

Standardized Common Service Package For Fleet Management – GPS Tracking of Vehicles

Background

The 2012 Quadrennial Comprehensive Policy Review (QCPR) of UN operational activities for development, adopted on 21 December 2012 by the General Assembly of UN (Res 67/226), called upon the UN system to improve the management of facilities and operations, by taking into account sustainable development practices, building on existing efforts and promoting cost-effectiveness while maintaining accountability, transparency and improved results-based management to Member States. The Executive Boards of a number of UN agencies, funds and programs also emphasized the importance of harmonizing business operations.

With increased public scrutiny and the call for the UN to demonstrate tangible results regarding efficient, cost-effective, impactful and relevant support at the country level, the United Nations Development Group (UNDG) has established the Business Operations Strategy (BOS) framework to support UN Country Teams (UNCTs) to take a strategic, results oriented approach to planning, management and implementation of harmonized Business Operations at the country level. The BOS is the backbone of the 'Operating as One' pillar of the UNDG Standard Operating Procedures for Delivering as One (DAO), approved by the executive heads of 18 UN agencies with field presence.

Where the BOS is the strategic planning tool for common business operations, the UNDG standardized Common Service packages are the actual building blocks for implementation.

Common Service Packages

When setting up Common Services at the country level, each UNCT currently develops its own services, often duplicating services that have already been developed by other countries. This duplication significantly increases transaction costs for the design of Common Service at the country level. A major part of these costs can be reduced – in particular those costs that are not determined by local factors.

Additionally, due to the variety of solutions, it is challenging for UNDG, HLCM and HQs to track and monitor trends in Common Services and ensure that country practices inform HLCM and UNDG policy decisions aimed to remove blockages and create an enabling environment for harmonized business operations.

The aim of Common Services package is to reduce transaction costs by avoiding duplication of the development effort of Common Services at the country level, and to enhance quality of services by facilitating access to tested practices in other countries.

The CS package itself is in fact a comprehensive bundle of relevant guidance documents and templates that OMTs can readily use to identify and address a need at the country level, and set up a Common Service for that operational area – either outsourced or in-house.

The CS packages aim to standardize those parts of the set-up and maintenance processes that are not subject to local circumstances, thereby providing UNCTs with a standardized “off-the-shelf” Common Service solution that:

- Eliminates duplication of the development cost of common services
- Reduces operating and transaction cost
- Provides better quality of services
- Improves performance evaluation of services
- Simplifies cost recovery among Agencies
- Enables knowledge sharing and promote good practices across the UN system
- Reinforces Monitoring & Evaluation mechanisms in the context of harmonized business operations

Service Description

With GPS vehicle tracking as part of a fleet management solution, OMTs will have an advanced and highly integrated management tool for their organization's vehicle pool.

Once installed in the vehicle, the GPS tracking device passively collects data and provides real-time, accurate and reliable information regarding vehicle location, vehicle status, fuel consumption, maintenance scheduling, as well as driver behavior & performance. This wealth of information is accessible via an online portal, which comes standard with the GPS tracking devices. With this web-based tool, the user can real-time monitor the above and/or generate management reports, which can be used for informed decision-making by senior management.

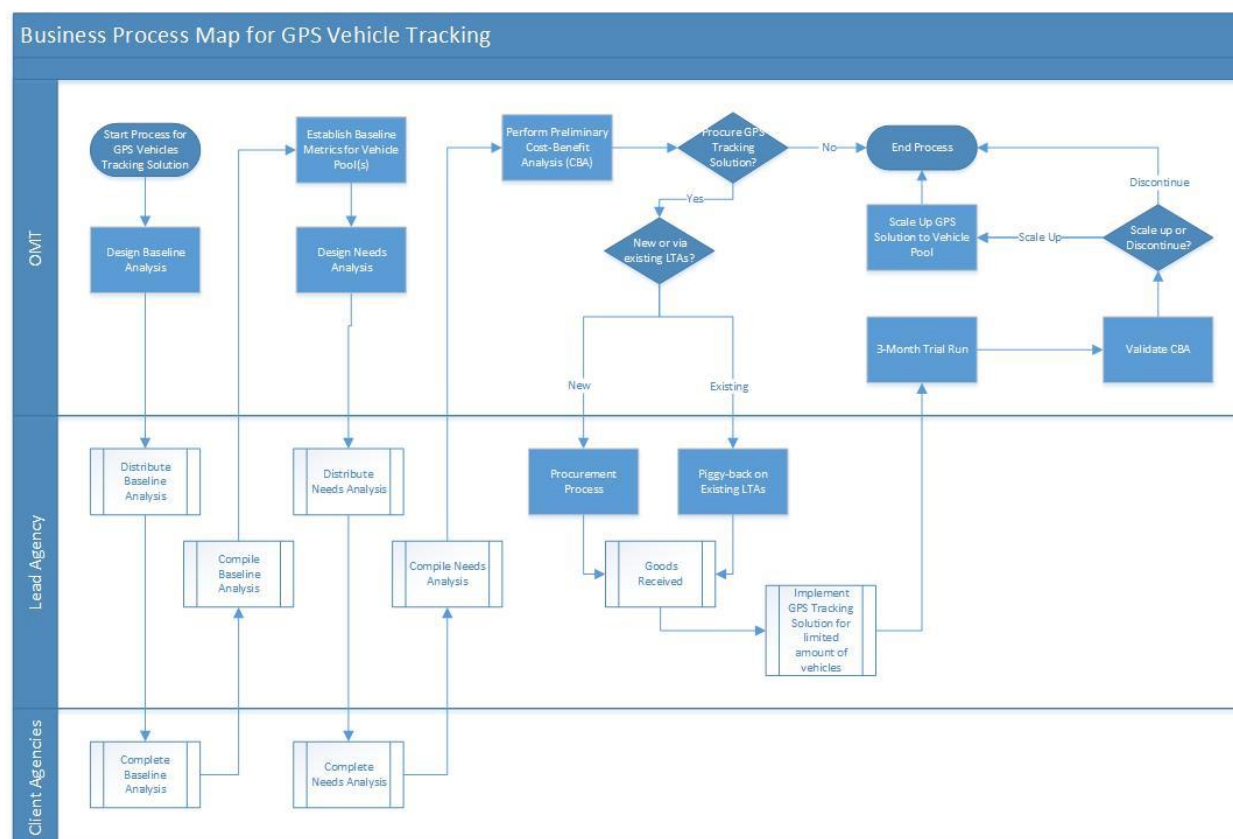
Furthermore, the GPS device detects driving violations, such as speeding, and can send alerts via the web portal and/or mobile phone, putting the fleet manager in a position to remotely immobilize the vehicle and prevent unauthorized use. The device also allows for 'geo-fencing'; once the vehicle crosses a predefined geographical boundary, an alert will be sent and the vehicle's engine will automatically be immobilized.

As a result, GPS vehicle tracking technology significantly reduces traffic accidents and generates considerable savings in fuel consumption, as well as help control fleet maintenance costs, improve operational efficiencies, manage vehicle reliability, and improve driver safety.

It should be noted that at present, UNDP, UNICEF and UNFPA are in the process of procuring LTA's for fleet sharing solutions/applications. The selected solution will most likely include GPS tracking as part of the comprehensive fleet sharing and management package. The concept will be piloted in a few countries during the first half of 2016. For further information on this subject, please contact Mr. Oliver Buhler at

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Business Process



Technical Outline

1. Initiate Process

OMT takes the decision to explore GPS tracking solutions to reduce operational cost of the Agencies' fleets.

2. Baseline Analysis

As a first step, the OMT should establish a baseline by taking stock of the current fleet management situation of participating Agencies – e.g. the amount of vehicles being used per year, the amount of kilometers traveled per year, US\$ amount of fuel per year, US\$ amount of maintenance cost per year.

Usually one of the Agencies takes it upon themselves to draft a Baseline Analysis (for a template, please see Annex I), distribute it among the participating Agencies, and then compile the collected data.

3. Needs Analysis

Upon establishing the baseline, the OMT should undertake a Needs Analysis (please see Annex II) – the amount of vehicles will determine the size of the sample group to do a trial run. Furthermore, this is where the OMT should determine specific needs in terms of the available GPS tracking solutions; for example, perhaps there is a need to integrate the online monitoring tool with a booking and billing system.

The Needs Analysis will form the basis for the TORs of the services and specifications of the goods to be procured.

As with the Baseline Analysis, a Lead Agency will draft a survey and distribute it amongst the relevant Agencies, so as to obtain a clear idea what kind of needs exists. The Lead Agency will also compile the results.

4. Preliminary CBA

The purpose of the preliminary Cost-benefit Analysis (CBA) is to get an idea of both the up-front and recurring costs, and compare these to anticipated cost savings, cost avoidance and other expected benefits derived from implementing the solution.

5. Procurement

Based on the outcomes of this exercise, the OMT will have the Lead Agency procure the GPS tracking solution that is most appropriate, cost-effective and best value for money for the Agencies' specific situation – this can either be done via:

- Existing global LTAs (UNICEF, WFP and UNHCR) – LTAs are available upon request – and avoid the procurement process all together; or
- Establishing a new contract with a supplier, following the regular Lead Agency concept whereby one Agency procures the GPS tracking solution on behalf of the other Agencies. Please refer to Annex IV for a sample RFP.

6. Trial Run

The Lead Agency will implement the GPS tracking solution with a limited amount of vehicles among the vehicle pools of the participating Agencies. The suggested number is 15-20% of the vehicles, depending on the OMT.

A 3-month trial run is recommended to test the solution, although it is ultimately up to the OMT to determine the length of said trial period.

7. Validate CBA

The sample population of test vehicles will collect data during the trial run, which can then be compared against the baseline values and used to validate the preliminary CBA.

8. Scale up or Discontinue?

Based on the trial run, the OMT will decide to either discontinue the solution, or scale up to the entire vehicle pools of the participating Agencies.

Governance

The UNDG has developed two formal instruments that govern Common Services among UN organizations:

- The template MOU on Common Services (Annex 5)
- The template MOU on Common Premises, which also deals with premises-related common services (Annex 6)

The MOUs are *mandatory*, in that they form the legal basis for the services transaction among Agencies, and should reflect the agreed cost distribution.

While these instruments allow for a certain leeway to adapt to local context, it should be noted that any substantive deviation from the standard template is to be reviewed by the legal department of the respective lead Agency, which often causes significant delays in the process of establishing the MOU. Any fundamental changes from the template are therefore not encouraged.

The MOUs are signed by the Resident Coordinator in his/her capacity as UNCT Chair.

Governance of the GPS tracking devices is done at the level of the agency. Each agency monitors their vehicles and generates management information as needed with regards to the management and impact of the GPS tracking solution. The OMT monitors the project as a whole and reports to the UNCT on results as part of their regular annual reporting.

Governance not applicable as each Agency still manages their own vehicle pool.

Cost Recovery

Please refer to (Annex 7) for an Excel tool that can be used as an example for cost-sharing Common Services, using various cost drivers, i.e.:

- Square feet/square meters of (common) space
- Number of staff
- Number of computers/workstations
- Number of Vehicles

Best Practices

UNICEF Ethiopia – see Annex 3.

Annex 1 – Baseline Survey

Baseline Survey for Fleet Management - GPS Tracking Solutions					
Metrics		Agency A	Agency B	Agency C	Agency D
1	Amount of vehicles currently used/in Agency's vehicle pool [A]	120			
2	Average amount of kilometers per vehicle per year [B]	40,000			
3	Total annual amount of kilometers for the Agency's entire vehicle pool [C = A x B]	4,800,000	0	0	0
4	Average fuel consumption in US\$ per vehicle per year [D]	\$6,000			
5	Total annual fuel consumption in US\$ for the Agency's entire vehicle pool [E = A x D]	\$720,000	\$0	\$0	\$0
6	Average maintenance cost in US\$ per vehicle per year [F]	\$9,000			
7	Total annual maintenance cost in US\$ for the Agency's entire vehicle pool [G = A x F]	\$1,080,000	\$0	\$0	\$0
8	Maintenance cost in US\$/km for each vehicle per year [H = B/F]	\$4.44	#DIV/0!	#DIV/0!	#DIV/0!
9	Maintenance cost in US\$/km for the Agency's entire vehicle pool [I = H x A]	\$533.33	#DIV/0!	#DIV/0!	#DIV/0!
10	Average lifespan in years for vehicles as per the Agency's policy	5			
11	Average resell value, if any, as per local market rates (in some countries the asset value in the ERP system is less than what you can actually sell it for)	\$2,500			
12	Total annual number of traffic accidents involving official vehicles	9			
13	Total annual number of fatal traffic accidents involved official vehicles	1			
14	Total annual number of vehicle thefts	3			
15	Number of dedicated drivers per Agency, including their grade level	12			

Annex 2 – **EXAMPLE¹** Needs Analysis

Name Business Operation/Common Service	Needs Analysis Narrative	KPIs
Fleet Management	<p>Outcome 1: By 2018, the UN in Utopia has realized a reduction of UN Vehicle Operating Costs by an average of 20% per year</p> <ul style="list-style-type: none"> • Output 1a: By 2015, the UN System in Utopia has reduced the cost of fuel by 40% through the development and implementation of a joint GPS Tracking Solution for Vehicles <ul style="list-style-type: none"> o Annual Deliverable 2012: In year 1, cost reduced by 10% of baseline year 2012 o Annual Deliverable 2013: In year 2, cost reduced by 20% of baseline year 2012 o Annual Deliverable 2014: In year 3, cost reduced by 30% of baseline year 2012 o Annual Deliverable 2015: In year 4, cost reduced by 40% of baseline year 2012 • Output 1b: By 2018, the UN System in Utopia has reduced the cost of vehicle maintenance by 55% through the development and implementation of a joint GPS Tracking Solution for Vehicles <ul style="list-style-type: none"> o Annual Deliverable 2012: In year 1, cost reduced by 2% of baseline year 2012 o etc. 	<ul style="list-style-type: none"> * # of LTAs * Reduction of transactional cost, expressed in %-age

¹ Please note that the given numbers are only to show an example of a Needs Analysis narrative; by no means should these number be a benchmark

Annex 3 – Country Examples

UNICEF Ethiopia

Executive summary

The vehicle tracking device is a powerful, GSM/GPRS tracking and monitoring device for real-time fleet management and tracking solutions for public, commercial and private sector applications.

With advanced and highly integrated management features, the device is an ideal solution for vehicle diagnostics, fuel consumption monitoring, and maintenance scheduling. It also detects and prevents unauthorized vehicle use by immobilizer and real-time alerts via Web portal or by SMS notification as well as reports and any violations made by drivers remotely.

As an integrated tracking, driver behavior and vehicle monitoring package, the device makes a significant contribution to savings in fuel and overall fleet operation and maintenance costs.

The device passively generates data and provides real time, accurate and reliable information regarding vehicle location, vehicle status, and driver behavior. Generated reports based on user-defined parameters and current GPS coordinates are easily accessed

The tracking device delivers all of the traditional fleet management benefits including event reports such as: Start/End Trip, Speeding, Idle Time, Excessive, Acceleration/Deceleration, Odometer readings, Vehicle location, Accident Analysis and Driver Identification.

Moreover, by implementing the system on entire UNICEF vehicles we will be able to save over US\$200,000 per annum.

Introduction

UNICEF Ethiopia is one of the largest offices in the world with over 120 vehicles used for its program implementation. Having number of vehicles for the program implementation directly leads to high running cost of fleets in order to maintain the program up running smoothly. When we look at number of vehicles generally, it looks the office is running with surplus of vehicles but practically these are the quantity the office need to have. If the office is running with optimal number of vehicles, so, how should be the running cost would be minimized? Obviously devising a strict control system could be the sole solution to tackle the problem. That is why the office has decided to have the vehicle tracking device as the best controlling tool in order to minimize risk of insecurity and minimize missuses.

On 2011, the transport assistant from UNICEF Ethiopia office had been sent to Nairobi, Kenya for a fleet management training. After the training on his way back, he brought a vehicle tracking devise for test purpose and installed on one of the vehicles without disclosing the test devise installation to drivers and monitored movements of particular vehicle for three months. During the test, it was noted that drivers were making unauthorized routes/ uses of the vehicle which ranges from 20-35 km per day. After the two month time, the office disclosed for all Addis based drivers that installation of tracking devise on a particular vehicle and each movement had been monitored. As a result, they were also told not to make mistakes which were noted during the test period. After the disclosure no miss use and violations made. That was the time where the office has decided to install the device on all UNICEF vehicles.

1. Benefit of tracking device in terms longing life span of vehicles

The existing UNICEF transport policy suggests a life span of a vehicle should not exceed 150,000km or five years. If so, 800,000km is the life span of five vehicles and by implementing the tracking device the organization is benefitted from spending money which could be allocated to procure five vehicles.

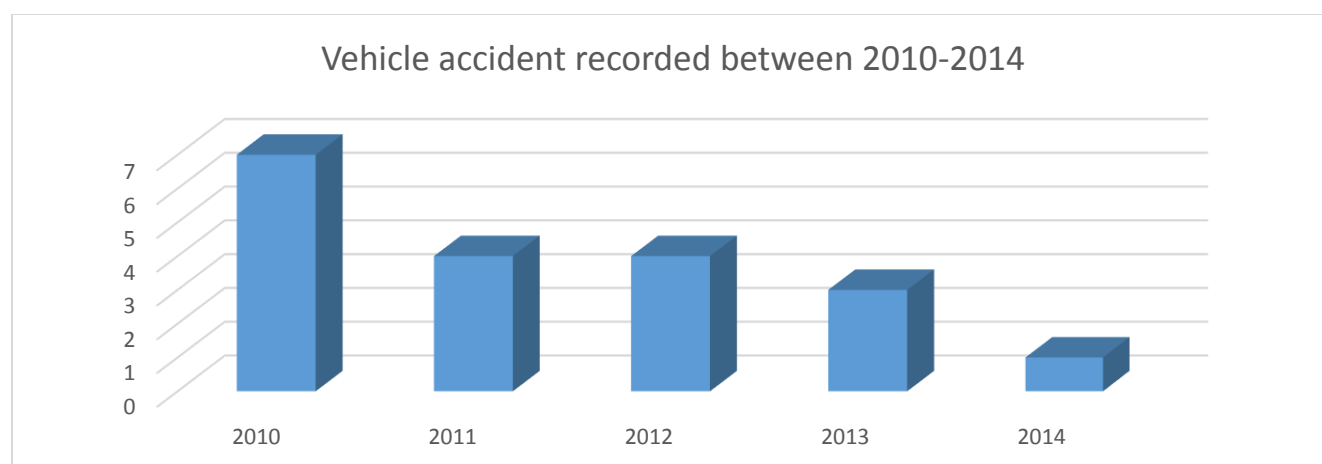
2. Benefit of tracking devise in terms of security:

- All UNICEF vehicles with tracking device can be tracked easily and specific location is known
- Can immobilize the vehicle if stolen,
- Can make a Geo-fence in order to restrict a vehicle not to be driven to unintended directions.
- Encourages drivers to park vehicles in safe area and minimizes risk of vulnerability to insecurity threat.

Advantages of tracking device on Motor Vehicles Collusion (MVC) Reduction

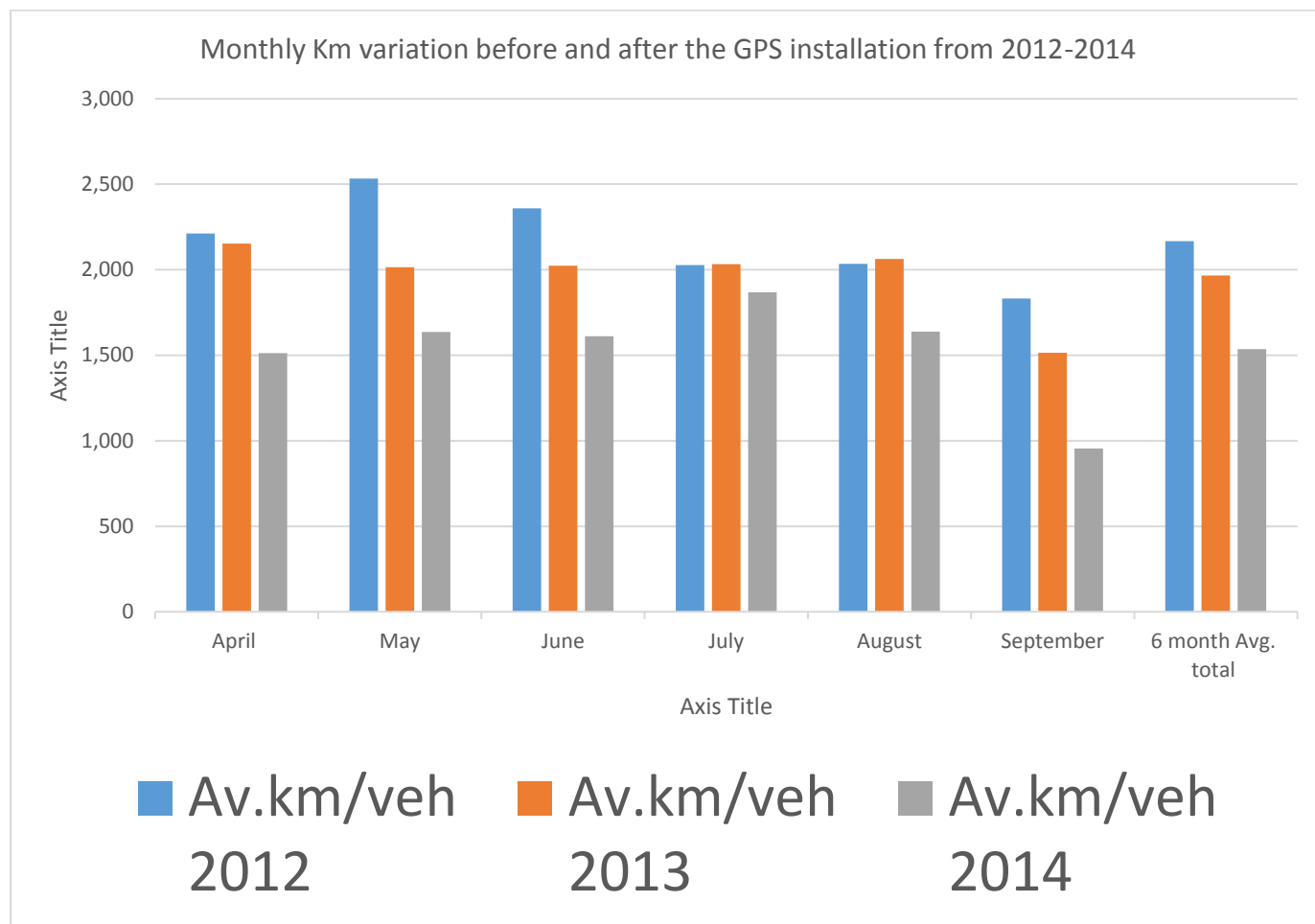
Before the implementation of the tracking device in UNICEF, the trend shows that UNICEF vehicles involves in MVC the average of 4.5 per annum.

UNICEF Ethiopia Accident record summary from 2010-2014						
#	Year	Causality/ death	Injury	Property damage /Total loss	Total no. accident recorded	Remark
1	2010	2	3	2	7	Before the tracking device installation
2	2011	0	3	1	4	
3	2012	2	2	0	4	
4	2013	1	0	2	3	
5	2014	0	1	0	1	After the tracking installation






Advantages of tracking device on unnecessary route/ misuse reduction

In 2012, before the implementation of tracking device the average km coverage per vehicle per month was 2,162km. (According to the data gathered and analyzed from April to September 2012). However, when data analyzed for the same period after the tracking device implementation, the record shows the average km/vehicle reduced to 1,524km/month/vehicle.



Key

	Average km/vehicle/ month before tracking device
	Average km/vehicle/ month before tracking device
	Average km/vehicle/ month after tracking device

3. Cost benefit analysis of tracking device

According to the data analyzed above, by implementing the tracking device on all UNICEF vehicles we will be able to save a minimum of 638km per vehicle per month compared to traditional way of managing fleet (figure

determined based on the data year 2012 and 2014). When we multiply this figure by number of vehicles which are installed with the device (119 vehicles) **(638 km*119 vehicles*12 months =911,064 km)**

- **For our calculation purpose, the annual km saved considered to be 800,000km**

Cost of fuel saved: (ETB 2,171,428.49 OR US\$111,355)

In average vehicles cover 7km per litter and In order to cover 800,000km we need 114,285.71 liters of fuel. To buy such bulky fuel with current market price (19birr/litter) we need ETB 2,171,428.49

3.1. Cost of Maintenance saved: (ETB 1,280,000 OR US\$65,641)

All UNICEF vehicles are maintained every 5,000km and the average cost of maintenance per schedule is ETB 8,000. So if we service vehicles every 5,000km the frequency of 800,000km would be 160 times. When we multiply the average cost of each maintenance (8,000birr) by frequency of 160 it costs us ETB 1,280,000.

3.2. Cost of Tire saved: (ETB 1,092,000 OR US\$56,000)

With Our current experience a batch of tire (six tires) on a vehicle expected to cover 30,000km. If we are able to save 800,000km per annum from all vehicles, we will also be able to save 156 tires. Which could be mounted on 26 vehicles per annum. The average cost of a tire is ETB 7,000 and when multiplied by 156= ETB 1,092,000

Table 1. Cost saved per annum Vs cost expended per annum for the device (Cost analysis)

#	Description of Cost saved per annum	Amount (US\$)	cost expended per annum for the device	Amount (US\$)
1	Cost of fuel saved:	111,355	Annual web hosting fee (\$72/vehicle)	8,568
2	Cost of Maintenance saved:	65,641	Annual data subscription(etb300/month/vehicle)	21,969.23
3	Cost of Tire saved:	56,000	*Initial cost of the tracking devise is USD200/unit And about US\$55,000 expended for the project. When this amount prorated for five years (book value) = US\$11,000	11,000
Total		232,996		1,537