Study into An Post Operational and Revenue Derived Volume Reconciliation

A report prepared for

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1. Introduction

Postal and Logistics Consulting Worldwide (PLCWW) has been asked by the Commission for Communications Regulation (ComReg) to provide advice on the reconciliation of An Post's operational and revenue derived volumes.

2. Background

In 2015, ComReg appointed Frontier Economics to produce a report on the cost rules and other requirements to meet USP provider accounting obligations.[1] Following the publication of the report ComReg went out to consultation on its recommendations, a number of which were challenged by An Post, in particular the requirement to attempt to reconcile revenue-derived and operational mail volumes. Consequently, ComReg has requested expert assistance on this.

3. An Post Reported Mail Volumes 2011-2015

3.1 The unaudited volumes recorded by An Post over the last five years is outlined in the following figures. The total volume information and the 2015 volume information by format is from An Post's public Regulatory Accounts, while the volume information by format from 2011 to 2014 is included in a Confidential Annex to its Regulatory Accounts.

Figure 1: Comparison of Total revenue-derived and operational volumes 2011-2015

Total Volumes	2011	2012	2013	2014	2015	Increase or Decrease 2015 v 2011
Revenue derived (m items)	✂	✂	✂	601.4	559.0	✂ (✂%)
Operational (m items)	✂	✂	✂	614.0	584.2	✂ (✂%)
Difference (m items)	✂	✂	✂	12.6	25.2	✂

[1] Frontier Economics report on Cost rules and other requirements to meet USP provider accounting obligations published in November 2015.

Difference (%)	✂%	✂%	✂%	2.1%	4.5%	✂%

3.2 Figure 1 clearly shows that there is a significant difference between revenue-derived and operational volumes in each of the five years featured, although the gap narrowed significantly between 2011 and 2014, with an increase again in 2015. To understand the main differences for the gaps will require further analysis by different mail formats -see following figures.

Figure 2: Comparison of revenue-derived and operational volumes for Letters 2011-2015

Letter Volumes	**2011**	**2012**	**2013**	**2014**	**2015**	**Increase or Decrease 2015 v 2011**
Revenue-derived (m items)	✂	✂	✂	537.6	499.4	✂ (✂%)
Operational (m items)	✂	✂	✂	543.8	519.0	✂ (✂%)
Difference (m items)	✂	✂	✂	6.2	19.7	✂
Difference (%)	✂%	✂%	✂%	1.2%	3.9%	✂%

3.3 There is still a gap between the two methods, however, the difference for letters is generally less than the total difference when all formats are included. This is not surprising as An Post currently estimate that 92.5% of letters pass through sorting machines, where they are counted automatically[2], thereby underpinning its view that operational letter volumes are relatively accurate. Again, there is an improving trend in the gap between 2011 and 2014 but a widening again in 2015.

[2] An Post response to PLCWW report on Study into An Post Operational and Revenue Derived Volumes – File Note for Discussion September 2016

Figure 3: Comparison of revenue-derived and operational flat volumes 2011-2015

Flat Volumes	2011	2012	2013	2014	2015	Increase or Decrease 2015 v 2011
Revenue-derived (m items)	✂	✂	✂	45.1	42.6	✂ (✂%)
Operational (m items)	✂	✂	✂	36.1	39.7	✂ (✂%)
Difference (m items)	✂	✂	✂	(9.0)	(2.9)	✂
Difference (%)	✂%	✂%	✂%	20.0%	6.8%	✂%

3.4 Again, there is a discrepancy between the two methods for flats[3]. However, with the exception of 2011, the discrepancy is in favour of the revenue-derived method, unlike letters and the total. Whilst An Post quote that currently 73% of flats are machine sorted[4] and therefore recorded automatically, this leaves a far greater percentage being manually sampled compared with letters, although this would usually suggest a higher volume discrepancy in favour of operational volumes (as occurred in 2011) rather than the opposite impact that occurred in 2012-2015. Normally, the main explanation for such differences is that some items that are sold as letters are then transferred to the flats stream for operational handling, whilst items sold as flats are sometimes transferred to the packet stream for operational handling which will distort the comparisons between revenue-derived and operational volumes for each distinct format. The fact that there is a higher figure recorded for revenue-derived flats supports this conclusion.

[3] Also known as large envelopes or large letters

[4] An Post response to PLCWW report on Study into An Post Operational and Revenue Derived Volumes – File Note for Discussion September 2016

Figure 4: Comparison of revenue-derived and operational packet volumes 2011-2015

Packet Volumes	2011	2012	2013	2014	2015	Increase or Decrease 2015 v 2011
Revenue-derived (m items)	✂	✂	✂	18.7	17.1	✂ (✂%)
Operational (m items)	✂	✂	✂	34.1	25.5	✂ (✂%)
Difference (m items)	✂	✂	✂	15.4	8.4	✂ (✂%)
Difference (%)	✂%	✂%	✂%	82.4%	49.1%	✂%

3.5 The two methods for recording packet volumes show the widest disparity of any format. This perhaps is not surprising given that all operational packets are manually sampled using average bag fills (using average bag fill of 25 packets) or average ALT[5] fills (usually 155 packets per ALT). Revenue-derived packet volumes are based on the average weight of the item, whilst bag and ALT fills tend to be based on the volumetric dimensions of packets. Having said this, in 2014 An Post calculated that 87% of their packet volumes weighed 500g or less[6], suggesting that packets are of a relatively small weight and unless they were being posted in large packages containing low weight protective material, this would not explain the significant difference in the two methods of volume calculation. The other explanation is covered in para 3.4, i.e. items sold as flats are handled operationally as packets and are counted operationally as such.

[5] Auto Level Trough

[6] Frontier Economics report on Cost rules and other requirements to meet USP provider accounting obligations published in November 2015 – Annex 4 refers

4. Reasons for Discrepancies between different methods of volume calculation

4.1 In its Confidential Version of the Volume Information annex to the regulatory accounts, An Post quote two reasons why there are differences between revenue-derived and operational volumes, as follows:

- The revenue-derived and operational volumes are derived from fundamentally different systems and processes
- Real Mail Study (RMS) Sampling is undertaken to and accuracy of +/- 1% Estimation is required in operational volume counting, typically by the use of "Standard fill" assumptions

4.2 Whilst these reasons are substantially correct, there is no analysis or quantification as to the root cause or any suggested actions by An Post to correct or reduce the gap. Indeed, an analysis of the gaps identified in Figures 1-4 raise a number of questions that are not easily answerable in a rational manner. For example, the normal expectation is that operational volumes exceed revenue-derived ones – partly for the reasons mentioned by An Post but also because the systems and processes they use are not of the best standard, e.g. container fills are not regularly updated so are prone to more inaccuracy as customer posting habits change over time and by time of year.

4.3 Another reason is that in postal networks generally there is often an incentive for operational staff to exaggerate their workload – either unintentionally or deliberately. For example, weighted volumes are normally the basis for allocating managerial budgets, staff hour allocations (such as overtime for handling above-expected volume levels) and for assessing productivity and calculating potential productivity payments (although we do not believe that the latter currently applies in An Post).

4.4 Where operational volumes are based on machine data, such as letters and some flats, then they should be relatively accurate – certainly letters show the narrowest gap of all formats with a gap of only 1.2% in 2014, although for some reason this had increased to 3.9% in 2015 (see Table 2). Given the explanations outlined in paras 4.2 and 4.3 it is surprising that (with the exception of 2011) flats have shown that revenue-derived volumes, which are usually regarded as the more accurate of the two, exceeded operational volumes for the last four years – albeit in 2015 the gap had reduced to 6.8% from a high of 20% in 2014 (see Table 3). As outlined in para 3.4. I believe one of the main causes of the flat and packet gaps is that some items sold as flats are handled operationally as packets. This may also be the case for some letters, which are transferred for handling to the flats stream. An Post do not accept this explanation, but have offered no alternative reason or theory for this difference[7].

[7] An Post response to PLCWW report on Study into An Post Operational and Revenue Derived Volumes – File Note for Discussion September 2016

5. Reconciliation between Volume Counting Systems

5.1 An Post does not perform any reconciliation on its mail volume collection systems[8], even though this is regarded as international best practice[9] [10]. The background to this reconciliation is to ensure volumes are recorded accurately as these are the basis for a number of significant business and regulatory decisions. Indeed, reconciliation is only a process to provide confidence that stated volumes are as accurate as possible.

5.2 ***But why are accurate volumes by format (and service) important?*** There are a number of key reasons for this:

- Volumes by format determine workload which in turn determine the resources required to provide the mail service(s)
- Volume trends also determine which formats/services are growing or in decline which helps determine future trends and assists regulators in determining appropriate action in terms of tariff setting for the USP
- Volumes are important in helping assess cost allocations to products (particularly given the fixed cost nature of many operational activities) so that cost reflective pricing can be determined
- Volumes by format are important in underpinning the Real Mail Study, which needs to determine accurate volume flows between destinations to design and maintain the quality of service measurement system
- Weighted volume is used as a measure of mail productivity to determine the relative efficiency of a postal company and individual operational units[11]
- Furthermore, operational volumes, as An Post notes[12], are used in managing the operational performance of the business, that is, for example staffing levels (which are the main cost in the provision of postal services) are based on operational mail counts / flows. Therefore, operational mail volumes are an important input in assessing and controlling the costs of a postal business.

[8] Letter from An Post to ComReg on Audit of 2014 RMS, dated 24 March 2016

[9] In a 2013 study, the European Regulators Group for Postal Services (ERGP) confirmed that 60% of countries reconciled revenue-derived and operational volumes in their regulatory accounts.

[10] ✂ *(In Confidence)*

[11] Weighted Items per gross staff hour (WIPGH) is used by Royal Mail as its productivity measure. Different mail formats are given a weighting, e.g. letters are 1; flats may be 1.5 and packets may be 3 or higher. The weighted total is then divided by total paid for staff hours to determine productivity levels. See page 19 of Royal Mail 2015/16 Annual Report & Accounts http://www.royalmailgroup.com/sites/default/files/Annual%20Report%20and%20Accounts%202015-16_0.pdf

[12] Response to Accounting Direction consultation

5.3 As operational volumes based on mail formats are often used for all the activities outlined in para 5.2 then it is particularly important that operational volumes are accurate and reconcile with revenue-derived volumes.

5.4 I understand that in the UK, Royal Mail also has a gap between the two methods of volume calculation[13]. With two completely different measurement processes it expects a small gap to always be present. The larger gap is probably due to revenue being diluted through non-payments or underpayment of mail prices – which occurs, is difficult to quantify but is being tracked down through better revenue protection, as a high priority. The other possible reason is non-compliance to measurement. Neither of these reasons are acceptable in the longer term and Royal Mail are taking actions to improve the position[14].

5.5 If there is a very large parcel (packet) and large letter (flats) gap – in Royal Mail these are corrected as part of its monthly reconciliation statement (see para 5.1). Again, items sold as large letters (flats) are frequently moved into the parcel stream, and the same occurs for letters into large letters (flats). Such discrepancies need to be accounted for correctly before the gap is reported.

5.6 ✂. In the interim period a maximum 2% range for letters and 5% for flats and packets should be achievable providing An Post implemented a more robust operational measurement and sampling system accompanied by a robust revenue protection/mail segregation and an improvement diagnostic reconciliation system and action programme to explain and correct the gap.

6. Closing the Gap

6.1 It is clear that closing the gap between the two methods will require a concerted effort by An Post. Whilst more frequent sampling to update container fills for flats and packets may help (most letters are already machine counted) the data in Figures 1-4 seem to suggest that the biggest problems are the gaps identified for flats and packets, with the evidence pointing to items sold as flats (and recorded as flats in the revenue-derived figures) being handled operationally as packets as they are too large to be handled through the flat sorting machines or the flat manual fittings. If this issue could be resolved then it would probably have the greatest single impact on operational volume accuracy and in closing the gap.

6.2 I have compared the definitions for letters, large letters (flats) and small parcels (packets) between Royal Mail and An Post as both have similar automated sorting systems for letters and large letters with similar pricing regimes, with the exception of the maximum weight

[13] ✂ *(In Confidence)*

[14] ✂ *(In Confidence)*

limit[15]. There therefore appears to be no fundamental difference in advising customers of the maximum dimensions for letters and flats[16]. Part of the solution may be in better customer education – particularly at post offices where most flats and packets are posted or with firms who regularly post flats and packets. Indeed, there is a customer incentive to declare an item a flat rather than a packet as the price is significantly lower. Ultimately, therefore, this becomes an issue of revenue protection rather than container fill accuracy. It is therefore recommended that An Post reviews its customer communications on flats and packets and improves its revenue protection processes, not only to improve the accuracy of the format data but to ensure it is not losing revenue due to underpayment of "flats" that should be more correctly defined as packets. As a second measure, it should ensure that the issue is highlighted to revenue protection teams and staff responsible for mail segregation at mail centres to minimise the problem. Assuming this can be achieved then it would be expected that the investment in improved revenue protection would at worst be revenue neutral.

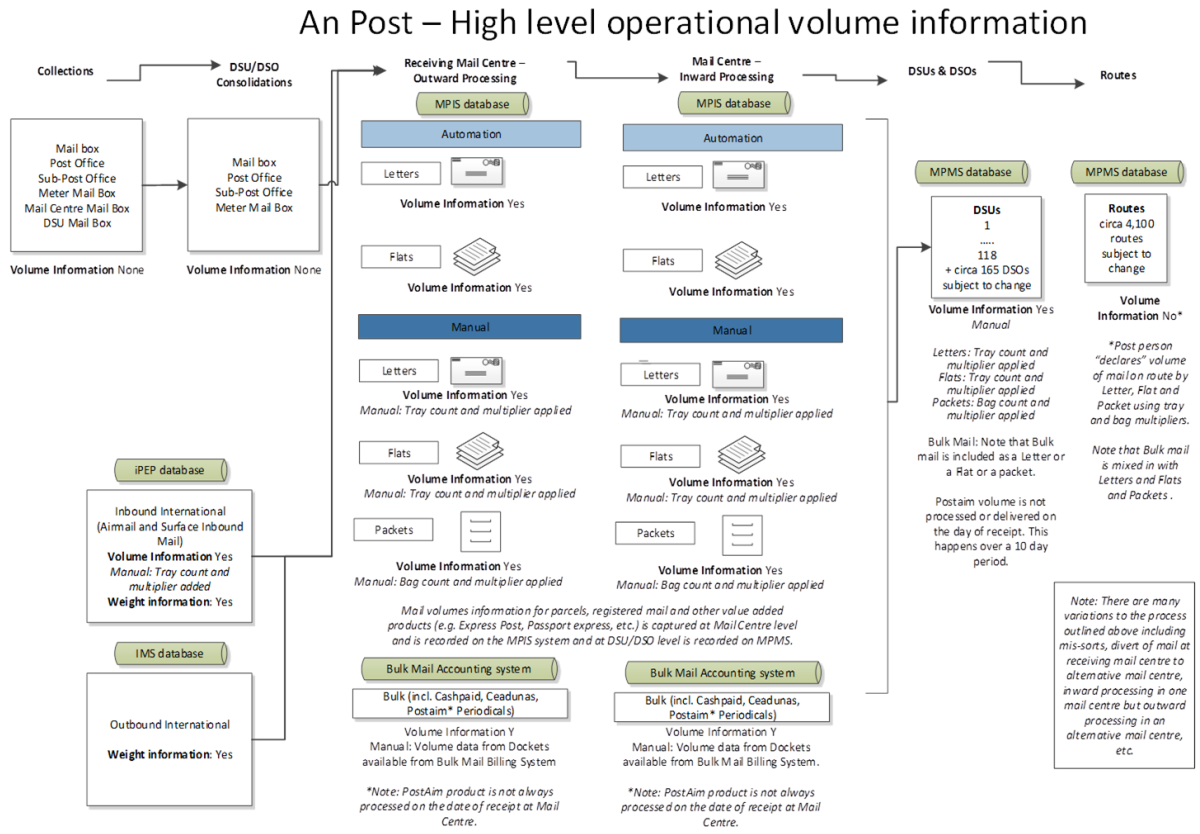
7. Implementation of Revised Sampling and Control Processes

7.1 In response to ComReg's consultation on Frontier Economics November 2015 report on accounting obligations, An Post challenged the need for a reconciliation between revenue-derived and operational volumes and claimed that to implement Frontier Economics' recommendations would cost €250,000 in one-off set up costs and €4.9 million ongoing costs, most of which would be incurred in delivery units (€3.75 million p.a.) and mail centres (€0.5 million p.a.), presumably to introduce quarterly container fill sampling. Whilst it is difficult to challenge An Post's calculations without fully understanding the detail of how it plans to undertake such measures (a summary of An Post's current operational measurement systems are outlined at Annex A and a graphical representation is shown at Figure 5), it is entirely feasible to produce more accurate operational volume data through the use of existing systems, thereby avoiding significant additional cost.

[15] The maximum weight of a large letter (flat) for An Post is 500g; the maximum weight for a large flat for Royal Mail is 750g.

[16] ✂ *(In Confidence)*

Figure 5: Map of An Post's operational measurement system



Source: An Post, 31 May 2016, Draft Process Flow v5.0

7.2 Indeed, if An Post adopted the option of using existing DSU walk count information to reconcile mail volumes then this would be a cost neutral way of obtaining more accurate confirmation of operational volumes – particularly for flats and packets. Whilst letter mail volumes appear to be measured fairly accurately at the outward (posting) stage through machine counts, flat and packet volumes have a wide variation between revenue and operationally derived methods. Whilst, this may be due in large to revenue protection issues, an amalgamation of data from MPMS at DSUs should reveal how many flats and packets have been posted in a certain period. If average container fill data is required for use elsewhere in the An Post pipeline then this could be achieved by dividing this data by the number of containers despatched to the DSU by the IMC. An average container fill could be calculated for each format, which could be interrogated at any interval required (daily, weekly, seasonally or annually). International inbound and Postaim items will need to be excluded from the equation but these could be easily identified by the postperson counting them, as Postaim often arrives in a separate container and could be excluded before the count proceeds, whilst international items are easily identified by the indicia and/or customs label (alternatively, international items could be ignored or assumed to form a small percentage of total items, which could be based on a national assumption comparing total terminal dues data with domestic data). Whilst this would not necessarily close the gap between revenue and operationally derived data (due to the issue of items paid for as flats being transferred to

the packet stream for operational handling in outward mail centres), it would provide a more accurate and up-to-date figure than using average container fill data.

7.3 Part of the solution would also require action from the An Post revenue protection teams and mail segregation teams at mail centres so that accurate recording of operational volumes could be understood, particularly where flats may exceed the current product definition and need to be handled as packets, as outlined in para 6.2.

7.4 As part of this process, it may be helpful for the An Post team to benchmark what occurs in other countries, e.g. in Royal Mail, to determine whether its systems could be adapted or improved.

8. Confidential Reporting

An Post is concerned that there may be an adverse competitive impact if some of the data requested by ComReg appears in the Regulatory Accounts. It is the case that some information can be sensitive to competitors. Elsewhere in Europe, competition is largely open in the packet/parcel area between USPs and private operators. For letters and flats, most competition to USPs has come from private operators - normally parcel operators who use their depot and transport networks to move mail in bulk. They may have their own delivery operations in urban areas or, more likely, use the USP for last-mile delivery (so-called downstream access). They are not normally interested in single item mail. However, as these are USO products, An Post does not face any effective competition for USO services in Ireland. However, potential competitors may be interested in details regarding certain formats, particularly packets (and possibly flats) so maintaining the existing practice of only including the reconciliation between revenue-derived and operational volumes in a confidential or redacted version of the regulatory accounts should continue.

9. Conclusions

In terms of the six main issues outlined by ComReg in its memo of 21 July I have come to the following conclusions

i) The current, and historical, difference between revenue-derived and operational volumes should be of major concern to An Post as not only does this call into question the accuracy of the volumes it is handling but may also be undermining the basis of its product costings and be a cause of revenue loss. It also compromises the whole process of regulatory decision-making, which relies heavily on the accuracy of volume data. Indeed, An Post has recently written to ComReg requesting a review of its price cap, partly due to unexpected greater volume declines in 2014 and 2015 and greater declines predicted in 2016 based on the existing price cap model[17]. Also, of concern, is that An Post have undertaken no root cause analysis on the reasons for the differences between both data sets – other than to point out that the methodology of each system is different.

[17] Letter from An Post CEO to ComReg dated 14 September 2016

ii) Whilst An Post claims that the reconciliation of revenue-derived and operational-derived volumes is not a 'reconciliation' in the accounting sense but rather a comparison – there is no reason why a reconciliation is not attempted – indeed, I believe this is best practice, as performed by a number of other European USPs. Whilst this may well identify a divergence, the important thing is that such a divergence should be investigated and explained and actions taken to correct it if it is outside acceptable defined limits.

iii) Mail volumes recorded at DSUs should be accurate as every flat and packet is counted daily, whilst letter volumes are mainly counted by machine so should also be relatively accurate. It should be possible to use this data to reconcile volumes at inward mail centres by dividing the actual volumes by format by the number of containers despatched daily from the mail centre to the DSU, which are also recorded daily on An Post's MPMS system. With some minor adjustments for international mail and bulk mail this should be adequate to provide relatively accurate domestic volume data by format.

iv) On the basis of the current volume measurement system used at the DSUs, I do not believe that An Post would require any significant additional resource to introduce such a measurement system, as the cost is already included in its current cost base.

v) Given that An Post's current systems should already be capable of providing more accurate operational volume data, then the additional costs that An Post has proposed to accurately report operational volumes do not appear to be justified.

vi) Whilst accepting that An Post may have some genuine concerns over the publication of the reconciliation of format-based revenue –derived and operational volumes in the public version of the Regulatory Accounts, it is important that such information is provided to ComReg on a confidential basis so that it can exercise its duties effectively in terms of pricing and other strategies.

10. Recommendations

For the reasons outlined in para 9 and elsewhere in this report, it is essential that An Post provides accurate volume data for each of its mail formats. In this respect, a reconciliation of revenue-derived and operational volumes is an important indicator of data accuracy and in line with international best practice. It is an exercise that An Post should undertake at least annually and report the results to ComReg. It is suggested that for the next five years, it should also investigate and report on the root causes of any differences in each format – letters that are in excess of 2% and flats and packets that are in excess of 5%, - together with

an action plan designed to close the gap to at least the accepted level. This should form part of the a formal reporting structure to ComReg, with An Post agreeing the exact format and timetable of such a reporting structure to ComReg prior to its live implementation. At the end of five years ComReg should review the "gap" with the aim of requiring An Post to reduce it further, e.g. to less than 2% for all formats.

Steve Hannon

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Annex A

Current Operational Volume Measurement Systems Used by An Post

A1. An Post currently captures volume data through three separate systems, as follows

i) MPIS (Mail Processing Information System) which records volume information at each of An Post's four mail centres

ii) MPMS (Mail Performance Management System) which records volume information and other operational data (e.g. coverage of deliveries) at each delivery office

iii) RMS (Real Mail Study) which records a sample of mail posted at input points (collection points) to assist in the design of the domestic quality of service measurement scheme

Each of these is covered in the following paragraphs

A2. MPIS

The MPIS system records mail volumes by service and format at both the outward processing and inward processing stages at An Post's four mail centres. Volumes of letters and flats that are processed by automation are machine counted. An Post estimates that 95% of letters are machine sorted and counted. Manually-processed letters and flats are placed in trays, with tray fills based on an average content fill figure (typically 275 items for a tray of manual letters and 70 for a tray of flats). Whilst tray fills are due to be reviewed annually, the same average fill figure has been in use since 2012. This is not best practice as mail formats can change over time. However, the difference between revenue-derived and operational volumes for letters in recent years has been relatively small (1.2% in 2013 and 3.9% in 2015) probably due to the fact that most letters are machine counted. Packets are all handled manually, so are all counted by the number of container fills multiplied by a standard fill figure (typically 25 per bag or 155 per ALT). Again, we understand that the standard fill figure has not been reviewed since 2012.

A similar process occurs in inward mail centres where letters and flats which are machine processed are counted by the machine whilst manual letters, flats and packets are based on the number of containers multiplied by the appropriate standard fill figure. The inward processing unit will also provide data on the number of containers despatched to each delivery office (DSU) by service and format, including number of walk-sorted letters (i.e. letters sorted by automation down to delivery route level).

A3. MPMS

MPMS is a separate system, which records volumes by service and format processed and delivered at DSU and DSO level. It is not linked to the MPIS system so does not use the data from that system nor does it attempt to reconcile volumes despatched from the inward mail centre (IMC) to those recorded at the DSU. The DSU will receive walk-sorted mail from the IMC, which is transferred directly to the delivery preparation frame for walk sequencing. All manual letters, including mail for any DSO served by the DSU, arrive in letter trays from the

IMC and are walk-sorted on the inward primary sorting frames at the DSU. Flats will also arrive in trays and be walk-sorted on the inward primary flat sorting frames at the DSU. All letters and flats will then be transferred to the appropriate walk sequencing frames. At the sequencing frame, all letters (including those already walk sorted by the IMC) are placed in trays, with trays being counted and multiplied by a standard tray fill to determine the number of letters to be sequenced for each walk before sequencing commences. Packets that arrive at the DSU, typically in bags, are walk sorted on the inward primary packet frames and then transferred to the appropriate walk. Each delivery postperson physically counts every flat and packet before commencing sequencing. At delivery walk level therefore there should be an accurate account of all flats and packets, in addition to a reasonably accurate number of letters (the latter being based on tray counts and standard fill assumptions). This data, along with other information, such as missorts and delivery coverage, is recorded on the MPMS system[18]. The physical item count by the delivery postperson appears to be an expensive method for determining walk volumes when sampling is used elsewhere in the An Post mails pipeline.

A4. RMS

RMS is currently used to inform the accuracy of the independent quality of service measurement system. Its purpose is to identify the volume of mail flows that need to be measured by the Q of S measurement system, so that the Q of S samples accurately reflect the reality of customers' experience.

The system is triggered by PwC who have outlined the framework for determining the basis of the measurement system. This requires An Post to detail annually all the mail input (collection) points in the country – mail boxes, meter boxes, post offices, mail centres and firms' pick ups. PwC then provide a sampling schedule for these input points, which are spread over the year. Collectors who are due to include a sample on their collection route are issued with a special bag label for the input point on the day it is due. The collector then seals the bag, records the actual time collected on the label and then returns to the collection centre where it is placed in a separate cage and transferred to the mail centre. At the mail centre the bag is transferred to a dedicated sampling point where samplers then count the items, sample a number of items based on a sampling frame and then record the details of the sampled items, e.g. payment method, weight, envelope colour and address destination. These details are recorded on a summary sheet and then transferred to An Post HQ where the information is collated and forwarded to PwC so that it can design the Q of S sampling framework for the coming year. The system is complex and costly and is prone to errors and inconsistencies[19].

[18] Information based on MPMS DSU Training Manual and meeting with An Post at Cavan on 17th August 2016

[19] In 2015 there were 274 late or failed samples; repeat samples were not always taken on the correct day of the week and there were over 200 nil yields (i.e. samples with no mail). There were also errors in how samples were recorded in at least one mail centre.