

“Annex A”

Terms of Reference

Field Maintenance and Repair of UNHCR Motorized Assets

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1 Introduction

1.1 Background

1.1.1 Introduction to UNHCR

The Office of the United Nations High Commissioner for Refugees was established on December 14, 1950 by the United Nations General Assembly. The agency is mandated to lead and co-ordinate international action to protect refugees and resolve refugee problems worldwide. Its primary purpose is to safeguard rights and well-being of refugees. It also has a mandate to help stateless people.

In more than five decades, the agency has helped tens of millions of people to restart their lives. Today, staff of UNHCR is providing assistance to about 14 millions of refugees and 59.5 millions of forcibly displaced people in 126 countries. For further information about UNHCR, its mandate and operations, please visit www.unhcr.org

1.1.2 Introduction to UNCHR Fleet Management

An analysis of the UNHCR vehicle fleet conducted in 2011 identified a large annual overhead of operating costs, issues with asset control and risks to staff safety in the field. The analysis report made recommendations to restructure vehicle fleet management within the organization under a Global Fleet Management (GFM) function.

The High Commissioner launched the Global Fleet Management Project (GFM) in 2013 with the following aim:

“To provide UNHCR field offices and operations with appropriate, cost-effective, safe vehicles and professional fleet management services to support optimum programme delivery.”

The Global Fleet Management function has been providing support to field operations since January 2014. The provision of appropriate maintenance and repair services for UNHCR vehicles is a key component of this strategy.

GFM delivers fleet management support to UNHCR field operations including the provision of vehicles through an internal rental scheme. The rental scheme is an arrangement that enables the risks and benefits of ownership to reside with GFM centrally and where the client operations only pay for actual use of the rented vehicles. Each field operation budgets the rental cost within their annual budget for as long as the vehicles are required. When a particular vehicle is no longer required, the vehicle may be returned to the rental pool and

payment will cease. The GFM will manage all surplus vehicles and redeploy or dispose of them in whichever way is the most cost effective and beneficial to UNHCR.

To date, the following tasks have been implemented by GFM:

- Organizing a centralized, global fleet management function in the Headquarters;
- Introducing a global policy and operational processes on fleet management;
- Introducing an internal vehicle rental scheme;
- Providing global insurance for all UNHCR vehicles;
- Introducing fleet management software;
- Installing vehicle tracking systems in all rented vehicles;
- Disposing of existing vehicles surplus.

The 5-year GFM strategy includes the following core projects:

- | | | |
|----|-----------------------------------|-----------|
| 1. | Global Fleet Rental and Insurance | 2014-2015 |
| 2. | Maintenance and Repair | 2015-2016 |
| 3. | Power Generating Equipment | 2016-2017 |
| 4. | Fuel Management | 2017-2018 |

1.2 Statement of Purpose & Objectives

The purpose of this RFP is to identify reliable service providers that would assist UNHCR with the implementation of the global Maintenance and Repair project.

GFM of UNHCR invites qualified suppliers, manufacturers and service providers to make a firm offer for the establishment of a Frame Agreement for provision of field services for Maintenance and Repair of UNHCR Motorized Assets.

For purpose of the intended project, the term Asset refers to any UNHCR owned motorized piece of equipment. In the UNHCR Asset Management system, items with an acquisition value of more than USD 10,000 fall into the PPE (Power, Plant & Equipment) category, while any UNHCR owned motorized piece of equipment with an acquisition value between USD 5,000 and USD 10,000 fall into the STI (Serial Tracked Item) category.

This RFP enables potential service providers to submit offers in the required format and on time that best meet UNHCR's objectives. In addition, it describes how such offers will be evaluated and sets out the way in which any necessary communications between potential providers and UNHCR should be handled. UNHCR is not seeking a compilation of standard materials and marketing collateral, thus, relevance and quality, rather than quantity should be considered while offers are being assembled.

UNHCR wishes to emphasize that the information contained herein is intended to establish an efficient and fair evaluation process for comparison of offers on a like for like basis. Thus,

potential service providers shall make an effort to prepare their submissions in line with requirements set in this RFP.

Content of the submitted offer can be considered as integral part of the intended contract. By no financial or legal means, UNHCR can be held liable or restricted for using any part of the communicated offers freely for evaluation purposes in accordance with UNHCR procurement rules.

1.3 Strategic GFM Objectives

Under GFM the implementation of quality maintenance and repair processes for UNHCR motorised assets will allow the organization to achieve the benefits outlined below. The offer of the potential service provider should explain how the proposed services will address the strategic objectives of GFM.

1.3.1 Improve utilization and availability of UNHCR vehicles

UNHCR used to spend substantial funds every year on vehicle acquisition and fleet operations. Through its activities, GFM aims to reduce both the capital cost of vehicles as well as the operational costs. The capital cost is being reduced through optimising procurement and maximising disposal revenues. Operating efficiencies can be achieved through improved utilisation of the fleet, reduction of the fleet size and lowering the age of the fleet, which leads to reduction of maintenance and repair costs.

At the end of 2013 UNHCR had a combined fleet of more than 6,000 vehicles, with approximately 5,700 of these being light vehicles. The average age of the light vehicle fleet was approximately 6 years. By the end of 2018 all UNHCR light vehicles older than 5 years will be disposed of. The recommended maximum vehicle lifetime for UNHCR light vehicles is set now to 5 years, which will result in an average age of the fleet of 2.5 years. A younger and better managed fleet will require less maintenance and repair (reduced vehicle downtime) and therefore the vehicles will spend a smaller proportion of time off-the-road (fewer unscheduled maintenance events).

As a consequence of the above, the organization will achieve the greater vehicle availability to support its operations.

1.3.2 Cost Reduction

Through implementation of standardized processes, the total cost of maintenance and repair will be significantly reduced. This is seen by GFM as a major factor that contributes to optimization of the Total Cost of Ownership (TCO) of the UNHCR fleet. The following benefits will be realized as a result of the project implementation:

- Lower expenditure on maintenance & spare parts;
- Higher residual values for end-of-life motorised assets;
- Fewer high-cost mechanical failures;
- Reduced spare part stock level;
- Improved fuel consumption.

UNHCR would like to learn from the potential service provider if cost reduction measures are proposed. In case cost reduction measures are proposed, UNHCR would like to be provided with a target value. It is to be noted that UNHCR has no accurate historical data on maintenance and repair costs at this moment. UNHCR and the potential service provider will have to come with an agreed schedule to obtain needed vehicle fleet maintenance and repair reports.

1.3.3 Improve Road Safety

Road traffic accidents are the leading cause of death and injury to UN staff worldwide.¹ UNHCR recognises the importance of road safety in preventing casualties among non-United Nations civilians and United Nations personnel.

UNHCR supports measures taken by the Secretary-General and the United Nations system to enhance road safety, which includes training and initiatives to promote road safety.²

GFM, with the support of other stakeholders is developing a road safety system which combines building the staff awareness, providing training, improving the vehicle management and journey planning, etc.

The UNHCR road safety system also aims at:

- Establishing effective data management and accident reporting to allow the identification of the underlying causes behind accidents, via the compulsory insurance scheme;
- Improving the management of drivers and vehicles;
- Addressing speeding by means of the vehicle tracking system;
- Reducing the number of vehicle breakdowns during field missions;
- Avoidance of use of mechanically unsafe vehicles.

Consistent with the UN's approach to improving vehicle safety, GFM is also seeking to increase the availability of vehicle safety features by updating the standard vehicle models and introducing appropriate maintenance and repair practices.

Should the service provider wish to address the road safety, UNHCR would like to learn how success will be measured.

1.3.4 Minimize the Environmental Impact

Minimisation of the environmental impact is part of the GFM fleet management strategy. It includes use of cleaner vehicles and fuels, reducing emissions, as well as providing training to improve utilization of vehicles with the aim to achieve fuel efficiency.

As with other mentioned objectives of GFM, the Maintenance and Repair project will help to minimize the environmental impact of UNHCR vehicles by reducing emissions and improving waste management.

¹ UN General Assembly A/68/489. Report of the Secretary-General, Safety and security of humanitarian personnel and protection of United Nations personnel. 27 September 2013

² UN General Assembly Resolution A/RES/67/85 67/85. Safety and security of humanitarian personnel and protection of United Nations personnel, 21 March 2013

GFM would like to know whether the potential service provider has introduced and implemented policies regarding the environment, in particular to improving waste management such as the disposal of used oils, batteries and tires amongst others. Should the potential service provider wish to address the environmental impact, UNHCR would like to learn how success will be measured.

2 Requirements

The Technical Offer should follow the structure and logic of the present RFP. You are strongly advised to follow this recommendation when constructing your offers.

2.1 Maintenance & Repair of Motorized Assets and its Core Requirements

To achieve the outlined above objectives, the future service provider is requested to develop and implement a flexible business model to ensure that all UNHCR vehicles in the field can receive appropriate and effective maintenance and repair services. This will lower operating costs, reduce vehicle downtime and at the same time will provide transparency to fleet costs and performance data (as described above in the Strategic GFM Objectives chapter 1.3).

Provision of timely and competent vehicle servicing to the UNHCR field operations is often problematic due to a number of reasons. The following tasks will allow the future service provider to resolve these problems and help achieving the outlined Objectives.

2.2 Repair Facilities

Currently the UNHCR fleet is serviced and maintained through the following options:

- By commercial enterprises, which are mainly present in capital cities. This includes manufacturers' authorised service providers, such as Toyota or Nissan dealers, and non-authorized workshops;
- By Implementing Partners of UNHCR, mainly in locations where commercial enterprises are not available;
- By UNHCR offices themselves, mainly in deep field locations with small numbers of vehicles.

In all the above cases provenance of spare-parts and quality assurance can be uncertain.

2.3 Business Processes and Skills

Another deliverable for the project will be establishing of the missing skills and business processes that are required for the successful project implementation. The potential service provider should analyse the existing business processes used by UNHCR for maintenance and repair, and propose optimization or introduction of additional business processes.

Training could be considered as one of the options to establish required skills that may not be sufficient or available at the moment.

Basic vehicle maintenance training of UNHCR staff may be required in some remote field locations where it will not be economical to set up a fully-fledged workshop. In many cases these locations will be far away from the capital cities. In order to avoid unnecessary travel

of to be serviced vehicles to capital cities, UNHCR would like the potential service provider to provide basic mechanical training (mainly practical training, e.g. changing engine oil and filters, light bulbs, brake pads, etc.) to staff in these remote locations. It is not foreseen that the training session will take longer than two days and one trainer should suffice to train the number of relevant staff on site. Training material to support the sessions will be required.

A minimal amount of generic guidance on vehicle repair and maintenance is already provided in Chapter 8 of the UNHCR Supply Manual³, however the degree of compliance is unknown and there appears to be only a low appreciation of the value of preventative maintenance. Preventive maintenance consists of scheduled servicing, inspections, and vehicle repairs to prevent potential problems and maximize vehicle availability.

2.4 Life-Cycle Management and End of Life Processes

Since the prospective service provider is expected to manage the end-to-end supply chain of spare parts, it will then be the responsibility of the selected service provider to establish and maintain respective Life-Cycle management and End-of-Life (EOL) processes applicable to spare parts.

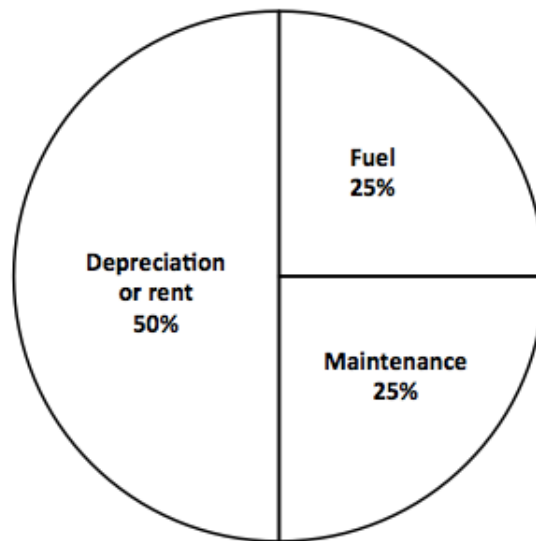
2.5 Optimization of Business Processes

The process optimization should become one of the central managerial activities supporting implementation of the project. Since there is no uniform approach in UNHCR to repair and maintenance, GFM is expecting from the selected service provider to analyse the current processes and prepare comprehensive recommendations to improve or establish required business processes. Thus, the Service Catalogue will be one of the deliverables of the project.

2.6 Total Cost of Ownership

As a general rule, the main costs related to the vehicle fleet operation are allocated according to the proportions in the graphic below:

³ Chapter 8, Part 5: PPE Management, Section 3: PPE Preparation Use, Maintenance & Repair (*Annex 8*)



Currently, the cost of assets in UNHCR is not maximized and maintenance costs are relatively high. With implementation of the Maintenance and Repair Project, GFM would like to align the costs as per above diagram.

2.7 Spare Parts Management

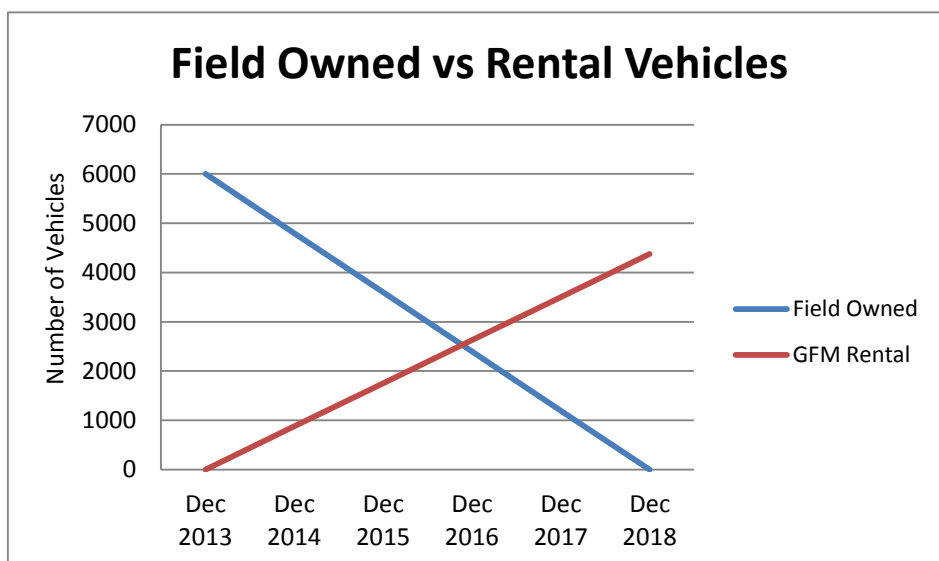
Closely linked to the provision of maintenance and repair is the supply of spare parts. Spare parts management, from ordering, inventory control and recording of use is a highly complex task. Evidence would suggest that there are significant inefficiencies in the way in which the organisation manages the spare part supply chain.

Difficult access to competent maintenance and repair facilities, extended and fragile spare-parts supply chains, an ageing and oversized vehicle fleet and low levels of fleet management competence in the field combine to create a sub-optimal environment for effective vehicle maintenance and repair. The impact to the organisation is a higher than necessary vehicle breakdown frequency, resulting in disruption to operations as well as avoidable costs.

Currently, all UNHCR motorised assets receive some level of periodic maintenance and repair. The frequency and quality of maintenance services and spare parts and lubricants used is uncertain.

2.8 Project Scale

As per below graph, all UNHCR light vehicles should be part of the rental scheme by the end of 2018. Part of the ongoing process is to right-size the fleet from approximately 6,000 currently to around 4,500 vehicles by the end of 2018.



All the rental vehicles are subject to maintenance and repair processes that will be established during the implementation of the intended project.

Also, all the rental vehicles of UNHCR are equipped with tracking devices. Installation, maintenance and troubleshooting of vehicle tracking devices in field locations will be performed by the selected service provider as part of the standard service package. For more information about the UNHCR Vehicle Tracking System (VTS), please refer to chapter 2.22; Vehicle Tracking System.

Given the global scale of operations, UNHCR recognizes the fact that the potential service provider may not have adequate presence in every capital or field location. For this reason, the potential service provider can consider subcontracting requested services, if necessary.

The *Annex 1* provides reference to the current country operations of UNHCR. The list also includes names of UNHCR partners (contact details of the UNHCR partners can be provided upon request) that are currently involved into vehicle maintenance and repair activities.

The *Annex 2* provides reference to current field locations in each country. In some of these field locations UNHCR may have no local partners present to maintain UNHCR vehicles. It is then the responsibility of the potential service provider to analyse all the information provided and propose a comprehensive global approach to maintenance and repair of UNHCR vehicles in all locations.

2.9 Project Roll-Out Plan

UNHCR will, together with the successful service provider, develop the project implementation plan. Since UNHCR is present in more than 100 countries with approximately 270 office locations, the project implementation will require a staged approach. It is proposed to implement the maintenance and repair project as follows:

2016/2017	Pilot phase; it is proposed to start with 2 countries to gain experience for both the potential service provider as well as UNHCR/GFM.
2017/2018	Based on the outcome of the pilot phase, gradually start the roll-out of the project to include the eight (8) biggest countries, representing 50% of the UNHCR light vehicle fleet.
2019 and beyond	All operational locations with a light vehicle fleet of more than 50 units to be included into the maintenance and repair project.

Please see *Annex 3*, which provides reference to the UNHCR Fleet size by location. This list includes:

- all light vehicles UNHCR operates at this moment (GFM rental as well as owned by country operations).
- Trucks and busses
- Armoured vehicles

For the top 25 countries, all locations in that particular country are indicated.

UNHCR's preference is to establish a contract with a single provider, however, given the magnitude of the project UNHCR will also consider split award and offers for services provided at regional level. Please complete the table in Annex 2 to confirm which regions are covered in your proposal.

After coming to an understanding of the UNHCR project requirements and performing the scope analysis, the potential service provider is encouraged to propose an alternative implementation plan as well. In either case, the middle of 2019 should be considered as the deadline for the overall project commissioning and signing off. Beyond this date all the developed and implemented project components and processes should function in the business-as-usual mode. By this date all the country operations should be included into the new maintenance and repair scheme.

The project scale and scope may increase overtime. For instance, country offices may be allowed to service their own (non-rental) vehicles through the GFM maintenance and repair setup, provided they comply with conditions and requirements outlined in this RFP. The Future Scope of Work Chapter 2.25 provides more details on services that can be requested by UNHCR in addition to the current requirements.

2.10 Service Management

UNHCR is using FleetWave®, the fleet management solution developed by Chevin (www.chevinfleet.com), for centralized management of all fleet-related processes in UNHCR. FleetWave® provides UNHCR with a comprehensive overview of the Total Cost of

Ownership (TCO) of its fleet. The contracted service provider will be given a required access to FleetWave® software of UNHCR to perform related data entry and maintain other related processes as required. Development of an interface for automated data transfer from an existing Service Management Software of the potential service provider to FleetWave® may become a requirement. It is the expectation of UNHCR that the service provider will develop specifications of such an interface and implement it in cooperation with Chevin at no additional cost to UNHCR.

When submitting an offer to this RFP, please indicate whether your company is willing to comply with this requirement.

All maintenance and repair processes of UNHCR should be managed in FleetWave® through the Job Card feature. The number of vehicles due for maintenance in each location will be communicated to the service provider in the dashboard of FleetWave®. The service provider would then contact the custodian office of UNHCR to agree on the date to perform the maintenance. Once the vehicle is delivered to the workshop, the service provider staff would create a Job Card for the vehicle and specify all the requirements to be done for the specific vehicle. After completion of all the intended works, the service provider will close the Job Card. This will allow the custodian office to certify the performed maintenance in FleetWave®. By having the office certification in FleetWave®, GFM will be able to settle an invoice related to the specific Job Card (inclusive spare parts, labour, mission cost, if any). Every Job card should also have a complete set of supporting documents attached (such as approved mission request forms, air-tickets, invoices, etc.).

FleetWave® enables the service provider to request the country UNHCR office to deliver a vehicle for service based on current odometer readings. Repair requests, however, will be communicated to the service provider by the UNHCR focal point in the country operation. The repair Job Card process will be identical to the maintenance scenario described above.

2.11 Warranty and Guarantee Periods

The potential service provider has to describe warranty and guarantee conditions applicable to provided services and delivered components as per the scope of this project.

2.12 Engineering and Manufacturing Services

The potential service provider may be required to provide ad-hoc engineering and manufacturing services of custom parts and components related to vehicles, generators, VTS and radio installations. The potential service provider should confirm feasibility to comply with this requirement.

2.13 Provisioning of Related Services and Items

The selected service provider may be requested to deliver services or goods that are not explicitly mentioned in this RFP, however, are required to meet the contractual obligations or requested by UNHCR. In either case, the written approval of UNHCR is required for provisioning of any related services or items.

2.14 Field Service Management (FSM) Software

At this stage, GFM is not planning to use any tools besides its ERP system and FleetWave® for the project control. However, if the potential service provider is already using any specialized Field Service Management (FSM) software, GFM would like to receive a general presentation on this software for purposes of familiarization.

2.15 Payment for Services

Submission of related invoices to GFM should be done once a month on an agreed schedule. Payment of invoices for closed and certified Job Cards will be performed by GFM in batches within 30 days after receiving the invoices (as per General UNHCR Terms and Conditions).

Related services, approved by GFM outside of the outlined scope, such as training sessions, should be invoiced separately. All submitted invoices should be accompanied by a complete set of supporting documents (travel authorizations, air tickets, etc.).

It is understood that the potential service provider will have to include admin overhead costs (such as lease of premises, water, electricity etc.) in their invoices. The potential service provider is requested to provide their proposed percentage of these admin overhead costs in *Annex B*.

The submitted offer must contain description of the proposed payment schedule.

UNHCR will not accept invoices for services provided out of the contract scope or in cases when a fault has been attributed to:

- imputable behavior of the contractor staff;
- faults in contractor's workmanship;
- non-compliance with agreed processes, procedures or with installation/service manuals;
- non-compliance with the industry best practices and regulations for installation, maintenance and troubleshooting;
- violation of safety and security regulations by the contractor staff;
- non-compliance with travel-related instructions, regulations or schedules.

2.16 Contract Duration

The intention is to make a contract with an initial duration of three (3) years, potentially extendable for a maximum of two (2) periods of up to one (1) year each.

2.17 Termination of the Agreement

If the contract is terminated, the contracted service provider has to agree to transfer all established business processes in full to UNHCR and to the subsequent service provider in order to guarantee continuity of the established UNHCR maintenance and repair activities worldwide.

When submitting the offer, the potential service provider should detail exit strategies applicable to scenarios of the contract termination and its due expiration.

2.18 Global Fleet Management Vehicle Catalogue

From the 1st of January 2014 all new vehicles for UNHCR operations and partners are supplied through the GFM Programme. In an effort to achieve organizational benefits through standardization, operations are offered a choice of vehicles to meet their operational requirements. The range of vehicles offered includes 8 different models which come in left-hand and right-hand drive versions:

Vehicle Type	Model	Engine	Vehicle/Terrain Category
Nissan Patrol	TWSSL(R)AFY61URZ	Turbo Diesel 4 cyl, 2953 cc, 110 kW	4x4 Station Wagon/Heavy Duty
Toyota Landcruiser	HZJ76L(R)-RKMRS	Diesel 6 cyl, 4164 cc, 96 kW	4x4 Station Wagon/Heavy Duty
Toyota Landcruiser	HZJ78L(R)-RJRMS	Diesel 6 cyl, 4164 cc, 96 kW	4x4 Station Wagon/Heavy Duty
Toyota Landcruiser Pick-Up SC	HZJ79L(R)-TJMRS	Diesel 6 cyl, 4164 cc, 96 kW	4x4 Pick Up/Heavy Duty
Toyota Landcruiser Pick-Up DC	HZJ79L(R)-DKMRS	Diesel 6 cyl, 4164 cc, 96 kW	4x4 Pick Up/Heavy Duty
Toyota Prado	LJ150L(R)-GKMEE	Diesel 4 cyl, 2986 cc, 70 kW	4x4 Station Wagon/Medium Duty
Toyota Corolla	ZRE182L(R)-GEFNK	Petrol Unleaded, 4 cyl, 1798 cc, 16-Valve, 97 kW, EUR 3	Sedan/On Road
Toyota HiAce	LH202L(R)-REMDE	Diesel, EFI 2986 cc, 4 cyl, 70 kW, High-altitude compensator	Minibus/On Road

It has to be noted that the above accounts for over 90% of the delivered vehicles, in case of emergencies or special instances, the GFM can procure vehicles outside of the above table. Vehicle models procured over the past 12 months are, amongst others, Peugeot 508, Dacia Duster, Toyota Hilux and Toyota Landcruiser 200 series.

The potential service provider should confirm it can service and repair all the models listed above as well as any other vehicle procured by UNHCR.

2.19 Approved Repair Items for Vehicles

UNHCR has established a closed list of jobs/components that do not require GFM authorization for Maintenance, Repair or Replacement (Ref: *Annex 4*) on rental (GFM)

vehicles. Any other repair job outside of this scope will require GFM authorization. The following information should be provided to GFM with a request for such an authorization:

- Make and model of the vehicle
- Barcode (asset ID) of the vehicle
- Year of manufacturing
- Odometer reading
- Estimated repair cost in USD

An authorization to proceed with the requested repair will be made by GFM within 3 working days.

The repair jobs, listed to in the *Annex 4*, do not require such an approval from GFM and can be performed by the selected service provider in accordance with the *A and B service intervals* defined in the *Annex 6*.

The potential service provider is requested to confirm that maintenance & repair will be performed as per the manufacturers' flat rate times.

The potential service provider is requested to propose solutions that could be made available to any UNHCR operation to rapidly increase or, in case of closing down an operation, decrease vehicle repair and maintenance capacity.

Potential service provider can review and propose modifications of the list referred to in *Annex 4*.

2.20 Sourcing and Pricing of Spare Parts

When quoting percentages for spare parts (*Annex B*), the potential service provider is requested to provide the percentage based on the vehicle manufacturers official spare parts list.

2.21 Optimizing the Existing Stock of Spare Parts

With the above introduction of requiring approval for the majority of repair works, it is obvious that the existing spare parts stocks will have quite a number of obsolete spare parts. As a result of this new organizational policy, UNHCR will request the successful service provider to identify such “dead stocks”. The identified obsolete spare parts will be auctioned off through the established UNHCR Asset Management procedures. When submitting your offer, please confirm willingness and capacity to perform this one-time exercise, and indicate associated cost, if any.

2.22 Vehicle Tracking System

The Vehicle Tracking System (VTS) project is one of the main components of the UNHCR Global Fleet Management programme.

Every UNHCR rental vehicle is equipped with tracking devices to measure and improve utilization of the fleet as well as to address issues related to safety and security of staff in field locations. UNHCR is currently fitting tracking devices into rental vehicles in 3 global vehicle hubs prior to shipment of those vehicles to customers in the field. The tracking devices are operational and transmitting data upon arrival to the destination country. In some cases, when rental vehicles acquired by GFM locally, the tracking devices are installed into locally procured vehicles either by UNHCR technicians or with help of agents of Novacom Services, the UNHCR global provider of the vehicle tracking services (www.novacom-services.com).

The current field network of available UNHCR and Novacom technicians is expanding but not sufficient to respond timely to request for field installations, troubleshooting and maintenance. Therefore, it is the intention of UNHCR is to source these field services from a qualified global provider that will be engaged into maintenance of UNHCR rental vehicles.

The *Annex 9* provider reference to technical specifications of the standard tracking device that is currently used by UNHCR for vehicle tracking purposes. In 2016, a new model of the tracking device will be introduced by Novacom, but support of the current one will be provided until the end of 2019.

In the future, UNHCR is also planning to install the same tracking devices onto rental power generators.

Currently, the field operations of UNHCR also have a possibility to equip their existing (non-rental) vehicles with tracking devices as well. Such retrospective installations of tracking devices are also carried out at the moment either by UNHCR technicians or by agents of Novacom. In the future, the selected service provider will also provide field installation, troubleshooting and maintenance services of retrofitted tracking devices.

The potential service provider of the UNHCR maintenance and repair services should confirm its interest to:

- a) Provide maintenance and troubleshooting services for the tracking devices that are already in operation (2,000 units in use by the end of August 2015; target number of tracking devices installed in the rental fleet is 4,500 by the end of 2018);
- b) Install new tracking devices in field locations as required and include them into the overall maintenance and repair service portfolio;

- c) Provide the same service level to tracking devices used for UNHCR power generating equipment;
- d) To ensure continuity of vehicle tracking services provided to the UNHCR field operations, the successful service provider may be requested to perform firmware upgrade of tracking devices. Such work may be necessary to perform on individual assets, groups of assets or globally;
- e) In addition, UNHCR may request the selected service provider to modify configuration of the UNHCR software platform for vehicle tracking on a periodic basis. This would include initial configuration of the software platform when the vehicle tracking project is commissioned in a country operation, as well as periodic changes of the configuration to align it with modified operational context (more/less vehicles in the country, custodian change, different requirements for reporting and alerting, etc.). Thus, the potential service provider shall confirm its readiness to perform this task;
- f) Optionally, perform installation, programming, troubleshooting, firmware upgrade, maintenance and repair of vehicular radio transceivers. The installation manuals can be sent to the potential service provider upon request.

UNHCR purchases and supplies tracking devices globally as needed. The selected service provider will have access to the required number of tracking devices and spare parts supplied by GFM to each country operation as necessary. If needed, UNHCR will organize an appropriate technical training session for a selected group of service provider's technicians to enable the company to carry out the outlined range of tasks.

2.23 Approved Repair Items for Vehicle Tracking System

Any maintenance and repair of tracking devices does not require GFM authorization unless a malfunctioning tracking terminal, or any of its components, is proven to be beyond repair and has to be replaced. In cases when faulty tracking terminals have to be replaced with new ones, the following information should be provided to GFM when submitting requests for authorization:

- Make and model of the vehicle
- Barcode (asset ID) of the vehicle
- Registration Number Plate of the vehicle
- Current custodian office of the vehicle
- Brief description of the technical problem with the tracking device and troubleshooting steps taken;

- Model of the faulty tracking device
- Serial number of the faulty tracking device
- ICC-ID of the current SIM card installed in the faulty tracking device
- Model of a new tracking device available for replacement
- Serial number of a new tracking device available for replacement
- ICC-ID of the SIM card that will be installed in the new tracking device.

2.24 Future Scope of Work

The scope of the maintenance and repair project for rental light vehicles is planned to be expanded in the future. The extended project scope includes:

- Power generators (2016-2017);
- Non-rental vehicles (UNHCR operation owned);
- Specialized vehicles (trucks, buses, earth moving equipment);
- Armoured Vehicles
- Motorcycles.

UNHCR is also planning to start implementing the fuel management project in 2017-2018, possibly, outside of the maintenance and repair project. By adding the accurate fuel data captured in FleetWave®, the organization will be able to generate comprehensive global reports on Total Cost of fleet Ownership.

When submitting the offer, the potential service provider should confirm interest in developing projects for UNHCR within the future scope of work.

2.25 Power Generators

The service provider should confirm willingness and capacity to extend the service portfolio to additional projects outlined above in the Future Scope of Work Chapter 2.24, and to the power generating equipment in particular.

Many UNHCR operations are heavily relying on their own power generating capacity. About 80% of required electrical energy UNHCR is sourcing by using power generators. Generators of electrical power provide energy to UNHCR offices, staff accommodation, water pumps, mission critical installations such as ICT systems, etc.

The *main objectives* of the generator project are as follows:

- Include power generators into the UNHCR rental scheme in 2016-2017;
- Ensure that the rental generators provide stable and reliable electrical power;
- Establish standard installation and commissioning processes for rental generators;

- Establish routine standard maintenance and repair processes for rental generators to reduce the failure rate;
- Optimize annual costs related to generator maintenance and fuelling;
- Reduce pollution;
- Establish basic user and service skills in the field;
- Allow country offices to service their own (non-rental) generators through the established mechanisms, provided the country offices are ready to comply with conditions and requirements outlined in this RFP.

To achieve the outlined above objectives, the prospective service provider is requested to develop and implement a flexible business model to ensure that all UNHCR generators in the field can receive appropriate and effective maintenance and repair services. It is the intention of UNHCR to establish maintenance and repair processes for rental generators in the same way as for rental vehicles.

The *Annex 1* provides reference to the current country operations of UNHCR. The list also includes names of UNHCR partners (contact details of the UNHCR partners can be provided upon request) that are currently involved into generator maintenance and repair activities.

The *Annex 2* provides reference to current field locations in each country. In some of these field locations UNHCR may have no local partners present to maintain UNHCR generators. It is then the responsibility of the potential service provider to analyse all the information provided and propose a comprehensive global approach to maintenance and repair of UNHCR generators in all locations.

If a potential service provider is interested in servicing and repairing power generators of UNHCR, they should be ready to identify and correct gaps in technical expertise, issues with spare part management, availability of maintenance and repair facilities, as well as environmental hazards, once the contract has been awarded.

2.26 Approved Repair Items for Generators

UNHCR has established a closed list of jobs/components that do not require GFM authorization for Maintenance, Repair or Replacement (Ref: *Annex 5*) on rental (GFM) generators. Any other repair job outside of this scope will require GFM authorization. The following information should be provided to GFM with a request for such an authorization:

- Make and model of the generator
- Barcode (asset ID) of the generator
- Year of manufacturing
- Current running hours
- Estimated repair cost in USD

An authorization to proceed with the requested repair will be made by GFM within 3 working days.

The repair jobs, listed to in the *Annex 5*, do not require such an approval from GFM and can be performed by the selected service provider in accordance with *service schedules and procedures* that have to be developed by the service provider in accordance with manufacturers' recommendations.

Potential service provider can review and propose modifications of the list referred to in *Annex 5*.

The potential service provider is requested to confirm that maintenance & repair will be performed as per the manufacturers' flat rate times.

When confirming the interest in servicing and repairing power generators, the potential contractor should also review the *Annex 7*, which refers to UNHCR generator statistics.

Additional requirements:

2.26.1 In addition to maintenance and repair, the potential service provider should confirm readiness to install, commission and decommission UNHCR generators. For more information about this requirement, please refer to Chapter 2.27; Generator Installation, Commissioning and Decommissioning.

2.26.2 The potential service provider is requested to propose a business solution that would address *emergency scenarios*, such as a generator breakdown in a field office, or fast expansion of the UNHCR operation in a given country. By proposing the solution the potential service provider should be willing to implement it.

This solution may include prepositioning of a spare generator capacity sized to the current scale of the UNHCR operation.

Where feasible, local offices of UNHCR may assist to the service provider with importation and custom clearance processes as UNHCR is tax exempted. Consignments cleared with assistance of UNHCR cannot be used or sold outside the intended project.

2.26.3 The potential service provider is requested to propose solutions that could be made available to any UNHCR operation to rapidly increase or, in case of closing down an operation, decrease power generator capacity.

Based on the provided information received in the financial section of this RFP, UNHCR will evaluate the feasibility to purchase this power generator equipment from the potential service provider.

- 2.26.4** Propose a solution that allows any UNHCR office to scale the power output of its generator power plants up or down dynamically depending on increase or decrease of the infrastructure load.
- 2.26.5** The potential service provider should also confirm willingness and capacity to deploy, if needed, auxiliary systems and components, such as lightning protection, grounding circuits, over-voltage and surge protection, voltage stabilizers, interfaces with solar energy equipment or city power grid, etc.
- 2.26.6** Future project stages may require provision of maintenance and repair services to UNHCR none-rental (existing) generators;
- 2.26.7** Post-installation services, besides preventive and corrective maintenance, should consider inclusion of periodic assessment of the infrastructure load and maintenance of electrical wiring.

2.27 Generator Installation, Commissioning and Decommissioning

The potential service provider should confirm willingness and capacity to install, commission and decommission UNHCR generators. At this stage, the infrastructure works are not part of the project scope (generators should only be connected to the Main Distribution Board in each location). In case needed, the site preparation will be carried out by the respective UNHCR office well ahead of the arrival of the power plant.

The works related to the power infrastructure of UNHCR facilities may come into the project scope at a later stage. However, the service provider would need to survey the existing infrastructure to size capacity of rental generators correctly prior to their installation. In some locations UNHCR has local expertise to assist in this task.

UNHCR is in the process to renew the frame agreements it has with various generator suppliers. Next to the classic generator set up, UNHCR will investigate possibilities on hybrid, solar as well as wind power solutions. The potential service provider should confirm willingness and capacity to install, commission and decommission these alternative power generator solutions.

Preparation of proper documentation and user training will be part of the commissioning process.

2.28 Operation and Monitoring of Generators

All UNHCR rental generators will be equipped with tracking devices (similar to those installed in UNHCR vehicles) for remote measurement of hours in operation, measuring the load current, and other parameters. The UNHCR tracking system also allows switching off the overloaded generators remotely. Standard Operating Procedures (SOPs) will be developed and issued to regulate such scenarios by defining roles and responsibilities of UNHCR staff and the future provider of the maintenance and repair services.

3 Content of the Technical Offer

When preparing the Technical Offer, the content of Chapter 2 “Requirements” and Chapter 4 “Evaluation” should be consulted. Your Technical Offer should be concisely presented and structured in the following order to include, but not necessarily be limited to, the following information:

3.1 Company Qualifications

A description of your company with evidence of your company’s capacity to perform the services required, including:

- Company profile, registration certificate and last audit reports;
- Three or more letters of reference, with contact information;
- Confirmation and evidence that your company can implement a project with a scale similar to the one outlined in this RFP;
- Description of the current Field Service Management platform used by the potential service provider (Reference: Chapter 2.10).

3.2 Proposed Services

- Comprehensive assessment of the existing maintenance and repair facilities and proposal of an optimized maintenance and repair facility model;
- Comprehensive assessment of the existing business processes related to maintenance and repair of UNHCR motorized assets and proposal of an optimized set of business processes. Besides, the continuous assessment and optimization of the business processes should be built in to the proposed project model;
- Proposal on optimization of the Total Cost of Ownership;
- Description of how the potential service provider will establish and manage the end-to-end supply chain of spare parts;
- Confirmation that the potential service provider will be using the fleet management software of UNHCR (FleetWave®) for the purposes of service management as outlined in the Chapter 2.10;
- Confirmation that services for vehicles, generators and vehicle tracking system can be provided in full and in accordance with requirements outlined in the Chapters 2.11 – 2.28 including the confirmation of readiness to expand the service portfolio over the future scope of work;
- Confirmation that all established processes will be handed-over in full to a new service provider in case of termination or expiration of the contract.

3.3 Personnel Qualifications

- List of the core project personnel that will be engaged by the potential service provider into the project development, implementation and commissioning. Professional Resumes of the proposed core project personnel should also be submitted;
- In case the proposed core staff needs to replace during the duration of the project, it will be the responsibility of the service provider to propose substitute candidates with equal qualifications and professional experience;
- All sub-contracted companies and personnel should comply with the same conditions for professional integrity, code of personal conduct, and any non-disclosure agreements signed.

3.4 Applicable General Conditions

Please indicate your acknowledgement of the UNHCR General Conditions of Contract for the Provision of Goods and Services by signing this document (*Annex D*) and including it in your submitted Technical Proposal.

3.5 Vendor Registration Form

If your company is not already registered with UNHCR, please complete, sign, and submit with your Technical Proposal the Vendor Registration Form (*Annex C*).

4 Evaluation

4.1 Technical Evaluation

The **Technical offer** will be evaluated using inter alia the following criteria and percentage distribution: **70%** from the total score.

Critical Requirements
Company registration certificate
Transfer all established business requirements in full to UNHCR after contract termination
Willingness to comply with the requirement to use FleetWave
Service provider is able to cover at least one full region where UNHCR operates according to Annex 2
Company Qualifications
Company profile
Latest Financial Statement
Confirmation of recent experience or projects of similar nature and magnitude
References to major clients
Confirmation that the proposed project roll-out plan is acceptable or, submission of an alternatively roll-out plan targeting the end of 2018 as the overall project commissioning deadline
Description of the current Field Service Management platform used by the potential service provider
Any information that facilitates evaluation of the company's reliability, financial and managerial capacity, etc.
Proposed Services and Project Deliverables
Confirmation that the service provider can deliver the requested services and would perform the full range of tasks
Confirmation of comprehensive understanding of the customer requirements for services
Description of the project planning and implementation methodology and the proposed operating model
Description of warranty and guarantee conditions applicable to provided services and delivered components (vehicles, VTS, generators)
Confirmation of intention to design and establish adequate life-cycle management processes, including End Of Life (EOL)
KPIs and SLA proposed
Does the offer propose solutions to improve utilization and availability of assets?
Does the offer propose solutions to reduce cost of fleet operations, has a target been provided?
Does the offer propose solutions to improve road safety, was an approach for measuring success proposed?
Does the offer propose solutions to minimize environmental impact, was an approach for measuring success proposed?
Does the offer address the need of establishing appropriate repair facilities where needed?
Does the offer include the analysis of skill requirement and address the training needs (inclusive of deep field)?
Does the offer include the analysis of the current business processes and proposes optimized/new business processes?
Does the offer include a proposal for reduce Total Cost of Ownership (TCO) (diagramme)?
Does the offer address issues related to the spare parts management in its current state?
Does the offer assure GFM that the service provider can deliver services at the required project scale (locations, quantities)?

Does the service provider agree to the proposed implementation plan or proposes alternatives?
Does the service provider use any specialized FSM software or value-added modules to their ERP system to manage services?
Does the service provider agree to 30-day payment schedule or any alternative is proposed that is acceptable to GFM/UNHCR?
Does the service provider confirm its capacity to service and repair vehicles from the GFM catalogue?
Does the service provider offer any changes to the proposed lists of the standard repair job and the GFM service intervals?
Does the service provider confirm willingness and capacity to perform the optimization of the existing spare parts stock?
Does the service provider confirm willingness and capacity to install, maintain and troubleshoot VTS in the field?
Does the service provider confirm willingness and capacity to install, maintain and troubleshoot radios?
Does the service provider confirm willingness and capacity to manage the VTS platform?
Does the service provider confirm interest in developing projects for UNHCR within the future scope of work (Refer to 2.25)?
Does the service provider confirm interest in developing the generator project globally?
Does the potential service provider confirm willingness and capacity to install, commission and decommission UNHCR generators?
Does the potential service provider propose a business solution that would address emergency scenarios, such as a generator breakdown in a field office, or fast expansion of the UNHCR operation in a given country?
Does the service provider agree with the proposed service schedules and approved repair jobs or offers alternatives?
Does the potential service provider offer backup/redundancy solutions when operations expand or contract?
Does the potential service provider offer a solution to scale power output dynamically up/down?
Does the potential service provider confirm willingness and capacity to deploy, if needed, auxiliary systems and components?
Does the potential service provider confirm willingness to perform maintenance & repair on light vehicle and generators according to the manufacturers' flat rate times?
Personnel Qualifications
List of the core project personnel that will be engaged by the potential service provider into the project development, implementation and commissioning. Professional Resumes of the proposed core project personnel should also be submitted
In case the proposed core staff needs to replace during the duration of the project, it will be the responsibility of the service provider to propose substitute candidates with equal qualifications and professional experience
All sub-contracted companies and personnel should comply with the same conditions for professional integrity, code of personal conduct, and any non-disclosure agreements signed

Some technical criteria will be subject to minimum passing scores; if an offer does not meet these minimums it will be deemed technically non-compliant and will not proceed to the financial evaluation.

UNHCR may short list potential contractors that have received highest technical scores and decide to continue the evaluation process with a reduced number of potential service providers.

UNHCR may choose to invite short listed potential service providers to make face-to-face presentations of their offers and to give the evaluation team an opportunity to get clarifications on any specific question, which may arise in result of the initial technical evaluation.

5 Performance Evaluation

5.1 Key Performance Indicators and Service Level Agreement

UNHCR expects to monitor the performance of the selected service provider. To establish the performance criteria, the potential service provider is requested to propose a list of the Key Performance Indicators (KPIs) and Service Level Agreement (SLA) based on their experience in similar projects with their commercial customers. UNHCR would like to have evidence that proposed KPIs and SLA are coherent with those used in the industry.

As a starting point, GFM is proposing to review the main project objectives mentioned in this RFP and consider such parameters as:

- availability of operational assets (percentage of the total number of light vehicles available for operational use. Taking into account that the average age of the light vehicle fleet beginning of 2019 will be approximately 2.5 years, UNHCR would strive by then to have an availability rate of 95%),
- gradual cost reduction,
- timely provision of services in field,
- customer satisfaction, etc.

Based on received information, UNHCR will construct the performance evaluation framework for the project in close cooperation with the selected service provider.

6 List of TOR Annexes

- Annex 1.** Countries of UNHCR operation and UNHCR partners currently involved into vehicle maintenance and repair activities.
- Annex 2.** Current field locations of UNHCR.
- Annex 3.** The UNHCR Fleet size by location as of June 1, 2016.
- Annex 4.** List of jobs/components that do not require GFM authorization for Maintenance, Repair or Replacement of rental vehicles.
- Annex 5.** List of jobs/components that do not require GFM authorization for Maintenance, Repair or Replacement rental power generators.
- Annex 6.** Service schedule A and the service schedule B as defined in the UNHCR vehicle service book.
- Annex 7.** UNHCR Generator Distribution by Country as of June 1, 2016.
- Annex 8.** UNHCR Manual, Chapter 8, Part 5: PPE Management, Section 3: PPE Preparation Use, Maintenance & Repair.
- Annex 9.** Data Sheet of the Surelinx c8100 tracking terminal.
- Annex 10.** Manual for installation of a tracking device into the Toyota LC 70 series vehicle.

Annex 1. Countries of UNHCR operations and UNHCR partners currently involved into vehicle maintenance and repair activities.

Country	Maintenance & Repair Partner	Contact	e-mail
Burkina Faso	African Initiative for Relief and Development	Mr. Israel Nzeyimana	Israel.n.@airdinternational.org
	Danish Refugee Council	Mr. Yaya Kone Mr. Dominique Koffi	Laf-mb@drc-wa.org cd-mb@drc.dk
South Sudan	Action Africa Help International	Mr. Minari Emmanuel Mr. Paul Kebenei	eminari@actionafricahelp.org Paul.kebenei@actionafricahelp.org
	Danish Refugee Council	Mr. Rickard Hartmann	Drc.ssudan@drc.dk
Uganda	Danish Refugee Council	Mr. Sirak Mehari	s.mehari@drcuganda.org
	African Initiative for Relief and Development Lutheran World Federation Aktion Afrika Hilfe, Germany Inter-Aid Medical Team International Humanitarian Initiative Just Relief Aid American Refugee Committee	Mr. Paul Orikushaba Mr. Emmanuel Kironde Mr. David Alula Abdulkarteem Kipchumba Mr. Peter Kiura	info@airdinternational.org Uganda@actionafricahelp.org ekironde@interaiduganda.org dalula@medicalteams.org a.kipchumba@hijra.org Peter.kiura@arc.co.ug
Afghanistan	Danish Refugee Council	Ms. Ruta Nimkas Mr. Mohammed Ismael Hamid	Hop.afghanistan@drc-afg.org Om.lts@drc-afg.org
Burundi	International Rescue Committee	Mr. Richard Crothers Mr. Marc Niyibikora	Marc.niyibikora@rescue.org
	Lutheran World Federation	Ms. Claudette Nzohabonimana	Finc.bdi@lwfdws.org

Country	Maintenance & Repair Partner	Contact	e-mail
Ethiopia	African Humanitarian Aid and Development Agency Lutheran World Federation	Mr. Moges Tamene	ahada@ethionet.et Pro.eth@lwfdws.org
Namibia	Africa Humanitarian Help, Ethiopia	Mr. Tekle Giorgis Aynalem	aha@africaonline.com
Cameroon	Africa Initiative for Relief and Development Int. Fed. of Red Cross & Red Crescent Societies African Humanitarian Action Action Contre La Faim Ieda Relief, Int. Emerg. And Development Aid International Medical Corps Fairmed Foundation Croix Rouge Francaise	Mr. Shibeshi Messay Mr. Denis Duffaut Mr. Cire Wane Ms. Estelle Tabone Mr. Gilbert Masumbuko Mr. Jean Mukenga Mr. Alphonse Umboock Ms. Marie Le Menn	Messay.s@airdinternational.org Denis.duffault@ifrd.org Cameroon@africahumanitarian.org dp@cm.missions-acf.org gilbert@iedarelief.org jmukenga@InternationalMedicalCorps.org umboock@yahoo.fr Hod-cam.frc@croix-rouge.fr
Guinea	Agency For Coop. And Research Development	Ms. Chloé Huynh	Chloe.huynh@acordinternational.org
Rwanda	Adventist Development And Relief Agency	Ms. Stella Rutaboba	stella@adra.org.rw
Liberia	African Initiative For Relief And Development	Mr. John Henry Ikwap	John.i.@airdinternational.org
Chad	African Initiative For Relief And Development	Mr. Jean Marie D'Almeida	Aird-chad@airdinternational.org
Congo	African Initiative For Relief And Development Agence D'Assist. Aux Repatries Et Refugies Au Congo - Cob Terres Sans Frontières Association Des Petites Soeurs Dominicaines Au Congo	Mr. Israel Nzeyimana Mr. Jean-Romain Badinga Mr. Benoit Ngadjole Mateso Ms. Estelle Prudence Maleka	Israel.n@airdinternational.org jeanromainbadinga@yahoo.fr matebeno@yahoo.fr prudesty@yahoo.fr

Country	Maintenance & Repair Partner	Contact	e-mail
Democratic Rep. of Congo	African Initiative For Relief And Development	Mr. Mahamadou Saliou Baba	info@airdinternational.org
Tanzania	African Initiative for Relief And Development		info@airdinternational.org
Sudan	Refugee Counselling Service, Khartoum, COR, Sudan	<i>Government of Sudan</i>	
Algeria	Triangle Generation Humanitaire, France	Mr. Medhi Bouaziz	Medhi.bouaziz@tringlegh.org
Kenya	Care International		info@care.or.ke
Myanmar	Bridge Asia-Japan	Mr. Takeo Hara	takeoharabaj@gmail.com
Malawi	Participatory Rural Development Organization	Ms. Emily Banda	emilybanda@hotmail.com

Please note that the above countries refer to situations UNHCR has a partner carrying out maintenance and repair. Countries not mentioned in the above list indicate that maintenance and repair is carried out by either commercial enterprises or UNHCR locally.

Annex 2. Current field locations of UNHCR - Please complete the table to confirm which regions are covered in your proposal.

CENTRAL AFRICA AND THE GREAT LAKES		READY TO PROVIDE SERVICE? YES/NO
Central Africa and the Great Lakes		
Burundi	Bujumbura Makamba Muyinga Ruyigi	
Cameroon	Yaounde	
Central African Republic	Bangui	
Democratic Republic of Congo	Buburu Bunia Bukavu Dongo Dungu Gbadolite Goma Kinshasa Kalemie Libenge Lumumbashi Mbandaka Pweto Uvira	
Gabon	Libreville	
Republic of Congo	Bétou Brazzaville Impfondo	
Rwanda	Byumba Cyangugu Gisenyi Kigeme Kigali Kibuye	
United Republic of Tanzania	Dar es Salaam Isaka Kigoma Kasulu Mpanda Mwanza Ulyankulu	

SOUTH & WEST AFRICA		READY TO PROVIDE SERVICE? YES/NO
Southern Africa		
Angola	Lunada	
Botswana	Gabarone	
Malawi	Lilobgwe	
Mozambique	Maputo Nampula	
Namibia	Windhoek	
South Africa	Muslina Pretoria	
Zambia	Lusaka Mongu Solwezi	
Zimbabwe	Harare	
West Africa		
Benin	Cotonou	
Burkina Faso	Ouagadougou	
Code d'Ivoire	Abidjan Guiglo Tabou	
Gambia	Banjul	
Ghana	Accra	
Guinea	Conakry Nzerekore	
Guinea-Bissau	Bissau	
Liberia	Harper Monrovia Saclepea Zwedru	
Mali	Bamako	
Niger	Niamey	
Nigeria	Abuja Lagos	
Senegal	Dakar	
Sierra Leone	Bo Freetown Kenema	
Togo	Lome	

EAST AND HORN OF AFRICA		READY TO PROVIDE SERVICE? YES/NO
East and Horn of Africa		
Chad	Abeche Amdjarass Amleyouna Biltine Farchana Goz Beida Gore Guereda Hadjer Hadid Haraze Iriba Koukou Maro N'Djamena	
Djibouti	Djibouti	
Eritrea	Asmara	
Ethiopia	Addis Ababa Alamata Asosa Dollo Ado Gambella Jijiga Shire	
Kenya	Dadaab Kakuma Nairobi	
Somalia	Bossasso Galkayo Hargesia Nairobi Mogadishu	
Sudan	El Fasher El Geneina Habillah Kassala Kadugli Khartoum Mornei Nyala Zalengi	
Uganda	Adjumani Arua Kampala Mbarara	
South Sudan	Awiel Bentiu Bor Jam Jang Juba Malakal Maban Rumbek Torit Wau Yambio Yei	

MIDDLE EAST & NORTH AFRICA		READY TO PROVIDE SERVICE? YES/NO
Middle East		
Iraq	Baghdad Basra Dohuk Erbil Kirkuk Missan Narsiriyah Sulemaniyah	
Israel	Tel Aviv	
Jordan	Amman	
Kuwait	Kuwait City	
Lebanon	Beirut Qobayat Sour Tripoli Zahle	
Saudi Arabia	Riyadh	
Syrian Arab Republic	Aleppo Damascus	
United Arab Emirates	Dubai Abu Dhabi	
Yemen	Aden Sana'a	
North Africa		
Algeria	Algiers Tindouf	
Egypt	Cairo	
Libya	Benghazi Tripoli	
Mauritania	Bassikounou Nouakchott	
Morocco	Rabat	
Tunisia	Tunis Zarzis	
Western Sahara	Laayoune	

AMERICAS		READY TO PROVIDE SERVICE? YES/NO
North America and the Caribbean		
Dominican Republic	Santo Domingo	
Haiti	Port-au-Prince	
Latin America		
Argentina	Buenos Aires	
Brazil	Brazilia	
Colombia	Apartadó Arauca Bogota Cucuta Medellin Mococa Pasto Quibdó Villavicencio	
Costa Rica	San José	
Ecuador	Largo Agrio Quito	
Mexico	Mexico City Tapachula	
Panama	Panama City	
Venezuela	Caracas Guasdalito Maracaibo San Cristobel	

EUROPE		READY TO PROVIDE SERVICE? YES/NO
Eastern Europe		
Armenia	Yerevan	
Azerbaijan	Baku	
Belarus	Minsk	
Georgia	Gali, Tbilisi, Zugdidi	
Moldova	Chisinau	
Russian Federation	Moscow	
Turkey	Ankara, Gaziantep, Hatay, Urfa, Van	
Ukraine	Kiev	
South-Eastern Europe		
Bosnia and Herzegovina	Banja Luka, Mostar Sarajevo, Tuzla	
Croatia	Knin, Sisak, Zagreb	
Kosovo	Pristina	
Montenegro	Podgarica	
Serbia	Belgrade	
The former Yugoslav Republic of Macedonia	Skopje	
Northern, Western, Central and Southern Europe		
Albania	Tirana	
Bulgaria	Sofia	
Cyprus	Nicosia	
Hungary	Budapest	
Romania	Bucharest	

ASIA & THE PACIFIC		READY TO PROVIDE SERVICE? YES/NO
Central Asia		
Kazakhstan	Almaty Astana	
Kyrgyzstan	Bishkek Osh	
Tajikistan	Dushanbe	
Turkmenistan	Ashgabat	
East Asia and the Pacific		
Australia	Canberra	
China	Beijing Hong Kong	
Papua New Guinea	Port Moresby	
South Asia		
India	Chennai New Delhi	
Nepal	Damak Kathmandu	
Sri Lanka	Colombo Jaffna Kilinochchi Mannar Island Vavuniya	
South East Asia		
Bangladesh	Cox's Bazaar Dhaka	
Cambodia	Phnom Penh	
Indonesia	Jakarta	
Malaysia	Kuala Lumpur	
Myanmar	Maungdaw Yangon	
Philippines	Cotabato Manila	
Thailand	Bangkok Mae Sot Kanchaburi Mae Hong Son Mae Sariang	
South West Asia		
Afghanistan	Herat Jalalabad Kabul Kandahar Maza-i-Sharif	
Iran	Ahwaz Dogaroon Kerman Mashhad Tehran	
Pakistan	Islamabad Karachi Pershawar Quetta	

Annex 3. UNHCR Vehicle Fleet Distribution by Country as per 01 June 2016

1. Chad	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	427	9	72	0	
Per Location:					
Abeche	5	1	4		
Amdjarass	28		2		
Amleyouna	8		2		
Farchana	67	1	14		
Goz Beida	26		8		
Gore	50	3	6		
Guereda	26		3		
Hadjer Hadid	17				
Haraze	19		2		
Iriba	54	1	15		
Koukou	15		2		
Maro	32		3		
N'Djamena	80	3	11		
					508

2. Ethiopia	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	337	4	60	0	
Per Location:					
Addis Abeba	69	1	35		
Almata	12				
Asosa	34		2		
Dollo Ado	71	1	9		
Gambelle	74		9		
Jijiga	44	1	3		
Shire	33	1	2		
					401

3. South Sudan	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	274	13	93	0	
Per Location:					
Bor	14		35		
Jam Jang	51	5	28		
Juba	77	4	2		
Malakal	8		20		
Maban	74	3			
Rumbek	4				
Wau	1				
Yambio	26		4		
Yei	19	1	4		
					380

4. Kenya	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	251	10	91	8	
Per Location:					
KENCES Warehouse			12		
Dadaab	123	2	51	8	
Kakuma	57	2	26		
Nairobi	57	4	2		
Nairobi Regional	11	2			
Nairobi Som. office	3				
					360

5. Democratic Republic of Congo	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	292	12	43	1	
Per Location:					348
Babura	5		1		
Bunia	32	1	6		
Bukavu	25	2	2		
Gbadolite	39	2	5		
Goma	63	1	3	1	
Kinshsa	41	4	1		
Kalemie	14		9		
Libenge	23	1	3		
Lubumbashi	4		1		
Mbandaka	1				
Uvira	31	1	9		
Zongo	14		3		

6. Pakistan	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	258	18	20	21	
Per Location:					317
Islamabad	53	9		4	
Karachi	7			1	
Peshawar	146	9	5	8	
Quetta	52		15	8	

7. Sudan	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	241	13	41	0	
Per Location:					380
Damazin	2				
El Fasher	5	2			
El Geneina	12	4			
Habilah	3	1			
Kassala	93	2	39		
Kadugli	4				
Khartoum	106	1	2		
Kosti	5				
Nyala	6	1			
Zalengei	5	2			

8. Uganda	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	200	11	54	0	
Per Location:					265
Adjumani	33	2	6		
Arua	19		2		
Hoima	32	1	8		
Kampala	53	6	17		
Kiyandongo	1				
Mbarara	62	2	21		

9. Tanzania	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	198	7	31	0	
Per Location:					236
Dar es Salaam	70	1			
Isaka	1		2		
Kibondo	26	1	1		
Kigoma	10		2		
Kasulu	51	5	21		
Mpanda	27		3		
Mwanza	4				
Ngara	1				
Ulyankulu	8		2		

10. Cameroon	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	151	0	25	2	
Per Location:					178
Batouri	31		7		
Bertoua	19		7		
Douala	8				
Maroua	34		5	2	
Meiganga	40		6		
Yaounde	19				

11. Iraq	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	140	0	16	21	
Per Location:					177
Baghdad	1			8	
Basra	3			3	
Dohuk	27		10	4	
Erbil	78		5	2	
Kirkuk	2			2	
Nasiriyah	3				
Suleimaniyah	26		1	2	

12. Sri Lanka	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	52	0	112	0	
Per Location:					164
Colombo	35				
Jaffna	3		3		
Kilinochcho	7		109		
Mannar Island	2				
Trincomalee	1				
Vavuniya	2				

13. Niger	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	109	3	20	0	
Per Location:					132
Abala	7		1		
Diffa	24		5		
Niamey	43	3	9		
Oullam	6				
Tahoua	19		5		

Tillabery	8				
Zinder	2				

14. Liberia	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	82	1	46	0	
Per Location:					
Harper	21		8		
Monrovia	231	8			
Saclepea	15		12		
Zwedru	23		18		
					129

15. Rwanda	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	102	4	23	0	
Per Location:					
Byumba	12		6		
Cyangugu	3		1		
Gisenyi	4		2		
Huye	9		1		
Kigeme	3		2		
Kigali	51	3	7		
Kirehe	11	1	1		
Kibuye	9		3		
					129

16. Central African Republic	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	102	1	15	3	
Per Location:					
Bangui	102	1	15	3	
					121

17. Burundi	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	87	10	15	2	
Per Location:					
Bujumbura	48	5	10	2	
Muyinga	17	3	2		
Ruyigi	22	2	3		
					114

18. Lebanon	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	83	0	0	10	
Per Location:					
Beirut	34			2	
Qobayat	8			1	
Sour	10			1	
Tripoli	12			1	
Zahle	19			5	
					93

19. Algeria	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	47	2	41	0	
Per Location:					
Algiers	8	2			
Tindouf	39		41		
					90

20. Jordan	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	73	13	3	0	
Per Location:					89
Amman	60	12	3		
Amman (Service Centre)	2	1			
Amman (Director Off.)	11				

21. Mali	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	66	0	16	4	
Per Location:					86
Bamako	32		2	1	
Gao	11		5	1	
Kayes	6				
Mopti	10		5	1	
Tombouctou	7		4	1	

22. Afghanistan	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	18	0	10	56	
Per Location:					84
Herat	2		1	6	
Jalalabad	3		1	8	
Kabul	7		6	29	
Kandahar			1	3	
Mazar-i-Sharif	6		1	10	

23. Burkina Faso	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	67	1	12	0	
Per Location:					80
Ougadougou	67	1	12		

24. Syrian Arab Republic	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	26	6	20	27	
Per Location:					79
Aleppo	1			3	
Damascus	21	6	20	15	
Homs				2	
Qamishly	1			3	
Sweida	1			2	
Tartous	2			2	

25. Yemen	Light Vehicles	Buses	Trucks	Armoured Vehicles	Total Number of Vehicles
	50	0	6	16	
Per Location:					72
Aden	19		4	9	
Sana'a	31		2	7	

The following vehicle types are included in the above categories:

Light Vehicles	Buses	Trucks	Armoured
Vehicles			
4x2 Station wagon	Bus	General Cargo Truck	Armoured
Vehicles			
4x4 DC Pick Up	Minibus	Dump truck	
4xx SC Pick Up		Agricultural Vehicles	
4x4 Station Wagon		Construction Vehicles	
Delivery Vehicles		Tankers	
Minibus			
Passenger Vehicles			
Sedan			

	Other Countries	Total Number of Vehicles
26	Cote d'Ivoire	64
27	Servia & Montenegro	59
28	Congo	57
29	Thailand	49
30	Mauretania	48
31	Zambia	46
32	Myanmar	41
33	Djibouti	40
34	Ghana	38
35	Somalia	37
36	Guinea	35
37	Senegal	35
38	Islamic Republic of Iran	34
39	Bangladesh	33
40	Western Sahara	32
41	Colombia	31
42	Georgia	30
43	Nepal	30
44	Nigeria	30
45	Bosnia & Herzegovina	29
46	Ukraine	28
47	Ecuador	23
48	Turkey	23
49	Mozambique	21
50	Malawi	20
51	South Africa	20
52	Zimbabwe	20
53	Philippines	18
54	Tunisia	18
55	Angola	16
56	Eritrea	16
57	Sierra Leone	16
58	Libyan Arab Jamahiriya	15
59	Botswana	14
60	Kyrgyzstan	14
61	Former Republic of Macedonia	12
62	Togo	12
63	Venezuela	12
64	United Arab Emirates	11

65	Egypt	10
66	Gambia	10
67	Malaysia	10
68	Hungary	9
69	India	8
70	Croatia	7
71	Namibia	7
72	Saudi Arabia	7
73	Switzerland	7
74	Mexico	6
75	Benin	5
76	Greece	5
77	Guinea-Bissau	5
78	Haiti	5
79	Russian Federation	5
80	Armenia	4
81	Dominican Republic	4
82	Gabon	4
83	Indonesia	4
84	Kazakhstan	4
85	Kuwait	4
86	Tajikistan	4
87	Azerbaijan	3
88	Panama	3
89	Albania	2
90	Argentina	2
91	Belarus	2
92	China	2
93	Costa Rica	2
94	Australia	1
95	Brazil	1
96	Bulgaria	1
97	Cambodia	1
98	Cyprus	1
99	Israel	1
100	Republic of Moldova	1
101	Morocco	1
102	Romania	1
103	Turkmenistan	1
Grand Total		6,214

Annex 4. List of jobs/components that do not require GFM authorization for Maintenance, Repair or Replacement for GFM rental vehicles.


Engine	Air filter
	Fuel filter
	Oil filter
	Diesel fuel injector
	Glow plug
	Radiator
	Radiator cap
	Radiator hoses & clamps
	Coolant
	A/C condenser
	Hose clamps
	V-belt/drive belt and tensioner
	Water pump and gasket
	Thermostat and gasket
	Rocker arm cover gasket
	Crankshaft oil seal (front and rear)
	Exhaust manifold gasket
	Intake manifold gasket
Petrol engine, (in addition to above mentioned components)	Spark plug
	Leads
	Ignition coil
	Fuel injector
Electrical	Battery and battery clamps
	Starter Motor
	Alternator
	Fuse/circuit breakers
	Relays
	Bulbs
	Horn
	Tail light assembly
	Head lights
	Front Blinker Lights
Electrical, switches	Headlight switch
	Ignition switch
	Brake light switch
	Turn signal switch
	Door lock switch
	Wiper switch
	Door window switch
	Back up lamp switch
Brakes	Brake Pad
	Brake disc
	Brake Caliper
	Brake shoe
	Brake drum
	Wheel brake cylinder
	Parking brake shoe
	Parking brake cable
	Brake hydraulic tubes and hoses
	Brake master cylinder
	Brake booster
In general: all brake parts are approved and therefore works are authorized	

Axles and propeller shaft	Front and rear axle hub oil seals
	Front and rear axle hub bearings
	Front and rear axle pinion oil seal
	Universal joint
Glass	Windshield
	Front and rear door glass (L+R)
	Backdoor glass
	Quarter glass (L+R)
Body	Front and rear bumper
	Outside mirror (L+R)
	Hood release cable
Suspension	Ball joint (L+R)
	Front coil spring
	Rear coil spring
	Rear leaf spring shackle bushing
	Rear leaf spring
	Rear leaf spring U-Bolt and nuts
	Shock absorber (Fr + R)
	Stabilizer bar bushing
	Suspension Stabilizer Bar Link
	Suspension Control Arm Bushing
Wheels	Rim
	Wheel nuts
	Studs
	Car jack
	Tires
Steering	Steering tie rod end (L+R)
	Steering tie rod end boot
Manual Transmission Clutch	Clutch friction disc
	Clutch release bearing
	Clutch pressure plate
	Clutch release cylinder
	Clutch master cylinder
General	Wiper blades
	Vehicle radio antenna
	Fuel filler cap
Lubricants	All

Annex 5. List of jobs/components that do not require GFM authorization for Maintenance, Repair or Replacement for GFM rental power generators.

Engine	Air filter
	Fuel filter
	Oil filter
	Coolant filter
	Fuel/water separator
	Fuel unit nozzles
	Engine coolant pump
	Radiator
	Radiator hoses and clamps
	Radiator cap
	Coolant
	V-belt/drive belt and tensioner
	Thermostat & gasket
	Rocker arm cover gasket
	Crankshaft oil seal (front and rear)
	Exhaust manifold gasket
	Intake manifold gasket
Electrical	Battery
	Starter Motor
	Alternator
	Circuit breaker
	Relays
	Diode bridge/rotating rectifier
	Automatic voltage regulator
	Transfer switch
	Fuses
	Engine interphase module (EIM)
	Engine control unit (ECU)
	Engine management unit (EMU)
	Magnetic pickup
	Wiring harness
Electrical, Sensors	Engine oil pressure sensor
	Fuel pressure sensor
	Fuel pump solenoid
	Engine coolant temperature sensor
	Engine inlet manifold air pressure sensor
	Engine inlet manifold air temperature sensor
	Crank shaft position sensor
	Cam shaft position sensor
	Engine speed sensor
	Radiator coolant level sensor
	Fuel temperature sensor
Electrical, Gauges	Amp meter
	Volt meter
	Frequency meter
Lubricants	All

Annex 6. Service schedule A and the service schedule B as defined in the UNHCR vehicle service book.



SUPPLY MANAGEMENT AND LOGISTICS SERVICE

DRIVING FORWARD



UNHCR
United Nations High Commissioner for Refugees
Haut Commissariat des Nations Unies pour les réfugiés

SERVICE SCHEDULE 'A'

INSTRUCTIONS

The whole vehicle is to be inspected attention being paid to safety critical items. Adjustments are to be made and parts replaced where required. The service is as listed under the sections which follow.

ENGINE

(a) Checks

- Oil level and leakage's
- Cooling water level
- Windscreen wiper fluid level
- Engine mounting rubber
- Fan belt
- Cylinder head and manifold connections
- Engine idling and acceleration

(b) Cleaning


- Fuel filter element (replace if necessary)
- Air filter (replace if necessary)
- Battery terminals and grease the posts
- Clean engine - Steam wash

(c) Change

- Engine oil and filter
- Fuel filter (as required)
- Air filter (as required)


STEERING

- Check power steering level and condition
- Check linkage for damage, wear and deformity
- Check steering for free play
- Check overall steering performance
- Lubricate steering knuckles



SUPPLY MANAGEMENT AND LOGISTICS SERVICE

DRIVING FORWARD



UNHCR
United Nations High Commissioner for Refugees
Haut Commissariat des Nations Unies pour les réfugiés

TRANSMISSION

- Check for oil leaks
- Check for air leakage in vacuum airline and modulator
- Check transmission electrical connections for wear and frays
- Check shifting linkage and mechanism
- Check linkage control for looseness and operation
- Check and lubricate transmission system linkage
- Check transmission overall performance
- Check differential oil level and leakage
- Check differential overal performance

DRIVE LINE


- Check tire pressure, wear, cracks and damage
- Check wheel hub bolt tightness
- Check wheel nuts for looseness
- Check propeller shaft joint bolts fixing condition
- Check front and rear wheel bearings for looseness
- Check axle shaft mounting bolts for looseness

BREAKING

- Check and adjust pedal for free play
- Check brake pedal operational condition
- Check for damage, oil and air leakage
- Check fluid reservoir level and leakage
- Check hand brake operation condition
- Check and adjust brake shoes and brake lining clearance
- Check brake piping and flexible hose condition
- Dedust and clean the brake system
- Test the overall brake efficiency


SUSPENSION

- Check all leaf for breakage and sliding
- Check all mounting for looseness, gaps and damage
- Check chock absorbers for oil leakage and damage
- Check spring pins and bushings condition
- Check conditions of all shocks
- Check condition of all suspension bushes



SUPPLY MANAGEMENT AND LOGISTICS SERVICE

DRIVING FORWARD



UNHCR
United Nations High Commissioner for Refugees
Haut Commissariat des Nations Unies pour les réfugiés

ELECTRICAL

- Check alternator charging characteristics
- Check battery mounting condition
- Check battery electrolyte level and specific gravity for electrolyte
- Check battery switch and terminals
- Check all lights, horn, panel instruments/gauges
- Check hazard lights and all turn signals
- Check windscreen wipers operational condition
- Check starter operational performance
- Check all wiring harness and connector for looseness and damage

AIR CONDITIONING

- Check functioning of the air conditioning
- Check refrigerant
- Check for gas leaks from piping connections
- Check tightness of the air conditioning belt

BODYWORK AND CHASSIS

- Check for damages of the chassis and bodywork
- Check for the damages to the body flooring
- Check overall body condition for damage and paint wear
- Lubricate all the chassis, grease nipples
- Grease all joints
- Grease propeller shaft yoke
- Check security of driver and passenger seats
- Check the functioning of all doors
- Grease all door hinges
- Apply WD-40 to the window winding mechanism and grease the window channel mechanism

SUSPENSION

Conduct a vehicle road test to ensure that the servicing has been completed satisfactory and that vehicle defects have been remedied before returning the vehicle to the client.



SERVICE SCHEDULE 'B'

INSTRUCTIONS

In the 'B' Service Schedule, most of the service conducted in the 'A' service will be repeated. Additional service requirements are as stated under the following headings.

ENGINE

In the section, most of the checks and service carried out under the 'A' service schedule are to be repeated. The 'B' service thus comprises the 'A' service scheduled plus additional requirements as follows.

(a) Checks

- Fuel injection pressure and state of the nozzle spraying pattern
- Calibrate injector pump and injectors
- Inspect exhaust smoke density
- Check water pump for leakage

(b) Cleaning

- Clean the exhaust system

(c) Lubricate

- Water pump

(d) Replace

- Air filter element
- Fuel filter element

STEERING

- Check steering alignment

TRANSMISSION

- Change transmission oil
- Change differential oil

BREAKING SYSTEM

- Check the servo for condition and leakage

DRIVE LINE

- Same as 'A' service

SUSPENSION

- Same as 'A' service

ELECTRICAL

- Same as 'A' service

AIR CONDITIONING

- Same as 'A' service

BODYWORK AND CHASSIS

- Same as 'A' service

ROAD TEST

Conduct a vehicle road test to ensure that the servicing has been completed satisfactorily and that vehicle defects have been remedied before returning the vehicle to the client.

SERVICE SCHEDULE "A"	SERVICE SCHEDULE "B"
5,000 KM	
10,000 KM	
	15,000 KM
20,000 KM	
25,000 KM	
	30,000 KM
35,000 KM	
40,000 KM	
	45,000 KM
50,000 KM	
55,000 KM	
	60,000 KM
65,000 KM	
70,000 KM	
	75,000 KM
80,000 KM	
85,000 KM	
	90,000 KM
95,000 KM	
100,000 KM	
	105,000 KM
110,000 KM	
115,000 KM	
	120,000 KM
125,000 KM	
130,000 KM	
	135,000 KM
140,000 KM	
145,000 KM	
	150,000 KM

Annex 7. UNHCR Generators as of 01 June 2016

1. Chad	Generators	Total number of generators
Per Location:		143
Abeche	3	
Amdjarass	6	
Amleyouna	5	
Farchana	17	
Goz Beida	10	
Gore	11	
Guereda	5	
Hadjer Hadid	7	
Haraza	7	
Iriba	21	
Koukou	5	
Maro	10	
N'Djamena	36	

7. Ethiopia	Generators	Total number of generators
Per Location:		66
Addis Abeba	4	
Almata	1	
Asosa	7	
Dollo Ado	6	
Gambella	18	
Jijiga	20	
Shire	10	

3. South Sudan	Generators	Total number of generators
Per Location:		98
Bor	5	
Jam Jang	19	
Juba	40	
Malakal	2	
Maban	14	
Rumbek	2	
Torit	3	
Wau	1	
Yambio	4	
Yei	8	

2. Kenya	Generators	Total number of generators
Per Location:		102
Dadaab	69	
Kakuma	31	
Mombasa warehouse	1	
Nairobi	1	

10. Democratic Republic of Congo	Generators	Total number of generators
Per Location:		58
Bunia	6	
Bukavu	8	
Gbadolite	6	
Goma	10	
Kinshasa	6	
Kalemie	3	
Libenge	4	
Uvira	10	
Zongo	5	

15. Pakistan	Generators	Total number of generators
Per Location:		35
Islamabad	12	
Karachi	1	
Peshawar	17	
Quetta	5	

5. Sudan	Generators	Total number of generators
Per Location:		71
El Fasher	1	
El Geneina	11	
Habillah	1	
Kassala	26	
Khartoum	19	
Kosti	7	
Mukjar	2	
Nyala	1	
Zalengei	3	

4. Uganda	Generators	Total number of generators
Per Location:		82
Adjumani	29	
Arua	3	
Hoima	12	
Kampala	15	
Mbarara	23	

8. Tanzania	Generators	Total number of generators
Per Location:		63
Dar es Salaam	5	
Isaka	1	
Kibondo	30	
Kigoma	1	
Kasulu	12	
Mpanda	9	
Mwanza	1	
Ulyankulu	4	

16. Cameroon	Generators	Total number of generators
Per Location:		27
Batouri	7	
Bertoua	3	
Douala	1	
Maroua	7	
Meiganga	7	
Yaounde	2	

29. Iraq	Generators	Total number of generators
Per Location:		9
Dohuk	1	
Erbil	4	
Kirkuk	1	
Suleimaniyah	3	

41. Sri Lanka	Generators	Total number of generators
Per Location:		4
Colombo	1	
Jaffna	1	
Kilinochchi	2	

17. Niger	Generators	Total number of generators
Per Location:		27
Abala	3	
Diffa	1	
Niamey	14	
Oullam	1	
Tahoua	4	
Tilabery	1	
Zinder	3	

19. Liberia	Generators	Total number of generators
Per Location:		23
Harper	5	
Monrovia	6	
Saclepea	5	
Zweru	7	

24. Rwanda	Generators	Total number of generators
Per Location:		15
Byumba	2	
Cyangugu	1	
Gisenyi	1	
Huye	2	
Kigali	4	
Kirehe	3	
Kibuye	2	

11. Central; African Republic	Generators	Total number of generators
Per Location:		49
Bangui	49	

13. Burundi	Generators	Total number of generators
Per Location:		43
Bujumbura	25	
Muyinga	10	
Ruyigi	8	

23. Lebanon	Generators	Total number of generators
Per Location:		15
Beirut	4	
Qobayat	1	
Sour	3	
Tripoli	3	
Zahle	4	

18. Algeria	Generators	Total number of generators
Per Location:		23
Algiers	1	
Tindouf	22	

22. Jordan	Generators	Total number of generators
Per Location:		20
Amman Main Office	6	
Amman Service Centre	2	
Amman Director's Office	1	
Azraw Warehouse	11	

6. Mali	Generators	Total number of generators
Per Location:		70
Bamako	38	
Gao	12	
Kayes	3	
Mopti	5	
Tombouctou	12	

9. Afghanistan	Generators	Total number of generators
Per Location:		58
Herat	3	
Jalalabad	7	
Kabul	30	
Kandahar	6	
Mazar-i-Sharif	12	

20. Burkina Faso	Generators	Total number of generators
Per Location:		22
Ougadougou	22	

14. Syrian Arab Republic	Generators	Total number of generators
Per Location:		38
Aleppo	1	
Damascus	27	
Qamishly	8	
Sweida	2	

12. Yemen	Generators	Total number of generators
Per Location:		44
Aden	26	
Aden warehouse	2	
Sana'a	16	

	Other Countries	Total number of generators
34	Cote d'Ivoire	6
31	Serbia & Montenegro	9
27	Congo	9
101	Thailand	0
35	Mauretania	6
49	Zambia	3
21	Myanmar	22
32	Djibouti	7
37	Ghana	5
25	Somalia	14
28	Guinea	9
26	Senegal	10
38	Islamic Republic of Iran	5
51	Bangladesh	2
69	Western Sahara	1
60	Colombia	1
62	Georgia	1
33	Nepal	7
30	Nigeria	9
75	Bosnia & Herzegovina	0
48	Ukraine	3
61	Ecuador	1
47	Turkey	3
40	Mozambique	4
64	Malawi	1
98	South Africa	0
57	Zimbabwe	2
67	Philippines	1
56	Tunisia	2
50	Angola	2
39	Eritrea	4
36	Sierra Leone	6
46	Libyan Arab Jamahiriya	3
59	Botswana	1
53	Kyrgyzstan	2

92	The Former Yugoslav Republic of Macedonia	0
42	Togo	4
103	Venezuela	0
68	United Arab Emirates	1
44	Egypt	3
52	Gambia	2
54	Malaysia	2
87	Hungary	0
63	India	1
81	Croatia	0
55	Namibia	2
97	Saudi Arabia	0
99	Switzerland	0
93	Mexico	0
43	Benin	3
85	Greece	0
45	Guinea-Bissau	3
86	Haiti	0
96	Russian Federation	0
72	Armenia	0
83	Dominican Republic	0
84	Gabon	0
88	Indonesia	0
90	Kazakhstan	0
91	Kuwait	0
100	Tajikistan	0
58	Azerbaijan	1
94	Panama	0
70	Albania	0
71	Argentina	0
74	Belarus	0
79	China	0
80	Costa Rica	0
73	Australia	0
76	Brazil	0
77	Bulgaria	0
78	Cambodia	0
82	Cyprus	0
89	Israel	0
65	Republic of Moldova	1
66	Morocco	1
95	Romania	0
102	Turkmenistan	0
Grand Total		1,390

Generators Purchased Over the last 3 Years ONLY by UNHCR Headquarters

GENERATORS PURCHASED OVER THE LAST 3 YEARS	CAPACITY	PO QTY (EA)							
ITEM DESCRIPTION	KVA	bruno	canamidex	coelmo	hatz	koyo	nahhed	wilson	Grand Total
DEUTZ GENERATOR, AIR COOLED, 5 KVA, PRIME POWER	5					7			7
GEN 5 KVA PORTABLE PETROL/DIES	5				6				6
GEN, HATZ, 5 KVA, AIR COOLED	5				1				1
GEN HATZ 10 KVA AIR COOLED	10				26				26
GENERATOR 10 KVA, DIESEL	10	8							8
GEN, DEUTZ, 12.5 KVA, PRIME	12.5		4						4
DEUTZ GENERATOR, AIR COOLED, 15 KVA, STAND-BY POWER	15		10						10
GEN HATZ 15 KVA AIR COOLED	15				5				5
GEN, DEUTZ, 15 KVA PRIME	15	6							6
DEUTZ GENERATOR, AIR COOLED, 20 KVA, PRIME POWER	20	10							10
GEN HATZ 20 KVA AIR COOLED	20				23				23
GEN HATZ 25 KVA AIR COOLED	25				3				3
GEN, DEUTZ, 25 KVA PRIME	25					1			1
PERKINS GENERATOR, WATER COOLED, 30 KVA, PRIME POWER	30		6	7			7	5	25
PERKINS GENERATOR, WATER COOLED, 30 KVA, STAND-BY POWER	30		2	3			8		13
CUMMINS GENERATOR, WATER COOLED, 40 KVA, PRIME POWER	40					4			4
PERKINS GENERATOR, WATER COOLED, 40 KVA, PRIME POWER	40			4					4
GEN PERKINS 45 KVA WATER COOLED	45		7						7
GEN, PERKINS, 45 KVA PRIME	45						6	8	14
PERKINS GENERATOR, WATER COOLED, 50 KVA, PRIME POWER	50			1					1
PERKINS GENERATOR, WATER COOLED, 50 KVA, STAND-BY POWER	50						3		3
CUMMINS GENERATOR, WATER COOLED, 60 KVA, PRIME POWER	60					1			1
GENERATOR, PERKINS, WC/60 KVA	60		8			1	1		10
PERKINS GENERATOR, WATER COOLED, 60 KVA, PRIME POWER	60			1		1	13	2	17
PERKINS GENERATOR, WATER COOLED, 60 KVA, STAND-BY POWER	60		2	2			6		10
PERKINS GENERATOR, WATER COOLED, 70 KVA, PRIME POWER	70			2					2
PERKINS GENERATOR, WATER COOLED, 70 KVA, STAND-BY POWER	70		1	1					2
PERKINS GENERATOR, WATER COOLED, 80 KVA, PRIME POWER	80		3	1		1	4		9
PERKINS GENERATOR, WATER COOLED, 80 KVA, STAND-BY POWER	80						2		2
GENERATOR WITH PERKINS ENGINE 100 KVA	100		2						2
PERKINS GENERATOR, WATER COOLED, 100 KVA, PRIME POWER	100		4	3			13	3	23
PERKINS GENERATOR, WATER COOLED, 100 KVA, STAND-BY POWER	100						7		7
GENERATOR, FG WILSON, WC/110 KVA	110							3	3
GENERATOR, PERKINS 150 KVA	150		1						1
PERKINS GENERATOR, WATER COOLED, 150 KVA, PRIME POWER	150		3	2			1	2	8
PERKINS GENERATOR, WATER COOLED, 150 KVA, STAND-BY POWER	150						1	1	2
PERKINS GENERATOR, WATER COOLED, 200 KVA, PRIME POWER	200			2			1		3
PERKINS GENERATOR, WATER COOLED, 200 KVA, STAND-BY POWER	200						1		1
PERKINS GENERATOR, WATER COOLED, 250 KVA, PRIME POWER	250			2		1	4	1	8
PERKINS GENERATOR, WATER COOLED, 250 KVA, STAND-BY POWER	250						5		5
GENERATOR, PERKINS, WC/275 KVA	275			1			1		2
PERKINS GENERATOR, WATER COOLED, 350 KVA, PRIME POWER	350			2			2		4
PERKINS GENERATOR, WATER COOLED, 350 KVA, STAND-BY POWER	350						2		2
PERKINS GENERATOR, WATER COOLED, 400 KVA, PRIME POWER	400			1					1
PERKINS GENERATOR, WATER COOLED, 450 KVA, PRIME POWER	450							1	1
PERKINS GENERATOR, WATER COOLED, 500 KVA, PRIME POWER	500			1			1		2
GRAND TOTAL		24	53	36	64	17	89	26	309

Capacity breakdown for generators acquired
through UNHCR Headquarters
over the last 3 years
(no purchases by country offices
included)

GENERATOR CAPACITY	BY QTY
5 KVA	14
10 KVA	34
12.5 KVA	4
15 KVA	21
20 KVA	33
25 KVA	4
30 KVA	38
40 KVA	8
45 KVA	21
50 KVA	4
60 KVA	38
70 KVA	4
80 KVA	11
100 KVA	32
110 KVA	3
150 KVA	11
200 KVA	4
250 KVA	13
275 KVA	2
350 KVA	6
400 KVA	1
450 KVA	1
500 KVA	2
GRAND TOTAL	309

Quantity breakdown of generators acquired
through UNHCR Headquarters
over the last 3 years
(no purchases by country offices included)

GENERATOR BY CAPACITY	QTY
30 KVA	38
60 KVA	38
10 KVA	34
20 KVA	33
100 KVA	32
15 KVA	21
45 KVA	21
5 KVA	14
250 KVA	13
80 KVA	11
150 KVA	11
40 KVA	8
350 KVA	6
12.5 KVA	4
25 KVA	4
50 KVA	4
70 KVA	4
200 KVA	4
110 KVA	3
275 KVA	2
500 KVA	2
400 KVA	1
450 KVA	1
GRAND TOTAL	309

Annex 8. UNHCR Manual, Chapter 8, Part 5: PPE Management, Section 3: PPE Preparation, Use, Maintenance & Repair.

Introduction

Depending on requirements, maintenance or repair can be undertaken by an operator, a UNHCR workshop or an external workshop. The different levels of maintenance and repair are:

- Preventive maintenance.
- Simple corrective maintenance (repair).
- Scheduled workshop maintenance and repair.

Responsibility

In many cases, Supply staff contract commercial workshops and/or other organisations to conduct maintenance and repair work.

They also advise the custodians of the items and the maintenance service providers about the manufacturer and maintenance and repair guidelines of UNHCR, schedules and procedures.

Competitive service

Make the best use of funds allocated for maintenance and repair by:

- Negotiating preferred customer discounts with workshops.
- Obtaining firm quotations prior to authorising work to be done.
- Preventing unnecessary charges.
- Seeking competitive bids from different workshops (in the case of major overhauls), whilst ensuring the quality of maintenance/repair works.

Common maintenance issues

Many maintenance problems are encountered in field operations. A few of the more common problems to be aware of are as follows:

- Using old vehicles with high mileage that are in poor condition.
- Unavailability of adequate maintenance facilities resulting in use of unsuitable ones.
- Poor preventive maintenance practice, such as not changing oil and other filters when required.
- Failure to inspect and service vehicles regularly.
- Scarcity and high cost of locally purchased equipment, tools and spare parts.
- Improvisation or welding broken parts.
- Removal or switching parts from vehicles temporarily out of service.
- Having too many types, makes and models of PPEs in use.
- Cannibalisation of excessively worn parts and components from unserviceable vehicles.
- Using badly worn or damaged tyres.
- Abuse and damage of vehicles caused by unsafe driving.

Preventive maintenance should be performed at regular intervals as recommended manufacturer or UNHCR manuals for operating in rugged conditions.

Preventive maintenance

Preventive maintenance maximises the serviceable life of a PPE by preventing avoidable, premature wear and failure. It involves inspecting and servicing vehicles and other PPEs before they need to be repaired as follows:

PPE type	Routine tasks
Vehicles	<ul style="list-style-type: none"> • Changing engine fluids, filters and belts. • Tuning the engine and servicing the drive train and steering.
Office equipment	<ul style="list-style-type: none"> • Cleaning, testing and adjusting components. • Replacing worn components.

Repair

Repair is undertaken after the vehicle or item has failed or has been damaged, and restores the PPE back to serviceable condition.

It generally involves inspecting, testing and replacing defective parts or components. Harsh operating environments, normal deterioration over time, improper use and abuse and poor standards of preventive maintenance lead to frequent repair work.

Repair can be divided into:

- Common corrective maintenance.
- Scheduled workshop maintenance and repairs.

Common corrective maintenance and repair

Repairs are considered to be corrective action, if the PPE does not leave the operator and is not officially sent to a workshop. These are generally small faults, as shown in the table below.

PPE type	Examples of common corrective maintenance
Vehicles	<ul style="list-style-type: none"> • Replacement of light bulbs, spark plugs. • Changing a tyre. • Adjusting a carburettor.

Scheduled workshop maintenance and repair

Where scheduled maintenance is required for small to medium-size repairs, an arrangement usually exists with an IP or commercial workshop to conduct the repairs.

- Vehicles usually go to established workshops.
- Generators and other non-vehicle PPEs are usually repaired in UNHCR workshops at the local, regional or HQ level. In some cases, however repairs are outsourced.

Note: Where PPE has been given to IPs for Right of Use, the project agreement should not include a budget line for equipment maintenance, spare parts, etc. if the maintenance is possible to be undertaken using a UNHCR contracted/managed workshop.

Mobile workshops

The usefulness of mobile workshops should be carefully assessed and will depend on the machinery, equipment and spare parts they carry, as well as their operational range and limitations related to dispersal of the vehicle fleet, local roads, geography and climate.

The availability of trained personnel to operate the servicing equipment should also be considered.

Accident repair

Maintenance/repair will also be needed following an accident. In such cases, workshop staff should only inspect the item, do a cost estimate and prepare a report. AMB decisions determine whether or not repairs should be undertaken. Once an AMB has decided on disposal and action is required by a workshop, equipment is delivered to a workshop.

If a repair cannot be undertaken, a manager should find someone else to do the job, through three competitive pro forma bids. If this is not possible, a note for the file should be submitted explaining the circumstances.

Issuing service/repair request

Follow the steps below to raise a service request and send a PPE item to a workshop for repairs or maintenance:

Step	Action
1	Supply staff prepares and signs a Service / Repair Request (SI001).
2	Forward the Service/Repair Request (SI001) to the PPE custodian to advise that preventive maintenance or repair is required.
3	Forward the Service/Repair Request (SI001) to the workshop to schedule work (or an evaluation for accident insurance).
4	The workshop opens a Job Card (SI005) for each PPE and all necessary information entered.

Inspecting / evaluating work

Inspection and/or evaluation is required in the following circumstances:

- If equipment needs regular maintenance.
- A PPE that has been in an accident.
- To confirm all required maintenance and repair work is done properly and no unnecessary work was performed.

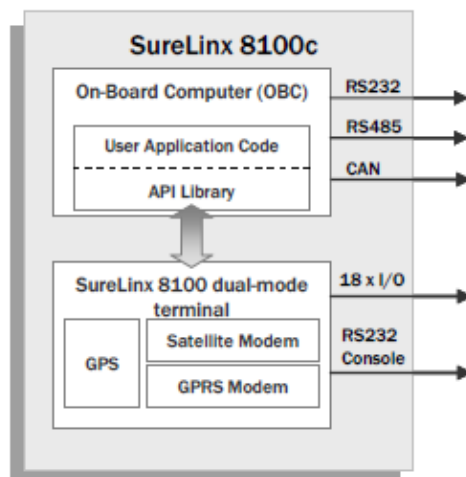
Annex 9. Data Sheet of the Surelinx c8100 tracking terminal

Versatile and customizable, the SureLinx™ 8100c builds on the flexibility and efficiency of the SureLinx 8100, adding a C-programming environment and more industry-standard interfaces to enable new opportunities.



The SureLinx 8100c terminal's integrated on-board computer (OBC) with a C-programming environment and API library allows for rapid development of sophisticated applications that cater to the asset tracking, fleet management, remote surveillance and SCADA markets.

Industry standard RS232, RS485 and CANbus interfaces enable applications where text messaging, connections to sensor networks and on-board vehicle diagnostic capabilities are required – all designed to create a highly responsive and flexible communication platform.



WHY SURELINX 8100c?

- C-programmable on-board computer with an operating system supported by feature-rich Integrated Development Environment (IDE) tools and enables creation of customized solutions.
- Application Framework (API Library) provides ready-made drivers to access resources such as satellite/cellular modems, GPS and I/O.
- CANbus interface supports 3rd party protocol stacks, such as J1939, to support engine monitoring capabilities and on-board diagnostics in fleet management applications.
- RS485 serial interface supports 3rd party protocols such as Modbus® for SCADA and other sensor network monitoring applications.
- RS232 serial interface supports a variety of generic devices such as text-messaging terminals and barcode readers.

All the features and benefits of the SureLinx 8100 including:

- Fully-integrated satellite/cellular package eliminates integration, installation and support issues.
- Exception-based reporting based on time, distance, Geofence or other criteria reduces operating costs without sacrificing functionality.
- Intelligent message routing increases reliability and lowers networking costs by automatically selecting which network to use.
- Data Log maintains detailed information that can be extracted when convenient and cost-effective.
- Low-profile Inmarsat/GPS antenna can be installed inconspicuously for security applications.
- Over-the-air programming enables remote reconfiguration – anytime, anywhere.



Annex 10. Manual for installation of a tracking device into the Toyota LC 70 series vehicle

Installation Guideline, VTS, Toyota LC78L, GFM Project, January 2014

Page 1 of 23

INSTALLATION GUIDELINE**VTS vehicle tracking system; SureLinX 8100c by Novacom**

Subject; Description of Installation Procedure of VTS vehicle tracking system equipment

Suited to vehicle; Toyota Land Cruiser, Hard Top, HZJ78L-RJMRS, 11 seats, LHD, 4WD, 2 door

Reference; UNHCR item ID number: 00006796

INTRODUCTION**Purpose**

The objective is the documentation for the standardized installation of Non-Factory-Fit-Accessories with the description of the technical installation process. Produce guidelines with best illustration of steps for defined standard installation of vehicle tracking system (VTS). Scope, to UNHCR light vehicles as specified in the standard GFM Model Line-up 2014.

Further goals; to ease the installation of VTS systems at the global hubs in standardized manner and to assure reliability of installation by mandated professionals and trained personnel. Use the present production of description as reference for the quality control. Furthermore, aim for cost reduction.

Reference

The manufacturer's recommendations prevails as the relevant instruction guideline in regards to the SureLinX 8100c by NOVACOM installation guide and must be consulted prior installation and remain the lead standard. Every VTS SureLinX kit supplied by NOVACOM is provided with written instructions.

- NOVACOM "Installation Guide" version 2, SureLinX 800c (supplied with each kit)
- NOVACOM "Drill Template" SureLinX Satellite/GPS Antenna (1 sheet instruction, with each kit)
- NOVACOM "SkyWave, SureLinX 8100c Installation Guide" (1 sheet instruction, with each kit)
- Contact [www\(dot\); www.novacom-services.com](http://www.novacom-services.com)

It is recommended to consult the NOVACOM Installation Guide, version 1.2 and pay attention to "Installation"; fitting satellite/GPS antenna, GSM antenna, power supply, emergency button, SureLinX, driver's ID and options.

The present works of UNHCR installation guide line focus on standard VTS system installation for the specific vehicle only, to be used by trained UNHCR personnel and contractors. The information has been prepared in accordance with current engineering principles and generally accepted practices, using the information available at the time of publication.

The present works cannot and does not repeat the manufacturer's instruction manual. Therefore, refer to the NOVACOM Installation Guide, version 1.2 and pay as well attention to "SkyWave, SureLinX 8100c Installation Guide" point to cautions in regards to the installation. Read the relevant instructions carefully and completely prior installation.

Material requirements, tools

All necessary material needed to install and operate the VTS SureLinX 8100c by NOVACOM, is fully supplied; with compact terminal, GPS antenna, GSM antenna, cable harness, panic/emergency button, fuse and mounting kit, ID (identification driver) reader, ID keys and cable plus relevant documentation as mentioned already.

The recipient body – UNHCR admin at the hub and/or the installer – must cross-check the supplied hardware against the inventory list at time breaking the boxes before installation.

Installation

Reference made to the installation description further down the page; “Start of VTS installation, SureLinX 8100c by NOVACOM”. As a summary, the principle steps to consider as follows;

- Before start of installation, consult the relevant manufacturer’s documentations.
- Pay attention to safety precautions, warnings, notes and material handling.
- Follow the present installation guideline for the specified vehicle.
- Prepare the vehicle, e.g. assure fully charged battery, and arrange for work area.
- Provision for the necessary tools, special tools and hardware by the responsible installer.
- Disassemble components; engine compartment, in front passenger compartment in particular dashboard disassembling/assembling.
- Perform installation of VTS system, SureLinX 8100c by NOVACOM to the specific vehicle.
- Assembling; in opposite order as disassembling process.

Ensure that the power supply to operate the mobile station is 12 V DC!

Read and follow installation guidelines, instruction manuals first before start to action.

Test

After final installation, perform the “Commissioning” final check; turning power on, proceed as per check list described in the SureLinX 8100c by NOVACOM Installation Guide, version 1.2. (Do brake control before extensive driving).

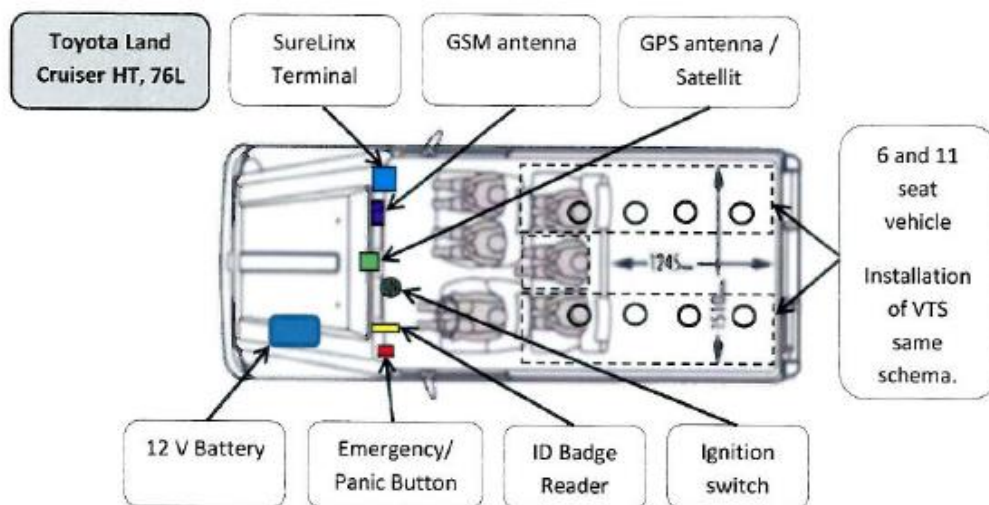
ANNEX

Pinpoints of importance to pay attention too. Although it may appear everything is known, always something remains unknown. It is recommended to work through the reference documentation.

Installation Guideline, VTS, Toyota LC78L, GFM Project, January 2014

Page 3 of 23

Principal lay-out of the HF radio accessories and cables installation in the specific vehicle;



VTS SureLinX 8100c by NOVACOM relevant and supplied components;

- SureLinX Terminal
- GPS Antenna / Satellite
- GSM Antenna
- ID Badge Reader
- Emergency/Panic Button
- And power cable harness with in-and output cables. All cable connections are not shown not to obstruct the layout. The components are built in vehicle as displayed.

Harness / cables run, from - to;

- Power feed; from ignition switch to SureLinX terminal (red cable)
- Power control; from ignition switch to SureLinX terminal (blue cable)
- GPS antenna/satellite to SureLinX terminal (black cable)
- GSM antenna to SureLinX terminal (black cable)
- ID badge reader to SureLinX terminal (multi-color cables, plug male/female)
- Emergency/panic button to SureLinX terminal (multi-color cables, plug male/female)
- Negative / ground cable; from SureLinX terminal to ground (black cable)

Instruction/guideline of VTS vehicle tracking system installation in specific vehicle

VTS vehicle tracking system; SureLinX 8100c by Novacom

Subject; Description of Installation Procedure of VTS vehicle tracking system equipment

Suited to vehicle; Toyota Land Cruiser, Hard Top, HZJ78L-RJMRS, 11 seats, LHD, 4WD, 2 door

Reference; UNHCR item ID number: 00006796

The documented assembling steps and display of additional items are supplementary to the only relevant SureLinX 8100c by NOVACOM Installation Guide. Reference made to follow basic documentations;

- NOVACOM "Installation Guide" version 2, SureLinX 8100c (supplied with each kit)
- NOVACOM "Drill Template" SureLinX Satellite/GPS Antenna (1 sheet instruction, with each kit)
- NOVACOM "SkyWave, SureLinX 8100c Installation Guide" (1 sheet instruction, with each kit)
- Contact [www\(dot\); www.novacom-services.com](http://www(dot); www.novacom-services.com)

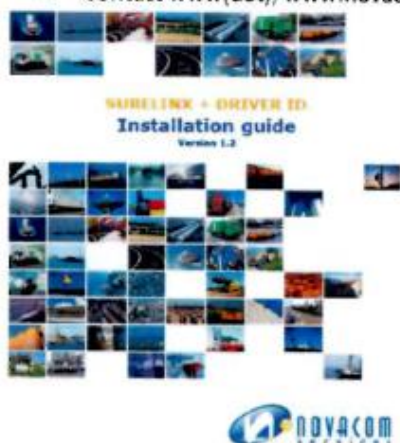
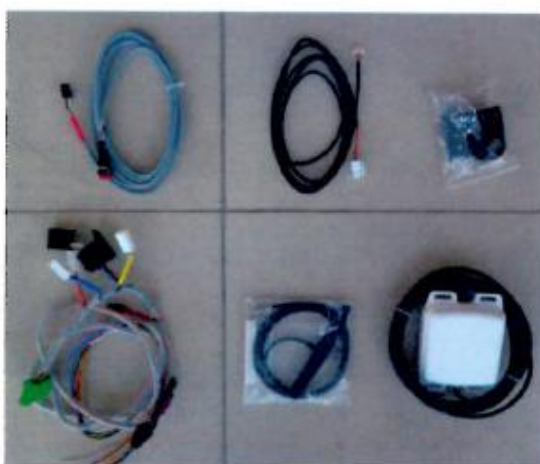


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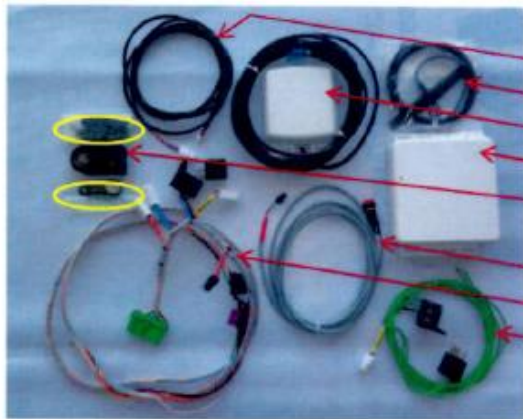
Presentation of content in details of ICOM VHF kit as follows;



Display of main components;

Display of full VTS SureLinX 8100c kit as supplied by supplier/agent NOVACOM;

Note; Perform inventory check per list before installation. Ensure completeness of VTS kit, accessories and components as indicated on the picture.



Display of components in details;

- Cable
- GSM antenna
- GPS antenna / Satellite
- SureLinX Terminal
- Reader assembly, cradle/pad & driver's key/badge (yellow oval)
- Emergency/Panic Button
- Wire harness, with 3Amps fuse (violet)
- Immobilizer relay (not activated)

VTS, SureLinX 8100c by NOVACOM - Picture 2

VTS, SureLinX 8100c by NOVACOM - Text 2

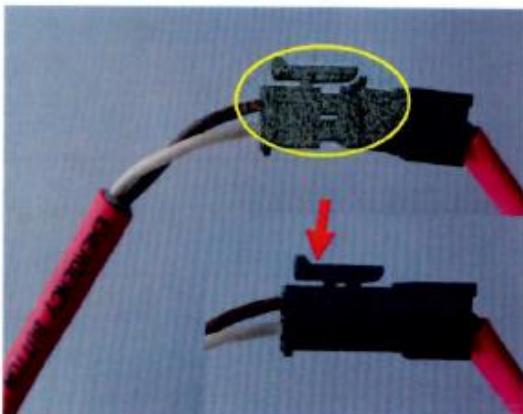


VTS SureLinX 8100c, system components and cables connected in display;

- GPS antenna/satellite
- GSM antenna (for local area network)
- Emergency/Panic Button
- Connection, emergency button
- Immobilizer relay (not activated)
- Cable harness
- SureLinX Terminal
- Cable, reader ID key
- ID key/badge (will be with the driver)
- Reader assembly (ID)

VTS, SureLinX 8100c by NOVACOM - Picture 3

VTS, SureLinX 8100c by NOVACOM - Text 3



Emergency Button/Panic Button;

Fast and secure connection.

(New and latest version, December 2013)

- Press down (red arrow)
- Disconnect plugs (yellow ring)

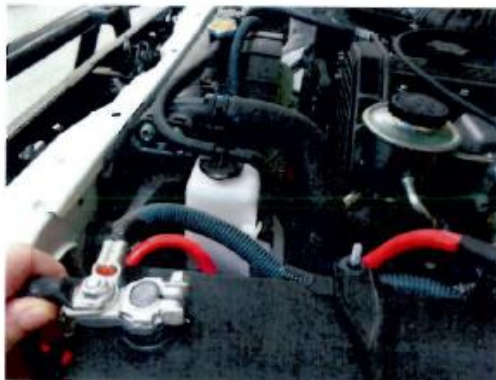
In some countries the EB/PB is not required. However, with this option for easy connection, the installation can be done as required any time at a later stage.

INSTALLATION PROCESS BY ILLUSTRATION AND DESCRIPTION –VHF Transceiver, ICOM IC-F5062D

Subject, specific vehicle; Toyota Land Cruiser, Hard Top, HZJ78L-RJMRS, 11 seats, LHD, 4WD, 2 door

Remark; disassembling – system installation – assembling often goes together, and therefore this operation is not mentioned separately in the following process description.

For installation convenience; It is advisable in doing installation of the VTS tracking system beforehand of HF and VHF radios, if such installation are planned. Volume of work is considerably in regards to dashboard disassembling/assembling. Refer to the relevant VTS Installation Guide.



VTS; Land Cruiser, 78L – Picture 1

VTS SureLink power link picked at the ignition switch. Therefore, first identify the power connectors/plugs at ignition switch;

- Permanent intake power at the ignition switch, when contact is off.
- Then identify continuity power clamp, when contact is switched on.

Note; Refer to the VTS installation Guide

Disconnect negative terminal at a later stage

Never connect system to 24 V battery!

VTS; Land Cruiser, 78L – Text 1



VTS; Land Cruiser, 78L – Picture 2

For the installation of the SureLink 8100c some components of the dashboard must be remove.

Remove glove compartment.

- Grasp and lift up the lower edge.

VTS; Land Cruiser, 78L – Text 2

*...Pages 7-21 have been skipped.
Complete installation manuals can be obtained from UNHCR upon request.*

Foreword;

The UNHCR installation guideline remain supplementary to the SureLinX 8100c Installation Guide, version 1.2 by NOVACOM. The UNHCR installation guideline focus on the VTS vehicle tracking system installation only to the specific vehicle. The present works do not repeat the supplier's installation guideline.

The Installation Guide, version 1.2 by the supplier NOVACOM is predominant. Pay attention to the SureLinX 8100c Installation Guide by NOVACOM; the supplier's recommendation prevail in regards to the VTS, the installation guide must be consulted prior installation. In particular pay attention to fitting/positioning the GPS and GSM antenna, SureLinX terminal, driver's ID, emergency button, connections, grounding and power supply (battery), then the final checks and commissioning.

QUOTE; excerpt from SureLinX by NOVACOM Installation Guide;

CAUTION Two types of emergency button, the wiring depends on the button.

NOTE Ignition must be grounded to detect the vehicle is stopped. Controlled by relay.

UNQUOTE

Additional VTS equipment installation recommendations.

The following is excerpted from several vehicle manufacturer's. These are supplementary to the installation guide by NOVACOM

The VTS vehicle tracking systems must be installed by properly trained personnel.

Summary; The following must be observed for the proper installation of communication equipment; 's

- The positive power supply (power/control) must be taken at the ignition switch.
- Fit the fuse as close to the power source as practicable.
- The negative circuit connection made to body sheet metal, must be clean of paint.
- Do not fuse the negative connection!
- GPS antenna optional can be fit also on the roof.
- Magnets may affect the accuracy or operation of the compass on vehicles so equipped.
- All installations should be checked for possible interference between the communications equipment and the vehicle's electronic systems.
- The owner's first line of contact regarding vehicle problems is the supplier (NOVACOM).
- **Caution;** The VTS is in operation also when ignition is off. Every 6hrs a signal is sent and consumption of feeder power is permanent, although little. Vehicle not in used for longer period may result in discharged battery and to interruption in transmission!
- **Caution;** Ensure operational status of battery. Maintenance is paramount!
- Reference also made to Owner's Manual supplied with each vehicle.

CABLING, WIRING must be in a position that;

- is secured and concealed as much as possible; cables arranged under dashboard, and tied-up.
- Where wiring passes through metal sheets provide grommet to prevent insulation being cut.
- Protect all cable, with isolation tape, split loom tube, grommets and cable ties.

- **Hint;** A bend radius of six times the harness diameter is recommended.
- Ensure battery condition and fully charged. Pay attention to grounding is made.
- Disconnect always the battery NEGATIVE first before begin with work.
- **Note;** If battery is disconnect, some components may lose short-term memory, e.g. VTS
- To add power pick-up from existing power plus cable at the ignition switch, perform soldering (no splicing or use of jumper terminal at the socket).
- DO NOT FUSE THE GROUND LEAD.
- Use plated ground screws, then proper size of ring terminal with lockwasher serrations.
- If the appropriate terminal is exposed to weather apply a commercial protectant, use silicone/dielectric grease or pole protection spray "presto" (Trademark), corrosion retarder.
- Fit standard grommet and run the cable(s) through, assure add holes are well sealed.
- Ensure that all connectors are fully mated and that latches are locked.
- **Disconnect** NEGATIVE and POSITIVE terminal **prior** any type of welding!
- Avoid mechanical pressure on cables because of degradation or even short circuits.

INSTALLATION OF COMPONENTS. For the installations in passenger vehicles.

- Try out any installation beforehand drilling holes. Attach components properly with cable ties.
- Watch out for wire harnesses routed under and behind dashbard.
- If ignition switch control is desired, use a power relay to reduce load on i-switch.
- The antennas be installed along dashboard or optional on the roof.

WIRE HARNESS AND ROUTING

- Harness and in-line connectors shall be anchored to prevent free movement.
- An anchor point shall be no further than 80 mm from a connector.
- The length of an unanchored section of harness should be no more than 300 mm.
- Use tie wraps on harness covering only, not individual wires.
- Do not anchor harness with tie wraps in contact with wire insulation.
- Tie wraps shall not pull on the harness so that connector cable seals are distorted.
- Allow cable to exit connector body without pulling on the connector.
- Harness routing shall not interfere with sensor locations.
- To prevent cross threading start all cap screws and nuts by hand then use driver/spanner.

Footnote;

- Design CHECK-LIST in order to perform quality control on the entire installation.
- Use UNHCR installation guideline to draft check-list and point to essential standards.
- Intermediate, agreed checks should be performed during installation and recorded. At the end the none-visible is the most essential, hidden errors can't be corrected easily.
 - Recommended 3-step quality check; electrical connections, installation of VTS components, assembling completion. Final check/commissioning is the 4th step.
- Perform functional test and perform the commissioning procedure for the VTS
- Final, certified approval of the installation works shall be done by the installer itself or/and by third parties as by consultant.

7 List of Abbreviations

EIM	Engine Interphase Module
ECU	Engine Control Unit
EOL	End of Life
EMU	Engine Management Unit
ERP	Enterprise Resource Planning system
FSM	Field Service Management
FTP	File Transfer Protocol
GFM	Global Fleet Management
ICC-ID	Integrate Circuit Card Identifier
ICT	Information & Communication Technology
KPI	Key Performance Indicator
KVA	Kilo Volt Ampere
M&R	Maintenance & Repair
OEM	Original Equipment Manufacturer
PPE	Property, Plant & Equipment
RFP	Request for Proposal
SIM	Subscriber Identification Module
SLA	Service Level Agreement
SOP	Standard Operating Procedure
STI	Serial Tracked Item
TCO	Total Cost of Ownership
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
VAT	Value Added Tax
VTs	Vehicle Tracking System