UPU-Agreed Measurement Systems External Audit 2019

Universal Postal Union
International Bureau

Audit Report February 2020

pwc

1. Executive Summary

The Universal Postal Union Global Monitoring System (UPU GMS) has been running Quality of Service measurements since 2009, starting with 21 countries. This number rose over the years reaching 49 in 2019, that participate 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 UNEX measurement system for which 14 countries in 2019 were also measured and participate in the QS link. Thus, with two UPU-agreed measurement service providers (MSPs) measuring 69 countries for the QS link purpose calls for transparency and reliability in the measurement output to give the needed confidence in going forward in the quality of postal service delivery for each measured country 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 (UPU GMS TD) with following scope:

- RFID diagnostic monitoring
- Panel Management Update Testing
- Calculation and reporting of Quality of Service Results

As part of the audit, we leveraged in the year 2018 defined working program for RFID and applied it during the site visit at the UPU International Bureau (UPU IB) in Bern, Switzerland and applied it as well remotely at LYNGSÖE (Denmark) and Kyubisystem (Spain). Other audit procedures were either conducted on-site (i.e., at the UPU IB) or remotely, i.e., the follow ups at IPC, Quotas, TNS Kantar. Further areas were audited in close contact with key contact person at the UPU IB or IPC (i.e., the verification of the statistical design, the performance measurement recalculation, the RFID Trend Analysis as well as other topics as per above.

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 Technical Design document.

We noted the three findings (Finding ID 1-3: retention and training of panellists) from the audit 2018 only partially affecting compliance with a low significance, are currently still open. These findings are related to conscious decisions made to improve operational processes that are not reflected yet in the UPU – GMS Technical Design document

The finding from the audit 2018 related to “Test items not reaching destination” (Finding ID 4 in 2018), does still not directly affect the compliance, but has high relevance for the measurement, since the identified circumstances are reducing the valid on target (VOT). This topic is currently under investigation by the Compliance Audit Process (CAP) expert team in association with other parties. We analyzed the approach and methodology used to investigate on the issue and consider it appropriate to provide substantial additional information to create transparency on the issue. We deem this transparency as important to eventually perform a root cause analysis and to provide a satisfactory solution to the issue. Note that at the time of issuing this report, the result of the investigation is still pending.

This report has been prepared solely for the use of 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.

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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 Technical Design document in 2019.

The scope covered following areas and components:

- LYNGSÖE - RFID Follow Up audit
- Quotas – Panel Management Follow Up audit
- TNS Kantar – Panel Management Follow Up audit
- IPC UNEX UPU TD–Follow Up audit
- UPU GMS – RFID and Follow Up audit
- Kyubisystem – Site Survey and RFID Follow Up
- Review of China field test methodology
- Review of Reweighting procedure
- Verification of the Statistical Design (incl. Allocation of Items)
- Recalculation of the Performance Measurement
- Review of applied Validation Rules
- Trend Analysis (RFID read rates)

It also covered the following areas of the UPU – GMS Technical Design 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 Technical Design 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 on local teams already experienced with UPU IB and IPC.

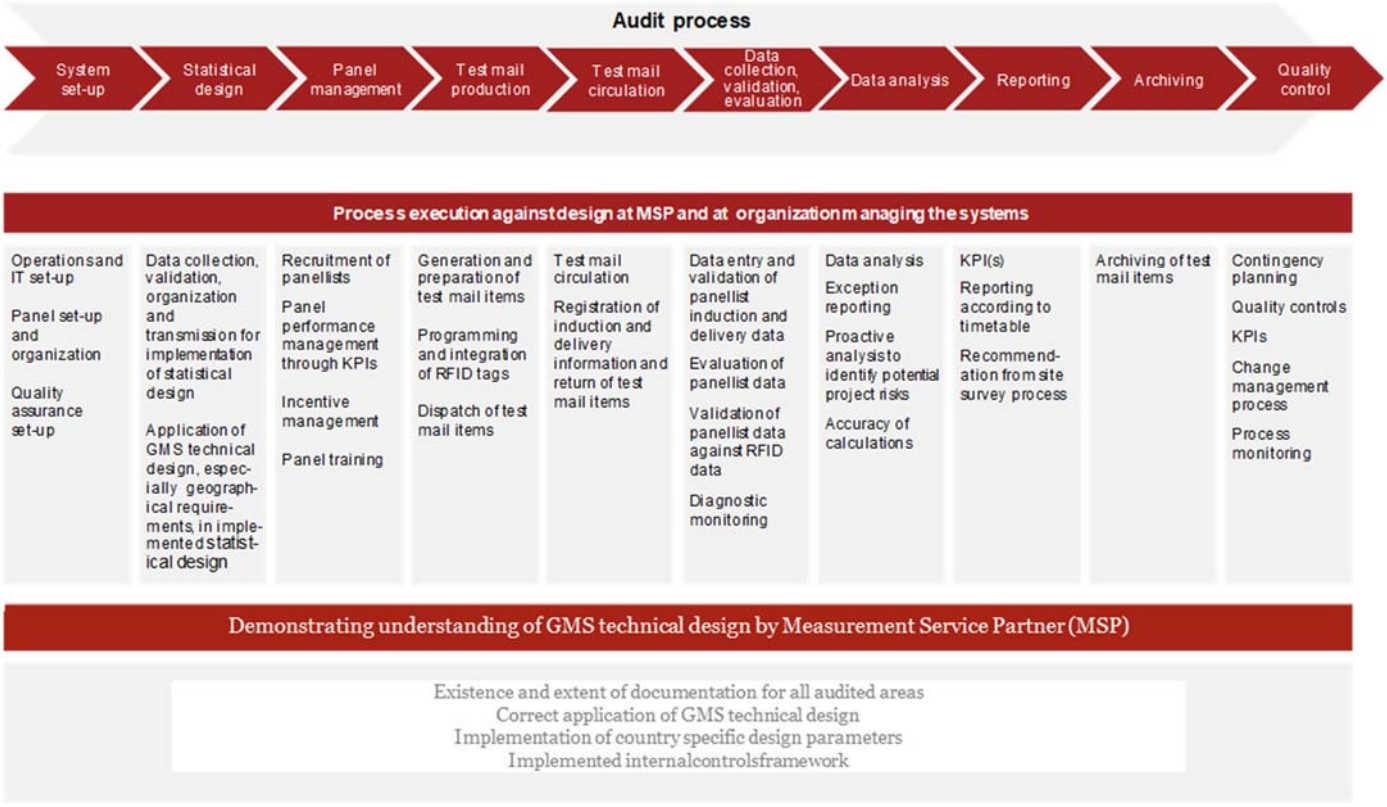
While the methodology is standardised, PwC recognises that each client's environment and requirements are different. Hence, we customised it for this specific task, focusing on the four areas in respect of compliance to the UPU – GMS Technical Design document:

- 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 Technical Design document
- Assessing the risks and mapping all elements in focus into 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 the existing can be assessed.
- Obtaining during the UPU and IPC interviews information and documentation by exchanging experience with 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 on 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 form that will help follow-up actions and improvements.

This methodology will also be applied in the following years, confirming situation and progress, leveraging on all structured experience from the first year.


Audit process
System set-up
Statistical design
Panel management
Test mail production
Test mail circulation
Data collection, validation, evaluation
Data analysis
Reporting
Archiving
Quality control
Process execution against design at MSP and at organization managing the systems
Operations and IT set-up
Panel set-up and organization
Quality assurance set-up
Data collection, validation, organization and transmission for implementation of statistical design
Application of GMS technical design, especially geographical requirements, in implemented statistical design
Recruitment of panellists
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 panellist induction and delivery data
Evaluation of panellist data
Validation of panellist 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 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 partial 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 4, see detailed list in chapter 4.2).

Measurement Areas	UNEX UPU TD meas.	UNEX UPU TD meas. – PMC – TNS	UPU GMS meas.	UPU GMS - PMC -Quotas	Kyubisystem	LYNGSÖE
A. Statistical design (sample design)					N/A	N/A
B. System configuration and inputs					N/A	N/A
C. Panel management		2		1	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.

Finding ID	Area ID	Area Description	Assessment Area	Compliance	Issue description	Significance	Recommendation / Assessment results
1	**C1**	Panellists' recruitment questionnaires, to ensure that UPU-specific recruitment requirements are satisfied	**UNEX UPU TD measurement - PMC - TNS**	Partially Compliant	**Panellists' retention period** 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 Technical Design document: "In all cases, panellists: [....] should be willing to participate for at least six months;" 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 backup panellists. **Finding remains open and unchanged in 2019.**	Low	We recommend either implementing a clause in the recruitment questionnaire to ensure the panellist is aware that he is expected to participate for at least six months or agreeing with UPU on updating the formulation of the technical design. The UNEX UPU TD measurement system and TNS do not fully agree with the recommendation as they express concerns because being formally bound by such a retention requirement may put off panellists of staying at least six months on the panel. Therefore, we suggest to the UPU GMS measurement system and to UNEX UPU TD measurement system to formally agree on the next steps and assessing whether the recommendation needs to be implemented or the formulation of the TD can be adjusted.

Finding ID	Area ID	Area Description	Assessment Area	Compliance	Issue description	Significance	Recommendation / Assessment results
2	**C6**	Process of panellists' training	**UNEX UPU TD measurement - PMC - TNS**	Partially Compliant	**Training of Panellists** 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 panellist performance was monitored and that in case of low performance the panellist was trained again. The UPU – GMS Technical Design 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" In addition, the documented training program 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 Technical Design 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.)". **Finding remains open and unchanged in 2019.**	Low	We recommend implementing an assessment process to ensure the knowledge of the panellist is tested before involving her/him as an active panellist. In addition we recommend adding to the instructions provided to panellists a section on how to indicate the condition of the item received. The UNEX UPU TD measurement system and TNS 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 panellist 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. Therefore, we suggest to the UPU GMS measurement system and to UNEX UPU TD measurement system to formally agree on the next steps and assessing whether the recommendation needs to be implemented or the formulation of the TD can be adjusted.

Finding ID	Area ID	Area Description	Assessment Area	Compliance	Issue description	Significance	Recommendation / Assessment results
3	**C1**	Panellists' recruitment questionnaires, to ensure that UPU-specific recruitment requirements are satisfied	**UPU GMS - PMC -Quotas**	Partially Compliant	**Panellists' retention period** 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 Technical Design document: "In all cases, panellists: [....] should be willing to participate for at least six months;" 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 backup panellists. **Finding remains open and unchanged in 2019.**	Low	We recommend either implementing a clause in the recruitment questionnaire to ensure the panellist is aware that he is expected to participate for at least six months or agreeing with the UPU on updating the formulation of the technical design.

4	-	-	**UNEX UPU TD measurement – UPU GMS**		**Test items not reaching destination** We noted that the UNEX UPU TD measurement system was affected by a large amount of test items not reaching destination even for a long period of time, despite being induced accordingly to the the TD document. 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 1178 in November 2018 and 33 out of 1141 in December 2018. Please refer to section Update 2019 for the current situation. 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, but the number of valid test items going 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 been yet identified. **Update 2019:** We acknowledge that the CAP currently runs a pilot with the objective to validate, by use of RFID registration: 1. the Leg1 route of the pilot test mail from panellist posting/induction postcode to dispatch office of exchanges (OE) and/or airmail unit (AMU); 2. the dispatch OE/AMU of the pilot test mail; 3. percentage of pilot test mail with at least one registration in the source country but does not reach their destination.	● High	It is recommended investigating on the reasons for missing travelling items involving the designated operator (DO). We suggest that the investigation is performed either jointly or managed by the POC.

		At the current stage there are some preliminary results available, with a certain number of test items marked as received in several of the 14 pilot destination countries, with registrations in all test weeks. However, no concrete conclusion could be yet made. The UPU CAP is still investigating on the issue and initiates further work on the preliminary results provided above. **Finding remains open in 2019.**	

Compliance rating: Compliant Partially compliant Non-compliant

Significance rating: Low Medium High

4.3. Additional observations related to the audit

The following list shows observations that are not considered as findings but that are relevant to the performance measurement.

Reweighting:

We noted that due to a reduced VOT on several links for different reasons the POC decided to introduce and apply for the 2018 performance calculation a re-weighting rule after completion of the audit activities performed for the 2018 report. We analyzed the approach used by UPU and IPC for the reweighting in 2018 performing as well sample calculation and we do note that approach and recalculated results are in line with the POC decision. The application of the weighting rule for 2019 being still subject to the approval of the POC at the moment when we performed the audit, we cannot comment on its application on the final results of 2019.

Semi-active transponder shortage:

Due to the current field test on the ongoing China issue there has been a shortage on active transponders at the GMS service provider. Items have been sent in several cases without active transponder, leading to the items to be not considered in the reports and reducing the number of valid items. This issue is handled by the re-weighting solution approach.

4.4. Points of attention for the POC

The following points do not represent currently a compliance issue, but we suggest the POC to analyses them and eventually take preventive actions

ID	Title	Description	Suggestion	Status in audit
1	Validation rules	There are some differences in the wording used between MSPs around validation (e.g., what is a valid item) and on using data in reports. POC has been defining in 2019 Basic test item validation rules. The application of these rules could have different interpretations based on definitions and could to different actions by GMS and UNEX. For example, items are duded after long end-to-end time in UNEX and not in GMS. Differences in validation rules could drive to an asymmetric treatment of operators if duded items are not statistically in line with the items used in the performance calculation.	Establish with both MSPs a common definition of valid item and map the current applied validation rules of both MSP against the POC Basic test item validation rules as defined in POC C 2 2019.1	The checks and sample recalculations on UNEX and GMS against the POC rules have not shown significant impact on the performance.
2	Communication inefficiences on site installation changes	Some operators are performing changes on their site installations and they are not communicating it afterwards. POC has been identifying this as an issue and has planned and performed a large number site survey, identifying for example, a relevant change at one operator not communicated.	Even if site visits are a good measure to identify deviations, it could be valuable to improve communication processes in order to avoid these issues.	No action planned. Impact on the measurement is a reduced VOT and this is expected to be taken care by the reweighting approach decided by POC if VOT is under minimum expectation.

3	Audit of RFID Gate providers	There is an increasingly number of service providers dealing directly with operators and there is not a systematic GMS approach to enforce compliance and to standardize their regular audit.	Since a centralized audit may not be the most efficient approach, we suggest considering an audit approach based on a SOC ("System and Organization Controls") 2 report, which is designed to provide assurances about the effectiveness of controls in place at a service organization that are relevant to the security, availability, or processing integrity of the system used to process clients' information, or the confidentiality or privacy of that information. These reports can be produced by (local) independent third-party auditors.	No findings in regard to the follow ups performed at LYNGSÖE and Kyubisystem.

Annexes

A1 Rating Criteria

Compliance rating criteria

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

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

Partially compliant means a minor deviation from the UPU – GMS Technical Design 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 Technical Design 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 analyzed, but expectation is that the impact does not change the measurement.
- High means that the measurement result is affected, and the implications should be analyzed in detail.

Significance rating:

Low
Medium
High

A2 Work performed

LYNGSÖE

Date	13.12.2019
Location	Remotely via E-Mail questionnaire/WebEx/telephone conference
Attendees	Jesper Boller (LYNGSÖE) Sven Schlösser (LYNSÖE) Angelo Mathis (PwC Switzerland) Deniz Sari (PwC Switzerland)
Covered areas	Via meeting, the following areas were assessed: • RFID Diagnostic Monitoring System set-up (guidelines, technical setup) • RFID Data integrity (equipment, data loss, time stamps, manipulation) • Incident Management (process, tools)

Quotas

Date	06.12.2019
Location	Remotely via E-Mail questionnaire/WebEx/telephone conference
Attendees	Isabel Meier (Quotas) Daniele Costa Hoster (Quotas) Angelo Mathis (PwC Switzerland) Simon Marti (PwC Switzerland)
Covered areas	Via questionnaire, the following areas were assessed: • Panel management • Mail production • Mails circulation (distribution / sending / receiving) • Data collection, validation and processing • Archiving • Quality Control

IPC and TNS Kantar

Date	02.12.2019, 06.12.2019
Location	Remotely via E-Mail questionnaire/WebEx/telephone conference
Attendees	Bert Seghers (IPC) Ingrid De Roover (IPC) Sebastian Mann (TNS Kantar) Angelo Mathis (PwC Switzerland) Simon Marti (PwC Switzerland) Patrick Morandi (PwC Switzerland)
Covered areas	Via questionnaire, the following areas were assessed: • Panel management • Mail production

	• Mails circulation (distribution / sending / receiving) • Data collection, validation and processing • Archiving • Quality Control

UPU

Date	13.09.2019, 09.12.2019, 17.01.2020
Location	UPU IB in Bern, Switzerland
Attendees	Antonio Caeiro (UPU IB) Julius Tsuwi (UPU IB) Cesar Allende (UPU IB) Angelo Mathis (PwC Switzerland) Patrick Morandi (PwC Switzerland)
Covered areas	Via meeting, the following areas were assessed: • Statistical design (incl. Allocation of Items) • Panel management • Mail production • Mails circulation (distribution / sending / receiving) • Data collection, validation and processing • Reporting • Archiving • Quality control • RFID Diagnostic Monitoring System set-up (guidelines, technical setup) • RFID Data integrity (equipment, data loss, time stamps, manipulation) • Incident Management (process, tools) • China field test methodology • Reweighting Calculation procedure • Recalculation Performance Measurement • Validation Rules • Trend Analysis of RFID Read Rates

Kyubisystem

Date	20.12.2019
Location	Remotely via E-Mail questionnaire/WebEx/telephone conference
Attendees	• Eduardo Pérez (Kyubisystem) • Angelo Mathis (PwC Switzerland) • Patrick Morandi (PwC Switzerland)
Covered areas	Via meeting, the following areas were assessed: • Site survey coverage • On site installation compliance • Gate/handover point coverage by proper equipment • Change management process to subsequent installation changes • Physical security measures • Data integrity, data access • Monitoring and incident management for equimpent in use • Documentation of site acceptance tests • RFID Diagnostic Monitoring System set-up (guidelines, technical setup) • RFID Data integrity (equipment, data loss, time stamps, manipulation) • Incident Management (process, tools)