TERM OF REFERENCE FOR VEHICLE TRACKING SYSTEM (VTS)

UNDP and Ministry of Health
Royal Government of Bhutan
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TERMINOLOGIES

MoH - Ministry of Health
ALS - Advanced Life Support
Ambulance - Land Ambulance
AMC - Annual Maintenance Contract
API - Application Programming Interface
Bidder/ Vendor - Local Firm
BLS - Basic Life Support
BTL - Bhutan Telecom Limited
CA - Call/ Communication Agent
Change Request Contract - CRC
Client - HHC
CV - Curriculum Vitae
DCA - Dispatch Closure Agent
Development partner - UNDP
DITT - Department of Technology and Telecom
DMS - Department of Medical Service
EMSD - Emergency Medical Service Division
GDC - Government Data Center
GPS - Global Positioning System
HERCS - Health Emergency Response System
HF - Health Facility
HHC - Health Help Center
HR - Human Resource
ICT - Information Communication Technology
IOT - Internet of Things
MoH - Ministry of Health
NDA - Non-Disclosure Agreement
Parties - Client and vendor
Pilot - Ambulance Driver
RTMD – Realtime Temperature Monitoring Device
SMS - Short Message Service
SRS - System Requirement Specification
TAT - Turnaround Time
ToR - Terms of Reference
ToT- Training of Trainers
UAT - Users' Acceptance Test
UNDP - United Nation Development Program
VTS - Vehicle Tracking System

Term of Reference

1. Background

Ever since HHC, MoH provided Emergency Response Services to all citizens of our nation on a 24x7 basis, we comprehend having a Vehicle Tracking System will further assist "MoH to provide" and "citizens to avail" the service in all needy circumstances.

HHC, MoH would like to have a system where all the ambulances can be tracked in "real-time" with proper Landmarks and trace tracks even the history with the help of VTS. This system will help HHC to get accurate odometer readings for each and every ambulance movement. The accident rates of ambulances by overspeeding shall be reduced with the VTS by having the feature of overspeeding alarm systems. Unauthorized movement notification in VTS shall prevent unauthorised movement.

Although there is a Vehicle Tracking System in place, we experience quite a number of troubles in handling it. The main issue we have is the poor landmarks on the map, and HHC is not able to customize and make changes with the existing ktracker. The system is also not integrated with HERCS causing HHC to maintain a separate system for ambulance Turnaround Time (TAT.)

The mobile application for callers to track the particular assigned ambulance to prepare themself for transportation to the hospital. Therefore, this project shall overcome the existing pain points and we shall indulge in the forthcoming vehicle tracking system (VTS) which is locally available. The proposed VTS should also be able to cover all other medical vehicles including ambulance, medical supplies, EPI vans, and office cars.

The aim of this ToR is to steer the "Bid winning company" as per our opted desire and they shall fulfill the MoH objectives of having this system in place.

2. Objective

The Vehicle tracking system is a web-based vehicle tracking system to track real-time movement, history tracking, monitoring the speed, and record real-time ambulance odometer.

The development of VTS aims to:

1. ***Ambulance (120 nos: Across 20 dzongkhags)***

a. Monitor ambulance movement, speed, and odometer
b. Reduce the unauthorized movement of the ambulance
c. Provide safety to the ambulance driver and transport of the patient through driver behavior analysis functions, fleet alarms etc.
d. Fuel and Maintenance alert and management as additional features
e. Improve emergency service delivery.

2. ***Vehicles carrying products requiring cold chain (7 nos: Mongar 2; Gelephug 1; DoMSHI 3 and MSDD 1)***

a. Monitor EPI vans movement, speed, and odometer
b. Real-time temperature monitoring device (RTMD) and humidity, of the cold chain system
c. Fuel and Maintenance alert and management as additional features
d. Improve service delivery including in times of emergency.

3. ***Vehicles carrying medical supplies (37 nos: MSDD 14; All dzongkhags 20; Gelephu 1; Mongar 1 and Sarpang 1)***
   a. Monitor vehicle movement, speed, and odometer
   b. Reduce the unauthorized movement of the vehicle
   c. Temperature and humidity monitoring
   d. Fuel and Maintenance alert and management as additional features
   e. Improve service delivery including in times of emergency.

4. ***Office cars (16 nos: DoS 7; DoPH 4; DMS 1; DTMS 1 and RCDC 3)***
   a. Monitor vehicle movement, speed, and odometer
   b. Fuel and Maintenance alert and management as additional features
   c. Reduce the unauthorized movement of the vehicle

5. ***Other vehicles***
   The pool vehicles of Jigme Dorji National Referral Hospital are not included in this document.

3. Stakeholders

The following shall be the stakeholders of the system:

3.1. The Emergency Medical Service Division (EMSD):
The EMSD of MoH is mandated to provide efficient ambulance service to the citizens of the country on a 24*7 basis. The division ensures that the patient is transported to the nearest health facilities within the golden hour. They shall be the ultimate owner of this system and shall use the system for planning and ambulance mobilization.

3.2 The Hospital administration:
The concerned authority shall be monitoring ambulances under their jurisdiction, generating trip reports, odometers reports for planning, budget allocation and monitoring.

3.3. HHC Call Centers:
HHC call agents are the end users of the VTS. They ensure that the nearest ambulance to the event is assigned to transport the patient in the minimum time possible. The call agent shall also monitor the authorized and unauthorized moment of the ambulance. They ensure that the patients are transported to the destination health facilities safely.

3.4. Information Technology Professionals:
The ICT professionals in HHC and MoH shall provide the technical support to the call agents and programs.

3.5. DITT:
The Department of Information Technology as the competent agency shall provide the technical backstopping to the project. This shall also include server space for technology deployment in the GDC.

3.6. DoMSHI:

The Department of Medical Supplies and Health Infrastructure deals with the procurement of all the medical supplies and reaches them to all the health facilities under 20 dzongkhags through our heavy duty vehicles.

4. VPDP:

The **Vaccine Preventable Disease Program** manages the cold chain for the EPI and vaccines and supplies to respective health facilities. They have cold chain carrying vehicle.

5. UNDP:

The United Nation Development Programme and UNICEF (technical advice on cold chain for vaccines, and real-time temperature monitoring) shall be the development partner agencies for the project (Vehicle Tracking System).

6. Public:

The public shall be the end beneficiary as the system shall ensure that patients are safely transported to the destination hospital.

4. Scope of the work

4.1. The scope of the work shall not be confined to this TOR document. The vendor shall visit the site and further understand and gather the requirements of the user. The vendor is expected to draw the clear picture of the SRS with the system flow diagrams and prototype.

4.2. Expected deliverables/modules:

- 4.2.1. System Administration & User role based
- 4.2.2. Vehicle Registration Module
- 4.2.3. Ambulance live monitoring window in Map (dashboard/Home page)
- 4.2.4. History tracking
- 4.2.5. Integration of VTS with the existing HHC ICT systems
- 4.2.6. Detail system documents including user manuals
- 4.2.7. Security and authenticated accessibility
- 4.2.8. Search facility in of the page
- 4.2.9. Easy navigation from one page to another
- 4.2.10. Reporting module

4.3. The vendor shall work with the other HHC local partner (vendor such as BTL, etc.) during the integration of the systems. The vendor shall provide free assistance during system integration or include the cost as specified in 10.3 of this document.

5. General Features

The system should be a web-based Tracking System which shall be accessed from inside and outside the health help center network.

5.1. Dashboard:

The user interface or a dashboard of the application shall have a provision for display and automatic refresh of vehicle speed and vehicle positions on the map window every thirty seconds or less using any internet web browser. There should be a wide choice of vehicle icons to choose from and the vehicle icon

changes color as a vehicle starts moving from a stationary position. Search Bar at top of the dashboard similar to google search bar. Hover activated drop down menu for report generation, history tracking, setting and other utilities.

The system shall be compatible in any of the latest web browsers such as Microsoft Edge, Internet Explorer, Google Chrome, Safari, Firefox and Opera, etc. The system should be mobile phone web browser and cross browser compatible.

User defined roles for all the relevant stakeholders of the system having each role with specific accessibility and dashboard.

5.2. Mapping:

Use of the latest country map (BHUTAN) with international boundaries. The map shall support position mappings providing sufficient and exact details of road (lham) network, city, town names, street name and satellite imagery with good resolution. The map also should provide the accurate degree of latitude and longitude of the landmarks.

5.3. Live Tracking:

The tracking system should show the current positions of all vehicles in the map window and also trace the route of selected vehicles with speed and direction of travel. The map should have a provision for automatic zoom on the area where the vehicles are located and place of halt or being idle. Additionally, a feature on prompting the best and fastest route with approximate time to reach the destination which helps in choosing the fastest and safest route giving an idea to the Driver for making effective decision.

The user shall be able to highlight/ click the assigned vehicle from the list or map and live track/ monitor accordingly.

5.4. History tracking:

The tracking system shall have a provision for showing the historical position data (At least up to last one year) of all tracking units along with speed, direction of travel and trace routes on the map window. It shall also allow the playback of the live video recorded of that vehicle on that particular date.

5.5. Legends on Map:

The color, picture, symbol used in the map has to be properly leveled in the map or outside the map in that page.

5.6. Customization:

There shall be provision to “add” , “edit”, “active”, “inactive”, “remove” and “delete” the features in the application based on the user role.

5.7. Reports:

Reports for strategic management decisions. The system shall have the provision for the following reports generation.

All the pages shall have search functionality. An example: Driver name or ambulance number as search parameter.

5.8. Data sharing:

The system shall share the relevant data and communicate among the integrated systems.

6. System Requirement Specification (SRS)

6.1. Email Notification, system notification and Alert

The system shall use email, system pop-up notification, SOS alarm and Short Message Service for the following detail:

1. *SMS Notification:*
    a. GPS breakdown: ICT, HHC, Concerned Authorities (Health Facility).
    b. Vehicle breakdown: HHC and Concerned Authorities (Health Facility).

2. *Ambulance alarm/ alert in the ambulance:*
    i. Overspeeding
    ii. Movement delay notification:
        1. Pop-up notification to the agent
        2. Alarm reminder to the driver on the phone
        3. Pager notification to driver
        4. Provision to enter the reason for delay, for being idle/stopping to the drivers
    iii. Geo-fence
    iv. Route
    v. Idle
    vi. Stop

6.2. Live Tracking

The system shall track ambulances on the map in real time with landmarks. The following information shall be displayed in the dialogue box and right hand column:

6.2.1. In the callout information

a. Call Type
b. Ambulance number
c. Ambulance type (ALS/ BLS)
d. On the spot landmark, date and time
e. Base and Destination hospital (hospital name)
f. Speed --along with real time speed display, average speed maintained by the vehicle and mileage

6.2.2. In the left panel of the menu information:

a. Ambulance number
b. Ambulance type (ALS/ BLS)
c. Driver detail (name, contact number)
d. Assign Date and time
e. Ambulance movement date and time
f. Base and Destination hospital (hospital name)
g. Longitude and latitude

h. Speed
i. Patient details
j. Alarm
k. The ambulance color should change and blink based on the following mode in the map with legend:
    i. Ambulance: Small Ambulance symbol
    ii. Authorize movement: Red color
    iii. Unauthorized movement: Black color
    iv. GPS non-functioning: Yellow
    v. Vehicle off road: Orange cross
    vi. On the trip stoppage (Idle): Blue
    vii. Landmark: Hut with plus sign
    viii. Route: Black path and White stripe
    ix. Station: white

6.3. History Tracking:

The system shall be able to track the ambulance movement with all the past live tracking attributes

a. Ambulance number
b. All the landmark travelled, date and time
c. Assign Date and time
d. Ambulance movement date and time
e. Base and Destination hospital (hospital name)
f. Longitude and latitude
g. Speed
h. Patient details
i. Kilometer travelled per trip (start to end)
j. Play the recorded trip of an ambulance on that particular date and time
k. Data Archival mechanism

6.4. Integration with Health Emergency Response Center System (HERCS)

The system should allow the integration with the HHC ICT system such as Health Emergency Response System and others. Automatically fetch data and update as follows:

6.4.1. From VTS to HERCS

a. Odometer update of the assigned ambulance
b. Base hospital and destination hospital
c. Movement and trip complete time (base-destination-base)
d. Pop up message to call agent if the ambulance do not move beyond 5 minutes

6.4.2. From HERCS to VTS

a. Call type
b. Patient details
c. Ambulance number
d. Base and Destination hospital (hospital name)
e. Event details
f. Capture the ambulance's assigned time

g. Reminder to ambulance driver via:
   i. SMS
   ii. Pager
   iii. Call

6.4.3. This web based fleet management system to be also used for tracking medical supplies and office cars (pool vehicles):

1. There shall be App (apple & android) where based on role can track the car or cars
2. The system should include Car maintenance and other details communicated from car by the gps device to the system:
   Odometer
   Speed
   Fuel
   Start
   Expenditure
3. Drivers information should also be captured such as license delta and health conditions
4. Active tracking features in case of good network and passive tracking in case of no network where details will be captured off line and synced when network is available.
5. Base map with Health Facility
6. Announcement
7. The system should integrate with any GPS device supplies
8. Integration with ePIS & BVS
9. IoT of notification of status alerting for but not limited to:
   i. fuel,
   ii. license,
   iii. blue book
   iv. Speed
   v. Maintenance
   vi. Tyres life

7. Reporting

The system shall generate reports for the strategic management decisions.

7.1. Kilometer traveled by all vehicles in specified date and time.

7.2. Number of trips reported by the individual ambulance with the kilometer.

7.3. Driving time and stop time of selected vehicles in user specified date and time range.

7.4. Status on the ambulances such as:

7.4.1. Number of functional and non-functional ambulances

7.4.2. Number of functional and non-functional GPS

7.4.3. Number of ambulance in each dzongkhag/ health facility

7.4.4. Number of ambulance under maintenance

7.5. Other relevant reports for every vehicle in the user specified date and time.

7.6. Reports shall have export features to word, PDF and excel format with selected parameter as heading and column names besides printing.

8. Technical Requirement

8.1. The vendor shall reuse our existing GPS devices if possible which are installed in 120 ambulances of 20 dzongkhags.

8.2. If the existing devices are not compatible, the vendor shall purpose separate costing for the device.
8.3. GPS devices installed in the ambulance shall be configurable through SMS or any utility software.
8.4. The Vehicle data must be stored in both the servers (common HERCS database and VTS database).
8.5. Mobile apps for Program, IT and hospital administer to track the particular assigned ambulances.
8.6. The vendor is responsible for any third party or API needed in the integration of the GPS device with Vehicle Tracking System or HERCS.
8.7. The map resolution should be clear and sharp when viewed in computer screen, Television screen (65 inches) and mobile.
8.8. The HHC shall not bear the cost of database, IDE and third party or utility software.
8.9. The system shall be hosted in HHC server both application and database or as suggested by the vendor in a secure and authorized location upon the agreement by the client. The initial cost of the hosting shall be included in the VTS development package at least for two years.
8.10. The vendor shall use the opensource platform for systems and databases.
8.11. The system and database ownership shall be HHC property.
8.12. The vendor shall bear any additional subscription fee such as google map and customization, etc.

9. Security Feature

9.1. Data Security: The data/information of our vehicles must be securely stored in the server and not to be disclosed without the consent of HHC.
9.2. The vendor shall not make client's data public without their explicit permission, as the vendor understands that privacy is of utmost importance to the buyer. However, the vendor shall agree and may monitor or disclose client's data if expressly required, in order to comply with applicable Government statutory laws, rules and regulations and in the compliance of any security concerns.
9.3. Establish necessary checks-&-Balance and secure systems to prevent unauthorized accessibility.
9.4. The system would ensure that the users follow login procedures.
9.5. The access to the database should be limited based on the user roles of the organization.
9.6. A proper audit trail and logs must be built within the proposed system.
9.7. SSL Certificate should be installed.
9.8. The system has to be tested by BtCIRT, DITT using different tools for any security loopholes.
9.9. The vendor has to fix all the vulnerabilities that are reported by BtCIRT without implication on cost and time.
9.10. The software must have standard inbuilt security features so that the software has all the checks and balances to ensure integrity of data, alter or modify any data without the appropriate permissions.
9.11. The system should have provision to assign access rights based on the roles.

10. Installation and other cost

10.1. Installation/Mounting and configuration of devices in all ambulances shall be at the same rate for all ambulances in 20 dzongkhags.
10.2. The cost for installation of GPS in new ambulances shall be limited to the cost of device and installation charges.
10.3. The vendor shall propose and include the following cost:
   a. Overall system development with its deliverable.
   b. Hosting cost if it is not feasible at the identified site of the client.
   c. Integration cost with the HERCS and ePIS.
   d. Any other third-party APIs needed.
   e. Support and maintenance service for one year.

f. GPS device cost.

11. Technical support

11.1. The vendor shall provide one year full support from the date of UTA sign off.

11.2. Provide technical assistance to set up the software at the client's premises within Bhutan including the devices.

11.3. The issues raised shall be addressed immediately in the entire support period.

12. Concurrency, Browser Compatibility and Bandwidth Optimization

12.1. The proposed system will be used across the country irrespective of reliable internet and network availability. So, the system must run and load on low bandwidth and also should be functional on all available networks.

12.2. The system must have a capacity to handle at least 150 concurrent user accesses.

12.3. The proposed system must be compatible with all available browsers.

13. Test site or staging environment

13.1. The vendor shall test the vehicle tracking system in a test or staging environment provided.

13.2. The vendor will be also required to set up the local machine environment, staging environment and production set up systems to test and back up the life system or package in case of disaster.

14. Development Methodology

14.1. Modular based approach and SCRUM methodology shall be used for the design and development of the system.

14.2. The vendor shall initially carry out a detailed requirement study including Process Re-engineering wherever possible, which shall result in formulation of further Software Requirement Specification (SRS) document, Software Design document and associated AS-IS and TO-BE workflows.

14.3. On acceptance of SRS, workflows and Design documents by the client, the vendor shall develop and present a nonfunctional prototype (HTML, CSS prototype) of the system to the client and obtain approval for each module. This shall help in better user acceptance of the system.

14.4. After the development, the first testing shall be done in the premises of the vendor by their testers.

14.5. The bugs/ fixes are classified into two categories: Critical and Non-Critical. The Critical bugs/ fixes are those which freezes the system and the normal functioning of the client or any other client is affected by the system's malfunction. Otherwise, it will be Non-Critical. The vendor must give immediate attention to the Critical bugs/ fixes and attend to them within 24 hours of receiving the complaint from the client in any form of media. The critical bugs/ fixes must be fixed within 5 working days. However, in some exceptional cases, the vendor may negotiate for time extension if acceptable to the client. The Non-critical bugs should be fixed within two weeks. All the bugs/ fixes are to be properly documented and must submit to the client in the form of reports.

14.6. The final testing of the software package will be done with sample test data at the premises of the client. Only after the user acceptance testing is successful, the software will be deployed for live operation.

15. Network connectivity requirement

15.1. The proposed system would use the existing network connectivity and bandwidth of HHC.

16. Backup and Recovery

16.1. The vendor shall submit a backup and recovery strategy and methodology for the system. The methodology shall include hardware and software used, types of backup, frequencies of backup, as well as procedures for performing the backup and recovery.

16.2. The vendor shall address the following during the support service period:

16.2.1. The backup of the database should be taken on a daily and/or weekly incremental basis and shall share with HHC ICT for accessibility.

16.2.2. Full backup of relational database and source code files shall be taken on a monthly basis whenever any changes are carried out with prior notification to HHC ICT.

16.2.3. A full (cold) backup shall always be kept in a safe location as identified by HHC ICT.

16.2.4. If the system fails, the vendor shall restore within 24 hours.

16.2.5. Ensure no loss of any data.

16.3. The vendor shall also ensure adequate training is provided to the system administrator so that the client shall handle the backup and recovery issues in-house after the expiry of the support service period.

17. Conformity with Standards

The system should strictly adhere to the following standards.

17.1. Electronic Government Interoperability Framework (eGIF) standards.

17.2. Information Management Security Policy of RGoB.

17.3. eHealth Standards of MoH.

18. **Use of Source Code Management Tool**

The vendor shall manage its source codes through source code management tools like Subversion (SVN) and GIThub or any other source code management tools. It shall also be a useful tool to track previous versions of the codes and for debugging purposes.

19. Ownership of Source Code and other Intellectual Property

19.1. The HHC and MoH shall be the rightful owners of the Source Code and all Intellectual Property associated with the system and they shall have full rights over the ways they can use these resources.

19.2. The vendor shall not share and use the same property to any other areas similarly HHC and MoH shall seek approval from the vendor if it needs to be used in other government agencies.

20. Re-engineering of the Processes

The vendor shall try to re-engineer the processes wherever possible so that the system can be optimally utilized instead of merely automating the manual procedures.

21. Obsolescence

The vendor undertakes to continuously and unfailingly advise the Client of new technologies (hardware & system software) in regard to the Solution during the currency of this Contract. If the Client decides to introduce any such new technologies in replacement of the Solution or along with the Solution or as the case may be, the work that may arise therefrom shall be considered beyond the purview of this Contract. The Client shall enter into a change request contract (CRC) for the purpose; provided that such work scope is not being covered under the license agreement.

22. Naming Convention Standard

In order to keep source codes organized, the vendor shall strictly follow standards for forms, reports, databases, triggers, views, stored procedures, coding etc.

23. Patent and Copyright

23.1. The vendor represents that the Solution or any product/component, supplied by the vendor does not infringe any patents and copyright. If, however, a third-party claim that the Solution or any product/component thereunder, supplied by the vendor under this Contract, infringes a patent or copyright ("IP Claim"), the vendor shall defend the Client against the IP Claim at the vendor's expense and pay all costs, damages and legal fees that a court finally awards.

23.2. If the vendor determines that no alternative is reasonably available, and the Client agrees to return the Product/Component/Solution to the vendor on the vendor's written request, an appropriate compensation shall be proposed and shall be acceptable to the client.

23.3. The vendor shall have no obligation to the Client regarding any "IP Claim" based on:

23.3.1. The Client's modification of a Product/Component under the Solution unilaterally.

23.3.2. Use of the program in other than its specified operating environment within HHC and MoH.

23.4. The combination, operation or use of a product/component under the Solution with any other product, program, data or apparatus, not furnished by the vendor, provided that the use of such product, program, data or apparatus has not been envisaged in this Contract and such product, program, data or apparatus is solely responsible for such infringement.

24. Quality of Work

The vendor must ensure quality while implementing the system at all times. This shall be evaluated by the HHC and MoH in the long run and this shall have bearing on awarding similar government projects that are in the pipeline and also those projects that will be taken by the government in the future.

25. Confidentiality of data

25.1. The details of the offer proposed by the vendor or its acceptance thereof with or without modifications by HHC and MoH shall not be passed in part or full to any third party without prior written approval of the parties involved. This applies to both clients as well as the vendor.

25.2. The vendor shall sign and shall preserve Non-Disclosure Agreement with the HHC and MoH.

26. Maintenance & Support

26.1. The vendor must provide free support service for a period of one year after signing off users' acceptance tests of the system by the client.

26.2. Update patches and related software.

26.3. During this period, the vendor is responsible for technical support such as updating patches, fixing bugs, and correcting defects without any additional cost.

26.4. Develop new reports as per the demand of the HHC and MoH.

26.5. Provide backup of both systems and data on a regular basis.

26.6. Ensure dedicated supports are rendered during the deployment period.

26.7. For the major changes, a separate change management contract will be agreed and signed Implement best security features.

26.8. The vendor technical focal shall provide the support during critical issues of the system and shall be available 24/7.

27. Change Management

27.1. If there is a major change(s) in the requirements of the system, the vendor must provide post implementation support under a Change Request Contract for six months from the date of acceptance of the software package by HHC and MoH.

27.2. Change Request Charge shall be estimated and shall propose to the client on a lump sum amount.

27.2. The Change Request is completely need based and payments are made only based on the major changes agreed between the client and vendor.

27.3. The vendor must use all reasonable efforts to study the requirements of the system thoroughly during the initial implementation period.

27.4. The vendor shall not entertain frequent changes in the system from the client, once the requirements are finalized, which shall adversely affect the project completion date and delay the project. However, the changes that come through the change management shall be executed by the vendor under the terms and conditions of Change Request Contract.

27.5. Whenever there are major new requirements due to change in the procedures/guidelines of the HHC and MoH, the client shall ask for additional requirements through a Change Request Document. The work involved in the change request and the cost will be worked out by both client and vendor and a cost shall be agreed within the framework of the Change Request Contract.

27.6. The CRC shall be initiated, if the change is considered major, bringing in a major impact on the database or adding more input screens.

27.7. The minor modifications of fields within an existing screen or changes having minor or no impact on the database shall be handled as specified in the support service. The minor changes shall not be handled by the Change Management Contract.

27.8. The CRC shall also be initiated, if the Client decides to introduce any new technologies in replacement of the Solution or along with the Solution, due to advancement of the technologies, as may deem necessary for the system by the vendor. Such CRC shall occur, provided that the above work scope is not being covered under the license agreement.

27.9. The vendor shall be binding to carry out the CRC made by the client for one years after the acceptance of the system by the HHC and MoH. An agreement shall be signed for this contract.

28. Sizing of the Service Platform

28.1. The proposed system must be a web-based system and app base with appropriate built-in facility to capture and store data at an identified server.

28.2. The system must have a feature to capture data in low network coverage as well as on offline mode.

28.3. The system must also have a data synchronization feature.

28.4. The system must be responsive to any devices.

28.5. The system should be browser compatible in any latest web browser (Internet Explorer, FireFox, Opera, Safari, Microsoft Edge, Google Chrome, etc).

28.6. The reporting shall have to be done graphically as well as in text/tabular form. The report generation in the proposed system shall have two categories, the standard reports and adhoc reports. The standard reports shall be designed and uploaded during the implementation and for adhoc reports; the system shall have a customized Query Builder feature. In every report there must be a facility to generate the report as PDF, Excel Sheet, CSV or as HTML format.

28.7. The system shall have User interface (UI) consistent.

29. System Deployment

29.1. The system shall be deployed in the HHC in compliance with government to government standards and protocols.

29.2. There shall be a minimum of one live system and one test system. The live shall be used to capture real time data and make decisions while the test system shall be used to test applications before deploying in the live system and train the users and ICT personnel.

29.3. The vendor shall deploy the application system and database in the client identified servers.

30. Knowledge Transfer

30.1. User Types in VTS shall consist of following Roles

30.1.1. Central System Admin – Overall System Management, User Creation and technical support, report generation.

30.1.2. CA - Track and monitor all the ambulances in the system, generate reports and history track.

30.1.3. Local System Admin – Track and monitor their jurisdiction ambulance.

30.1.4. Program Users - Be able to view data and generate reports.

31. Training Of Trainers of ICT

31.1. Technical training shall be provided to the HHC and MoH ICT as part of knowledge transfer. This shall ensure the continuity of the system support when vendors are not available immediately.

31.2. The vendor shall also train HHC ICT on installation, configuration and troubleshooting of GPS devices of the ambulance.

32. Training Of Trainers of the Users

32.1. Comprehensive system user training shall be provided to identified master trainers who in turn shall train the general users.

32.2. The Consultant shall provide relevant training materials and resources to the TAT.

32.3. The vendor shall provide a sufficiently detailed training plan before the start of training to HHC and MoH. The plan should contain an indicative list of resources that would be allocated from the vendor's side.

32.4. The vendor shall provide the necessary infrastructure for the training at a suitable location.

32.5. The training shall be conducted as required and decided by MoH in consultation with the vendor.

32.6. The vendor shall provide adequate training HHC and MoH ICT on system deployment & operation, server and system configuration and installation, backup services, Directory Management, security requirements, and other necessary technical services, which shall enable them to use the system for timely and accurate production of required information within their area of authority and responsibility.

32.7. On completion of the training, the master trainers and ICT shall be performing a rigorous test on the system and submit their observation(s). The observations will cover the following topics:

32.7.1. Comments on User Interface and suggestions for betterment.

32.7.2. Comments on operational flow.

32.7.3. Response time of the system.

32.7.4. Bugs encountered and error management facilities.

32.7.5. Data validation and security measures.

32.7.6. Documentations.

32.8. The MoH would review the above feedback and direct the vendor to take necessary corrections or remedies. Based on the observations/comments made by the training participants, if HHC and MoH feels that the training is not satisfying or not adequately covered, then the vendor is liable for providing additional training.

33. Deliverables

33.1 Software Requirement Specification Document (High level SRS and Low-level SRS).
33.2 Working and Tested system and database with source code with proper documentation.
33.3 User and Administrator Manuals for the system including Online Help and video tutorials.
33.4 Setup and Release notes for each new release.
33.5 Test Cases.
33.6 Reports.
33.7 All database scripts.
33.8 Training of trainers.
33.9 Any other relevant documents, supporting software, etc.

34. Proposal of the vendor:

34.1. The vendor shall submit a brief description of the vendor's organization and outline of recent experience. Experience on such assignments both functional and technical shall be of an added advantage. Copy of credential or appreciation certificates must be enclosed.

34.2. The minimum HR requirements for the Project Development Team from the vendor's side are to be specified below.

34.3. The bidder desirous of quoting for the work should satisfy the following minimum requirements:

34.3.1. The bidder should have the valid license for performing the consultancy service in the software development work in Bhutan.

34.3.2. The bidder should have adequate technical manpower to carry out the project and complete it on time. All the professionals should be employed on a full time basis and their responsibilities delegated based on the standard software development team.

34.3.3. The bidder can collaborate and partner with the foreign vendors, but presence of local manpower is necessary to build up the capacity and competitiveness of the local vendor to provide Maintenance support to the system as and when required.

34.3.4. There must be at least 1 full time National Project Manager/ team leader with sound technical knowledge of IT Project Management, 1 System Analysts with sound knowledge of System and Database Architecture and Design and 2 Developers having thorough knowledge on recent ICT technologies. HHC and MoH shall monitor and verify them through CV and in person.

34.3.5. A brief background of the applicant vendor and a letter of intent;

34.3.6. Evidence of past experience in undertaking similar works (provide examples and referees);

34.3.7. CVs of the lead consultant and key team members.

34.3.8. Financial proposal (all-inclusive lump sum amount with a cost breakdown).

34.3.9. Comments on the TOR.

34.3.10. Valid Trade/Business License for the project.

35. Duration of the assignment (Timeline)

The entire work should be completed within *6 months* from the receipt date of the work order as mentioned in the table below. * M-Month; w= week

		September 2021				M2				M3				M4				M5				Feb 2022			
SL	**Activities**	w 1	w 2	w 3	w 4	w 5	w 6	w 7	w 8	w 9	w 10	w 11	w 12	w 13	w 14	W 15	w 16	W 17	w 18	w 19	w 20	w 21	w 22	w 23	w 24
1	Project Inception ● Discussion within MoH and development partners ● RFP																								
1	Project Inception (System Requirement Gathering)																								
2	System development and Integration With HHC ICT System																								
3	GPS device installation in ambulances																								
4	Testing and bug fixing																								
5	Training of Trainers																								
6	UAT Signing																								

37. Payment Terms:

The consulting firm will be paid on a lump sum basis based on submission of deliverables which meet quality standards and based on an agreed schedule of work. The firm is required to offer a Lump Sum fee for the assignment. The Lump Sum amount must be "all-inclusive". The schedule of payment for the services is as follows:

SN	DESCRIPTION	Time	Payment Percentage
1	1st Phase Modules : Inception - Project Inception (System Requirement Gathering) - System development and Integration - Testing	As per the timeline in 35	40 %
2	2nd Phase Modules: Deployment - Installation of GPS device in all the ambulances - Testing and bug fixing - Training of Trainers -		50 %
3	3rd Phase Modules: Finalization - UAT Signing Project completion report submission including user manual, installation manual, etc.		10%

However, the vendor shall also have the privilege to propose other options but subject to approval of MoH and development partner. Any payment to the vendor by the donor shall be subject to clearance from the MoH.

38. APIs

Application Programming Interface (API) shall be a priority requirement in this system, a software intermediary that allows two applications to talk to each other or exchange data.

39. Communication Matrix

Besides established protocols below, the SDV shall use informal social media apps to communicate efficiently with the MoH Teams.

SN	Information	Sender	Receiver	Timing	Method
1	Ad hoc Issues	HHCt	HHC CA	Anytime	Group email
2	Weekly Status	vendor Focal	HHC ICT	Monday	Group email

3	Fortnightly Status	vendor Focal	HHC ICT	2nd Friday	Group email or meeting
4	Monthly Status	vendor Focal	HHC ICT and Program	3rd Friday	Meeting
5	Project Review	vendor Focal	HHC ICT and Program	As & when	Meeting/ Report

40. **Recommended presentation of offer**

Interested firm wishing to take up the assignment should submit the following:

a. A brief background of the applicant firm and a letter of intent;
b. Technical proposal: A summary of the methodology and timelines for ensuring completion of works by required time; and
c. CVs of the lead consultant and key team members
d. Evidence of past experience in undertaking similar works (provide examples and referees);
e. Financial proposal (all-inclusive lump sum amount with a cost breakdown)

f. The firm is to submit a comprehensive quoted price for this assignment along with the proposal. The quote shall be Ngultrum, inclusive of tax, warranty and also price for AMC for 1 year separately.

g. The vendor shall propose the following separately:

- Unit price for the GPS device, RTMD and total cost for all the ambulances, EPI vehicles (unit price x number of ambulances/EPI vehicles/medical supply vehicles).
- Installation and configuration cost in all the ambulances/EPI vehicles/medical supply vehicles. The vendor has to travel round dzongkhag for installation and configuration of GPS devices in the ambulances and shall involve HHC ICT.

41. Evaluation and selection criteria

The following criteria combining technical and financial proposal shall serve as a basis for evaluating the offers:

- Combined scoring method – where the qualifications, experience and methodology will be weighted a maximum of 70% and combined with the price offer which will be weighted a maximum of 30%.
- The technical bid shall be evaluated on a pass/fail basis for compliance or non-compliance in the Terms of Reference
- Compliance with UNDP General Terms and Conditions of Contract;
- Factors which determine technical and financial capacities of the Offeror;
- Price (value for money).

The proposal should be submitted in electronic format by 22nd August 2021 to procurement.bt@undp.org

40. Annexures:

Annexure I : Non-Disclosure Agreement

Annexure II : Integrity Pact

Annexure I:

NON-DISCLOSURE AGREEMENT

This agreement is entered into this ___ day of _____, 20__ by and between _____ (hereinafter "Recipient"), with offices at _____, and _____, with offices at
_____ (hereinafter "Disclosure").

WHEREAS Disclosure possesses certain ideas and information relating to _____ that is confidential and proprietary to the Disclosure (hereinafter "Confidential Information"); and WHEREAS the Recipient is willing to receive disclosure of the Confidential Information pursuant to the terms of this agreement for the purpose of _____; NOW THEREFORE, in consideration for the mutual undertakings of the Disclosure and the Recipient under this agreement, the parties agree to the below terms as follows:

Disclosure:
The Disclosure agrees to disclose, and the Receiver agrees to receive the Confidential Information.

Confidentiality:
No Use: The Recipient agrees not to use the Confidential Information in any way or manufacture or test any product embodying Confidential Information, except for the purpose authorized by the Disclosure.

No Disclosure.
The Recipient agrees to use its best efforts to prevent and protect the Confidential Information, or any part thereof, from disclosure to any person other than the Recipient's employees that have a need for disclosure in connection with the Recipient's authorized use of the Confidential Information.

Protection of Secrecy.
The Recipient agrees to take all steps reasonably necessary to protect the secrecy of the Confidential Information and to prevent the Confidential Information from falling into the public domain or into the possession of unauthorized persons.

Limits on Confidential Information:
Confidential Information shall not be deemed proprietary, and the Recipient shall have no obligation with respect to such information where the information:

Was known to the Recipient prior to receiving any of the Confidential Information from the Disclosure;

Has become publicly known through no wrongful act of the Recipient;
Was received by the Recipient without breach of this agreement from a third party without restriction as to the use and disclosure of the information;

Was independently developed by the Recipient without use of the Confidential Information; or
Was ordered to be publicly released by the requirement of a government agency.

Ownership of Confidential Information:

The Recipient agrees that all Confidential Information shall remain the property of Disclosure and that the Disclosure may use such Confidential Information for any purpose without obligation to the Recipient. Nothing contained herein shall be construed as granting or implying to the Recipient any transfer of rights, any patents, or any other intellectual property pertaining to the Confidential Information.

Term and Termination:
The obligations of this agreement shall be continuing until the Confidential Information disclosed to the Recipient is no longer confidential.

Survival of Rights and Obligations:
This agreement shall be binding upon, inure to the benefit of, and be enforceable by (a) the Discloser, its successors and assignees; and (b) the Recipient, its successors and assignees.

IN WITNESS WHEREOF, the parties have executed this agreement effective as of the date first written above.

Discloser (Name of the Discloser)	**Recipient (Name of the Recipient)**
Sign	**Sign**
Name	**Name**
Title	**Title**
Date	**Date**

Annexure II:

INTEGRITY PACT

1 General:

Whereas *(Name of head of the procuring agency or his/her authorized representative, with power of attorney)* representing the (*Name of procuring agency*), Royal Government of Bhutan, hereinafter referred to as the **"Employer"** on one part, and *(Name of bidder or his/her authorized representative, with power of attorney)* representing M/s. (*Name of vendor*), hereinafter referred to as the **"Bidder"** on the other part hereby execute this agreement as follows:

This agreement shall be a part of the standard bidding document, which shall be signed by both the parties at the time of purchase of bidding documents and submitted along with the tender document. This IP is applicable only to "**large**" scale works, goods and services, the threshold of which will be announced by the government from time to time. The signing of the IP shall not apply to framework contracting such as annual office supplies etc.

2 Objectives:

Whereas, the Employer and the Bidder agree to enter into this agreement, hereinafter referred to as IP, to avoid all forms of corruption or deceptive practice by following a system that is fair, transparent and free from any influence/unprejudiced dealings in the **bidding process**[1] and **contract administration**[2], with a view to:

2.1 Enabling the Employer to obtain the desired contract at a reasonable and competitive price in conformity to the defined specifications of the works or goods or services; and

2.2 Enabling bidders to abstain from bribing or any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also refrain from bribing and other corrupt practices.

3. Scope:

The validity of this IP shall cover the bidding process and contract administration period.

4. Commitments of the Employer:

The Employer Commits itself to the following:-

4.1 The Employer hereby undertakes that no officials of the Employer, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favor or any material or immaterial benefit or any other advantage from the Bidder, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process and contract administration.

4.2 The Employer further convendors that its officials shall not favor any prospective bidder in any form that could afford an undue advantage to that particular bidder in the bidding process and contract administration and will treat all Bidders alike.

4.3 Officials of the Employer, who may have observed or noticed or have reasonable suspicion shall report to the head of the employing agency or an appropriate government office any violation or attempted violation of clauses 4.1 and 4.2.

4.4 Following report on violation of clauses 4.1 and 4.2 by official (s), through any source, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings shall be initiated by the Employer and such a person shall be debarred from further dealings related to the bidding process and contract administration.

5. Commitments of Bidders

The Bidder commits himself/herself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of the bidding process and contract administration in order to secure the contract or in furtherance to secure it and in particular commits himself/herself to the following :

5.1 The Bidder shall not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favor, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the Employer, connected directly or indirectly with the bidding process and contract administration, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding process and contract administration.

5.2 The Bidder shall not collude with other parties interested in the contract to manipulate in whatsoever form or manner, the bidding process and contract administration.

5.3 If the bidder(s) have observed or noticed or have reasonable suspicion that the provisions of the IP have been violated by the procuring agency or other bidders, the bidder shall report such violations to the head of the procuring agency.

6. Sanctions for Violation:

The breach of any of the aforesaid provisions shall result in administrative charges or penal actions as per the relevant rules and laws.

6.1 The breach of the IP or commission of any offence (forgery, providing false information, mis-representation, providing false/fake documents, bid rigging, bid steering or coercion) by the Bidder, or any one employed by him, or acting on his/her behalf (whether with or without the knowledge of the Bidder), shall be dealt with as per the terms and conditions of the contract and other provisions of the relevant laws, including De-barment Rules.

6.2 The breach of the IP or commission of any offence by the officials of the procuring agency shall be dealt with as per the rules and laws of the land in vogue.

7. Monitoring and Administration:

7.1. The respective procuring agency shall be responsible for administration and monitoring of the IP as per the relevant laws.

7.2. The bidder shall have the right to appeal as per the arbitration mechanism contained in the relevant rules.

We, hereby declare that we have read and understood the clauses of this agreement and shall abide by it.

The parties hereby sign this Integrity Pact at *(place)* _____ on *(date)* _____

	Agency	vendor
Signatory Sign	On Legal Stamp	On Legal Stamp
Full Name		
CID		
Designation		
Phone		
Witness Sign		
Full Name		
CID		
Phone		
Address		

[1] Bidding process, for the purpose of this IP, shall mean the procedures covering the tendering process starting from bid preparation, bid submission, bid processing, and bid evaluation.
[2] Contract administration, for the purpose of this IP, shall mean contract award, contract implementation, un-authorized sub-contracting and contract handing/taking over.