AUTOMATED GANTRY SOLUTION FOR PetroSA
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CTT0000025868
STATEMENT OF WORK

1.   INTRODUCTION

PetroSA invites suitably qualified Service Providers to submit Proposals for the provisioning of the following services/solutions.

The Tender consists of 6 (six) different Services/Solutions, i.e. Solution 1, Solution 2, Solution 3, Solution 4, Solution 5 and Solution 6

Tenderers can tender for *only* one or more Services/Solutions, which must be clearly marked on <u>all</u> correspondence in its Tender Documents and Solutions/Proposals.

- *Solution 1* – Automated gantry control solution with integration to SAP to automate manual depot activities.

- *Solution 2* – Auto tank gauging solution for PetroSA depots/terminals to provide tank stock levels per tank in each terminal, including tank capacity.

- *Solution 3* – In-transit product tracking (product quality and stock level). To mitigate quality issues.

- *Solution 4* – Truck product movement tracking and reporting (report loaded volume through electronic Bill of Lading and customer delivered volume through electronic proof of deliveries using mobile application).

- *Solution 5* – Product movement - Dispensing from Bauzer to aircraft (aircraft refuelling), recording and reporting of refuelling tickets, uploading of sale to SAP and Customer Billing & Product movement.

- *Solution 6* – Product movement - Retail solution which includes refuelling of cars and point of sales.

Suitably qualified Service Providers should provide PetroSA with as much information around their proposed Solution/s and should respond per solution by clearly marking and stating the Solution/s they responding to and provide all relevant information required as per the Solution/s requirements, including costs.

2. BACKGROUND

To deliver on its strategy, PetroSA Downstream Business *purchases fuel products, transport and distribute, store, and sell* to a number of commercial and industry customers from various locations. In so doing, the following process have been adopted and are executed as per standard operating practices:

- Trade and Supply processes

- Sales and Marketing processes

- Logistics and Distribution processes

Trade and Supply processes deals with the purchase of the product while Logistics and Distribution processes deals with the actual movement of the purchased product from the loading point to storage and actual distribution of the product to the end customer. The product moves utilize various modes of transportation such as ship, road, rail, pipe and stored in tanks in various business locations such as Mossel Bay, Tzaneen and Bloemfontein, including Jet fuel stored at airport terminals.

It is critical for the Logistics and Distribution functions of the business to have a transparent and real time view of the product/s throughout its life cycle.

Thus, to ensure movements of the product/s are accurately and timely recorded into the relevant transactional systems (i.e. SAP) as to enable; the customers to be invoiced as soon as they receive product/s with limited human intervention; This process will also ensure stock losses are mitigated to protect margins and stock outs are avoided. PetroSA business has also ventured into aviation business, which mainly includes refueling of aircrafts, which entails moving product/s from Bauzer trucks to aircrafts. Such refueling are recorded and billed directly to aviation customers, which are airliners. These need to be efficiently and seamlessly recorded to ensure customers are billed timely and accurately.

PetroSA strategy is also focused into entering the oil industry retail space where PetroSA will manage and operate service stations. These activities entail much product movement such as product/s receipts into the service stations, management of product/s in tanks, refuelling of customer vehicles, payment processing and stock reporting and reconciliation.

Against the above backdrop, this Tender is designed to help PetroSA identify and select the most-appropriate Service Provider/s that can provide the required services/solutions. This will entail the provision of hardware, software, management and support. PetroSA takes cognisance of the fact that to meet its requirements it will not be a *one solution fits all*. Therefore, scope of the services/solutions required are broken down into 5 different services/solutions. This will allow the service providers to tender for only one or more services/solutions.

3. BROADER SCOPE OBJECTIVES FOR THE DIFFERENT SERVICES/SOLUTIONS, IF APPLICATION

The following are the key high-level objectives PetroSA expects to achieve through these services/solutions as per the Tender:
The main objectives are:

- To automate terminal activities which include bulk product receipts via different modes of transports, recording of stocks discharge and loading in real time, tank dips, transport management, stock reporting and reconciliation.
- Real time processing and recording of stock movements to the transaction processing system. Thus, eliminate delays associated with goods receipts and goods issue processing.
- Manage transporters and drivers details to ensure only duly authorized trips are loaded at terminal sites.
- To ensure customers are billed timely and accurately following product loading at terminal level through integrating SAP sales orders to gantry control solution.
- To have transparent view of tank stock levels regardless of the locations, its situated using automatic tank gauging solution. (Depot stocks or service station tank levels etc.)
- Mitigate need to manual tank dips.
- To track in transit product movement (Quality of the product pre-loading to trucks and after loading, to mitigate issues relating to product quality.
- To track and report product movement (report truck loaded volume supported by electronic bill of lading and report product delivered volumes to customer site supported by electronic proof of deliveries using mobile application solution. This will ensure PetroSA process customer delivered orders timely with no need to wait for physical delivery of Bill of ladings and proof of delivery documents from transporters.
- Monitoring, dashboarding and terminal automated solution
- To ensure product to trucks and destined to customers is reported immediately following product delivery through use of electronic proof of deliveries.

- To track and record product movement to ensure aviation customers are billed correctly and timely. Product movement from Bauzer to aircraft, ensure refueled volumes are recorded correctly with aircraft details, product loaded, volumes loaded etc. using aviation refueling solution integrated or interfaced with SAP.
- To track and record product movement at retail service stations to ensure all refuels are correctly accurately recorded and billed using refueling Point of sales system integrated or interlinked with service stations pump meters.
- To minimize stock losses and theft
- To have standard practice(s) to manage inventory movements across the business.

4.   Evaluation Criteria

4.1 **Tenderers can tender for *only* one or more Solutions, which must be clearly marked on <u>all</u> correspondence in its Tender Documents and Solutions/Proposals.**

4.2 See the various Solutions/Services attached to this document reflecting each Solution/Service separately.

4.3 Partnership and subcontracting are allowed; however Tenders must indicate clearly if this will be the case.

4.4 Detailed Proposals must be submitted per Services/Solution and must be clearly marked, i.e. Solution 1, etc. comprising of all costs, hardware, software and/or licences, if applicable.

4.3 The evaluation will be conducted as per the Technical Questionnaire on ISS/e-Procurement and as per the Returnable Schedule;

4.4 Tenderers must complete and attached the *Returnable Schedule* with *all supporting documentation* to its Tender on ISS/e-Procurement.

4.5 Failing to submit the Returnable Schedule and all supporting documentation will result in elimination of your Tender.

5.   PRICING
All prices must be quoted in South African Rands and exclusive of VAT.

NB: **Bidders must complete the CBA and attach same to its Tender on ISS *and* provide a comprehensive breakdown of all services and prices in its Proposal/solution.**

6.   ENQUIRES
Any enquiries regarding this tender should be addressed to **Caroline Widmer** in the Tender Office at telephone no. (**021) 929-3006**, or e-mail address caroline.widmer@petrosa.co.za.

SERVICES/SOLUTION 1

7. SERVICES/SOLUTION 1 – Automated Gantry Control Solution with Integrated with SAP to automate manual depot activities

7.1 PetroSA environment overview

PetroSA is operating its Mossel Bay, Tzaneen and Bloemfontein terminals. These terminals contain assets that are critical to execute and manage Logistics and Distribution activities. These assets further include tanks for storage of the products, product receiving and loading of gantry instruments for various modes of transportation, with some tanks fitted with level measurement equipment.

7.1.1 Mossel Bay Terminal

The Mossel Bay Terminal include assets and infrastructure to receive bulk product via ship mode of transportation to physical product tanks. The physical product tanks are fitted with meter flow equipment that provides readings of the product tank levels. Prior product discharge opening readings are recorded and reconciled with meter readings following product discharge to determine actual volumes discharged. There is a number of physical storage tanks for various product grades and to each tank is assigned a unique tank number. PI solutions integrated into all the product tanks provides management with reports on physical stock movements (stock transfers, receipts and issues and stock levels).

There is currently one loading gantry dedicated for road orders linked to the physical product tanks. The gantry is using contrec controllers. All the loading activities are manual, traditional weighbridge system is used to record truck loaded volume and not the gantry meter. A truck is weighed in the weighbridge before proceeding to the loading gantry and weigh again after loading to determine the load volume. Manual calculations are thus done to determine the loaded volume. Loaded volumes are then actualized in SAP to process and bill the customer/s. Below is the extract of the loading gantry. There is currently an expansion project running for additional loading gantry.

Cross pump transfers are also performed to service oil industry sales orders. Before a transfer takes place, opening tank volumes are recorded and closing tank volume meter readings are taking to calculate the actual volume transferred. This process is done manually and later captured into SAP to actualize and bill the oil industry sales orders. The number of physical product tanks can be provided to the Tenderers at a later stage, when required.

7.1.2 Bloemfontein Terminal

The Bloemfontein terminal got 9 (nine) tanks dedicated to various product grades, maximum capacity in Liters, tank type, tank number and tank status all owned by PetroSA. See below description of the tanks:

Tank:	Tank Type:	Product:	Maximum Liquid	Safe working	Tank Status
6	Floating blanket	ULP93	1 142 546	1 013 718	Operational
13	Floating blanket	ULP93	1 140 078	1 011 252	Operational
14	Floating blanket	ULP95	1 262 446	1 121 687	Operational
11	Vertical Fixed Roof	DSL50	1 589 334	1 430 401	Operational
15	Vertical Fixed Roof	DSL50	1 271 642	1 144 478	Operational
10	Vertical Fixed Roof	DSL50	462 154	415 939	Operational
8	Vertical Fixed Roof	DSL50	76 866	65 336	Operational
9	Vertical Fixed Roof	DSL50	76 770	65 255	Operational
7	Vertical Fixed Roof	Not operational	Not operational	Not operational	Not operational

The depot is currently automated utilising a Terminal Management System and Contrec 1010 gantry controllers with *Smith* Turbine Meters, which Contrect 101 gantry controllers and meters which are outdated and difficult to get spare parts.

Loading and Discharge Gantry pictures are below:

Gantry meter controllers are below:

7.1.3 Tzaneen Terminal

The Tzaneen Depot is not automated and utilising manual meter cards (*Smith* LC) and no canopy. Meter cards are used to record loaded and discharged volume/s. There are 2 loading bays that can service 2 trucks simultaneously and 1 discharge bay. More information can be provided when required.

7.2 Automated Gantry Control Management System Solution requirements

PetroSA seeks to acquire Gantry Control Management System Software to control, manage and automate depot activities for its terminals in Mossel Bay, Bloemfontein and Tzaneen.   As the business evolves and grows, PetroSA expect this Gantry Control Management System Solution to accommodate its expansion, e.g., acquisition of additional terminals.

PetroSA is making use of SAP ECC solution as its transaction processing system and billing system of choice. This will remain with the development to upgrade SAP ECC to SAP S4/Hana.

7.3 Integration Requirements with SAP

- Solution 1 should allow for an interface for sharing data between SAP and the Gantry Control Management System Software. Such data will include:
  - SAP purchase order data: avail release purchase order details to the Gantry Control Management System Software to provide view of all incoming or expected product.

- Sales Order Data: avail release sales order details to the Gantry Control Management System Software to provide a view of orders scheduled to be loaded by customers.
- Sales order status changes: Once sales order/s are cancelled on SAP, the status to update in real time within the Gantry Control Management System Software by deleting the order.
- Delivery Confirmation data: all loadings will be triggered by released SAP sales orders in the Gantry Control Management System Software, following the loading of the customer order loaded volume to be shared with SAP in real time and SAP to trigger automatic goods delivery and issue.
- Master data: Customer, Supplier and Transporter.

7.4 Gantry Control Management System Software Required Functionalities

7.4.1 Bulk Product Receipts

- Terminal solution shall allow and/or enable bulk Product receipt via different modes of transports (road/rail/pipe/ship at Terminal point/Depot, without the need to physically record discharged volumes.
- Terminal solution shall provide SAP purchase orders released per plant and display as planned purchases.
- Solution shall receive and accept information updates from SAP for changed purchase.
- Terminal solution shall have the ability to accept and record volumes discharge via different modes of transport using road, rail gantry and pipe transfer and ship readings against relevant purchase order.
- Solution shall be able to calculate in-transit losses and/or gains for each purchase order using the loaded volumes and the terminal's physical received volumes.
- Terminal solution shall have ability to update stock entitlement following discharged and receipted volumes.
- Terminal solution shall have ability to display tank physical volume without the need to perform manual tank dips, through interface and information sharing with tank gauging solution.

7.4.2 Loading from Terminal: Pre-loading and loading authorization

- Only sales orders released from SAP can be loaded. Through integration of the terminal solution with SAP, the solution/s shall allow all released sales orders from SAP to be transferred and be available to the terminal solution for scheduling of loading and delivery. Information to be passed to include:
  - SAP Sales order number:
    - Product Name (Material Number and Description)
    - Volume
    - Loading Plant and Description
    - Required delivery/loading date

- Transporter company Name

- Terminal Solution shall not allow any changes into the order data transferred from SAP for loading except to update or change transporter details such as: Transport Company Name
  - Truck Registration
  - Drivers Details
  - Driver's name, license details and expiry date
  - Truck registration, compartments, and safe loading pass
  - Induction certificate of the driver with expiry date
  - Drivers' medical health certificate with expiry date
  - Etc

- Terminal solution through integration with SAP shall constantly monitor SAP sales order status in SAP, should the status of the sales order be cancelled and/or be blocked on SAP, the sales order should be cancelled on the terminal management solution. Only released SAP sales orders and loaded sales orders should remain in the terminal management solution.

- Terminal solution shall have ability to manage transporter company details, truck details and drivers' details.

- Solution shall allow for trips to be created against each released sales order prior to loading, including the assignment of the truck details and the drivers; details against each trip.

- The solution shall monitor the expiry date of the relevant certificates and issue notifications before expiry.

- The solution shall deny loading instruction for any transporter details not meeting the set requirements.

- The solution shall issue loading instructions for all valid sales orders assigned to valid transporters.

7.4.3 Loading from Terminal: Actual Loading and Post Loading

- Gantry Control Management System Software shall allow loading as per loading instruction.

- Gantry Control Management System Software shall allow for sales orders that were not uplifted during the scheduled uplifted date to be uplifted at a later date, as long they are still valid and released in SAP.

- Upon finalization of loading of the sales order, the solution shall capture the meter readings volume as loaded volume for the sales order and update the sales order as loaded and closed.

- Gantry Control Management System Software through integration with SAP and EDI, must use sales order loaded volume to actualize SAP sales order using the volume to perform auto goods issue on SAP, thereby reducing the stock levels in SAP and move the sales order to billing stage.

- Gantry Control Management System Software shall immediately reduce stock levels with the volume discharged.

- Terminal solution shall not allow for partial loading against a single order, only one order - one load. Should interruption take place at the gantry while loading and operations stop, the last reading shall be deemed as the loaded volume for such sales order. If less volume were issued a new sales order will be required to be created from SAP for the balance of the such sales order.

- Solution shall print out the bill of lading ("BoL") containing the following and allow the driver to sign off:
  - Sales Order Number with Customer Name

  - Customer reference number

  - Product and volume loaded

  - Loading date and time

  - Load location

  - Truck and drivers' details.

- The copy of the printed BoL to be issued to the transporter and one copy to be electronically filed.

7.4.4 Terminal Inventory Management: Scheduled deliveries and Daily stock levels

- Automatic tank gauging solution for all the tanks shall visualize accurate stock levels per tank and per terminal, at any given moment. The visualization to be displaced per tank capacity versus physical stock levels. This will also alleviate the need for manual tanks dips which sometimes contributes to product contamination.

- Solution shall provide a view of scheduled uplifts volume per day/week per terminal. Those will be sales orders released from SAP and can be visualized based on the delivery date of the sales order.

7.4.5 Terminal Inventory Management: Stock Reconciliation and Reporting

- Solution shall allow for daily/weekly/monthly stock reconciliation:
  - Opening balance
  - Stock receipts
  - Stock issues
  - Physical stock levels
  - Closing balance
  - Loss/gains reconciliation

- Report on stock levels per location including in-transit stocks.

- Report on gains and losses

7.5 Service Provider Proposal and Key Deliverables (Services/Solution 1)

- Service provider to provide a detailed proposal of the services/solution
- Proposal to include any hardware and software components (including its cost) and any license requirements, etc on how the requirements will be met, together with high level solution architecture demonstrating solution components including the integration of the Gantry Control Management System Software with SAP.
- *The Service Provider to provide the Support Model and Training Plan (Users and Technical Staff)*
- Implementation Approach Plan
- Detailed Project Plan including milestones and project phases.
- Service Provider to demonstrate track record on implementation of the project of this nature including SAP integration experience – to provide certificate of *SAP Development and Configuration Training. Partnership Certificate with SAP – COMPANY LEVEL (silver/gold).*
- Risk Management Plan that will address risks associated with scope, quality, schedule, and cost.
- Clear and proven *Project Management methodology* (e.g. Agile, PRINCE 2).
- Project Execution Plans detailing the execution and monitoring of the project.
- Project Quality Plan that describes the quality criteria of the project deliverables
- Project Requirements and Change Control Plan
- Project Communications and Change Management Plan
- Project Resource Plan that describes the key resources who will be assigned to the project
- Project manager and Project manager's certification (including PMP Certification) including SAP resources (including Organogram). Detailed Curriculum Vitae of the Project Manager provide proof.
- Change control processes and roll-back plans.
- Preliminary information gathering such as sites visits (see Tender Notice) and site surveys and infrastructure assessments to be conducted as to help determine compatibility issues. Where incompatibility limitation been identified, provide a proposal with cost associated.
- A minimum of two (2) detailed case studies where the solution was implemented not older than ten (10) years
- Provide three (3) company references of same or similar implementation of the Solution/Service of which two (2) must be in the *oil and gas* industry
- *A proposed draft Service Level Agreement*
- *Post Implementation Support*

7.6 Evaluation Criteria for Service/Solution 1

See clauses 4 and 5 above.

<div align="center">♦♦ End of Services/Solution 1 ♦♦</div>

SERVICES/SOLUTION 2

8. SERVICES/SOLUTION 2 - Auto Tank Gauging Solution for PetroSA Depots/Terminals to Provide Tank Stock Levels per Tank in Each Terminal, Including Tank Capacity

8.1 Current environment

PetroSA store the products in tank storages on its own terminals and 3rd party terminal sites. Currently, to have a view of the stock levels and product movements per site terminal tank, physical tank dips need to be manually recorded in excel spreadsheets. The current process is dependent on human intervention and on in certain cases the relevant person or staff are not available to provide this information when it is required.

This applies to all PetroSA terminals, except Mossel Bay terminal, where tanks are fitted with flow measuring systems. PI software system is installed to read the tank data information from the instruments and make tank data information available to authorized business users via a web interface. It is the intent of the business to expand the same solution to other terminals. If not the same solution, but the existing tank gauging instruments be still usable without the need to replace the existing ones.

8.1.1 Automatic tank gauging solution requirements
- Solution shall provide transparent view of all stock levels per tank in all PetroSA terminals, including its tank capacity and available ullage, through a form of web or mobile solution.
- Solution shall provide real time view of product movements per tank in all PetroSA terminals via web or mobile solution.
- Solution shall interface with Gantry Control Management System Software solution for information views around tank stock levels and movements.

8.1.2 Service Provider Proposal and Key Deliverables
- Service provider to propose a detailed solution, including physical instruments to measure tank levels, with all the components, costs breakdown, including:
  - ✖ Software
  - ✖ Hardware
  - ✖ licensing structure, including
  - ✖ installation and support

  pertaining to stock levels per physical tank and product movements per tank.
- The Tender must make provision for the supply and installation of the physical instruments to measure tank levels.
- Service provider to make consideration of the existing instruments fitted in the Mossel Bay tank and propose how their solution can be used in conjunction with the existing equipment. If any constraints, service provider to specify and recommend alternative solution.
- Service provider to advise and recommend how this solution can be applied in 3rd party sites were PetroSA rent storage tanks.

- Service provider to provide for the expansion of the solution into retail service station's environment and provide cost separately.
- Provide Communication plan and change management plan
- Service Support plan
- Detailed Project Plan including milestones and project phases.
- Service Provider to demonstrate track record on implementation of the project of this nature – company refernece
- Risk Management Plan that will address risks associated with scope, quality, schedule, and cost.
- Project Execution Plans detailing the execution and monitoring of the project.
- Project Acquisition Plan describing the acquisition of materials, goods and enabling system services supplied.
- Project Quality Plan that describes the quality criteria of the project deliverables
- Project Resource Plan that describes the key resources who will be assigned to the project including the Project manager and Project manager's certification, including CV of Project Manager.
- A minimum of three (3) detailed company case studies
- three (3) company references of same or similar services
- A proposed draft Service Level Agreement

8.1.3 Evaluation Criteria for Service/Solution 2

See clauses 4 and 5 above.

<div align="center">♦♦ End of Services/Solution 2 ♦♦</div>

SERVICES/SOLUTION 3

9.   SERVICES/SOLUTION 3 – In-transit product tracking (product quality and stock level) mitigate quality issues

9.1. Current Environment

PetroSA, when moving product via road mode of transport, is making use of 3rd party trucks as PetroSA does not have its own truck fleet.   Product is moved mainly:

- when PetroSA are replenishing stocks to its terminals with stocks sourced from oil industry suppliers.
- When PetroSA delivers stocks to its customers.

On number of cases, product quality has become an issue where the product becomes contaminated with a number of substances, leading to such products losing its specification.   Disputes are raised between PetroSA' 3rd party transporters and PetroSA customers as to the point where the product became contaminated. An origin product quality certificate is always issued to prove the quality of the product. It has now become difficult to prove when such product is loaded in a truck contracted by PetroSA; delivering to customer tanks; and at what point the product became contaminated.   When a customer is raising a dispute with PetroSA, the 3rd party transporters also do not take accountability leading to losses to PetroSA in most cases.

9.1.1 In-transit Product Quality tracking Requirements

- PetroSA requires a solution that can be used to track the quality of the product from the time its loaded onto a 3rd party truck and prior a 3rd party offloads the product.
- Solution to track in-transit loaded product quality.
- Solution to flag issues should any contamination be detected while product in-transit and/or dispensed of the product.

9.1.2 Service Provider Proposal and Key Deliverables

- Service provider to provide a detailed solution, including associated software and hardware, cost, etc. This will assist PetroSA to detect any quality issues for truck loaded product. NB - service provider should note that PetroSA do not own its own fleet.
- Project plan for installation of the proposed solution
- Tenderer to provide suggestions/innovative proposals

9.1.3 Evaluation Criteria for Service/Solution 3

See clauses 4 and 5 above.

♦♦ End of Services/Solution 3 ♦♦

SERVICES/SOLUTION 4

10. SERVICES/SOLUTION 4 – Truck product movement tracking and reporting (report loaded volume through electronic Bill of Lading and customer delivered volume through electronic proof of deliveries using mobile application).

10.1. PetroSA Environment

PetroSA sales process consist of a customer own collection method, where a customer would use its own transport to load the product after placing an order with PetroSA. The method of customer own collection allows for the product entitlement to be passed over to the customer following truck loading. The product would be uplifted from a PetroSA 3rd party supply point or from a PetroSA terminal. Following the loading of the product by the customer at a PetroSA 3rd party site, an EDI message would be sent in real time to PetroSA via EDI consisting of customer order details, product loaded and volume. This EDI message would trigger automatic goods delivery and issue on SAP, which ensure the customer is billed timely without the need to wait for physical proof of loading. Further, when the product is loaded from a PetroSA terminal via customer own collection, a goods delivery and goods issue will manually be captured in SAP based on the loaded volume. NB - This manual step will be automated as per Services/Solution 1 above. Delays in processing the goods delivery on SAP leads to delays in the billing of the customer.

Another method of PetroSA sales process includes PetroSA delivering to a customer site using PetroSA contracted transporter. This scenario allows PetroSA to pass product entitlement to the customer only after the product has been delivered to the customer's site and customer has signed proof of delivery. PetroSA owns the product in-transit and cannot process a customer sales order in SAP and cannot invoice the customer until proof of delivery is provided by the transporter.

Major challenges are thus experienced when PetroSA eventually delivers the customer orders. As PetroSA is using 3rd party transporters to deliver product, these challenges expose PetroSA to financial losses such as:
- No real time information is available as to when the product is delivered to a customer until a transporter emails proof of delivery to PetroSA, which sometimes happens only a couple of months after the product has been delivered. In the absence of such proof of delivery it means the customer orders remain open and they cannot be invoiced for the product.
- It makes it difficult to detect when theft, if applicable, has taken place.
- Reliance rest heavily on the transporters to scan and email proof of delivery.

These challenges are seriously impacting PetroSA business hence the need for the required solution.

10.1.1 Solution Requirements for electronic proof of deliveries.

- Solution is required that can be used by PetroSA contracted transporters to provide electronic proof of deliveries signed by customers following delivery of the product.

- Solution be an Internet based web application making use of handheld devices that can be used by transporters.
- Solution shall allow duly authorized PetroSA personnel to login and schedule customer orders for deliveries by :
  - Capturing sales purchase order number, product, load location, delivery location, loading date and time and delivery date and time.
  - Shall allow for pre-population of PetroSA transporter data and allow for the assignment of transporters to load and deliver orders.
- Notification emails to be sent to the transporter each time a load is scheduled for their company.
- Solution shall allow for transporters to access deliveries assigned to them.
- Upon accessing the loads and deliveries assigned, the transporter shall be able to update the web base application by assigning and capturing the truck to be utilized for such transportation and its details such as registration, compartments, drivers' details.
- The solution shall allow for this information to be saved and be kept on record.
- Solution shall allow PetroSA personnel to track scheduled orders, the assigned trucks, drivers, and statuses of deliveries.
- Solution shall allow the transporters to update the status of the delivery following product discharge by capturing discharge volumes and take a picture as proof of delivery and assign it to the load.
- The solution shall change the delivery status to "complete".
- The solution shall allow PetroSA personnel to download images of the Bill of lading and proof of deliveries.

10.1.2 Service Provider Proposal and Key Deliverables

- Service provider to provide a detailed solution, including associated software and hardware, cost, etc.
- Demonstrating how the loaded volumes (Bill of Lading) from the loading point will be recorded in reference with PetroSA' purchase order number
- And also demonstrate how the discharged / delivered volumes will be recorded in line with loaded volume (proof of delivery)
- The date stamps must reflect the loaded volume and the delivered volume (per entry record)
- The image of the proof of delivery to be attached through an electronic device proving the delivery by using a mobile application.
- Project plan for installation of the proposed solution
- *Tenderer to provide suggestions/innovative proposals.*

10.1.3 Evaluation Criteria for Service/Solution 4

See clauses 4 and 5 above.

♦♦ End of Services/Solution 4 ♦♦

SERVICES/SOLUTION 5

11. SERVICES/SOLUTION 5 – Product movement - Dispensing from Bauzer to aircraft (aircraft refuelling), recording and reporting of refuelling tickets, uploading of sale to SAP and Customer Billing & Product movement

11.1 Current Environment

PetroSA has embarked into the aviation space, playing a role in the refuelling of aircrafts in some of the South African Airports. To date PetroSA has registered a number of airliners as their customers its SAP ECC system.
In provisioning of its aviation services, PetroSA makes use of ACSA assets such as:

- Terminal depots at airports
- Product Tank storages
- Bauzers/trucks dispensing products to aircrafts

PetroSA purchase the product, transport it to the airport terminals into the storage tanks, and from the storage tanks to Bauzer/trucks, whereafter the last end user will be the aircrafts.

Some components of this Tender - Services/Solution 2, 3 and 4 will also apply to this environment as PetroSA would be moving product to the airport terminal tanks and also need to manage volumes in the tanks.

The Product to be transported must be subject to quality standards before its transferred to terminal tanks and also product at terminal tanks will be subject to automatic tank gauging.

The key requirement for this scope is to get a solution that will be used to record all tickets of the refuelled aircrafts daily, using hand held mobile applications. This information to be uploaded in SAP after the end of the day to create automatic sales orders that will later need to be processed and invoiced to the relevant airliner customer.

Operational Processes in the aviation industry includes Stock Management: *PetroSA is required by AACSA to keep certain levels of stocks (product) to be available in any given moment.*

11.1.1 Solution Requirements for Managing Aviation Activities

It is PetroSA strategic business intent to grow in the aviation space. This requires that the right systems are fit for purpose to support its aviation operational activities. Required solution to meet the following requirements:

- Solution shall be an active directory access-controlled web-based application, operated via mobile handheld devices by airport operators or officials on the ground to enable the following:
  - Shall have an interface with SAP for master data sharing (product name, customer name, location) to avoid re-capturing of data – this should have a drop down information pre-populated menu.

- Shall have electronic recording of each airliners refueling ticket details to reflect i.e. the product refueled, volume, aircraft number/registration, airline name, airport name, date of refueling, operator and type of sale (cash or credit).
- Following the recording of an refueling ticket for loaded aircraft, the solution shall allow for an electronic signature by the pilot, which will serve as the confirmation of an accurate ticket volume loaded to the aircraft.
- Solution shall be linked to a mobile printer and allow for print out of the refueling ticket's receipt which will be recorded and signed.
- Solution shall provide a reporting view of all refueling ticket records, per customer, product, location, date, etc. via the web application.
- SAP is the transaction system of choice for PetroSA where master data is stored and maintained, sales are created, stock is managed, and customers are billed. It is therefore a requirement that all refueling ticket records to be created via web application are uploaded in SAP daily to trigger sales transactions in SAP.

11.1.2 Service Provider Proposal and Key Deliverables

- Service provider to provide a detailed solution, including associated software and hardware (6 hand-held devices and 6 mobile printers, associated cost, etc.)
- Demonstrate how the integration will be achieved with SAP for master data such as:
  - Customer master
  - Material
  - Plant date (airport location)
- Demonstrate how all the refuelling tickets records will be uploaded in SAP to create sales orders as per customer, material, plant location and volume loaded, date etc without human intervention and duplication of records.
- Project plan for installation of the proposed solution
- *Tenderer to provide suggestions/innovative proposals.*

11.1.3 Evaluation Criteria for Service/Solution 5

See clauses 4 and 5 above.

♦♦ End of Services/Solution 5 ♦♦

SERVICES/SOLUTION 6

12. SERVICES/SOLUTION 6 – Product movement - Retail solution which includes refuelling of cars and point of sales

12.1.1 Solution requirements applicable to Retail Service Stations

- PetroSA's strategy is to enter the retail space, where PetroSA will manage and operate service stations. It is therefore critical for a solution where all the various transactions can be recorded and accounted for. Retail activities will include stock management components and sales management components. The stock management will include activities such as:
  o Inventory replenishment and Transportation
  o Inventory tracking and monitoring
  o   Inventory Reporting
- These requirements are likely to be met through the Services / Solutions 1 to 3 above.
- Retail sales management activities will include:
  o Refueling of cars
  o Cash/credit card payments
  o Account payments.
- Retail point of sales system linked to pump meters
- Reporting on sales per day, moved volumes

12.1.2 Service Provider Proposal and Key Deliverables for Retail Service Stations

- Service provider to provide a detailed solution, including associated software and hardware, cost, etc.

- Project plan for installation of the proposed solution point of sale

- Tenderer to provide suggestions/innovative proposals

12.1.3 Evaluation Criteria for Service/ Solution 6

See clauses 4 and 5 above.

♦♦ End of Services/Solution 6 ♦♦