Kenya Power

SPECIFICATIONS

For

GPS REAL-TIME FLEET TRACKING SYSTEM WITH ON-BOARD TRACKING UNITS

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1. FOREWORD

This specification has been prepared by the Transport Services Department. It is intended for the procurement of GPS real-time fleet tracking system with on-board tracking units

2. INTRODUCTION

This specification document was prepared to establish and promote uniform requirements for the GPS real-time fleet tracking system with on-board tracking units. The specifications lay down the minimum requirements acceptable for evaluation. It is the responsibility of the supplier to be conversant with the terms referred herein.

3. REQUIREMENTS AND SPECIFICATIONS

The requirements and specifications for the GPS Device and system are as in Appendix A below. All literature, brochures and manuals be in English language.

4. INFORMATION AND WARRANTY (In case of Tender Award)

The GPS Devices shall have a warranty against any defects, which may develop due to faulty material, manufacturing, calibration, transportation, installation or workmanship for a period of Thirty Six (36) Months from the date of delivery. Defects shall be rectified at the supplier's cost, including duties, taxes and shipment.

5. APPENDIX A: TABLE & STATEMENT OF COMPLIANCE

To be filled by the Supplier FOR ALL CLAUSES and submitted for tender evaluation.

APPENDIX A: SPECIFICATIONS TABLE & RESPONSE OF COMPLIANCE

No.	FLEET TRACKING SYSTEM WITH ON-BOARD UNITS	Manufacturer's Compliance/Remarks	Reference Page in Submitted Documents
1	GENERAL REQUIREMENTS		
i.	Duly stamped and signed authorization by Software Developer Supplied.		
ii.	Software Developer's Literature & Brochures Supplied.		
iii.	Duly stamped and signed authorization by Hardware Manufacturer Supplied.		
iv.	Hardware Manufacturer's valid certificate for quality management system i.e. ISO supplied.		
v.	Hardware Manufacturer's Literature, Manuals & Brochures Supplied.		
vi.	Technical Specification Sheet fully completed and submitted.		
vii.	Any item required to meet this specification and deemed necessary for efficient or improved operation of the tracking system be included in the tender with its corresponding costs.		
2	GPS TRACKING DEVICE SPECIFICATIONS		
i.	A standard on-board computer (OBC) capable of automatic monitoring and transmission of vehicle data or usage, whether stationery or moving. Should be in current production, sold & serviced by a supplier within Kenya.		
ii.	Units must be able to receive various signals & transmit responses via GPRS to a server having a secure password-controlled website, accessible over the internet. (i.e. able to send acquired data via GPRS connections via TCP/IP and UDP protocol).		
iii.	Suitable for both city and highway cruising on paved and unpaved (rough) roads in tropical conditions. Can operate at temperatures of up to +55 deg.		
iv.	Administrator's GSM number(s) to be authorized within firmware for remote vehicle shutdown via SMS and other remote commanding.		
v.	Device firmware to enable flexible configuration of data sending in roaming networks (depending on GSM providers list).		
vi.	Device firmware to enable input/output detection and sending via GPRS or SMS.		
vii.	Tamper proofing with no externally visible antenna, wiring switch (to avoid tampering).		
viii.	Has additional appropriate power surge protector (8-35V).		

ix.	Can integrate existing vehicle alarm and speed governor systems.		
x.	Device make indelibly marked on device.		
xi.	Device model & serial number indelibly marked on device.		
xii.	Indicate country of origin.		
xiii.	Capable of picking and discriminating very weak signals, multipath signal resistant and very reliable. (Min.-170dBW).		
xiv.	Number of channels supported by the GPS module, min no. 20.		
xv.	Memory Data holding capacity. Min 512 Kbytes and min 7500 logs. Specify.		
xvi.	Voltage operation: 10 to 30V (main) supporting 12/24V at ignition.		
xvii.	Internal long-lasting battery enabling continued storage and transmission of tracking data even when the main power from the vehicle is disconnected. Min. backup time 72 hours.		
xviii.	GSM module supporting all cellular communication options including: GSM (SMS), GPRS data & Cell ID Positioning for A-GPS.		
xix.	Supports SMS (Text) and to include location, speed and other vehicle information.		
xx.	The tracking device shall not impair the operations of the vehicle.		
xxi.	Has a built-in accelerometer which allows indication of vehicle motion or no motion based on user defined thresholds for automatic unit based motion and impact detection and reporting.		
xxii.	Has sleep mode and deep sleep mode (saving vehicles' accumulators).		
xxiii.	Must be able to support GPS based Mileage measurements with cumulative virtual odometer function independent of vehicle odometer. Prove of Min. 98% accuracy.		
3	**GPS DEVICE SENSOR CAPABILITY**		
i.	Indicate no. of digital inputs. Min 4. Attach supporting manufacturer's literature		
ii.	Indicate no of digital outputs. Min 4. Attach supporting manufacturer's literature.		
iii.	Indicate no of analogue inputs. Min 4. Attach supporting Manufacturer's literature.		

4	**GPS (GLOBAL POSITION SYSTEM)**		
i.	Provider's Server to automatically replicate data to a Mirror Server setup and maintained by the provider at KPLCs Data center and accessible over Internet and its Intranet (LAN & WAN). (Mirror Server hardware and its Internet connectivity shall be provided by KPLC).		
ii.	On-line GPS/Satellite capability – Real-time vehicle location and status can be obtained using web based browser and the desktop GPS software with a suitable map indicating position, route, etc.		
iii.	The system should have the capacity to handle over 3,000 units fitted to a fleet of vehicles. Provide proof i.e. test certificate, manufacturers certificates, etc.		
iv.	Integrate a Street Level – Digital Map of Kenya and have place marking capability for expansion of sites & locations within the whole country. System must have capability to upload place-marks into the web software and the place-marks must be displayed in the reports to ensure common visibility to end users and also trip replays.		
v.	Seamless integration with both Google Map and Earth with automatic export of data to display current location and historical track trails and trip replays.		
vi.	Off-line route display capability – Trip replay function on Digital vector Map, Google Maps and Google Earth.		
vii.	Indicate location accuracy of the system (specify within + or – 10 meters)		
viii.	Collect location information real-time while vehicle is in motion and allow user requested live updates.		
ix.	Coverage – must be configured to run using GPRS which facilitates WAN connectivity.		
x.	Multiple Geo-fencing capabilities (time and coordinates) and creation of routes for vehicles and ability for triggering alarm/alerts when vehicle goes out of authorized area.		
5	**SOFTWARE**		
i.	System compatibility and integration capability of your current version to the client's back end servers' MySQL5 and Oracle on windows server platform.		
ii.	Should provide data download / export module to the client's back end servers' MySQL5 and Oracle on windows server platform.		

iii.	Odometer mileage -Accurate odometer mileage readings for daily opening mileage and closing reading.		
iv.	Provision of 1-button (swiping key) for use by drivers in the operation of vehicles.		
v.	Integration of fuel data from the electronic fuel cards to be supplied by the fuel supplier		
vi.	Engine monitoring -Support engine monitoring for temperature, engine revving, harsh braking etc.		
vii.	Enable vehicle service scheduling and management.		
viii.	Mapping - Mapping and scheduling of emergency vehicles. Map display on location of each or all vehicles in geo-fenced area. Labelling of the distributed mapped vehicles with and auto-refresh map screen.		
ix.	Administration -Vehicle definition in the system to include region, sub-region, business branch and depot.		
x.	User profile management-Able to assign individual user profiles, query profile, provide profile management and profile audit trail capability.		
xi.	Must allow users at the administration level to select all the units. And the vehicle owner to view only his/her vehicle on dashboard.		
xii.	Ability for the dashboard to display the following: Battery status, Geo-fence violations, location map, average speed and speed violations		
xiii.	System Back up memory of internal data and devices; min 3 years.		
xiv.	Data Security – must protect against possible loss of data which may result from simultaneous update of the same information from more than one station and must have an easily executable routine for recovery in the event of the hardware or operating system failure.		
xv.	Scalability – must be capable of tracking an increasing number of vehicles and supporting increasing users countrywide. Min 3,000 vehicles; Specify capacity.		
xvi.	Ability to send system generated alerts & alerts & scheduled reports through Email, SMS, etc.		
xvii.	Alerts generated should include Over Speed, Low battery, multiple geo-fences, GPS signal loss, due vehicle service, connection/disconnection with the server, etc.		

xviii.	Capacity to create keys / fields as may be required especially for the vehicle Reg. no., Staff no., and vehicle model to enable reporting on either of them.		
xix.	Capacity to plot data in real time basis for one or more vehicles on the map at the time in different color showing details of vehicle, track , time etc.		
6	**STANDARD REPORTS**		
i.	Provision of standard and customized downloadable and printable reports		
ii.	Processing detailed reports on:-		
	(a) Global GPS devices status (online or offline)		
	(b) Various detailed vehicle activity reports		
	(c) Daily, weekly and monthly and custom period mileage reports (Min. 98% accuracy)		
	(d) Report of fleet by region, sub-region, depot, etc.		
	(e) Driver I-button and performance reports		
	(f) Fuel consumption reports		
	(g) Reports generated be based on daily, weekly, monthly, and customized periods.		
	(h) Vehicle performance statistical and graphical report in chart form		
	(i) Snapshot of Accident: Automatic transmission of Second by Second Pre- and Post-impact data to server. Min. 2 minutes. Data to include speed, direction, location & driver driving behavior.		
	(j) The total accumulated Odometer reading of the vehicle dashboard to be keyed into the system during installation. Thereafter, the accumulation of GPS mileage continues to create a virtual odometer that is displayed on the system dashboard and is available in various distance reports.		
	(k) Notification reports on all changes made or maintenance details to the software.		
7	**WARRANTY & SUPPORT SERVICE**		
i.	Specimen of unit to be shown during the DEMO		
ii.	Sample of Unit warranty to be submitted when tendering.		
iii.	Warranty period, min 3 years.		
iv.	Warranty replacement reporting for parts that fail early.		
v.	Provide service level agreement details & costs – min. 3 years.		

vi.	System to provide online service 24 hours a day for the period of the contract.		
vii.	Must have support capability in at least seven (7) major Kenya Power Depots (Nairobi, Mombasa, Nyeri, Nakuru, Kisumu, Thika and Kisii).		
8	**OTHER REQUIREMENTS**		
i.	Unit must download once installed to signify commissioning.		
ii.	Provide Network support and back-up service to serve KPLC depots countrywide.		
iii.	Training - should be offered for both functional and technical staff as necessary.		
iv.	Provide a list of the number of full time consultants and their qualifications for the project.		
v.	Indicate names and physical addresses of at least three major companies where you have supplied/installed more than 1,000 units in total.		
9	**DEMO-Live Presentation on the following system functionalities**		
i.	Hardware unit & Surge protector presentation.		
ii.	Web-based Real-time System functionality.		
iii.	Odometer accumulation display on the dashboard and distance report by Time, day, week and month.		
iv.	GPS based mileage measurements with cumulative virtual odometer function independent of vehicle odometer. Prove of Min. 98% accuracy.		
v.	Mapping - Mapping and scheduling of vehicles. Map display on location of each or all vehicles in geo-fenced area. Labelling of the distributed mapped vehicles with and auto-refresh map screen.		
vi.	Geo-fencing / Scheduling report by		
	(a)Time of the day		
	(b) Days of the week		
	(c) By location or route		
vii.	How digital map place-marking is effected in the web server software reports.		
viii.	Satisfactory test period of three months for confirmation of availability of required reports.		
10	**INITIAL SYSTEM TEST RUN**		
i.	Undertake an initial system test run for a reasonable period of time before roll-out. The client to determine the specific number of test vehicles.		
ii.	The roll-out will be subject to the success of the system test run.		