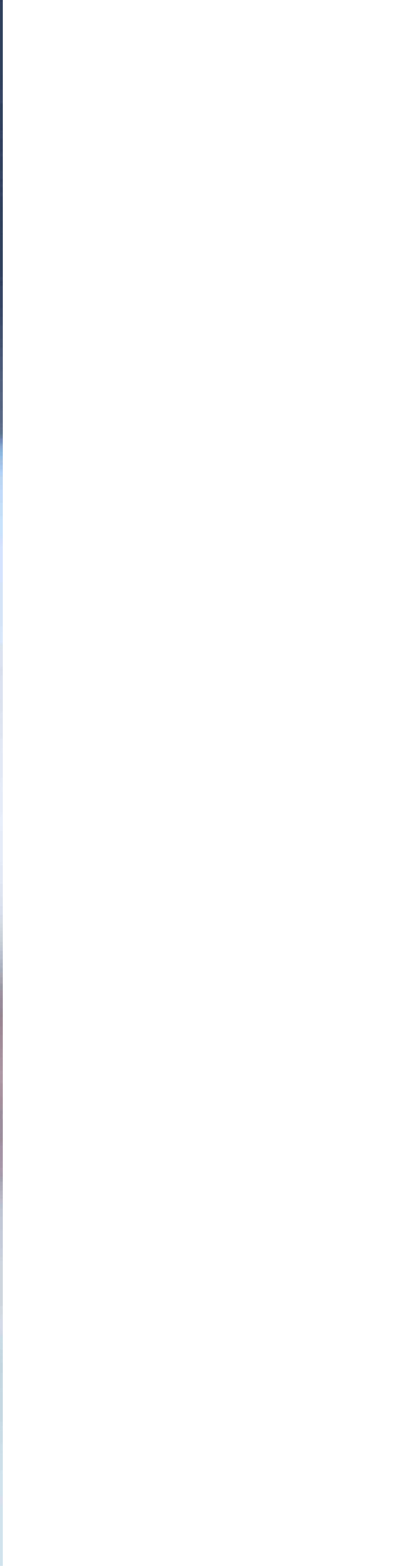


UPU-Agreed Measurement Systems External Audit 2020

Universal Postal Union
International Bureau

Audit Report February 2021





1. Executive Summary

2020 has been a very challenging year. The COVID-19 pandemic has not only had a devastating impact on public health, society and economies around the world, it also had a profound impact on people's lives and livelihoods. This has also directly impacted the Universal Postal Union Global Monitoring System (UPU GMS) due to the disruption of international flows through the closure of airports and local lockdowns. The UPU published a detailed impact analysis on this topic in May 2020.

Postal workers have been rightfully celebrated as local heroes in many countries and have played an essential role in keeping the world moving during the pandemic. For the UPU GMS, the production of test letters as well as the International Panel, with its thousands of panellists, was the most essential part of the system to keep running even during these uncertain times: keeping the production sites ready for restart wherever a lockdown was enforced by government. A positive effort was made to maintain the panellists, even when dispatching was not possible, by keeping in touch with them. In our audit procedures, we have emphasised and addressed the current global challenges and we have gained a good impression regarding the crisis response and the collaboration of all the parties involved.

The UPU GMS has been running Quality of Service measurements since 2009, starting with 21 countries. This number rose over the years reaching 58 countries in 2020 that participated in the UPU Quality of Service link to terminal dues (commonly referred to as UPU QS link). Similarly, the International Postal Corporation (IPC) has been running the UNEX measurement system for which 11 countries in 2020 were measured and participated in the QS link. Having two UPU-agreed measurement service providers (MSPs) measuring 69 countries for the purposes of the QS link calls for transparency and reliability in the measurement output to provide the confidence needed going forward in the quality of postal service delivery not only in each country measured but also at the global level.

As a proven and reputable audit services provider, PwC was pleased to support UPU with this challenge, leveraging our extensive experience in the postal industry, particularly in quality monitoring and auditing.

In agreement with the UPU Directorate of Postal Operations (DOP), we performed audit activities for the two MSPs, GMS and UNEX, using the UPU Global

Monitoring Technical Design 2nd Edition (TD) with the following scope:

- RFID diagnostic monitoring
- Panel Management testing of planning and production of test letters
- Calculation and reporting of Quality of Service results

Due to the pandemic, we performed all our testing procedures remotely using screen-sharing capabilities as well as cameras to perform 'virtual walkthroughs' of the local production sites of the test letter production sites, including Quotas and Kantar.

RFID diagnostic monitoring

We analysed the current status of RFID diagnostic monitoring and noted a continuous technological development and improvements that are leveraged by the main RFID service providers. We also noted an increased opening of the market to other RFID service providers. With the UPU International Bureau (UPU IB) in Bern, Switzerland, Lyngsoe Systems (Denmark) and Kyubi System (Spain), we developed and successfully tested an assessment that can be applied to new entrants.

Panel Management

In addition to the committed response to the COVID crisis, we noticed improvements in the quality controls of all service providers.

Quality of Service

We verified, in close contact with key contact persons at the UPU IB or IPC and using recalculations, the correct application of the TD (allocation of links and items), the validation of items and the performance calculation.

Performance measurement and Valid on Target (VOT) items

One of the most visible implications of the COVID pandemic on measurement is the large number of 'force majeure' filed cases, which reduces the number of VOT items. The general handling of reduced VOTs for affected links has been defined by the Postal Operative Council (POC) (re-weighting) and enforced in the past years. The actual number of VOT items and the application of force majeure decisions at a larger scale could cast doubt on the GMS measurement for the quality link, with the number of valid test items

falling below an acceptable data accuracy threshold independent of the re-weighting calculations. We note that the POC has recognised the circumstances and defined how to use historical data, where applicable, to calculate the final 2020 quality-linked terminal dues.

Based on our procedures as described in this report, nothing came to our attention that caused us to believe that the activities performed by UPU GMS or by UNEX UPU TD measurement systems or by the service providers in the audited areas were not compliant with the UPU-GMS TD document. We noted that the recommendations of our previous report had been considered.

The two findings (Finding ID 1–2: retention and training of panellists) from the 2018 audit, which only partially affect compliance and have low significance, are currently still open. These findings are related to conscious decisions made to improve operational processes that are not yet reflected in the current UPU – GMS TD document.

We note that the Compliance and Audit Process (CAP) expert team has been working with IPC and China Post to identify the source of the problem reported in 2018 for ‘Test items not reaching destination’ (Finding ID 3 in 2018) and developing recommendations that, in some cases, will be considered in the third edition of the UPU GMS TD. A final status of the investigation has not yet been reached and a new pilot will be continued.

This report has been prepared solely for the use of UPU in connection with the audit as requested by the UPU IB and should not be quoted in whole or in part without our prior written consent. No responsibility to any third party is accepted as the report has not been prepared for, and is not intended for, any other purpose.

The procedures performed by us do not constitute either an audit or a review made in accordance with International Standards on Auditing or International Standards on Review Engagements. Consequently, we do not express any assurance on the information included in this report.

Table of Contents

1. Executive Summary	3
2. Scope of our work	5
3. Audit Methodology and Process	6
4. Audit results	8
Annexes	14
A1 Rating Criteria	15
A2 Work performed	16

2. Scope of our work

The main objective of the external audit was to assess whether the methodology, its implementation and the calculation of QS measurement results by the two MSPs were compliant with the UPU – GMS TD document in 2020.

The scope covered the following areas and components:

- Quotas – Panel Management and letter production audit
- Kantar – Panel Management and letter production audit
- IPC UNEX UPU TD – Panel Management audit
- UPU GMS – RFID and Panel Management audit
- Kyubi System – RFID audit
- Lyngsoe Systems – RFID audit
- Verification of the statistical design (incl. allocation of links and items)
- Recalculation of the Performance Measurement
- Recalculation of validation of item
- Verification of bundling

It also covered the following areas of the UPU – GMS TD document:

- Calculation and reporting of Quality of Service results
- Panel Management
- Quality control and validation
- RFID Diagnostic Monitoring



3. Audit Methodology and Process

Based on our postal measurement experience, we developed specific audit procedures that we applied in this engagement.

We performed an assessment of the current postal measurement procedures that will allow UPU to understand the quality of service they are getting from their service providers in comparison with what is required by the UPU – GMS TD 2nd Edition (TD) document. We also provide clear insight on where improvements are needed and clear enforceable recommendations.

Our approach is:

- Independent
- Comprehensive
- Reliable and robust
- Statistically accurate
- Quality-driven and standardised
- Tested and proven over many years
- ISO9001 consistent

In our approach, we leveraged local teams already experienced with UPU IB and IPC.

While the methodology is standardised, PwC recognises that each client's environment and requirements are different. Hence, we customised it for this specific task, focussing on the four areas in respect of compliance to the UPU – GMS TD document:

- Calculation and reporting of Quality of Service results
- Panel Management
- Quality control and validation
- RFID Diagnostic Monitoring

Our methodology was underpinned by the following tasks:

- Understanding the requirements of the UPU – GMS TD document.
- Assessing the risks and mapping all elements in focus to our specific audit process (ref. diagram 1). We produced a viable, solid and efficient work plan.
- Collect information in appropriate mode: we know what should exist and how it can be assessed.
- Obtaining during the UPU and IPC interviews information and documentation by exchanging experience on postal measurement management with like-minded PwC people.
- Performing efficient walkthroughs with very experienced and skilled individuals speaking to the key service supplier people.
- Understanding deviations and confirming them with follow-ups. Performing recalculations wherever appropriate, leveraging our specific tools for this purpose.
- Formulating preliminary reports that can be validated.
- Producing a final report that is adequate for management and for those who have to work with it.
- Findings are formulated in a way that will help follow-up actions and improvements.

This methodology was used from the first year, confirming situation and progress, leveraging all of the experience from previous years.

Audit process



Process execution against design at MSP and at organization managing the systems

Operations and IT set-up	Data collection, validation, organization and transmission for implementation of statistical design	Recruitment of panelists Panel performance management through KPIs Incentive management Panel training	Generation and preparation of test mail items Programming and integration of RFID tags Dispatch of test mail items	Test mail circulation Registration of induction and delivery information and return of test mail items	Data entry and validation of panelist induction and delivery data Evaluation of panelist data Validation of panelist data against RFID data Diagnostic monitoring	Data analysis Exception reporting Proactive analysis to identify potential project risks Accuracy of calculations	KPI(s) Reporting according to timetable Recommendation from site survey process	Archiving of test mail items	Contingency planning Quality controls KPIs Change management process Process monitoring
--------------------------	---	---	--	---	--	--	---	------------------------------	---

Demonstrating understanding of GMS technical design by Measurement Service Partner (MSP)

Existence and extent of documentation for all audited areas
 Correct application of GMS technical design
 Implementation of country specific design parameters
 Implemented internal controls framework

4. Audit results

4.1. Results per audited area

Based on our procedures performed, nothing came to our attention that caused us to believe that the activities performed by UPU GMS, by UNEX UPU TD measurement system or by the service providers in the audited areas were not compliant with the UPU – GMS Technical Design 2nd Edition document.



The following table provides an overview of the results over the audited areas. When we noted at least one non-compliant finding, we marked the area as red; otherwise, it is marked yellow when there was at least one partially compliant finding. Areas are marked as green when no compliance issues were detected in the given area. The numbers included in the table below indicate how many findings were identified per measurement area (in total 2, see detailed list in chapter 4.2).



Measurement Areas	UNEX UPU TD meas.	UNEX UPU TD meas. – PMC – Kantar	UPU GMS meas.	UPU GMS - PMC -Quotas	Kyubi System	Lyngsoe Systems
A. Statistical design (sample design)					N/A	N/A
B. System configuration and inputs					N/A	N/A
C. Panel management		2			N/A	N/A
D. Mails production					N/A	N/A
E. Mails circulation (distribution/sending/receiving)					N/A	N/A
F. Data collection, validation and processing					N/A	N/A
G. Transit time calculations					N/A	N/A
H. Statistical Analysis					N/A	N/A
I. Reporting					N/A	N/A
J. Archiving					N/A	N/A
K. Quality Control					N/A	N/A
L. RFID Diagnostic Monitoring system						

Compliance rating: Compliant Partially compliant Non-compliant

4.2. Detailed findings


The following list shows the current identified and open findings.

Find- ing ID	Area ID	Area Description	Assess- ment Area	Compliance	Issue description	Significance	Recommendation / As- sessment results
1	C1	Panellists' recruitment questionnaires to ensure that UPU-specific recruitment requirements are satisfied	UNEX UPU TD measurement - PMC - Kantar	 Partially compliant	<p>Panellists' retention period</p> <p>The panellists were not informed, as part of the hiring process, about the requirement that they should be willing to participate for at least six months. This is not fully in accordance with chapter 7.2 of the UPU – GMS TD document: "In all cases, panellists: [...] should be willing to participate for at least six months".</p> <p>However, we noted that the approach generally used to reduce the risk of not having the necessary number of panellists is not addressed by formally requesting the panellist to commit for at least six months but by having and managing back-up panellists.</p> <p>Finding remains open and unchanged in 2019.</p>	 Low	<p>We recommend either implementing a clause in the recruitment questionnaire to ensure the panellist is aware that he/she is expected to participate for at least six months or agreeing with UPU on updating the formulation of the TD.</p> <p>The UNEX UPU TD measurement system and Kantar do not fully agree with the recommendation as they express concerns because being formally bound by such a retention requirement may put off panellists from staying at least six months on the panel.</p> <p>Therefore, we suggest the UPU GMS measurement system and UNEX UPU TD measurement system formally agree on the next steps and assess whether the recommendation needs to be implemented or the formulation of the TD can be adjusted.</p>

Find- ing ID	Area ID	Area Description	Assess- ment Area	Compliance	Issue description	Significance	Recommendation / As- sessment results
2	C6	Process of panellists' training	UNEX UPU TD measure- ment - PMC – Kantar	 Partially Compliant	<p>Training of Panellists</p> <p>There was no formalised way to assess whether panellists have been sufficiently trained before starting to act as a panellist. However, we noted that the panellists' performance was monitored and that, in the case of low performance, the panellist was retrained.</p> <p>The UPU – GMS TD document (chapter 7.3) mentions that “training should confirm that the panellist has understood the task involved and is able to carry it out as instructed”.</p> <p>In addition, the documented training programme for newly recruited panellists does not cover the topics on how to indicate the condition of the item received (envelope damaged, address label damaged or not fully legible, transponder missing, etc.). This is not fully in line with UPU – GMS TD document (chapter 7.3.2) where it states “instructions should indicate: [...] how to indicate the condition of the item received (envelope damaged, address label damaged or not fully legible, transponder missing, etc.)”.</p> <p>Finding remains open and unchanged in 2019.</p>	 Low	<p>We recommend implementing an assessment process to ensure the knowledge of the panellist is tested before involving her/him as an active panellist.</p> <p>In addition, we recommend adding to the instructions provided to panellists a section on how to indicate the condition of the item received.</p> <p>The UNEX UPU TD measurement system and Kantar do not fully agree with the recommendation as they express concerns because they believe that training guidelines (via video, long-form written and FAQs) provide a comprehensive introduction to panellists' tasks. In addition, they monitor their panellists to confirm that they understand their duties. If deviations are observed, panellists will be retrained or dropped as appropriate.</p> <p>Therefore, we suggest the UPU GMS measurement system and to UNEX UPU TD measurement system formally agree on the next steps and assess whether the recommendation needs to be implemented or the formulation of the TD can be adjusted.</p>

Find- ing ID	Area ID	Area Description	Assess- ment Area	Compliance	Issue description	Significance	Recommendation / As- sessment results
3	-	-	UNEX UPU TD measure- ment – UPU GMS		<p>Test items not reaching destination</p> <p>We noted that the UNEX UPU TD measurement system was affected by a large number of test items not reaching destination, even after a long period of time, despite being induced according to the TD document.</p> <p>In particular, no items at all induced between June 2018 and October 2018 reached the destination countries. Starting in November 2018, items were registered again: 12 out of 1,178 in November 2018 and 33 out of 1,141 in December 2018. Please refer to section Update 2019 for the current situation.</p> <p>Since the items were produced in line with the TD document and there are no indications they were not induced, this is not considered as a non-compliance matter, but the number of valid test items falling below the recommendations of the TD is influencing the performance measurement of the receiving countries. No similar pattern for the UPU GMS has been identified. The issue is known to UNEX UPU TD measurement and to UPU GMS, but no root cause has yet been identified.</p> <p>Update 2020:</p> <p>We acknowledge that the CAP has been running a pilot with IPC and China Post aiming to identify the reasons of the problem and to resolve it. The pilot has been producing base information on the problem, identifying issues related to the problem and formulating recommendations.</p> <p>The consequences of the problem have been addressed by introducing the re-weighting procedure. The investigation will be continued with a new pilot.</p> <p>The resolution and the activities have been strongly affected by the COVID emergency.</p> <p>Finding remains open in 2020, Significance is lowered to Medium</p>	<p>🟡 Medium</p>	<p>It is recommended to continue the investigation as planned by the CAP together with IPC and China Post until a clear resolution is found.</p>

Compliance rating:  Compliant  Partially compliant  Non-compliant

Significance rating:  Low  Medium  High

4.3. Impact of COVID on GMS measurement

The COVID-19 pandemic has impacted the world dramatically from a human perspective, with many lives lost and causing pain for many while creating a health, social and economic emergency.

It also disrupted many business processes, especially transportation. The postal services have suffered significantly and the consequences have also been severe for the GMS measurement.

The biggest effects we have seen are related to

- the production of test items, which in one case was blocked at one service provider for 5 weeks due to a government-imposed lockdown at the production site;
- the low rate of return of semi-active transponders to production units due to circulation delays;
- the dispatching of items to the sending panellist as the panellist sender packs were delayed by restrictions;
- panellists being locked down and not able to drop items;
- the uncertain transportation of items to destination countries due to flight cancellations and increased travel times; and
- the higher effort needed to validate items, for example because of incomplete information or a long transit.

On the other hand, we noted a strong reaction to keep the measurement alive. The key actions and decisions were:

- initiatives to maintain contact with the panellists even if no item was delivered and rewarding them even in lockdown periods;
- taking into consideration long transits for validity purposes;
- keeping to the production plans, but cancelling a sending if a delay would cause an overlap with another sending in order to avoid bundling;
- preparing contingency plans to produce and send even in lockdown situations or to resume production after a shutdown has occurred.

We acknowledge the tremendous effort by all the participants in the GMS measurement.

As a consequence of the restrictions related to COVID, there was a very large number of filings for cases of force majeure. These have been and are currently being reviewed and approved by the Validation and Review Committee for deletion of items according to the rules defined in the POC Report on the work of the Quality Link User Group 24.11.2020 document.

As stated by the POC, the application of 'deletion for force majeure' can cause the number of valid test items to fall below the acceptable data accuracy threshold needed to use the GMS measurement for the quality link terminal dues. To address this risk, the POC has allowed the use of historical data under certain conditions.

4.4. Assessment of RFID service providers

Based on our experience, we have developed an assessment for RFID service providers and applied it for Lyngsoe Systems, Kyubi System and UPU. The assessment covers the reliability of the solution, RFID data integrity and the operation of the readers, processors and collection and monitoring systems. The results have not identified any insufficiencies of these providers and we noted the developments all of them have made towards standardisation and best practices by leveraging new technologies.

4.5. Points of attention for the POC

Points of attention of the 2019 reports have been considered.

The following point for 2020 does currently not represent a compliance issue, but we suggest the POC to analyse it and potentially take preventive action.

ID	Title	Description	Suggestion	Status in audit
1	Impact of change from semi-active to passive transponders	<p>We noticed that, during the year, postal operators have been switching from semi-active to passive transponders, in some case due to the restrictions of carrying lithium batteries on flights. It appears that, in some cases, the switch over was related to delays in delivering data to the measurement, with an operational impact on the service providers.</p> <p>We also noticed that for service providers preparing the test items switching is not always a simple activity.</p>	We suggest analysing with postal operators and with the service providers the real effort for switching, defining contingency plans if decisions need to be taken to switch from semi-active to passive transponders.	The checks and sample recalculations on UNEX and GMS have not shown impact on the performance.



Annexes

A1 Rating Criteria

Compliance rating criteria




The compliance rating indicated the compliance of the different assessment areas with the UPU – GMS TD document.

Non-compliant means a clear violation of the UPU – GMS TD document.

Partially compliant means a minor deviation from the UPU – GMS TD document with no expected impact on the final measurement results. The significance rating provides indication on the severity and on the priority. Partial compliance can be related to

- a decision to deviate in order to improve quality in certain areas,
- a different interpretation of the UPU – GMS TD document or
- a minor mistake in applying the rules.

Compliance rating:




-  Compliant
-  Partially compliant
-  Non-compliant

Significance rating criteria

The significance is an estimation of the impact on the measurement of the identified issue.

- Low means no impact on the measurement results.
- Medium means an impact on the measurement results that should be analysed, but expectation is that the impact does not change the measurement.
- High means that the measurement result is affected, and the implications should be analysed in detail.

Significance rating:

-  Low
-  Medium
-  High

A2 Work performed

Lyngsoe Systems

Date	09.02.21
Location	Remotely via E-Mail and videoconference
Attendees	Jesper Boller (Lyngsoe Systems) Daniel Cirstoiu (Lyngsoe Systems) Angelo Mathis (PwC Switzerland) Orce Kitanov (PwC Switzerland) Simon Marti (PwC Switzerland)
Covered areas	Via virtual meeting, the following areas were assessed: <ul style="list-style-type: none">• RFID readers and processors (proven technology, continuity , data transfer, security)• RFID Diagnostic Monitoring System (proven technology, continuity , data transfer, access management)• RFID Data integrity (equipment, data loss, time stamps, manipulation)• Operation (incident Management, change management and access management)

Quotas

Date	26.11.20, 30.11.20
Location	Remotely via E-Mail, videoconference, virtual walkthrough of production premises
Attendees	Isabel Meier (Quotas) Daniel Kulms (Quotas) Daniele Costa Hoster (Quotas) Jens Ebering (Quotas) Manfred Stumpf (Quotas) Angelo Mathis (PwC Switzerland) Orce Kitanov (PwC Switzerland) Simon Marti (PwC Switzerland)
Covered areas	With a remote conference and a virtual walking through the production premises the following areas were assessed: <ul style="list-style-type: none">• Panel management• Mail production• Mails circulation (distribution / sending / receiving)• Data collection, validation and processing• Archiving• Quality Control An end-to-end production cycle has been verified in a virtual walking tour, viewing the activities and the controls performed

IPC and Kantar

Date	02.12.2020
Location	Remotely via E-Mail, videoconference, virtual walkthrough of production premises
Attendees	Ingrid De Roover (IPC) Ana Cejalvo (IPC) Sebastian Mann (Kantar) Aidan Lawrence (Kantar) Karen Lee (Kantar) Talita Maira Ferrera (Kantar) William Hussey (Kantar) Ali Akkas (Kantar) Jonathan Willoughby (Kantar) Marta Kalita (Kantar) Angelo Mathis (PwC Switzerland) Orce Kitanov (PwC Switzerland) Simon Marti (PwC Switzerland)
Covered areas	With a remote conference and a virtual walking through the production premises the following areas were assessed: <ul style="list-style-type: none">• Panel management• Mail production• Mails circulation (distribution / sending / receiving)• Data collection, validation and processing• Archiving• Quality Control An end-to-end production cycle has been verified in a virtual walking tour, viewing the activities and the controls performed

Kyubi System

Date	09.02.21
Location	Remotely via E-Mail and videoconference
Attendees	<ul style="list-style-type: none">• David Lozano (Kyubi System)• Orce Kitanov (PwC Switzerland)• Simon Marti (PwC Switzerland)
Covered areas	Via virtual meeting, the following areas were assessed: <ul style="list-style-type: none">• RFID readers and processors (proven technology, continuity , data transfer, security)• RFID Diagnostic Monitoring System (proven technology, continuity , data transfer, access management)• RFID Data integrity (equipment, data loss, time stamps, manipulation)• Operation (incident Management, change management and access management)

UPU

Date	11.11.20, 17.11.20, 24.11.20, 26.11.20, 04.02.21
Location	Remotely via E-Mail and videoconferences
Attendees	Antonio Caeiro (UPU IB) Julius Tsuwi (UPU IB) Cesar Allende (UPU IB) Angelo Mathis (PwC Switzerland) Orce Kitanov (PwC Switzerland) Simon Marti (PwC Switzerland)
Covered areas	Via virtual meetings, the following areas were assessed: <ul style="list-style-type: none">• RFID readers and processors (proven technology, continuity , data transfer, security)• RFID Diagnostic Monitoring System (proven technology, continuity , data transfer, access management)• RFID Data integrity (equipment, data loss, time stamps, manipulation)• RFID Operation (Incident Management, change management and access management)• Statistical design (incl. Allocation of Items)• Panel management• Mail production• Mails circulation (distribution / sending / receiving)• Data collection, validation and processing• Reporting• Archiving• Quality control• Recalculation Performance Measurement• Validation Rules

On the base of a sample of countries following recalculation have been performed:

- Verification of the statistical design (incl. allocation of links and items)
- Recalculation of the Performance Measurement
- Recalculation of validation of item
- Verification of bundling

