

# Terms of Reference



Empowered lives.  
Resilient nations.

## GENERAL INFORMATION

**Title:** National Consultant for Development of Maritime Domain Awareness Network for the Coordinating Ministry of Maritime Affairs and Investment.

**Project Name:** Global Maritime Crime Programme (GMCP).

**Reports to:** Programme Coordinator for Southeast Asia and the Pacific and UNODC Indonesia Country Manager

**Duty Station:** Home Based

**Expected Places of Travel (if applicable):** Not applicable.

**Duration of Assignment:** 127 working days within October 2021 – April 2022

### REQUIRED DOCUMENT FROM HIRING UNIT

	TERMS OF REFERENCE
4	<b>CONFIRMATION OF CATEGORY OF LOCAL CONSULTANT, please select:</b> (1) Junior Consultant (2) Support Consultant (3) Support Specialist (4) <b>Senior Specialist</b> (5) Expert/Advisor <b>CATEGORY OF INTERNATIONAL CONSULTANT, please select:</b> (6) Junior Specialist (7) Specialist (8) Senior Specialist
✓	APPROVED e-requisition

### REQUIRED DOCUMENTATION FROM CONSULTANT

✓	CV / P11 with three referees
✓	Copy of education certificate
✓	Completed financial proposal
✓	Completed technical proposal

### Need for presence of IC consultant in office:

☒ Partial (explain): The contractor will be homebased during his/her consultancy. No requirement to attend daily to the office. However, to be available for any meetings requested by the supervisor.

☐ Intermittent (explain):

☐ Full time/office based (needs justification from the Requesting Unit)

### Provision of Support Services:

Office space: ☐ Yes ☒ No

Equipment (laptop etc.): ☐ Yes ☒ No

Secretarial Services ☐ Yes ☒ No

If yes has been checked, indicate here who will be responsible for providing the support services: < Enter name >

## I. BACKGROUND

The UNODC Global Maritime Crime Programme (GMCP) supports member states, including Indonesia, to respond to maritime crime challenges. As part of this work, the GMCP provides expert legal and technical advice through events including capacity building events, table-top exercise and round-table discussion related to the specialist area of maritime crime and maritime law.

The UNODC GMCP has been supporting The Indonesian Coordinating Ministry for Maritime & Investment Affairs (MARVES) to strengthen its duties to coordinate all the aspect related to maritime issues. MARVES is the agencies in Indonesia which in charge with organizing coordination, synchronization, and control of ministry affairs in the administration of government in the maritime and investment fields. In term of law enforcement at sea, MARVES has been working with several related institution to support a fast response policy.

To improve the performance of implementation of law enforcement at sea, a mutual agreement on the exchange of data and information in the context of law enforcement at sea is signed. This agreement was signed in December 2019 between eight ministries/agencies namely, MARVES, Ministry of Finance, Ministry of Transportation, Ministry of Marine Affaire and Fisheries, Nasional Police, National Search and Rescue Agency (BASARNAS), Indonesia Coast Guard (BAKAMLA) and Indonesia Aerospace Agency (LAPAN). Currently, data sharing is done conventionally by a formal requested mail, which become ineffective and time consuming. In case of accidental event, the conventional data transfer became the main problem for making decisions quickly.

In order to fasten data and information sharing process among the agencies and to support quick decision making within maritime agencies, each agency will need to leverage application programming interfaces (APIs). APIs are programmatic means for developers to connect to existing systems, extract data from them and create new functionality on top of them. Several collaborated institutions had defined their data API, however, to smooth data sharing between each institution and also monitoring, an API-Hub is needed. API hub — a single place where teams in the group publish and share the APIs that they are building and allow others to easily discover and search through them. It is critical for MARVES to value innovation to ensure that institutions signed the agreement can more easily discover and connect to the APIs that exist in the institution.

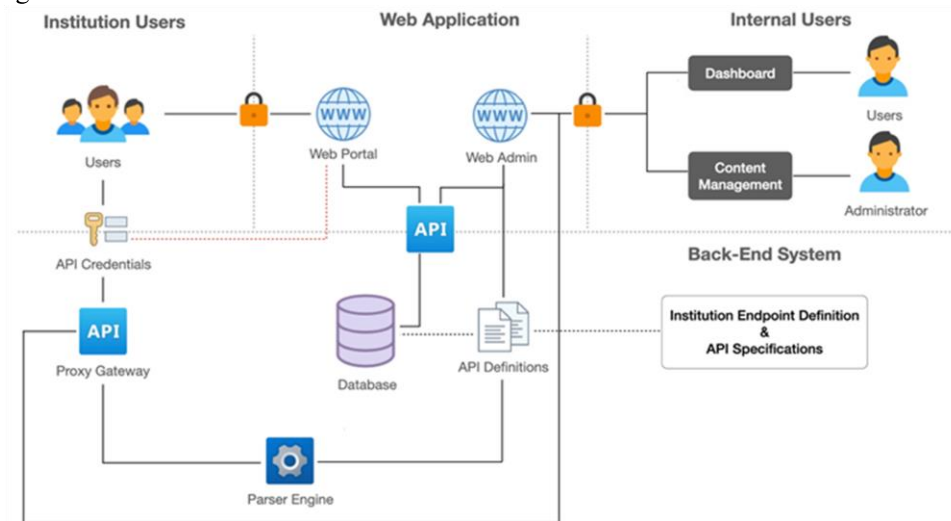
## II. SCOPE OF WORK, ACTIVITIES, AND DELIVERABLES

### Scope of Work

The purpose of this assignment is to support the UNODC GMCP in developing the API Hub Management for data sharing between ministries under MARVES, as the data source is specified from Ministry of Finance, Ministry of Marine Affaire and Fisheries, BASARNAS, BAKAMLA and LAPAN.

### Specific task to be performed by the national consultant:

Under the supervision of Programme Coordinator UNODC of GMCP for Southeast Asia and the Pacific and overall supervision of the County Manager of Indonesia, the consultant will carry out the following activities:



- *Conduct Application Infrastructure Setup/Adjustment*  
The consultant will do an Infrastructure setting and adjustment to prepare the system update. This work will include checking the components of hardware, software, networking components, an operating system (OS), and data storage.
- *Conduct API definition:*  
The consultant will collaborate with MARVES API-HUB team to exploring the collection of API specifications and endpoint of Institution. Since there are several databases in each Institution with different data types and formats, the consultant needs to do an analysis on the type, format, and size of database. The definition will be read by parser engine to forward to API gateway.
- *Conduct API Database*  
The consultant will build a database to stores all the configurations such as user accounts, API management, and user activities.
- *Conduct Parser Engine*  
The consultant will develop a parser engine in three steps. First, read the API Definitions to transform the specifications to be readable by system and consumable by users. Second, grouped the API according to the API source and only the fields that will be used are taken. Third, formatting into JSON Format, and an API Source field is added before entering the API gateway.
- *Conduct Back-End API*  
The consultant will build the back-end API as a data bridging between database and web application (web portal and web admin). It also has capability to track user activity.
- *Conduct API Proxy gateway*  
The consultant will develop a proxy gateway as the wrapper of API endpoint to standardize the request method to be more secure. API Gateway Serves as an entry point from several existing Data Sources to be used as a new service. API Gateway integrates with existing data source to perform authentication and authorization of message traffic. API Gateway is designed to offer a highly flexible and scalable solution architecture. Administrators can connect new instance APIs as needed with the API Gateway. It is easier to maintain, monitor, and secure APIs from multiple data sources.
- *Conduct user API Credentials*  
The consultant will develop a user API Credentials as the keys to access API Endpoints from institutions securely.
- *Conduct UI/UX Design*  
The consultant will design the UI/UX of web admin and web portal interface. Also provide Adobe XD as UI/UX guidelines development.
- *Conduct Monitoring Dashboard Admin Front-End Development*  
Web Admin is the web interface managed by an internal administrator to monitor the status of the data source connected to the API, API traffic, and user activities.
- *Conduct Content Management Dashboard Front-End Development*  
Web Admin is the web interface managed by an internal administrator to manage the listed API resources and configure user accounts.
- *Conduct Web Service Front-End Development*  
As the Web Portal is the web interface provides the data catalogue and download capability of data. The web service can interact with other applications through a mutually agreed agreement. The institution users need secure login to access the portal.

#### **Expected Outputs and Deliverables**

- *Infrastructure which includes hardware, software, and networking components is set up.*  
Each hardware (including data storage, etc), software (including OS, etc), networking components are set up and work as expected. The specification already managed for better

performance for the custom system inside.

- *API definition is reported*  
The API documentation is explained the reference manual with all needed information about the API, including functions, classes, return types, and arguments.
- *API database is developed.*  
The database should be maintainable and reliable. The database consists of the information of user accounts, API management, and user activities.
- *Parser Engine is developed.*  
The parser engine provides instructions on how to read the APIs, and it determines what type of analysis to conduct.
- *Back-End API is developed.*  
The back-end API includes to configure databases, servers, interfaces and operating systems.
- *API proxy gateway is developed.*  
The API proxy gateway provides a single, unified API entry point across one or more internal APIs. This proxy gateway is used to create, secure, share, and manage APIs.
- *User API Credentials is developed*  
A unique multiple API credentials are created for each institution user. The APIs feature credentials include Name, API password, Auth token, API key, Status, and Actions.
- *UI/UX is designed*  
UI/UX will be customized based on user need. It develops as Adobe XD files before web format to make better understanding what the user really needs. Some code will develop after to work as a controller to manage the model (database) and view (UI/UX).
- *Web Admin Monitoring Dashboard Front-End is developed*  
Web Admin Front-End is developed after UI/UX approved and Web Admin Front-End developed. It will develop first but revised at last as admin is the highest privileges in the system.
- *Web Admin Management Dashboard Front-End is developed*  
Web Admin Front-End is developed after UI/UX approved and Web Admin Front-End developed. It will develop first but revised at last as admin is the highest privileges in the system.
- *Web Portal Front-End is developed*  
Web Portal Front-End is developed after UI/UX approved and Web Admin Front-End developed. It will bring guest privileges from the admin with some security to filter which data has to show.

### III. WORKING ARRANGEMENTS

#### Institutional Arrangement

The consultant will perform his/her work under the supervision of the Regional Programme Coordinator of Southeast Asia and the Pacific of the Global Maritime Crime Programme of UNODC. In addition, the UNODC Country Manager of Indonesia will provide overall guidance and supervision to the consultant. Additional support will be provided under the guidance of National Programme Officer of Global Maritime Crime Programme.

During the consultancy, the national consultant is expected to work closely and liaise with relevant officials from the Indonesian Coordinating Ministry for Maritime & Investment Affairs (MARVES).

#### Duration of the Work

127 working days within October 2021 – April 2022

Deliverable	Description of task (deliverable)	Working days	To be accomplished by (date)	Reviewed and Monitored By
A	One report on Infrastructure Setup/Adjustment	3 days	6 Oct 2021	NPO GMCP; Regional Programme Coordinator GMCP.
B	One report on API definition	5 days	13 Oct 2021	NPO GMCP; Regional Programme Coordinator GMCP.
C	API database is developed	8 days	25 Oct 2021	NPO GMCP; Regional Programme Coordinator GMCP.
D	Parser Engine is developed	12 days	10 Nov 2021	NPO GMCP; Regional Programme Coordinator GMCP.
E	Back-End API is developed	16 days	3 Dec 2021	NPO GMCP; Regional Programme Coordinator GMCP.
F	API proxy gateway is developed	18 days	30 Dec 2021	NPO GMCP; Regional Programme

				Coordinator GMCP.
G	User API Credentials is developed	18 days	25 January 2022	NPO GMCP; Regional Programme Coordinator GMCP.
H	UI/UX is designed	7 days	4 Feb 2022	NPO GMCP; Regional Programme Coordinator GMCP.
I	Web Admin Monitoring Dashboard Front-End is developed	12 days	22 Feb 2022	NPO GMCP; Regional Programme Coordinator GMCP.
J	Web Admin Content Management Dashboard Front- End	12 days	11 March 2022	NPO GMCP; Regional Programme Coordinator GMCP.
K	Web Admin Management Dashboard Front-End is developed is developed	12 days	29 March 2022	NPO GMCP; Regional Programme Coordinator GMCP.
J	Final Report	4 days	5 April 2022	NPO GMCP; Regional Programme Coordinator GMCP.

**Duty Station**

The consultant will be home based during this consultancy with periodic meetings in UNODC offices or virtually as requested.

#### IV. REQUIREMENTS FOR EXPERIENCE AND QUALIFICATIONS

##### Academic Qualifications:

- Master's degree in Computer Science

##### Working Experience:

- Minimum 6 years of experience in creating integration system between two systems or more using Application Programming Interface (API).
- Experience in developing advanced system related to data centre.
- Experience in dealing with counterparts from various cultural backgrounds.

##### Competencies and special skills requirement:

- Demonstrated ability to work in harmony with person of different ethnicity and cultural background.
- Ability to work under pressure and handle multi-tasking situations.
- Excellent English and national language written and spoken skills.
- Strong motivation and good team player.

#### V. EVALUATION METHOD AND CRITERIA

*Individual consultant will be evaluated based on the following methodology:*



**Cumulative analysis**

*When using this weighted scoring method, the award of the contract should be made to the individual consultant whose offer has been evaluated and determined as:*

*a) responsive/compliant/acceptable, and*

*b) Having received the highest score out of a pre-determined set of weighted technical and financial criteria specific to the solicitation.*

*\* Technical Criteria weight; [70%]*

*\* Financial Criteria weight; [30%]*

*Only candidates obtaining a minimum of 70 point would be considered for the Financial Evaluation*

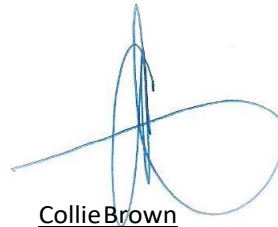
<b>Criteria</b>	<b>Weight</b>	<b>Maximum Point</b>
<b><u>Technical</u></b>		
<b>Criteria A: qualification requirements as per TOR:</b>	70%	70
1. Master's degree in Computer Science.	25 %	25
2. Minimum 6 years of experience in creating integration system between two systems or more using Application Programming Interface (API).	25%	25
3. Experience in developing advanced system related to data centre.	15%	15
4. Experience in dealing with counterparts from various cultural backgrounds	5%	5
<b>Criteria B: Brief Description of Approach to Assignment.</b>	30%	30
• Understand the task and applies a methodology appropriate to the task as well as strategy in a coherent manner.	15%	15
• Important aspects of the task addressed clearly and detailed.	10%	10
• Logical, realistic planning for efficient project implementation.	5%	5
<b>Criteria C: Further Assessment by Interview (if any)</b>	-	-

Prepared by

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Acknowledged by



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