



**UPU** | UNIVERSAL  
POSTAL  
UNION

# **Universal Postal Union**

## **Request for Proposal (RFP)**

### **Radio Frequency Identification (RFID)**

#### **Hardware equipment**

**Date: 13.06.2017**

**Classification: Confidential**



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## 1 Introduction

The Universal Postal Union (UPU) was founded in 1874 in Berne, Switzerland, with the main goal of establishing a single postal territory for the reciprocal exchange of letter-post items and adopting common principles for the international postal service in a non-discriminatory manner. Currently comprising 192 member countries, the UPU became a specialized agency of the United Nations in 1948.

The main mission of the UPU is to stimulate the lasting development of efficient and accessible universal postal services of quality, in order to facilitate communication between the inhabitants of the world. This encompasses the commitment towards free circulation of postal items over a single postal territory composed of interconnected networks, adoption of fair common standards and use of technology, cooperation and interaction among stakeholders, promotion of effective technical cooperation, and satisfaction of customers' changing needs. The UPU is thus expected to play a major role in the constant revitalization of postal services.

Furthermore, the UPU facilitates the development of worldwide postal services by providing an information and communication technology environment which allows designated operators (DOs)<sup>1</sup> of UPU member countries to concentrate on the delivery of postal services to their customers. In this context, the UPU provides a global network with value-added services, as well as computerized applications for the management of international mail and international postal money orders.

## 2 RFP terms and conditions

Unless otherwise stated in this request for proposal (RFP), the term "Bidder" shall refer to any person, company or legal entity submitting a proposal in response to this RFP. The term "Vendor" shall refer to a successful Bidder, as the case may be.

### 2.1 Confidentiality

Bidders shall treat in strict confidence all information contained in this RFP and its attached documents which is not already publicly known or generally accessible, particularly any documentation marked as confidential and distributed by the UPU to Bidders as additional confidential RFP documentation.

Bidders shall prevent disclosure or distribution of all such information to third parties and other entities and persons not expressly authorized herein. In case of doubt, these confidentiality provisions shall nevertheless be observed. All Bidders are obliged to observe these confidentiality provisions before, during and after the tendering process. These provisions shall not affect the UPU's and the Bidder's legal obligations to disclose information.

Bidders shall not use such information for any purpose other than the purposes associated with this RFP. This RFP and all attached documents may only be distributed or made available to persons directly involved in the tendering process on behalf of Bidders. In case external agents or subcontractors are involved in the preparation of the tender documents, they have to be named and indicated in the participation notification (see section 2.13).

Bidders assume full responsibility for compliance of their agents, employees and subcontractors, as well as any third parties involved on their behalf in this tendering process, with these rules of confidentiality and shall be liable for any damages resulting from misconduct or unauthorized disclosure.

If a Bidder violates the confidentiality provisions contained herein, it shall be liable to pay a penalty to the UPU unless the Bidder can prove that no fault is attributable to it. This penalty shall amount to no more than 50,000 CHF per infringement. Payment of any such penalty shall not release Bidders from their obligation to observe confidentiality.

Bidders willing to submit proposals in response to this RFP shall contact the persons specified below in this document and request receipt of additional RFP documentation from the UPU, as the case may be.

<sup>1</sup> In accordance with article 1.7 of the Constitution of the UPU, a designated operator is any governmental or non-governmental entity officially designated by the member country to operate postal services and to fulfil the related obligations arising out of the Acts of the Union on its territory.

Without prejudice to the confidentiality provisions set out above, Bidders hereby agree that the receipt of such additional RFP documentation may be subject to the prior signature of a non-disclosure agreement between the Bidder and the UPU, under conditions to be determined and communicated by the latter.

## 2.2 *Legal status of the Vendor*

The Vendor shall be regarded in law as having the legal status of independent contractor. The Vendor and its consultants, employees and subcontractors shall in no way be regarded as employees of the UPU. Such consultants, employees and subcontractors of the Vendor shall not be entitled to any employment benefits of the UPU.

The Vendor shall be solely responsible for due payment of all compensation owed to such consultants, employees and subcontractors, including payment of any employment taxes, benefits, compensation and insurance. The Vendor represents and warrants that it shall comply with all laws, rules and regulations required by the relevant authorities, including the appropriate withholding, reporting and payment of all necessary taxes.

The Vendor shall be liable for all work performed by its employees, consultants and subcontractors, as well as for any act or omission by such employees, consultants and subcontractors.

## 2.3 *Scope of the RFP*

This RFP concerns the procurement of Ultra High Frequency (UHF) Radio Frequency Identification (RFID) equipment. In this regard, any technical solution proposed by Bidders shall comprise the procurement, further detailed herein, or the following items taking due account of any applicable best practices and regulations:

- UHF RFID Postal Solution adaptable to different postal scenarios (2500 units);
- UHF RFID Handheld device for inventory and location of postal items (10 units);
- UHF RFID Printer and Encoder to print and codify UHF RFID inlays (10 units);
- UHF RFID Power Detection device to detect RF field emitted by the RF antennas (400 units);
- Optional: any other products or services aimed at leveraging the Bidder's offer.

All hardware components shall provide the maximum quality and performance achievable by technology currently available on the market to support technology needs of the project.

The Bidder's offer shall include the supply of equipment, warranty and written guidance, including whenever necessary technical training to properly install, configure and maintain the hardware elements.

Bidders shall provide a detailed quote sheet including unit prices for all hardware components listed above. In addition, for the UHF RFID Postal Solution, a specific cost breakdown per item (reader, antennas, cabling, peripherals and enclosure) is required.

If required by the UPU, a visit of the Bidder's premises may take place in order to evaluate the Bidder's proposed RFID hardware and meet the Bidder's project team, at no cost to the UPU.

Upon final selection of the Vendor, a four-year contract between the UPU and such Vendor shall be established, with expected annual purchases orders of 500 units for the item UHF RFID Postal Solution.

### *Current situation*

The UPU has been requested to improve the global performance of international letter-post mail. The official size of the global letter-post market is 350 billion domestic and international letter-post items and over 6 billion parcels at the international level (UPU estimate for 2012).

A system associating letter-post quality of service and payments made between DOs has been agreed as the method for achieving this objective. The UPU's Global Monitoring System (GMS), a neutral and independent measurement system, started to be implemented in 2009 and is now active in over 110 member countries.

External panellists (which are independent from DOs) exchange test-letters containing a passive UHF RFID transponder which are then read by RFID equipment installed at the operational facilities where postal traffic

is received and processed. This process generates the main portion of information required to determine the quality of service, and constitutes a well-established technique used by various member countries.

The objective of the UPU is to extend such established mail measurement techniques to real-time tracking and monitoring of postal items through the use of RFID technology.

#### *Project background*

The UPU provides its member countries and their DOs joining the GMS project the required RFID equipment to be installed at the postal operational facilities where postal traffic is received and processed.

The RFID equipment basically consists of a main unit comprising a RFID reader and respective power supply, and a RF antenna and respective cabling housed in a protective enclosure to be easily installed ("plug and play). When required, depending on the reading scenario, additional RF antennas may be connected to the main unit.

Currently, these components are either offered separately in a RFID Modular Kit, comprised by a main unit and additional antennas to be mounted modularly, or integrated in a compact structure to be installed zenithally or laterally depending on the postal scenario.

Installation, testing and maintenance of the RFID equipment is done by the technical staff of the DO.

#### *Operational facilities*

The installation of the RFID equipment is normally done at postal facilities to read the entrance and exit of test letters containing passive Radio Frequency Identification (RFID) transponders with the highest performance.

Depending on the postal facility, different postal scenarios may be implemented:

| <b>Type</b>        | <b>Purpose</b>     | <b>Maximum Dimensions</b> | <b>Type of container</b>                    |
|--------------------|--------------------|---------------------------|---|
| Standard dock      | Inbound / Outbound | 4 meters W x 4 meters H   | Double Carton/plastic CLD container stacked |
| Air Mail Unit dock | Inbound            | 5 meters W x 4 meters H   | Unit Load Devices (ULDs)                    |
| Elevators          | Inbound / Outbound | 4 meters W x 4 meters H   | Carton/plastic CLD container                |
| Conveyor belt      | Inbound            | 1.5 meters W              | Postal items without container              |

Although the installation of the RFID equipment is normally done as described above, it could be occasionally installed in a bottleneck/passing corridor to capture readings from an additional operational process.

#### *2.4 Objectives*

The objective of this RFP is to find providers of UHF passive RFID hardware capable of tracking and monitoring postal items in real time at the operational facilities where the postal traffic is received and processed.

The RFID hardware shall provide to DOs the necessary equipment to identify and monitor postal items during their daily operations in order to manage their operational processes.

Bidders shall propose the most cost-effective and innovative RFID equipment capable of meeting the requirements of the UPU, either directly or through the Bidder's use of a third-party solution.

#### *2.5 Expected benefits*

- Improvement of quality of postal operational processes;
- Real time identification and monitoring of postal items offering a wider vision of the supply chain;

- New business opportunities offering new services for customers.

## 2.6 *Use of the emblem, name and initials of the UPU*

Bidders shall not advertise or otherwise make public the fact that they intend to provide, are providing or have provided services to the UPU, or use the emblem, name or initials of the UPU in connection with their business for purposes of commercial advantage or goodwill without prior and explicit permission from the UPU. Bidders shall take all reasonable measures to ensure compliance with this provision by their agents, employees and subcontractors.

## 2.7 *Collusive bidding, anti-competitive conduct or any other similar conduct*

Without prejudice to the provisions contained in sections 3 and 4 below, Bidders (including their agents, consultants, employees and subcontractors) shall not engage in any collusive bidding, anti-competitive conduct or other similar conduct, in relation to:

- The preparation or submission of offers;
- the clarification of offers;
- the conduct and content of negotiations, including final contract negotiations.

For the purposes of this RFP, collusive bidding, anti-competitive conduct or any other similar conduct may include disclosure to, or exchange or clarification with, any other Bidder of information (in any form), regardless of whether such information is confidential to the UPU or to any other Bidder, in order to alter the results of the RFP in such a way that would lead to an outcome other than that which would have been obtained through a competitive process.

In addition to any other remedies available to it, the UPU may, at its sole discretion, immediately reject any offer submitted by a Bidder that, in the UPU's opinion, has engaged in any collusive bidding, anti-competitive conduct or other similar conduct with any other Bidder in relation to the preparation or submission of offers, whether in respect of this RFP or other procurement processes conducted by the UPU.

## 2.8 *Intellectual property*

This RFP and all its attached documents, including any content, forms, statements, concepts, projects and procedures explicitly or implicitly forming part of this RFP, constitute the exclusive intellectual property of the UPU. This RFP is communicated to the various Bidders with the sole purpose of assisting them in the preparation of their respective offers. Any hard copies of this RFP shall be destroyed or returned to the UPU by non-selected Bidders upon request of the UPU.

## 2.9 *Privileges and immunities*

Nothing in or relating to this RFP, the activities described herein or any potential agreements related thereto shall be deemed as a waiver, expressed or implied, of any of the privileges, immunities and facilities which the UPU enjoys as a specialized agency of the United Nations system, pursuant to the Swiss Host State Act and the Agreement on Privileges and Immunities of the United Nations (on Swiss territory), the Convention on the Privileges and Immunities of the Specialised Agencies (outside Switzerland), as well as any other conventions and laws recognizing and/or granting such privileges, immunities and facilities to the UPU and its officials (such as the International Organizations Immunities Act in the case of the United States of America).

Accordingly, Bidders shall expressly acknowledge and agree that the property and assets of the UPU, including any archives, data, documents and funds belonging to the UPU or held by it (including without limitation the data/hosting environments and servers pertaining to or associated with the provision of the services, as well as any data or document in any form belonging to or held by the UPU on behalf of UPU member countries and their DOs), are inviolable and shall be immune from search, requisition, confiscation, expropriation and any other form of interference, whether by executive, administrative, judicial or legislative action. The Vendor shall immediately contact the UPU in case of any attempt to violate or any violation of the UPU's privileges and immunities and take any reasonable measures to prevent such a violation.

In the light of the UPU's status as a specialized agency of the United Nations (and without prejudice to the observance, by the UPU, of any sanctions established by the United Nations Security Council), Bidders shall expressly certify their legal and operational willingness and ability to provide the services on a non-discriminatory basis for the benefit of all eligible entities established and/or situated in the territory of any

UPU member country, irrespective of the existence of diplomatic relations between a Bidder's country of incorporation and/or operation and any UPU member country (including its DOs).

#### 2.10 Tax exemption

Pursuant to article III, section 9, of the Convention on the Privileges and Immunities of the Specialized Agencies, the UPU is exempt from all direct taxes and from customs restrictions, duties, and charges of a similar nature in respect of articles imported or exported for its official use.

Furthermore, the UPU is exempt from Value Added Tax (VAT) in Switzerland (OLTVA, article 22; Instructions 2001 sur la TVA, articles 574, 816 and others) as well as other countries; therefore, any prices shall be indicated "net", without VAT or similar taxes.

#### 2.11 Language

Tender documents shall, in their entirety, be formulated by Bidders in **English** or French.

#### 2.12 Signature

Tender documents shall be signed by a representative (or representatives) duly designated and authorized to act on the Bidder's behalf and with the authority to legally bind the Bidder and accept the terms and conditions of this RFP.

#### 2.13 Participation notification

Upon receipt of this RFP, the Bidder shall send a confirmation of participation to all contact persons listed in section 2.14, in line with the deadline indicated in section 2.19 below.

#### 2.14 Contact persons

Mr Antonio CAEIRO  
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International Bureau  
Weltpoststrasse 4  
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SWITZERLAND

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Mr Cesar ALLENDE  
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Universal Postal Union  
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Weltpoststrasse 4  
3015 BERNE  
SWITZERLAND

E-mail: cesar.ALLENDE@upu.int

#### 2.15 Further inquiries and questions

Questions regarding the content of this RFP or any requests for clarification from Bidders shall be sent in written form to the contact persons listed in section 2.14. Answers to questions submitted by Bidders or additional information relevant to this RFP shall be forwarded by the UPU to all Bidders by 21 July 2017 at the latest.

#### 2.16 Delivery of offers and deadline

Offers (including all of the Bidder's tender documents) shall be presented as **four printed originals** in a sealed envelope and delivered **exclusively to the following address:**

Attention: Secretary of the Tenders and Procurements Committee  
Re: Radio Frequency Identification (RFID), Hardware procurement  
Universal Postal Union  
International Bureau  
Weltpoststrasse 4  
3015 BERNE  
SWITZERLAND

Offers shall reach the UPU at the above address **no later than 28 July 2017, at 16:00h Central European Time (CET)**. Offers received after this date shall not be considered by the UPU. Moreover, offers sent by

electronic mail or any means other than the sealed printed format specified above shall not be accepted by the UPU. The preparation and submission of tender documents by Bidders shall be free of charge for the UPU.

### 2.17 Evaluation procedure

The evaluation procedure serves to determine as objectively as possible the best solution from the UPU's perspective, based on the received tender documents. The described structure of the tender documents, i.e. the response format (see sections 3 and 4), is therefore mandatory for all Bidders.

Bidders not fulfilling the mandatory criteria as indicated in sections 3 and 4 below shall not be taken into further consideration by the UPU.

The non-exhaustive list of selection criteria is as follows:

- Bidder reputation, experience and qualifications in the logistics RFID field: the quality of management, technical staff, financial and organizational stability of the company. Bidder's reference for similar projects, current customer base;
- Design, functionality and suitability of the proposed solution: the functional suitability between the hardware solution and the project needs, without forgetting a robust but attractive design will be taken into account as fundamental criteria. The ease of installation, the quality of materials, and the flexibility to be adapted to the different implementation scenarios;
- Technical service, support and warranties provided: the quality of the bidder's support (i.e., assistance/troubleshooting, training, and consulting) will also be considered;
- Pricing: affordability of the proposed solution with clearly defined costs;
- Delivery Times: availability to deliver request products in accordance with the project timeline.

The deliberations of the UPU Tenders and Procurements Committee (TPC) are not public. The TPC shall submit a report to the Director General of the UPU International Bureau, together with its final recommendation for his assessment and confirmation. Bidders shall be informed immediately after the relevant decision is taken by the UPU.

The UPU General Terms and Conditions for the Provision of Goods and Services shall be accepted by the Bidder (attached as reference). The final terms of any resulting contract shall be defined by the UPU and accepted by the Vendor. **Contract negotiations shall only start after final selection of the Vendor.**

### 2.18 Modification, suspension or cancellation of the RFP

The UPU reserves the right, **at its sole discretion and at any time** before conclusion of the RFP (i.e. at any time prior to the signature of the relevant contract with the Vendor), to modify, suspend or cancel all or part of this RFP.

### 2.19 Tentative schedule

|  |   |
|--|---|
| Publication of RFP announcement            | 13 June 2017  |
| Pre-offer inquiries and questions          | 21 July 2017  |
| Receipt of offers by the UPU (deadline)    | <b>28 July 2017 at 16:00h Central European Time (CET)</b> |
| Short-list of Bidders                      | 25 August 2017  |
| Bidders' demonstrations                    | From 2 to 6 October 2017                                  |
| Estimated date for selection of the Vendor | <b>10 November 2017</b>                                   |

## 3 Offer structure – Response format

All information provided shall be delivered by the Bidder in full conformity with the terms and conditions set out in section 2. Moreover, the requirements stipulated in this RFP shall be covered in their entirety, according to the structure defined below and following the sequence and numbering provided in this section. The UPU shall evaluate the responses according to this same structure.

For each of the requirements listed in this RFP, Bidders shall answer with one of the following statements:

- a Covered;
- b Covered, with limitations (explaining the limitations);



c Not covered.

When the answer is "covered" or "covered, with limitations", Bidders shall provide further details and/or examples of existing implementations of their solution in the field (existing use cases).

### 3.1 Cover letter

The Bidder shall submit a cover letter including:

- A statement that the Bidder has read, understands and agrees to all provisions of this RFP;
- Its name, telephone number, address and e-mail address, and the name of its representatives.

The cover letter shall be signed by a representative (or representatives) duly designated and authorized to act on the Bidder's behalf and with the authority to legally bind the Bidder and accept the terms and conditions of this RFP, and shall also include a confirmation of such authorization by the Bidder, as well as a statement that the Bidder's proposed tender documents are valid for a minimum period of 90 days.

### 3.2 Executive summary

The Bidder shall provide an executive summary highlighting the most important aspects of its offer.

### 3.3 Bidder information

The Bidder shall provide the following information:

- Full legal status of the Bidder;
- Corporate background in terms of its head office and other worldwide regional locations:
  - Company history;
  - Organization and structure;
  - Organization's performance against other in the industry.
- Location and size of operations at the head office and any regional offices:
  - Number of employees by function (technical and non-technical);
  - Location of the main offices and branches;
  - Office from where the procurement would be managed;
  - Location and operating hours of helpdesk services, including contact numbers/e-mail addresses and languages.
- Products and services:
  - All products being marketed;
  - How long the products have been in the market;
  - Compatibility of different products marketed;
  - Who and where was the product developed;
  - Platform the products are running.
- Growth and financial:
  - Market position and share in the relevant markets;
  - Financial data (turnover, profit, etc.);
  - Partners and equity holders of the company.
- Customer reference list with description of similar projects, if any;
- Quality management certifications and statements:
  - IT (including security) certifications;
  - Results of technical and security audits of the Bidder's solutions.

### 3.4 *Subcontractor information*

The Bidder shall provide a list of all of its directly involved subcontractors (if any), and specify their exact degree of involvement with the Bidder.

### 3.5 *Functional structure*

The Bidder shall provide answers, including a full description (if possible adding some illustrations), to all the requirements set out in section 4 (General requirements). The UPU shall evaluate such answers according to the same structure.

### 3.6 *Pricing structure*

The Bidder shall provide its detailed pricing structure – as required by section 4 (General requirements) under the heading "Detailed quotation and costs". The UPU shall evaluate the responses according to the same structure.

**N.B.** – Do not include VAT in any price information (see section 2.9). All price information shall be exclusively in USD.

### 3.7 *UPU General Terms and Conditions*

Include a statement of acceptance of the UPU General Terms and Conditions for the Provision of Goods and Services, attached hereto for reference.

### 3.8 *Delivery and payment schedule*

Proposed delivery and payment schedule (to be agreed with the UPU) according to section 4.

## 4 **General requirements**

### 4.1 *Technical/functional description*

#### 4.1.1 *UHF RFID Postal Solution*

The RFID Postal Solution basically consists of a reader, antennas, respective electrical and RF cables and an enclosure to protect the reader and the external antennas. These components can either be incorporated in a RFID Modular Kit to be mounted modularly or offered in a compact structure.

RFID Hardware equipment and its components shall operate worldwide. The equipment shall conform to required industry standards, where applicable. The equipment shall operate to installed country power and radio frequency requirements and be capable of being upgraded through new firmware versions, in order to meet any frequency regulation change in the future.

The UPU wishes to provide a robust, easy-installation and attractive solution for its member countries and their DOs. The goal is to achieve 99% read rate reading a maximum of 500 diverse postal items containing passive UHF transponders passing simultaneously by a reading point within the reading range of 4x4 meters.

#### a. *Items to be included*

The Bidder shall provide the following elements:

- UHF RFID reader: bidders shall provide RFID readers operating with non-line-of-sight communication with UHF RFID transponders Gen2;
- Power Supply: bidders shall provide the power supply, fuses, and cables for RFID components that shall allow the use of locally available commercial power;
- UHF RFID antennas: bidders shall offer a directional antenna which allows non-obstructed read range of at least 5 meters;
- RF cabling: the contractor shall offer different RF cables lengths to allow flexible and adaptable installation, e.g. 3, 6 and 9 meters;

- Enclosure: an enclosure to protect the RFID equipment components and simplify the installation process;
- Peripherals: the RFID solution may include optional peripherals, such as motion sensors, light indicators or external GPRS modem whenever it adds value to the bidders proposal;
- Mounting elements: VESA Mounting Interface Standard (MIS), any other mounting or fixation element, which could facilitate the installation, should also be identified in the offer.

Other elements:

- User manual for the integrated solution;
- Product user guide for the individual components involved in the integrated solution;
- The bidder is responsible for providing all the cables and accessories that is necessary for the hardware system's functioning properly;
- The bidder should identify possible components that could represent an additional value for its proposal.

*b. Required technical specifications*

The Bidder shall satisfy the following specifications:

*Hardware specifications*

- Memory: In the event of network communication failure, the RFID reader should be able to store data persistently, even if reader is rebooted in this period. In order to accomplish with this requirement, reader shall have a minimum of 64 Mbytes of available persistent memory;
- Operating System: Linux capable of running external user applications, thus a minimum of Java 1.4.3 support, as well as 64 Mbytes of RAM memory are required. Alternatively, when it is not possible to run applications embedded in the reader, an external processor could be included;
- Temperature range: operational temperature between -25° C or less and between +55° C or higher, and storage temperature between -40° C or less and between +70° C or higher;
- Sealing: minimum required IP64 and IK08 protection capabilities.

*UHF RFID specifications*

- Supported regions: ETSI band: 865 - 868 MHz, FCC band: 902 - 928 MHz, and sub-bands;
- Transmit Power: +10dBm to +36 dBm (ETSI limited to 2W EIRP and FCC to 4W EIRP);
- Air Interface Protocol: EPC Global Class 1 Gen 2, ISO1800-6C, ISO1800-6B, ISO1800-63, Ucode 1.19;
- RF Regulations: FCC Part 15, ETSI EN 302 208 and ETSI EN 301 489.

*Connectivity ports*

- Communications: 10/100 BASE-T Ethernet (RJ45) and serial RS-232 for console, optional PoE;
- Network services: DHCP, HTTP, Telnet, SNMP and NTP, WS discovery;
- Optional services: support WIFI IEEE 802.11, GSM/GPRS communications link, as well as USB interface;
- IP address configuration: Static and Dynamic;
- General Purpose I/O: a GPIO Hardware Interface, either external or integrated in the reader itself, to provide an optically isolated connection for external input /output devices, such as motion sensors, light stacks and/or audible alarms;
- Antenna Ports: 4 monostatic ports available;
- Power supply: +24V DC including 100–240 VAC (50-60 Hz) power supply.

*Physical specifications*

- Design: RFID equipment components can either be embedded in a Modular Kit to be mounted modularly or offered in a Compact Structure, below some additional details about both options:
  - RFID Modular Kit: composed by a RFID Main Unit integrating all required components (reader, antenna, power supply and peripherals) to be easily installed. In addition, external antennas can be connected to the main RFID unit when required depending on the reading scenario.

- RFID Compact Structure: composed by a RFID Main Unit and external antennas described in the RFID Modular Kit option, including a structure to be mounted over the gate or on its sides.
- Enclosure: an enclosure to protect the equipment where environmental conditions, such as dust and rain, could affect the equipment resulting in a damaged or degradation of the hardware;
- Dimensions: the dimensions of the enclosure for the RFID Main Unit shall depend on the type of reader; 400 mm x 400 mm x 150 mm may be taken as a reference. The external antennas should include as well a similar protection adapted to their dimensions;
- Weight: a lighter enclosure will facilitate the installation process; as a reference, a weight of 5 Kilograms may be taken into account for the enclosure;
- Mounting pattern: all components part of the RFID Modular Kit and RFID Compact Structure, should include VESA standard 100x100 and/or 200x200.

#### 4.1.2 UHF RFID Handheld device

The RFID Handheld device shall be able to scan postal objects with UHF RFID transponders without having to stop and/or handle each item. In addition, the device should be able to scan barcode labels.

##### a. Items to be included

The Bidder shall provide the following elements:

- UHF RFID Handheld device;
- Power supply and/or stationary Cradle.

Other elements:

- Product user guide;
- all cables and accessories necessary for proper functioning of the equipment.

The Bidder may also identify any other components that could represent an additional value for its proposal.

##### b. Required technical specifications

The Bidder shall satisfy the following specifications for the UHF RFID Handheld device :

##### *Hardware specifications*

- Memory: minimum of 256 Mbytes of RAM, and 1G Byte or persistent memory are required;
- Operating System: preferably Android or Windows Mobile;
- Batteries: battery life shall allow users to work for several hours without charging/changing batteries. The number of hours it takes to fully recharge shall be also considered;
- Temperature range: operational temperature between -10° C or less and between +60° C or higher, and storage temperature between -30° C or less and between +45° C or higher;
- Sealing: minimum required IP54 protection capabilities;
- Barcode Engine: 1D Laser or 2D Imager Barcode Scanner.

##### *UHF RFID specifications*

- Supported regions: ETSI band: 865 - 868 MHz, FCC band: 902 - 928 MHz, and sub-bands;
- Transmit Power: 1W EIRP;
- Air Interface Protocol: EPC Global Class 1 Gen 2, ISO1800-6C, ISO1800-6B, ISO1800-63, Ucode 1.19;
- RF Regulations: FCC Part 15, ETSI EN 302 208 and ETSI EN 301 489;
- Reading range: 0M to 5M (According to Tag & Environment).

##### *Connectivity Ports*

- Communications: WLAN IEEE 802.11 a/b/g and Bluetooth, optional GSM/GPRS communications link;
- Power supply: +24V DC including 100–240 VAC (50-60 Hz) power supply.

### *Physical specifications*

- Design: the device shall incorporate an ergonomic design, to allow users to scan postal objects during their standard postal processes, being easy to use and non-stressful to wrist, arm, shoulder and elbow;
- Screen: the device shall incorporate an easy-to-use touch screen display.

#### *4.1.3 UHF RFID Inlays Printer*

The RFID Printer shall be a high performance device able to print and encode high volumes of postal item labels, offering high print speed, ensuring the printing quality and the encoding accuracy of the data embedded in every UHF transponder.

##### *a. Items to be included*

The Vendor shall provide the following elements:

- UHF RFID Printer.

Other elements:

- Product user guide;
- all cables and accessories necessary for proper functioning of the equipment.

The Bidder may also identify any other components that could represent an additional value for its proposal.

##### *b. Required technical specifications*

Bidders shall satisfy the following specifications:

##### *Hardware specifications*

- Printer Control Language: minimum required ZPL and EPL;
- Memory: minimum of 256 Mbytes of RAM and persistent memory are required;
- Ribbon Length: minimum required 400 meters;
- Print width: minimum required 168mm;
- Printing resolution: minimum required 300 dpi;
- Print Speed: minimum required 14 lps/356mm per second;
- User Interface: LCD available.

##### *UHF RFID specifications*

- Supported regions: ETSI band: 865 - 868 MHz, FCC band: 902 - 928 MHz, and sub-bands;
- Supported tags: UHF EPC Gen 2, ISO/IEC 18000-63 and RAIN RFID protocols.

##### *Connectivity Ports*

- Communications: 10/100 BASE-T Ethernet (RJ45);
- Optional: WLAN IEEE 802.11 a/b/g, serial RS-232 and Bluetooth communications link;
- Electrical: auto-detectable 100–240 VAC (50-60 Hz).

#### *4.1.4 UHF RFID Power detection device*

The RFID Power Detection device shall be a pocket size device without batteries able to detect radio frequency field emitted by the RFID antennas in a short distance.

##### *a. Items to be included*

The Bidder shall provide the following elements:

- UHF RFID Power detection device.

Other elements:

- Product user guide;
- The bidder is responsible for providing all the cables and accessories that is necessary for the hardware system's functioning properly;
- The bidder should identify possible components that could represent an additional value for its proposal.

*b. Required technical specifications*

The Bidder shall satisfy the following specifications:

*Hardware specifications*

- Batteries: not required, powered by RF signal;

*UHF RFID specifications*

- Supported regions: ETSI band: 865 - 868 MHz, FCC band: 902 - 928 MHz, and sub-bands;
- Power level range: 10mW to 4W EIRP;
- RF Regulations: FCC Part 15, ETSI EN 302 208 and ETSI EN 301 489;
- Detection range: 0CM to 100CM (According Antenna & Environment).

*Physical specifications*

- Design: it should be a pocket size device, with an ergonomic and light design, to allow users to verify if the RFID antennas are transmitting correctly.

*4.2 Delivery of equipment*

The Vendor shall be solely responsible for delivering all items in good condition in two different destinations (to be defined by the UPU), under the following conditions:

- The Vendor shall make the goods available at his/her premises until the shipment;
- The Vendor shall be responsible for replacing any items damaged during shipping;
- The Vendor shall be responsible for any and all cost associated with delivery;
- The Vendor shall inform the UPU IB of the shipment alternatives, respective transit times and costs;
- The Vendor shall ship the goods according to the shipment alternative selected by the UPU IB;
- The Vendor shall also be responsible for completing all the export documentation;
- Shipment tracking information shall be sent to the project team once it is available;

After an order is issued by the UPU, the lead time for delivery of equipment shall not exceed 3 months.

*4.3 Warranties and support*

Although maintenance of any installed equipment will be done by the UPU, Bidders shall provide the following information related to support and warranties for the proposed solution:

- Options available for support, names and addresses of support agents (if any) in the region;
- Standard hours during which support shall be provided and out of hours support options and costs;
- Number of staff in the support team;
- Response time to support inquiries;
- Periods and conditions of warranties, and extension options and costs.

*4.4 Bidder demonstrations*

Prior to contract award, short-listed bidders may be required to demonstrate their respective solutions to the selection committee at no additional cost to the UPU.

Each invited Bidder shall have one half day to demonstrate its technical solution to be installed in a portal at a postal facility located in Brazil. Details concerning the demonstration shall be provided by the UPU at a later stage. The time assigned to each Bidder shall be communicated 20 working days in advance of the demonstration for set-up.

#### 4.5 Detailed Quotation and costs

Bidders shall provide a detailed quote sheet. Bidders shall include unit prices for the following components of the hardware:

| Product / Services                             | Quantity | Price per unit | Total price |
|--|----------|----------------|-------------|
| UHF RFID Handheld                              | 10       |                |             |
| UHF RFID Printer                               | 10       |                |             |
| UHF RFID Power Detection device                | 400      |                |             |
| Optional products and/or services <sup>1</sup> | NA       |                |             |
| <b>TOTAL</b>                                   |          |                | <b>USD</b>  |

Bidders may specify any other optional products and/or services aimed at leveraging the Bidder's products.

For the UHF RFID Postal Solution hardware, Bidders shall make an offer for the complete set of hardware described by the UPU, and also for the main individual components involved in the integrated solution according to the following cost breakdown table:

| Product   |                          | Price per unit |                  |                   |                   |                   |
|---|--------------------------|----------------|------------------|-------------------|-------------------|-------------------|
|   |                          | Up to 500      | From 501 to 1000 | From 1001 to 1500 | From 1501 to 2000 | From 2001 to 2500 |
| RFID postal solution (complete unit)            | Modular Kit <sup>1</sup> |                |                  |                   |                   |                   |
|   | Compact Structure        |                |                  |                   |                   |                   |
| RFID Reader (4 port) <sup>2</sup>               |                          |                |                  |                   |                   |                   |
| RFID Antenna                                    |                          |                |                  |                   |                   |                   |
| RF cabling <sup>3</sup> (for external antennas) |                          |                |                  |                   |                   |                   |
| Enclosure                                       | Main Unit                |                |                  |                   |                   |                   |
|   | Additional antenna       |                |                  |                   |                   |                   |
| Mounting elements <sup>4</sup>                  |                          |                |                  |                   |                   |                   |
| Optional components <sup>5</sup>                |                          |                |                  |                   |                   |                   |

1. Including a RFID Main Unit and three external antennas (including enclosure);
2. Including power supply;
3. Specify the cable length and model;
4. Specify any mounting or fixation element, in addition to the VESA standard;
5. Specify any other component that could represent an additional value for the solution;

No Bidder shall be allowed to withdraw and resubmit its proposal, for any reason whatsoever, after proposals have been opened by the UPU Tenders and Procurements Committee.

**N.B.** – Bidders shall not include VAT in any price information (see section 2.9). All price information shall be exclusively in USD. Bidders shall confirm that the USD amounts quoted are fixed and shall cover any exchange rate variations at the time of the contract (if any).