

Call for tenders

Procurement of RFID equipment

1 July 2024

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1 Introduction

1.1 Profile of the UPU

The Universal Postal Union (UPU) was founded in 1874 in Berne, Switzerland, with the main goals 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. It does this by guaranteeing the free circulation of items over a single postal territory composed of interconnected networks, encouraging the adoption of fair common standards and the use of technology, ensuring cooperation and interaction among stakeholders, promoting effective technical cooperation, and ensuring the satisfaction of customers' changing needs. The UPU is thus expected to play a major role in the continued revitalization of postal services.

Furthermore, the UPU facilitates the development of worldwide postal services by providing an information and communication technology framework that allows the designated operators¹ 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 Terms and conditions

Unless otherwise indicated in this call for tenders, the term "Bidder" shall refer to any person, company or legal entity submitting a proposal in response to this call for tenders. The term "Vendor" shall refer to any selected Bidder.

2.1 Confidentiality

Bidders shall treat in strict confidence all information contained in this call for tenders and its attached documents that is not already publicly known or generally accessible, particularly any documentation marked as confidential and distributed by the UPU to Bidders as additional confidential tender documentation. Bidders shall prevent the 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 tender process. These provisions shall not affect the legal obligations of the UPU and Bidders to disclose information.

Bidders shall not use such information for any purposes other than those associated with this call for tenders. The call for tenders and all attached documents may be distributed or made available only to persons directly involved in the tender process on behalf of Bidders. If external agents or subcontractors are involved in the preparation of the tender documents, this must be indicated and their names provided in the participation notification (see section 2.14).

Bidders shall assume full responsibility for the compliance of their agents, consultants, employees and sub-contractors, as well as any third parties involved on their behalf in this tender 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 it can prove that no fault is attributable to it. This penalty shall not exceed 50,000 CHF per infringement. Payment of any such penalties shall not release Bidders from their obligation to observe these confidentiality requirements.

Bidders wishing to submit a proposal in response to this call for tenders must contact the person(s) specified in section 2.15 below and may, if necessary, request additional information from the UPU in relation to this call for tenders.

¹ In accordance with article 2.1.6 of the UPU Constitution, 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 agree that the receipt of any such information 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 as having, in law, the legal status of independent contractor. The Vendor and its agents, consultants, employees and subcontractors (as authorized by the UPU) shall in no way be regarded as employees of the UPU. Such agents, consultants, employees and subcontractors of the Vendor shall not be entitled to any employment benefits from the UPU. The Vendor alone shall be responsible for due payment of all compensation owed to such agents, consultants, employees and subcontractors, including payment of any employment taxes, benefits, compensation and insurance. The Vendor shall represent and warrant that it will 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, including any acts or omissions, by its agents, consultants, employees and subcontractors.

2.3 Scope of the call for tenders

This call for tenders concerns the provision of ultra-high frequency (UHF) radio frequency identification (RFID) equipment to the UPU over a period of one year.

The RFID equipment shall be used by designated operators in the management of their day-to-day operational processes, and will serve to identify, track and monitor postal items in real time at operational facilities where postal traffic is received and processed.

Bidders will be expected to propose the most cost-effective and innovative RFID equipment capable of meeting the UPU's requirements, either directly or through the use of a third-party solution. Bidders' tenders must comprise the supply of the equipment, warranty and written guidance, including, where necessary, any technical training for the proper installation, configuration and maintenance of the hardware.

2.4 Background

Current situation

The UPU is tasked with improving the global performance of the international letter-post sector. According to UPU estimates, the global letter-post market stood at 350 billion domestic and international letter-post items and over 6 billion international parcels in 2012.

It was agreed that the desired improvement in global performance would be achieved through a system associating letter-post quality of service and the payments made between designated operators. The UPU therefore devised the Global Monitoring System (GMS), a neutral and independent measurement system, which was first implemented in 2009 and is now actively used in more than 110 member countries.

Under this system, external panellists (independent of designated operators) exchange test letters containing a passive UHF RFID transponder that is read by RFID equipment installed at operational facilities where postal traffic is received and processed. This is a well-established process used by various member countries, serving to generate the majority of the information required to determine quality of service.

In order to respond to new market and customer needs, the UPU now aims to extend this established mail measurement technique to encompass the real-time tracking and monitoring of all postal items, including receptacles, through the use of RFID technology.

Project background

When the designated operator of a Union member country joins the GMS project, the UPU provides the required RFID equipment to be installed at the postal operational facilities where postal traffic is received and processed.

This RFID equipment essentially consists of a main unit comprising an RFID reader and associated power supply cables and adapters, and an RF antenna and associated cabling housed in a protective enclosure for ease of installation (i.e. "plug and play"). Depending on the reading scenario, additional RF antennas may be connected to the main unit if required.

At present, these components are either offered separately in an RFID modular kit, comprising a main unit and additional antennas for modular mounting, or integrated in a compact structure to be installed in an overhead or lateral position, depending on the postal scenario.

Installation, on-site testing and maintenance of the RFID equipment are normally conducted by the designated operator's technical staff, with the remote support of the GMS Data Acquisition team.

Implementation at postal facilities

The RFID equipment is usually installed at postal facilities so as to ensure optimum detection of the entry and exit of test letters containing passive RFID transponders.

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

Туре	Purpose	Maximum dimensions	Type of container
Small door	Inbound/outbound	1.5 m (W) x 2 m (H)	Trays/mailbags
Standard dock	Inbound/outbound	4 m (W) x 4 m (H)	Metal cages and/or pallets containing trays/mailbags
Airmail unit dock	Inbound	5 m (W) x 4 m (H)	Unit load devices (ULDs) containing trays/mailbags
Elevators	Inbound/outbound	4 m (W) x 4 m (H)	Metal cages and/or pallets containing trays/mailbags
Conveyor belt	NA	1.5 m (W)	Trays/mailbags

The minimum performance for postal items containing passive UHF transponders passing a reading point simultaneously, within a reading range of 4 x 4 metres, is:

Up to 500 units with RFID tags	99% positive identification
Up to 2,000 units with RFID tags	90% positive identification

Although the RFID equipment is normally installed according to the scenarios described above, it may occasionally be installed at a "bottleneck" (such as a corridor) and/or in an open area to capture all RFID transponders from various operational processes.

2.5 Objectives

The objectives for the UPU and the designated operators of Union member countries are as follows:

- Improve the quality of postal operational processes;
- Ensure real-time identification and monitoring of postal items, thus offering a wider vision of the supply chain;
- Enable new business opportunities and offer new services for customers.

To this end, Bidders must provide a technical solution for the procurement of the following items (see section 4 for further details), taking due account of any applicable best practices and regulations:

- UHF RFID GMS postal units adaptable to different postal scenarios (up to 1000 units);
- UHF RFID power detection devices to detect the RF field emitted by the RF antennas (up to 200 units);
- UHF RFID handheld devices for inventory and location of postal items (up to 50 units);
- UHF RFID printers to print and codify UHF RFID inlays (up to 50 units);
- Optional: any other products or services aimed at leveraging the Bidder's tender.

All hardware components shall provide the maximum quality and performance achievable by the technology currently available on the market.

If so required by the UPU, a visit to the Bidders' premises shall be arranged, in order to evaluate the proposed RFID hardware and to meet the proposed project team, at no cost to the UPU.

Upon final selection of the Vendor, a contract shall be established between the UPU and the Vendor for a period of one year, with the expected annual purchase of 500 UHF RFID GMS postal units.

2.6 Use of subcontractors

The Vendor shall not assign, sublicense, subcontract, pledge or otherwise transfer or dispose of its tender, or any of the rights and obligations contained therein or in an associated contract with the UPU, without the prior written consent of the UPU.

The approval by the UPU of the engagement of any subcontractor shall not relieve the Vendor of any of its obligations or responsibilities concerning the work performed by such subcontractors.

2.7 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, consultants, employees and subcontractors.

2.8 Collusive bidding, anti-competitive practices and any other similar conduct

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

- the preparation and submission of tenders;
- the clarification of tenders;
- the conduct and content of any negotiations, including final contract negotiations.

For the purposes of this call for tenders, collusive bidding, anti-competitive practices and any other similar conduct may include the disclosure to, or exchange or clarification with, any other Bidder of information (in any form), whether or not such information is confidential to the UPU or to any other Bidder, in order to alter the results of the call for tenders 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 tender submitted by a Bidder that, in the UPU's opinion, has engaged in any collusive bidding, anti-competitive practices or any other similar conduct with any other Bidder in relation to the preparation or submission of tenders, whether with respect to this call for tenders or other procurement processes conducted by the UPU.

2.9 Intellectual property

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

2.10 Privileges and immunities

Nothing in or relating to this call for tenders, 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 that 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 Specialized Agencies (outside Switzerland), and 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, the Vendor 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 documents in any form belonging to or held by the UPU on behalf of UPU member

countries and their designated operators), are inviolable and shall be immune from search, requisition, confiscation, expropriation and any other form of interference, whether through executive, administrative, judicial or legislative action. The Vendor shall immediately contact the UPU in the event of any attempt to violate or any violation of the UPU's privileges and immunities and shall take all reasonable measures to prevent such violations.

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 designated operators).

2.11 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, as an intergovernmental organization and a specialized agency of the United Nations, 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 in other countries. Therefore, all prices shall be indicated in "net" form, without VAT or similar taxes.

2.12 Language

Bidders must submit all tender documents entirely in English.

2.13 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 call for tenders.

2.14 Participation notification

Upon receipt of this call for tenders, Bidders shall send confirmation of participation to the contact person(s) listed in section 2.15 by the deadline indicated in section 2.20.

2.15 Contact persons

Secretary of the Tenders and Procurements Committee UPU International Bureau Weltpoststrasse 4 3015 BERNE SWITZERLAND

Tel: +41 31 350 35 02 E-mail: caa@upu.int

2.16 Further inquiries and questions

Bidders must send any questions regarding the content of this call for tenders or any requests for clarification in writing to the contact person(s) listed in section 2.15 by 26 September 2024.

Answers to questions submitted by Bidders, as well as any additional information and updates relevant to this call for tenders, shall be published on the UPU website at www.upu.int/en/Universal-Postal-Union/Procurement.

2.17 Delivery of tenders and deadline

All tenders must be submitted to the UPU by e-mail only at RFP-2024-013@upu.int with "RFP-2024-013—Procurement of RFID equipment" as the subject line.

The deadline for the submission of tenders is 10 October 2024 at 16.00 CEST (UTC+2).

The UPU shall not take into consideration any tenders received after this date and time. Furthermore, it shall not accept any tenders sent to any e-mail address other than that specified above or sent by any other means.

There shall be no charge to the UPU for the preparation and submission of tender documents by Bidders.

2.18 Evaluation procedure

The objective of the UPU's evaluation process is to ensure the selection of a qualified, reliable and experienced Vendor capable of providing the specialized services and fulfilling the objectives set out in this call for tenders.

The UPU shall conduct its evaluation procedure with a view to determining as objectively as possible the tender that best meets its specific requirements. All tenders submitted shall be subject to an in-depth assessment, at the UPU's sole discretion, in order to enable the UPU to engage the most appropriate service provider. Due consideration will be given to Bidders' specific backgrounds, qualifications and experience in relation to the required services.

The prescribed structure of tenders, as set out in section 3, is mandatory for all Bidders. The UPU shall not take into consideration any tenders that do not fulfil the mandatory criteria.

Tenders received by the UPU must address all aspects of this call for tenders, and Bidders should identify any aspects where they envisage modifications being necessary or consider elements to be missing.

Tenders shall be evaluated on the basis of the following criteria, in descending order of importance:

- Quality of the tender (according to the specifications herein);
- Knowledge and experience of the Bidder and its team and/or consultant(s), as applicable to the subject matter;
- Price.

The winning tender will be selected based on a non-exhaustive list of criteria as set out in section 4. Bidders should therefore consider how their tender corresponds with the criteria listed and clearly indicate this in their response document.

The deliberations of the UPU Tenders and Procurements Committee (TPC) are strictly confidential. The TPC shall submit a report on its evaluation of the tenders received to the Director General of the UPU International Bureau, together with its final recommendation, for his assessment and authorization.

The UPU is not bound to accept the lowest tender and reserves the right to accept all or part of a tender. In awarding the contract, account will be taken of both the overall costs of the work and of the nature and quality of the services to be provided. The UPU reserves the right to negotiate prices and terms and conditions of contract after receipt of tenders.

Bidders will be informed of the outcome of their tender as soon as possible after the UPU has made its final selection.

2.19 Modification, suspension or cancellation of the call for tenders

The UPU reserves the right, at its sole discretion and at any time before the conclusion of the tender process (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 call for tenders.

2.20 Tentative schedule

Publication of call for tenders	6 August 2024
Deadline for submission of participation notification	19 September 2024
Deadline for submission of queries	26 September 2024
Deadline for provision of responses to queries	3 October 2024
Deadline for submission of tenders to the UPU	10 October 2024 at 16.00 CEST (UTC+2).
Estimated start of engagement	15 October 2024

3 Tender structure - Response format

All information provided by Bidders must be fully compliant with the terms and conditions set out in section 2 above, as well as the provisions of this section and the service requirements listed in section 4 below.

Moreover, the requirements stipulated in this call for tenders must be met in their entirety, according to the structure defined below and following the sequence and numbering provided in this section. The UPU shall evaluate all Bidder responses in accordance with the structure defined herein and shall have the right to reject any tenders that do not fulfil the requirements of this call for tenders.

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

- Covered;
- Covered with limitations (explaining relevant limitations);
- Not covered.

Where 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

Bidders shall submit a cover letter including:

- A statement that the Bidder has read, understands and accepts all provisions of this call for tenders;
- The Bidder's name, telephone number, postal address and e-mail address, and the name(s) of its representative(s);
- A statement that the Bidder's tender documents are valid for a minimum period of 120 days.

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 call for tenders, and shall also include a confirmation of such authorization by the Bidder.

3.2 Executive summary

Bidders shall provide an executive summary highlighting the most important aspects of their tender.

3.3 Bidder information

Bidders must provide the following information:

- Company structure, locations/subsidiaries;
- Financial data (turnover, profit, etc.);
- Number of employees;
- Partners and equity holders of the company;
- Company history;
- Market position and share in relevant markets;
- Customer reference list with descriptions of similar projects;
- Quality management certifications and statements;
- Reference letters.

3.4 Subcontractor information

In the event that Bidders intend to engage a subcontractor for part or all of the services set out in this call for tenders, the following information must be provided with regard to the subcontractor(s):

- Company structure, locations/subsidiaries;
- Degree of involvement, with a list of services and/or products;

- Customer reference list with descriptions of similar projects;
- Reference letters.

3.5 Technical proposal

Bidders shall submit a technical proposal addressing all of the requirements set out in section 4 (Service requirements). This proposal should outline the methodology, processes and timelines, as appropriate, that Bidders intend to implement in order to fulfil the objectives of this call for tenders.

3.6 Pricing structure

Bidders shall provide a detailed pricing structure for the products and services proposed, including unit prices for the following hardware components:

Product/service	Quantity	Price per unit	Total price
UHF RFID handheld device	50		
UHF RFID printer	50		
UHF RFID power detection device	200		
Optional products and/or services ²	N/A		
Total			USD

For the UHF RFID GMS postal units, Bidders shall provide a price for the complete hardware unit described by the UPU, as well as a specific cost breakdown for each of the main components comprising the integrated solution, as per the following table:

Product		Price per unit				
			From 101 to 250	From 251 to 500	From 501 to 750	From 751 to 1,000
UHF RFID GMS Main unit including postal unit RFID reader and other elements						
	Compact structure including main unit, auxiliary antennas, RF cabling and extendable arms					
RFID reader (four-po	rt) ³					
Microcomputer ⁴						
RFID antenna						
RF cabling ⁴ (for exter	rnal antennas)					
Extendable arms						
VESA arms	T					
Enclosure Main unit						
External antenna						
POE switch						
Mounting elements ⁵						
Optional components ⁶						

² Bidders may specify any other optional products and/or services aimed at leveraging their tender.

³ Including officially approved power supply cables and adapters.

⁴ Specify cable length, model and connector type.

⁵ Specify any mounting or fastening elements, in addition to the VESA standard.

⁶ Specify any other components that could add value to the solution.

In addition to pricing for the hardware components, Bidders shall provide an estimated detailed pricing structure for on-site consultancy services (see section 4.9 below) as per the annexed table "RFP consultancy services". The purpose of this estimate is to include the costs for possible travel in the overall contract amount.

Bidders shall not be allowed to withdraw and resubmit their tender, for any reason whatsoever, after the tenders have been opened by the TPC.

Bidders shall not include VAT in any of their pricing information (see section 2.11 above). All pricing information shall be set out exclusively in United States dollars (USD).

Bidders shall confirm that the prices quoted in USD are fixed and that there shall be no additional cost to the UPU owing to exchange rate variation (if any) at the time of the contract.

3.7 Delivery and payment schedule

The target dates for provision of the services are as follows:

Start date: November 2024 End date: November 2025

The delivery and payment schedules should be proposed by Bidders in their pricing structures, and must be agreed with the UPU.

The services provided by the Vendor shall be invoiced in arrears on a monthly basis. The UPU will make payment within 30 business days of receipt of invoice, subject to its acceptance of the services provided and the Vendor's transmission to the UPU of any and all documentation clearly detailing the services to which the invoice pertains (in a format to be established by the UPU).

3.8 UPU General Terms and Conditions

Bidders shall include in their tender a statement of acceptance of the UPU General Terms and Conditions for the Provision of Services, attached hereto for reference.

The final terms of any contract arising from this call for tenders shall be defined by the UPU and accepted by the Vendor. Contract negotiations shall commence only after the final selection of a Vendor by the UPU.

4 Service requirements

4.1 Description of the services/products

As outlined in section 2.3, the Vendor will be expected to provide the following services/products:

- UHF RFID GMS postal units adaptable to different postal scenarios;
- UHF RFID power detection devices to detect the RF field emitted by the RF antennas;
- UHF RFID handheld devices for inventory and location of postal items;
- UHF RFID printers to print and codify UHF RFID inlays;
- Optional: any other products or services aimed at leveraging the Bidder's tender.

4.1.1 UHF RFID GMS postal unit

The UHF RFID GMS postal unit essentially consists of an RFID reader with the corresponding power supply cables and adapters, RF antennas and all associated electrical and RF cables required to be functional.

A "less is more" philosophy is preferred (in order to mitigate maintenance issues).

The minimum components of the solution are:

Main unit containing the	These elements form a set that must be grouped together.		
reader, its power supply, an antenna and the RF cable connecting the antenna to the reader	The unit may or may not be encapsulated. For certain scenarios, it should be possible to shield it for installation in areas where the unit may be exposed to indirect rain.		
	It must be possible to hang or install it on a VESA 100 mm x 100 mm bracket.		
Auxiliary antennas and RF cabling (3 m and 6 m)	They may or may not be encapsulated. For certain scenarios, it should be possible to shield them for installation in areas where the unit may be exposed to indirect rain.		
	It must be possible to attach them to the extendable arms of the main unit or to install them on a stand separate from the main unit, using a VESA 100 mm x 100 mm bracket.		
Extendable arms up to 4 m	Located on each side of the main unit, they can be installed optionally when required.		
Microcomputer and its power supply	Where the read processing firmware will be installed. The solution could be one microcomputer per reader, or one microcomputer per centre that collects readings from several readers.		

Some considerations

Certain additional peripherals may be integrated (e.g. active ventilation) if required to ensure the proper and robust functioning of the units.

All these components shall be encapsulated in a single product, known as the main unit, to guarantee ease of installation and to protect against impacts and external environmental agents. Although the design should be robust and industrial, the main unit must be easy to open for maintenance purposes and should be compatible with both the modular kit and compact structure versions of the UHF RFID GMS postal unit.

All RFID hardware, peripherals and components shall be flexible enough to operate worldwide under the applicable national power and radio frequency regulations, and to comply with any required industry standards, wherever applicable.

The UPU wishes to provide a robust, easy-to-access and -maintain, easy-to-install and attractive solution for its member countries and their designated operators. The goal is to achieve a 99% read rate, reading up to 500 different postal items containing passive UHF transponders passing a reading point simultaneously within a reading range of 4×4 metres.

The market shows a trend for the implementation of new readers based on POE (power over Ethernet). The proposal must provide for this scenario both in the technical proposal of the solution and in the price proposal offered.

Preference will be given to solutions designed to allow for an update of the reader model.

a Items to be included

The Vendor shall provide the following elements:

- Single-board computer: a powerful industrial microcomputer for interconnection with the RFID reader and/or any other peripherals to be managed through the UPU's GMS IoT software solution (the UPU shall be responsible for software integration). The GMS IoT solution has been developed for an ARMv7I (32 bits) architecture. This unit can be included within the main unit, or centralized by managing several main units;
- UHF RFID reader: it would be preferable for Bidders to propose various RFID readers, with all options offering a high reading performance and a power transmission level and processing speed specially designed to operate in postal environments with a high density of Gen2 RFID transponders. For reference, the GMS IoT software solution is currently compatible with Impinj Speedway XR420 and Zebra FX9600 readers (both with four RF ports). If commercially available, these readers should be included in the offer;

- Power supply cables and adapters: all electrical components and industrial power supply cables and adapters necessary to ensure the continuous functioning of the equipment. These elements must be compatible with the electrical systems of all countries around the world and their respective plugs/outlets and voltages/frequencies used for domestic appliances. Power supply cables and adapters must comply with the technical requirements of each of the elements of the RFID solution.
- UHF RFID antennas: a directional antenna with circular polarization and high gain covering all known RFID ultra-high frequencies known worldwide, allowing a non-obstructed reading range of at least 5 metres:
- RF cabling: various RF cable lengths to allow flexible and adaptable installation, e.g. 3, 6 and 9 metres;
- Network cabling: a secure, fast and stable connection between the microcomputer and RFID reader should be established via a direct Ethernet connection;
- Enclosure (optional): an enclosure to protect the RFID equipment and its components, and to simplify
 the installation process. The enclosure is not mandatory if the design of the solution allows for rain
 protection, or an optional rain protection element can be installed to protect the equipment if required;
- Peripherals (optional): the RFID solution may include optional peripherals (e.g. motion sensors, active ventilation, POE converters and/or integrated Wi-Fi access points allowing 4G/5G connection) where this adds value to a Bidder's tender;
- Mounting elements: VESA mounting interface standard (MIS) is required. Any other mounting or fastening systems that might facilitate installation should also be identified in the tender.
- POE switches (optional): POE switch to supply and extend the power supply to the RFID readers together with the elements that require power from the main unit.

Other elements

- Product datasheet and user manual for the integrated solution;
- Product datasheet for the individual components comprising the integrated solution;
- All cabling and any accessories required for the proper functioning of the solution;
- Packaging ensuring the protection (and efficient palletization) of equipment for global transportation.

Bidders should identify any other components that might add value to their tender.

- b Required technical specifications
- i Hardware specifications
- Microcomputer:
 - Type: industrial microcomputer built for high reliability and uptime with components resistant to harsh environments and 24/7 operation. Hardware other than Odroid and Raspberry Pi may be used as long as it meets the architectural requirements;
 - Architecture: as the GMS IoT solution has been developed for ARMv7I (32 bits), either an ARMv7 (32 bits) or ARMv8 (32/64 bits) architecture is required;
 - Memory: the device should include an embedded MultiMediaCard (eMMC) or micro SD card module (minimum V30 storage speed) as a hard disk for high storage capacity (minimum: 16 GB);
 - Processing capacity: a minimum of 2 GB of RAM;
 - Operating system: minimum Linux 11 (Kernel version 5.4), Docker version 19.03.4 or above and Java 11 support;
 - Connectivity: two Ethernet ports, one USB port and one HDMI port. If possible, external converters of any kind should be avoided.
- UHF RFID reader:
 - Transmit power: +10 to +33 dBm (EIRP);
 - Frequency: global reader supporting countries within the UHF band from 860 to 960 MHz;

- General purpose input/output: minimum of four inputs/outputs;
- Antenna ports: minimum three monostatic ports available.

RFID antennas:

- Gain: UHF RFID high gain antenna;
- Polarization: circular;
- Operating frequency: supporting the UHF band from 860 to 960 MHz;
- Radiation pattern: beamwidth (AZ/EL) with minimum of 40°/40°;
- Dummy transponder: a near-field detection transponder attached (not visible) to each of the RFID antennas for testing purposes.

ii UHF RFID GMS postal unit specifications

Physical specifications:

- Design: RFID equipment components can either be embedded in a modular kit for modular mounting or as one product in a compact structure version. Additional details of both options are provided below:
 - RFID modular kit: comprising the main unit integrating all required components for ease of installation. External antennas to be connected to the RFID main unit when required, depending on the reading scenario;
 - RFID compact structure: a single product comprising a main unit, extendable arms and external antennas as described under the RFID modular kit option, including a telescopic structure joining all parts, to be mounted horizontal or vertically depending on the reading scenario;
 - Component compatibility: both the main unit and external antennas should be compatible
 with both the modular kit and compact structure versions.
- Enclosure: an enclosure must be provided to protect the equipment against environmental factors (e.g. dust and rain) that could affect the equipment and result in damage or degradation of the hardware. The enclosure must allow easy access to the internal components whenever required by IT staff for maintenance purposes;
- Weight: the enclosure for the main unit should be lightweight to facilitate logistics and the installation process. For reference, a maximum weight of 15 kg should be taken into account;
- Mounting pattern: all mounting components for both the RFID modular kit and RFID compact structure should be provided, preferably following the VESA standard of 100 x 100 mm and/or 200 x 200 mm.

Environmental:

- Temperature range: minimum operational temperature range of -25 to 55°C and storage temperature range of -40 to 70°C (options offering a greater range are acceptable);
- Seal: minimum IP64 and IK08 protection.

UHF RFID specifications:

- Transmit power: +10.0 to +36 dBm (according to the existing regulatory status for using RFID in the GS1 EPC Gen2 (860 to 960 MHz) band of the UHF spectrum in each country);
- Supported regions or geographical areas: compatible with allocations authorized for RFID applications specifically within the 860 to 960 MHz band of the UHF spectrum;
- 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.

External connectivity ports:

Communication: Ethernet protocol RJ45 connector;

- Antenna ports: minimum three monostatic ports available;
- Electrical plug: locking power connector, adaptable 100–240 V AC (50-60 Hz).
- Default configuration:
 - Firmware: versions updated to the last existing version from manufacturers;
 - Applications (to be installed on the microcomputer): TeamViewer already installed and connected with the UPU's account.
 - Network services:
 - Internal static IP between the microcomputer and the RFID reader;
 - Preconfigured DHCP to connect externally from network to the microcomputer;
 - HTTP/s, Telnet/SSH, SNMP and NTP, WS-Discovery.
- Optional:
 - Wireless access point: an integrated module allowing wireless connection

4.1.2 UHF RFID power detection device (optional)

The RFID power detection device shall be a pocket-size device without batteries, able to detect the radio frequency field emitted by the RFID antennas within a short distance.

- a Items to be included
- The Vendor shall provide the following elements: UHF RFID power detection device.
- Other elements:
 - Product datasheet and user guide;
 - All cables and accessories required for the proper functioning of the hardware system.

Bidders should identify any other components that might add value to their tender.

- b Required technical specifications
- Hardware specifications: Batteries not required, powered by RF signal.
- UHF RFID specifications:
 - Supported regions: ETSI band: 865 to 868 MHz, FCC band: 902 to 928 MHz, and sub-bands;
 - Power level range: 10 mW to 4 W EIRP;
 - RF regulations: FCC Part 15, ETSI EN 302 208 and ETSI EN 301 489;
 - Detection range: 0 to 100 cm (according to antenna and environment).
- Physical specifications: Design pocket-size device with an ergonomic and lightweight design to enable
 users to verify whether the RFID antennas are transmitting correctly.

4.1.3 UHF RFID handheld device

The UHF 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 Vendor shall provide the following elements:
 - UHF RFID handheld device;
 - Power supply cables with adapters and/or stationary charging cradle.

- Other elements:
 - Product user guide;
 - All cables and accessories required for the proper functioning of the equipment.

Bidders should identify any other components that may add value to their tender.

- b Required technical specifications
- Hardware specifications:
 - Memory: minimum of 256 MB of RAM and 1 GB of persistent memory;
 - Operating system: preferably Android or Windows Mobile;
 - Batteries: battery life shall allow users to work for several hours without charging or changing batteries. The number of hours it takes to fully recharge shall be also considered;
 - Temperature range: minimum operational temperature range of -10 to 60°C and storage temperature range of -30 to 45°C (options offering a greater range are acceptable);
 - Seal: minimum IP54 protection;
 - Barcode engine: 1D laser or 2D imager barcode scanner.
- UHF RFID specifications:
 - Supported regions: ETSI band: 865 to 868 MHz, FCC band: 902 to 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: 0 to 5 metres (according to tags and environment).
- Connectivity ports:
 - Communication: WLAN IEEE 802.11 a/b/g and Bluetooth, optional GSM/GPRS communication link;
 - Power supply: 24 V DC including 100–240 V AC (50-60 Hz).
- Physical specifications:
 - Design: the device shall be easy to use and offer an ergonomic design enabling users to scan
 postal objects during standard postal processes without stress for the arm, wrist, elbow or shoulder:
 - Screen: the device shall offer an easy-to-use touchscreen display.

4.1.4 UHF RFID inlay printer

The RFID printer shall be a high-performance device capable of printing and encoding high volumes of postal item labels with a high print speed. It must ensure the print quality and 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 required for the proper functioning of the equipment.

Bidders should identify any other components that may add value to their tender.

b Required technical specifications

- Hardware specifications:
 - Printer command language: ZPL and EPL as a minimum;
 - Memory: minimum of 256 MB of RAM and persistent memory;
 - Ribbon length: minimum of 400 metres;
 - Print width: minimum 168 mm;
 - Print resolution: minimum 300 DPI;
 - Print speed: minimum 14 ips/356 mm per second;
 - User interface: LCD available.
- UHF RFID specifications:
 - Supported regions: ETSI band: 865 to 868 MHz, FCC band: 902 to 928 MHz, and sub-bands;
 - Supported tags: UHF EPC Gen 2, ISO/IEC 18000-63 and RAIN RFID protocols.
- Connectivity ports:
 - Communication: 10/100 BASE-T Ethernet (RJ45);
 - Optional: WLAN IEEE 802.11 a/b/g, serial RS-232 and Bluetooth communication link;
 - Electrical: auto-detectable 100–240 V AC (50-60 Hz).

4.2 Purchase orders and confirmation of delivery dates

The Vendor shall indicate the delivery times for each of the items offered, starting from the receipt of the purchase order from the UPU.

The Vendor must confirm receipt of the purchase order and delivery dates within a maximum of five working days.

4.3 Production management

In order to monitor and manage the production processes, and adjust delivery schedules as needed, the Vendor shall provide a living archive containing all relevant information for production control and inventory purposes. In addition, regular meetings shall be held between the Vendor's production/project manager and the UPU's production manager.

4.4 Quality control

Quality control prior to shipment of equipment to destination is a critical activity to avoid additional project costs and service availability issues. Therefore, the Bidder must propose a process that guarantees the real and effective verification of the quality of the product and its components before the RFID unit is shipped to the destination.

This quality control must be documented on a unit-by-unit basis, with the documentation able to be requested at any time by the UPU.

As part of the tender requirements, Bidders must meet the following criteria to ensure the highest levels of control and quality assurance:

- Adequate verification processes: Vendors must apply comprehensive verification processes to ensure that the delivered product and its components meet the specified product quality and design standards.
- Adequate testing procedures: It is essential that Vendors use adequate testing procedures. This
 includes thorough testing to identify and rectify any defects or non-conformities prior to final delivery.
- Sufficient quality controls: Vendors must carry out regular and adequate quality controls throughout the production or service provision process, to ensure consistency and compliance with quality specifications.

Any costs resulting from poor quality control of the RFID unit, including transport, fees or additional services required to remedy problems, will be the responsibility of the Vendor and will be charged accordingly. This includes:

- Transport costs: Any costs associated with the return of defective RFID units for repair or replacement shall be covered by the Vendor.
- Service costs: Any additional services required to rectify quality problems, such as additional inspections, testing or rework, shall be covered by the Vendor.
- Taxes and customs duties: Any customs duties resulting from unsatisfactory quality control of the RFID
 unit shall be covered by the Vendor.

4.5 Delivery of equipment

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

- The Vendor shall be responsible for the packaging (in accordance with international requirements) of all
 equipment to ensure the safety of the content;
- The Vendor shall make the goods available at its premises until shipment;
- The Vendor shall be responsible for replacing any items damaged during shipment;
- The Vendor shall inform the UPU of the shipment options, respective transit times and costs;
- The Vendor shall ship the goods according to the shipment option selected by the UPU;
- The Vendor shall be responsible for completing all export and customs documentation;
- Shipment tracking information shall be sent to the project team once it is available.

Shipments are subject to the prior written consent of the UPU. Reimbursement of any unavoidable costs shall be subject to the presentation, by the Vendor to the UPU, of any and all documents constituting proof of such costs.

Once an order has been placed by the UPU, the lead time for delivery of the equipment shall not exceed three months. The Vendor shall inform the UPU at least one month in advance in the event of any incident affecting the lead time.

4.6 Support service

The support service is crucial for ensuring the proper functioning and maintenance of the UHF RFID GMS postal unit. This service, provided by the Vendor, is designed to address complex issues related to the product, including product issues and direct consultations with the manufacturer. The goal is to ensure operational continuity and user satisfaction.

Scope of the support service

Product support:

- Updates and patches: provision of necessary updates and patches for the software and hardware of the product.
- Preventive maintenance: guidance and support for performing preventive maintenance activities to ensure optimal performance of the units.

Bug management:

- Issue identification: reception and analysis of error reports and issues reported by users.
- Issue resolution: development and delivery of temporary/permanent solutions or patches for identified issues.

Consultations with the manufacturer:

 Intermediation: acting as an intermediary between the UPU and the product manufacturer to resolve technical queries and complex issues.

- Issue escalation: escalation of critical issues to the manufacturer and follow-up until resolution.
- Progress reports: provision of regular reports on the status of queries and issues escalated to the manufacturer.

Service levels

The number of working days to carry out each action should be indicated.

Activity		Working days after communication ⁷
Technical support	Response time	
	Resolution time (remote)	
	Resolution time (on site)	
Replacement	Response time	
policies (equipment under	Resolution time (critical)	
warranty)	Resolution time (normal)	
Logistics	Purchase order confirmation (delivery dates)	
	Quotation	
	Shipment quotation	

Support availability

Business hours: support available Monday to Friday, from 8.00 to 18.00.

Service methodology – communication channels

- Phone: dedicated support line for handling incidents and queries.
- E-mail: exclusive e-mail for receiving and tracking incidents.
- Web portal: online platform for recording and monitoring incidents, queries and progress on issue resolution.

The Vendor must maintain continuous communication with the UPU regarding the progress and status of each incident.

Human resources rates for the performance of out-of-warranty support services

Remote support	Price per hour	
On-site support	Price per day	

Documentation and reporting

Technical documentation

Provision of updated guides and technical documentation for unit maintenance.

Review and continuous improvement

Biannual meetings between the UPU and the Vendor to review service performance and discuss potential improvements.

⁷ It is possible that penalties for non-performance may be defined in the contract based on the information provided.

4.7 Warranties and product lifetime

Owing to transportation and implementation times, the warranty for RFID equipment must be at least three years. Defective equipment under warranty must be replaced by the Vendor, with any shipping costs and customs duties also covered.

The Vendor must provide the following information:

- Names and addresses of support agents (if any) in the region.
- Standard hours during which support shall be provided.
- Out-of-hours support options and associated costs.
- Number of staff in the support team.
- Response time to support requests.
- Replacement policies and warranty extension options, including costs.

Any new items or component modifications in either version or branding must be thoroughly tested, and these tests must be documented before they are introduced as replacements for existing components. Substitution of components must be authorized in advance and in writing by the UPU, and at least six months' notice must be given before changes are implemented.

4.8 Spare parts

Bidders shall provide information on spare part management measures, including delivery times, taking into account any issues relating to raw material shortages, prolonged transit times or disruptive external events.

4.9 Consultancy services

The Vendor, at the request of the UPU, may be required to perform certain consultancy services in various cities around the world, and/or at the UPU headquarters located in Berne, Switzerland.

The Vendor shall not be reimbursed for travel expenses associated with work on this project unless otherwise specifically authorized by the UPU. In this regard, Bidders are required to note that a number of UPU-defined procedures regarding reimbursement for incurred travel costs shall apply, without prejudice to other conditions that may be determined by the UPU in the relevant services agreement with the Bidder.

- Reimbursable expenses shall not include local travel. For the purposes of this call for tenders, "local travel" shall mean any travel/transportation within the city where the offices used by the Vendor are located;
- Travel by plane, train or bus shall be reimbursed at the actual expense incurred by the Vendor's consultant;
- Travel shall always be by the most direct route and the most economical means of transportation;
- Saturdays and Sundays, as well as holidays falling during travel, shall not be compensated for by time in lieu or additional remuneration;
- Airline and car rental travel expenses shall be limited to reasonable rates obtained through a costcompetitive travel service (for example, a travel or car-rental website);
- Other pre-authorized expenses, such as taxi fares, parking costs or public transport costs, etc., shall be reimbursable on an actual cost basis;
- Accommodation costs shall be reimbursed at the actual expense incurred by the Vendor;
- Hotel expenses and a subsistence allowance shall be paid for meals and incidental expenses (for subsistence purposes) for each travelling day.

Bidders' offers shall also include costs for two return business trips to the UPU headquarters in Berne, Switzerland. Each meeting shall have a duration of a maximum of five days (without considering travel time).

Estimated travel cost per region

Region	Countries	Flights	Hotel ⁸	Subsistence	Miscellaneous ⁹	Total
Europe and CIS	3					
Africa	3					
Asia	3					
Caribbean	3					
Arab region	3					
Latin America	3					
North America	2					
Pacific	1					
Total	21					
Average						

Estimated travel cost to UPU headquarters

Days	Flights	Hotel ⁸	Subsistence	Miscellaneous ⁹	Total
5					
5					

As further specified in the UPU General Terms and Conditions for the Provision of Goods and Services (attached), the Vendor is required to take out, at its own expense, insurance for the entire duration of the contract, including for its consultants. The Vendor's consultants shall be insured, inter alia, against illness, accident, disability and death.

4.10 Bidder demonstrations

Prior to award of the contract, 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 may be requested to demonstrate its technical solution in a real postal operational scenario. 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 to allow for set-up.

4.11 Bidder requirements

Bidders are expected to have the necessary knowledge and expertise in the following areas:

- Good understanding of logistics and the postal sector;
- Good understanding of operating systems and networking;
- Thorough understanding of existing regulations applicable to operations using UHF RFID equipment;
- Thorough understanding of logistics and customs processes;
- Experience and qualifications in the field of RFID;
- Experience of technical support and maintenance activities for global projects;
- Experience of designing functional and robust hardware solutions;
- Experience of providing worldwide products and services.

⁸ Please indicate the price for an average of three nights per country.

⁹ Taxi, visa, vaccine and transit fees, among others.

Bidders shall demonstrate a record of satisfactory performance in similar activities (i.e. reference letters and/or work completion certificates). The business transactions and activities carried out by the Bidder must be compliant with the mandates and principles of the UPU.

4.12 Assessment criteria

Bidders will be assessed on the basis of a scoring system of up to 70 points for their technical proposal and 30 points for their pricing structure.

The technical proposal shall be assessed on the basis of the following criteria:

Criteria	Points obtainable
Pricing structure	30
Technical proposal	
Bidder's reputation, experience and qualifications	10
Design, functionality and suitability of the proposed hardware	40
Support, warranties and logistics	20
Total	100

Bidders shall provide evidence of their ability to meet these requirements by means of a list of references.

4.13 Duration of services

The services are scheduled to commence in October 2024 for a total contract term of one year.

4.14 Additional information

Bidders may include any additional information that they deem necessary or relevant in order for the UPU to gain a clear and detailed understanding of the services being offered.