guayaquil**. The cost of customs procedures for entry into Ecuador will be covered by **ASTINAVE EP**.

SERVICES: The delivery location for the FAT tests and knowledge transfer programs will be a Training Center provided by the successful bidder. The delivery location for the STW and SAT tests will be aboard the Missile Corvettes Galápagos, El Oro, and Esmeraldas.

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7.4 PAYMENT METHOD AND CONDITIONS:

The following table presents the payment plan for the deliverables to be acquired by ASTINAVE EP. This payment plan is divided into partial payments to be made in United States dollars. The payment plan includes an advance payment to ensure the start of equipment manufacturing, five partial payments corresponding to the deliveries for each Missile Corvette, and a final payment to be made upon signing the Final Delivery Certificate and accepting the contract.

In the event that the deliverable in Table 7.3 corresponds to GOODS, the supplier must deliver the following enabling documents:


- Corresponding customs invoice.
- Detail of item to accrue advance.
- Acceptance report of the contract administrator. Derived from the act of partial delivery of the goods if necessary.
- Packing list.
- Sea Bill of Lading or BL.
- Photographic evidence of the assets. The photographic evidence will be both in the factory by the contractor prior to shipment, as well as by ASTINAVE EP at the time of delivery of the goods according to INCOTERMS.
- Notify the vessel and booking document on which the cargo will be transported for tracking purposes.
- and transportation processes.

In the event that the deliverable in Table 7.5 the following enabling documents:

Certificate of attendance for knowledge transfer programs.

The STW and SAT test protocols signed and approved by ASTINAVE EP staff.

Payment Description	Amount	Deliverable
Advance Payment	40%	Delivery of a guarantee of good use of advance payment and faithful performance.
Payment 1	30%	<ol style="list-style-type: none"> Receipt of the FAT test protocols signed and approved by the ASTINAVE EP and Navy delegated personnel present at the testing of 09 generator sets. Acceptance report of (01) Knowledge Transfer Program of the Esmeraldas Class Missile Corvette Generator Sets. Acceptance report of the goods in factory by the administrator.
Payment 2	20%	Receipt of the following INCOTERMS CIF GOODS : <ol style="list-style-type: none"> 09 Generator Sets of 300KW, 440VAC, 60Hz, 3Ph, for Esmeraldas Class Missile Corvette, incl: installation and maintenance kits. Packing list and commercial invoice Report on acceptance of the administrator's assets, deriving from the partial delivery of the goods, if necessary.
Payment 3	4%	Reception of the following SERVICES (CORGAL) <ol style="list-style-type: none"> 01 STW Commissioning Test of the Electrical System for the Esmeraldas Class Missile Corvette. 01 Sea Acceptance Test SAT of the Electrical System for the Esmeraldas Class Missile Corvette. Test Acceptance Manager Report Partial delivery/receipt certificate

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Payment Description	Amount	Deliverable
Payment 4	3%	Reception of the following SERVICES (CORORO) 1. 01 STW Commissioning Test of the Electrical System for the Esmeraldas Class Missile Corvette. 2. 01 Sea Acceptance Test SAT of the Electrical System for the Esmeraldas Class Missile Corvette. 3. Test Acceptance Manager Report 4. Partial delivery/receipt certificate
Payment 5	3%	Reception of the following SERVICES (CORESM) 1. 01 STW Commissioning Test of the Electrical System for the Esmeraldas Class Missile Corvette. 2. 01 Sea Acceptance Test SAT of the Electrical System for the Esmeraldas Class Missile Corvette. 3. Test Acceptance Manager Report 4. Certificate of total delivery/receipt

Table 7.5 Payment method and terms.

The value of this advance payment will be 100% backed by a Guarantee of Good Use of Advance Payment and Faithful Performance with respect to the preparation and delivery of the GOODS and SERVICES, which will remain in effect until it is accrued or amortized in full.

The refund of the guarantee of good use of the advance payment will be made upon total delivery of the goods, that is to say, after payment 1 and payment 2, of which the advance payment will accrue 20% on the first payment and accrue 20% on the second payment, so that the invoicing should be 50% on payment 1 and 40% on payment 2.

The bid price must cover all activities and costs necessary for the bidder to fulfill the purpose of this process, to the full satisfaction of **ASTINAVE EP**.

Once **ASTINAVE EP** disburses the payment for the contract in accordance with Article 326.1 of the General Regulations of the LOSNCP, the supplier must submit payment information in accordance with Article 326.2 of the General Regulations of the LOSNCP.


7.5 TECHNICAL GUARANTEE:

The successful supplier must present the corresponding technical guarantee at the time of signing the final delivery and acceptance certificate of the contract.

The technical warranty period will be 12 months, counted from the signing of the delivery certificate and total receipt of the Missile Corvettes or, at the latest, 36 months after receiving the GOODS according to Incoterms 2020 CIF Guayaquil.

The technical warranty will validate that the goods are brand new from the factory, of optimal quality, free of defects and manufacturing flaws, and that they comply with the technical specifications, manufacturing standards, and requirements demanded by ASTINAVE EP.

During the term of the Technical Guarantee, if ASTINAVE EP requests the replacement of parts or pieces of the contracted good that have been considered defective, these will be replaced with new ones of the same quality and condition, at no additional cost to ASTINAVE EP within a maximum period of 60 calendar days from the date of notification.

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The technical warranty will cover 100% of products with damage or alterations caused by the factory, packaging, handling, poor quality of the materials or components used in their manufacture, and workmanship.

7.6 GUARANTEE OF ADVANCE PAYMENT AND FAITHFUL PERFORMANCE

“Art. 74.- Performance Guarantee. *-To ensure compliance with the contract and to respond to obligations incurred in favor of third parties related to the contract, the successful bidder, before or at the time of signing the contract, shall provide guarantees for an amount equivalent to five (5%) percent of the contract's value. In construction contracts, as well as in comprehensive fixed-price contracts, this guarantee shall be established to guarantee compliance with the contract and the obligations incurred in favor of third parties and to ensure the proper execution of the work and the good quality of the materials, thereby ensuring repairs or changes to those parts of the work in which construction defects, poor quality, or noncompliance with specifications are discovered, attributable to the supplier. In construction contracts or in the contracting of non-standard services, if the awarded economic offer is lower than the reference budget by a percentage equal to or greater than ten (10%) percent of the latter, the performance guarantee must be increased by an amount equivalent to twenty (20%) percent of the difference. between the reference budget and the contract amount.”*

“Art. 75.- Advance Payment Guarantee. *- If, due to the payment method established in the contract, the Contracting Entity must grant advances of any kind, whether in cash, sight drafts, or another form of payment, in order to receive the advance, the contractor must first provide guarantees equal to the advance amount, which will be reduced in proportion to the amortization of the advance or the provisional receipt of the works, goods, or services. Letters of credit will not be considered an advance if their payment is conditioned on the delivery or receipt of the goods or works subject to the contract. The amount of the advance will be regulated by the Contracting Entity, taking into account the nature of the contract.”*

Contractors may provide any of the guarantees established in Article 73 of the National Public Procurement System Law.


7.7 FINES:

For each day of delay in partial deliveries and/or failure to fulfill contractual obligations, ASTINAVE EP will impose a fine equivalent to 1x1000, calculated based on the percentage of obligations still pending execution, as established in Article 71 of the LOSNCP, in conjunction with Article 292 of the General Regulations of the Organic Law of the National Public Procurement System, currently in force. The resulting fines will be deducted from outstanding payments.

“Art. 293.- Procedure for imposing fines on the contractor. *- In any case, should the contractor incur the grounds for imposing a fine, the contracting entity must adhere to the following procedure:*

1. *The contract administrator shall, through a justified report, determine the breaches and the amounts of any applicable fines. This report shall be signed within seven (7) days of the event giving rise to the breach.*

2. *This report will be made known to the contractor within a maximum of three (3) days of its signing, in order to respect due process. The contractor has a term of five (5) days to*

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exercise its right to defense, with its response or in its absence, the contract administrator will impose the fines that may be applicable in a justified and reasoned manner, through an administrative act that will be notified to the contractor within a maximum term of three (3) days of being issued. Once notified, the fine will be deducted at the time of making the corresponding payment.

In the case of construction projects, fines will be calculated by the inspector and notified to the contract administrator, so that they can proceed in accordance with the procedure described in this article.

8. MINIMUM REQUIREMENTS

8.1 GENERAL OR SPECIFIC EXPERIENCE

For technical convenience and to safeguard the interests of the company, the manufacturer complies at least with the following **General Experience**:

Type of experience	Temporality to accredit experience	Number of Contracts and Projects Allowed	Minimum amount to demonstrate experience in relation to the reference budget	Minimum amount per contract or project
Demonstrate documentary Experience in selling products and/or services in the naval area related to the generator system.	During the last 15 years prior to the publication of the procedure.	1 or more	\$1,858,222.50	\$464,555.63


Table 8.1 General experience.

General or similar experience will be validated by submitting the following supporting documents:

- Contracts; or
- Invoices.

For technical convenience and to safeguard the interests of the company, the manufacturer must comply with at least the following **Specific Experience**:

Type of experience	Temporality to accredit experience	Number of Contracts and Projects Allowed	Minimum amount to demonstrate experience in relation to the reference budget	Minimum amount per contract or project
Demonstrate documentary Experience in sales and/or implementation and commissioning services for: marine engines, generator	During the last 15 years prior to the publication of the procedure.	1 or more	\$929,111.25	\$232,277.81

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sets, components and/or related spare parts kits.				
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Table 8.2 Specific experience.

Specific experience will be validated by submitting the following supporting documents:

- a. Contracts; or
- b. Invoices.

The participation of foreign legal entities as distributors or authorized representatives is valid, provided that the credentials and certifications come from the manufacturer, but the experience is directly from the supplier or bidder participating in the bidding.

The experience must be exclusively of the natural or legal person that will submit the bid, or in its absence of a consortium (document to be submitted in case of consortium to validate the experience is a consortium commitment, which must be validated and legalized in Ecuador once the award is notified.

8.2 OTHER MINIMUM REQUIREMENTS

NOT APPLICABLE

8.3 QUALIFICATION PARAMETERS

In order to evaluate the bids submitted by participating bidders, the minimum qualification parameters that must be met are the following:

Rating parameter	Complies	Does not comply
Integrity of the offer (forms)		
Overall experience		
Specific experience		
Reference budget		
Technical guarantee		
Technical specifications		
Total		

Table 8.3 Qualification parameters.


Those offers that fully comply with the minimum requirements will proceed to the evaluation stage of offers with points, otherwise they will be disqualified.

The methodology "By Score" is used when the objective is to establish the best technical or economic conditions or capacities among the bidders that have previously accredited a minimum required condition or capacity.

The following is a description of the evaluation parameters by score:

Qualification Parameter	Score
Financial offer	40
General Experience	20

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Specific Experience	20
Extended Technical Guarantee	20
Total:	100

Table 8.4. Scoring parameter by score.

Financial offer (40 points):

The bid whose total amount is the lowest of all the bids submitted will be given the highest score, the other economic bids submitted per item will be scored inversely proportional, taking as a basis the bid with the lowest amount.

General Experience (20 points)

The bidder will receive points for the amount of additional general experience. If this value is the highest of all the bidders, it will receive the full score, otherwise it will receive the proportional value in relation to the highest.

For the qualifications of this experience, the following criteria shall be observed:

1. The maximum number of points to be awarded to the bidder shall be the result of the factor of 1.25 by the amount of the Referential Budget.
2. If the bidder submits contracts with amounts in excess of the minimum required for general experience, points will be awarded proportionally to the amount in excess, according to the formula indicated.

Specific experience (20 points):

The bidder will receive points for the amount of its additional specific experience. If this value is the highest of all the bidders, the bidder will receive the full score, otherwise it will receive the proportional value in relation to the highest.

For the qualifications of this experience, the following criteria shall be observed:

1. The maximum number of points to be awarded to the bidder shall be the result of the factor of 1.25 by the amount of the Referential Budget.
2. If the bidder submits contracts with amounts in excess of the minimum amount required for specific experience, points will be awarded proportionally to the amount in excess, in accordance with the formula indicated.

Extended Technical Guaranty (20 points)


The bid that includes an extended technical guarantee for 24 months after the signature of the final acceptance certificate will receive the highest score.

9. REFERENCE BUDGET

According to the Market Study conducted through report INF-ZEU-229, the **multi-year reference budget** is **US\$3,716,445.00** (Three million seven hundred sixteen thousand four hundred forty-five and 00 American dollars). VAT is not included.

No.	Description	Worth
1	ESTATE	\$ 3,299,445.00
2	SERVICES	\$417,000.00

Table 9.1 Values

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Breakdown of the reference budget:

No.	Description	Cant.	And	Unit Price	Subtotal
ESTATE					
1	300KW Generator Set, 440VAC, 60Hz, 3Ph, for Esmeraldas Class Missile Corvette, incl.: installation and maintenance kits.	09	UND	\$366,605.00	\$ 3,299,445.00
SERVICES					
1	FAT Testing and Knowledge Transfer Program for the Esmeraldas Class Missile Corvette Generator Sets.	01	UND	\$208,500.00	\$208,500.00
2	STW Commissioning Test of the Electrical System for the Esmeraldas Class Missile Corvette.	03	UND	\$34,750.00	\$104,250.00
3	Sea Acceptance Test (SAT) of the Electrical System for the Esmeraldas Class Missile Corvette.	03	UND	\$34,750.00	\$104,250.00
TOTAL					\$ 3,716,445.00

Table 9.2 Breakdown of the reference budget.

The bid price must cover all activities and costs necessary for the bidder to fulfill the purpose of this process, to the full satisfaction of ASTINAVE EP. The price is **fixed** and **unchanging**. There will be no price adjustments, and they are the sole responsibility of the bidder.


The bid price must cover all activities and costs necessary for the bidder to fulfill the purpose of this process, to the full satisfaction of ASTINAVE EP. The price is fixed and unchanging. There will be no price adjustments, and they are the sole responsibility of the bidder.

Financial Certification: **Multiannual** YEAH ☒ NO ☐

The multi-year reference budget will be given as follows per year:

YEAR	PAYMENTS	VALUES
2025	Advance	\$1,486,578.00
2026	FAT Tests and Knowledge Transfer Program	\$ 1,114,933.50
2026	Reception of GOODS from CORGAL, CORORO and CORESM.	\$743,289.00
2027	Reception of STW / SAT Test Services of the Electrical System of the Missile Corvette " Galapagos "	\$148,657.80
2027	Reception of STW/SAT Test Services for the Electrical System of the Missile Corvette "El Oro"	\$111,493.35
2028	Reception of STW / SAT Testing Services of the Electrical System of the Missile Corvette " Esmeraldas "	\$111,493.35

Table 9.3 multi-year reference budget.

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10. OBLIGATIONS OF THE PARTIES

10.1 OBLIGATIONS OF THE CONTRACTOR

- Comply with each of the technical specifications requested by ASTINAVE EP, within the established times, conditions, and deadlines, as well as any other specifications outlined in the specifications and subsequent contract.
- The contractor is obligated to comply with any other obligations that arise naturally and legally from the purpose of the contract and are enforceable by reference to any contract document or specifically applicable legal provision.
- Deliver the goods in perfect condition and with the appropriate safeguards, meaning that at the time of delivery the goods will be verified by the contract administrator.
- The goods must be factory new, not remanufactured, not restored, not reconditioned and not rebuilt, guaranteed against manufacturing defects and installation errors, with the obligation of immediate replacement for factory defects.
- Pursuant to Article 326.2 of the General Regulations of the LOSNCP, Public Payment Information. Under the Tenth General Provision of the Law, the contractor is required to submit monthly account statements issued by the financial/banking institution showing the financial or banking transactions in the account in which payments resulting from the contract were received.

10.2 OBLIGATIONS OF THE CONTRACTING ENTITY


- Appoint the Contract Administrator for the full execution of the contract and notify the contractor in a timely manner.
- Sign the delivery and receipt documents for the goods received, provided that the legal requirements for delivery and receipt have been met; and, in general, fulfill the obligations arising from the contract.
- Provide the necessary facilities for the timely execution of the contract.
- Provide solutions to requests and problems that arise during the execution of the contract, through the Contract Administrator within a period of five (5) days, counted from the written request made by the contractor to the Contract Administrator.
- Comply with the respective payments under the established terms, making withholdings in accordance with current legal regulations.

11. DEFINITIONS AND ACRONYMS

11.1 ACRONYMS

ASTINAVE: Ecuadorian Naval Shipyards
Ah: Ampere-hours.
CORESM: Esmeraldas Corvette

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CORGAL:	Galapagos Corvette
CHORUS:	El Oro Corvette
EP:	Public Company
FAT:	Factory Acceptance Tests
Hz:	Hertz
IMO:	International Maritime Organization (International Maritime Organization)
Kw:	Kilowatts
LOSNC:	Organic Law of the National Public Procurement System
RPM:	Revolutions per Minute
SAT:	Sea Acceptance Tests
SERCOP:	National Public Procurement Service
STW:	Setting to Work
THD:	Total Harmonic Distortion (Total Harmonic Distortion)
Vac:	Alternating Current Voltage
Vdc:	Direct Current Voltage