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Parcel Performance Reports

Key calculation rules:

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Document history and version tracking

Version	Date	Editor	Comment
1.0	16 October 2007	Lati Matata	Draft, request for comments
1.1	19 October 2007	Lati Matata	Comments from UPU Parcels Programmeit
1.2	11 January 2008	Lati Matata	Comments from Jean-Marc Coeffic
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Referenced documents

Document	Author
Definitions for monthly Parcels Measurement reports, version 26.7.2007	UPU Parcels Unit

1 Introduction

The Quality Control System for Mail (QCS) generates and sends the Parcel Performance reports on the 15th day of every month.

The Parcel Performance reports are composed of three sets of reports;

- “All Operators Inbound Performance Report” (All Operators’ Results).
- “Outbound Item Report” (Each Delivery Operator’s performance on items from the Originating Operator).
- “Inbound Item Report” (The Delivery Operator’s performance on items from each Originating Operator).

The All Operators Report is a single document. It contains only percentages which show the performance of individual Designated Operators (D.Os). All D.Os receive copies of this single document. The Item reports contain parcel volume counts (for inbound and outbound Parcel items) and performance percentages for each specific D.Os. Every D.O receives the specific Item reports for their data.

The data used in the reports are derived from Electronic Data Interchange (EDI) messages sent between D.Os via the POST*Net and GXS networks.

This document describes key calculation rules QCS uses to determine the figures, volumes and percentages, shown in the reports. These are:

- Determining a Parcel item.
- Determining who (D.O) is the final originator and recipient of a Parcel item.
- The reference time for Parcel item events.
- The calculation of general ratios.
- The calculation of ratios measuring cross-border performance.
- The specific rules applied in the Parcel Performance reports.

This document assumes familiarity with the specific EDI messages, EMSEVT, xxxDES (PREDES, RESDES) and their event codes, EDI mailboxes, knowledge of mail category types and general postal operational principles.

2 A Parcel item

When handling EDI messages, QCS uses these steps to determine a particular item identifier is a Parcel item;

- If the item's identifier conforms to Part D of the UPU standard S10d;
 - o It has a length of 13 characters
 - o And its service indicator has the characters between CA and CZ.
 It is a Parcel item.
- If the item is still not positively identified as a Parcel item;
 - o If the sender mailbox ends with "330"
 - o Or if the sender mailbox ends with "301"*.
 It is a Parcel item.

* Items sent with mailboxes ending with "301" are further marked as EPG parcels.

As a key business rule, a D.O sends and receives EDI messages for Parcel items to and from EDI mailboxes xx330 and xx301 where xx is their country code.

3 The Mail Category of a Parcel item

QCS assigns a mail category (Airmail, Surface, S.A.L) to a Parcel item based on PREDESv2 sent by the origin D.O. Parcel items which do not have a mail category assigned are marked "no PREDESv2".

4 Originator and final recipient of a Parcel item

QCS continuously updates the originator and final recipient of a Parcel item as newer events are received for the Parcel item. Whether or not the originator and final recipient is modified depends on the EDI message type and the actual event. For example; Event C and Event D are defined to be from originator to final recipient, while Event J and Event K are not.

It is important to note that the originator of the Parcel item is not immediately determined by the country code (last 2 characters) of the Parcel item identifier. The reason for this is to transparently manage invalid Parcel items identifiers which might be sent via mailbox "xx330". The second reason is to take into account potential EDI messages from private operators.

5 The reference time for Parcel item events

QCS maintains separate time fields for specific events per Parcel item. Specific rules are used to determine the time to use in the case of multiple similar events; (All times are local)

Time field	Rule to select a reference time for duplicate events
Event A	Earliest event time
Event C	Latest event time
Event D	Earliest event time
Event E	Latest event time
Event F	Earliest event time
Event H or Event I	Earliest event time

These time fields are used for performance measurements involving time (speed) differences.

Additionally QCS maintains two reference time fields;

Time field	Rule	Comment
Sent	Latest outbound event time (Event A, Event B & Event C)	The latest time the Parcel item left the origin D.O
Received	Earliest inbound event time (Event D to Event I)	The earliest time the Parcel item arrived at the destination D.O

These time fields are used for performance measurements involving ratios. The referenced time field is determined by the denominator of the ratio.

6 Calculation of general ratios

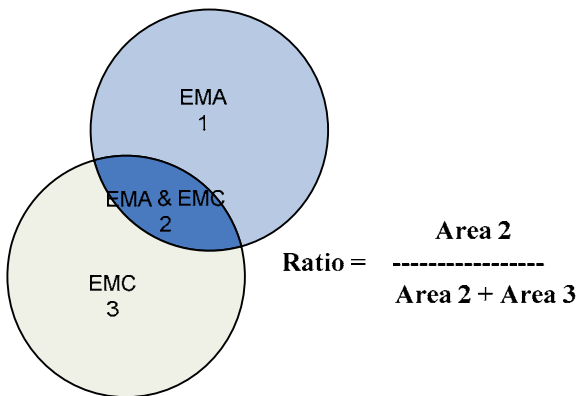
QCS makes ratio calculations at Parcel item level. These ratios are item specific, e.g. the ratio of an Event A to Event C means that for each Parcel item with an Event C, does this same Parcel item have an Event A?.

Additionally, in the case of occurrence of duplicate events for one Parcel item, QCS will only count each unique event once.

Example:

$$\text{Outbound ratio} = \frac{\text{Event A (Collection from customer)}}{\text{Event C (Departure from outbound office of exchange)}}$$

Illustrated as a Venn diagram;



7 Calculation of ratios measuring cross-border performance

Cross-border performance ratio refers to events which are recorded by different D.Os during the life cycle of the Parcel item.

Example:

$$\text{Transport ratio} = \frac{\text{Event D (Arrival at inward office of exchange)}}{\text{Event C (Departure from outbound office of exchange)}}$$

The Parcel Performance report requirements state that the inbound event, Event D, is the base event for the calculation of all ratios. This does not work with cross-border ratios as they will always result in values of 100% or greater.

To illustrate:

X = Event D events in a period

Y = Event C events in X

Y will always be less than or equal to X

Therefore ratio = X / Y will always be 1 or greater than 1.

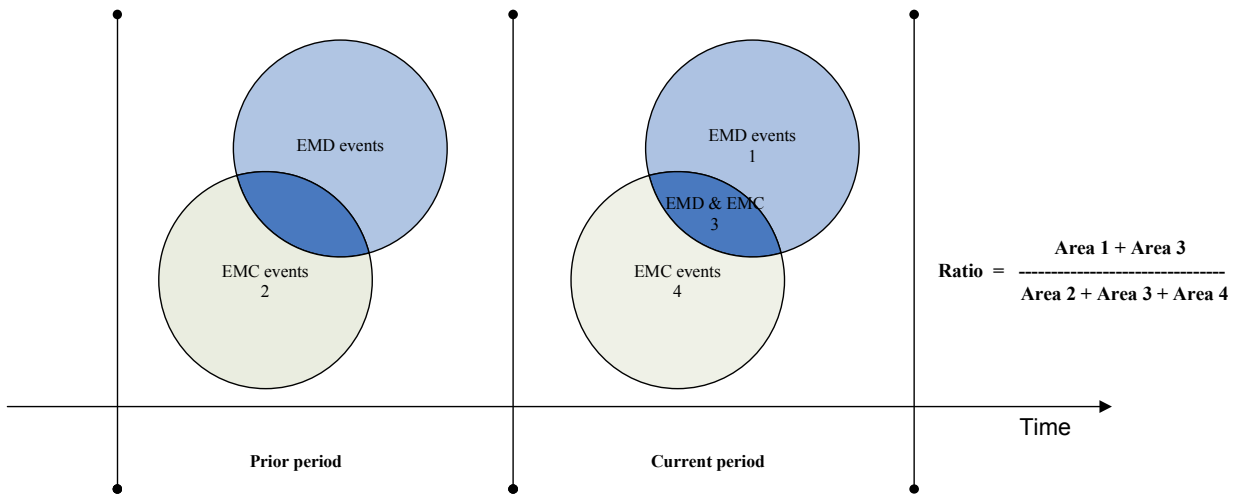
The stated goal of this ratio is to measure how well partner D.Os send and receive Parcel items in a given period. To accurately measure this, QCS relaxes the item specific* rule of calculating ratios and revises this ratio to be:

$$\text{Cross border ratio} = \frac{\text{Any Event D events in the period}}{\text{(Any Event C events in the period)} + \text{(Any Events C events prior to the period in question which do not have a corresponding Event D)}}$$

* QCS still enforces item specific counts to individual events, that is, duplicated events are not double counted per Parcel item.

The addition of Event C events in a prior period allows time for the transport of the physical Parcel items from the origin D.O to the destination D.O. The Parcel Performance reports requirements sets this prior period as 2 months.

Alternatively this can be illustrated as;



The interpretations of possible results of this ratio are as follows:

1. When the result is less than 100%: The destination D.O is not capturing all their inbound Parcel items.
2. When the result is equal to 100%: The destination D.O is capturing all their inbound Parcel items.
3. When the result is greater than 100%: The origin D.O is not capturing all their outbound Parcel items.

8 Specific calculation rules in the Parcel Performance reports

The following tables list the rules used to calculate the values in the Parcel Performance reports. Refer to the Definitions for monthly Parcel Measurements reports by the UPU Parcels Unit for guidance

8.1 All Inbound Operators Performance report

Column	Reference Period (Refer to Sec. 5. for time fields)	Rule (Refer to Sec. 6 & 7 for description of ratio)
Operator		The destination D.O of the Parcel item
Scanning Performance		
Event D over Event C	Sent	Cross-border ratio
Event C over Event D	Received	General ratio
Event F over Event E	Received	General ratio
Event H or Event I over Event C	Sent	Cross-border ratio
Event H or Event I over Event D	Received	General ratio
Event I over Event D	Received	General ratio
Event H no Event I over Event D	Received	General ratio
Event K over Event J	Received	General ratio (The transit D.O of the Parcel item)
RESDES over PREDESv2	Latest PREDESv2 dispatch closing time	General ratio of dispatch events. (At least one RESDES event for every PREDESv2 received)
Transmission Performance		
Event D < 48 hours	Event D time	Difference between the local Event D time and the preparation time of the EDI message
Event H or Event I < 120 hours	Event H or Event I time	Difference between the local Event H or Event I time and the preparation time of the EDI message
Delivery Performance		
Time between Event (x) and Event H or Event I from less than 2 to 10 days and greater than 10 days	Received	Where Event (x) is local time of Event F when Event E and Event F are present, Event D in all other cases.
No. delivery information	Received	No Event H or Event I (and are not out of sequence)
Out of sequence	Received	Event D or Event E is later than Event F or Event D or Event F is later then Event H or Event I

8.2 Outbound Parcel Item Performance report

This report is generated per origin D.O of the Parcel items.

Column	Reference Period (Refer to Sec. 5 for time fields)	Rule (Refer to Sec. 6 & 7 for description of ratios)
Operator		The destination D.O of the Parcel items
Outbound items sent		
Items sent	Sent	No. of Parcel items which have an outbound event

Parcel Performance reports	Key calculation rules
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Event A	Sent	No. of Parcel items which have an Event A
Event C	Sent	No. of Parcel items which have an Event C
Outbound items received		
Items received	Received	No. of Parcel items which have an inbound event
D	Received	No. of Parcel items which have an Event A
E	Received	No. of Parcel items which have an Event E
F	Received	No. of Parcel items which have an Event F
H	Received	No. of Parcel items which have an Event H
I	Received	No. of Parcel items which have an Event I
Scanning Performance		
Event D over Event C	Sent	Cross-border ratio
Event E over Event D	Received	General ratio
Event F over Event E	Received	General ratio
Event H or Event I over Event D	Received	General ratio
Event H no Event I over Event D	Received	General ratio
Delivery Performance		
Time between Event (x) and Event H or Event I from less than 2 to 10 days and greater than 10 days	Received	Where Event (x) is local time of Event F when Event E and Event F are present, Event D in all other cases.
No. delivery information	Received	No Event H or Event I events (and are not out of sequence)

8.3 Inbound Parcel Item Performance report

This report is generated per destination D.O of the Parcel items.

Column	Reference Period (Refer to Sec. 5 for time fields)	Rule (Refer to Sec. 6 & 7 for description of ratios)
Operator		The origin D.O of the Parcel items
Inbound items sent		
Items sent	Sent	No. of Parcel items which have an outbound event
Event A	Sent	No. of Parcel items which have an Event A
Event C	Sent	No. of Parcel items which have an Event C
Inbound items received		
Items received	Received	No. of Parcel items which have an inbound event
D	Received	No. of Parcel items which have an Event A
E	Received	No. of Parcel items which have an Event E
F	Received	No. of Parcel items which have an Event F
H	Received	No. of Parcel items which have an Event H
I	Received	No. of Parcel items which have an Event I
Scanning Performance		
Event D over Event C	Sent	Cross-border ratio
Event E over Event D	Received	General ratio
Event F over Event E	Received	General ratio
Event H or Event I over Event D	Received	General ratio
EMH no Event I over Event D	Received	General ratio

Delivery Performance		
Time between Event (x) and Event H or Event I from less than 2 to 10 days and greater than 10 days	Received	Where Event (x) is local time of Event F when Event E and Event F is present, Event D in all other cases.
No. delivery information	Received	No Event H or Event I (and are not out of sequence)