

Guide to Tolerance Apportionment by TMBS Function

Introduction.

Section 7.4.1 of the Metering and Billing Direction (the "Direction") allows for the accuracy limits specified in Table 1, column 2 "End to End", to be "apportioned equitably" when the Total Metering and Billing System (TMBS) is operated by more than one Communications Provider (CP) and the activities of each CP do not fall within the scope of Table 1, Columns 1 or 3.

As more CPs are now required to seek approval under the Direction, it is now possible for a TMBS to be operated by two or more CPs, for example a Network Operator (NO), a Service Provider (SP), a Billing Bureau (BB), a Print House (PH), a Call Centre (CC) and a Fulfilment House (FH). Functions such as Rating, Mediation, Bill Printing, Fulfilment and Customer Call Centres (for order handling or complaints) may be outsourced, not always within the UK. There is no single model for the division of responsibilities between the various CPs, who may be a combination of a selection of the above functions; for example, the role of the BB can include Fulfilment (Bill printing and despatch.), CDR collection and processing and the provision of Order Handling systems. It is also possible for two or even three Approval Bodies to be involved, thus complicating the agreement of an equitable apportionment of the accuracy limits.

One possible approach to apportionment would be to ascribe an error allowance to each element of the TMBS, which could then be "given" to whichever CP operated that element of the TMBS. There could be a need for "fine tuning" to take account of individual circumstances, such as variations in the contract terms between CPs or technical differences in the systems in use.

Description.

A typical TMBS will contain the following elements:

1. **Logging / Metering** – the generation and storage of CDRs by a switch or other network element such as a prepay IN platform or IVR platform
2. **Transfer of CDRs** from network element output to mediation input
3. **Mediation** – the correlation, reformatting (if required) and distribution of CDRs to the correct rating engine
4. **Rating** – the basic pricing of CDRs
5. **Bundling / Discounting** – the application of any bundles or other discounts
6. **Billing** (post-paid TMBS) – the preparation of the files for customer billing, including recurring payments (e.g. rentals, facility charges) and one-off charges (e.g. connection charges)
7. **Credit decrement** (pre-paid TMBS)

- 8. **Fulfilment** – the preparation, printing and dispatch of customer invoices (for post-paid customers)
- 9. **Order Handling** – recording of customer service requirements
- 10. **Customer Activation** – the process of giving (and ceasing) customer service
- 11. **Complaint Handling** – the handling of customer billing complaints
- 12. **Customer Credits** – the authorization and payment of customer credits
- 13. **Tariff Management** – the implementation and publishing of new tariffs and tariff changes.

Apportionment Rules.

Proposed apportionment of the tolerances in Table 1 of the Direction:

Allocation of the tolerances to a CP truly operating a TMBS from End-to-End is simple, the total tolerance of Table 1 Column 2 is used.

Where a distinct separation between the Logging / Metering and Billing can be determined, Table 1 Column 1 and 3 are allocated as shown below.

TMBS Element	Likely Owners	Column Used	Comments
Metering and Billing	Network Operator	100% of End-to-End (column 2)	This includes cases where the TMBS is provided by more than one Communication Provider but the application for assessment of the complete TMBS is made by the Network Operator and cascaded to all other parties. The other parties may be deemed to be sub-contactors.
Logging / Metering	Network Operator	100% of metering / logging (column 1)	It is unlikely that an organization other than those historically known as a Network Operator could conduct Logging / Metering
Billing	Service Provider Billing Bureau	100% of Billing (column 3)	If the Service Provider or Billing Bureau conduct mediation through to Fulfilment

Where the TMBS is delivered by two or more CPs and no distinct separation between the Logging / Metering and Billing can be determined, allocation of the Table 1 Column 2 allowance is more complex as it depends on which CP is responsible for which activity.

Because every TMBS may not contain all the elements listed below, a weighting score has been proposed for each activity. For any specific TMBS these scores can be totalled and a percentage of the Table 1 Column 2 allowance calculated.

Table 1 Column 2 is to be apportioned as shown below. *[Note: scores are shown in increments of 5 to allow scope for fine tuning]*

TMBS Element	Likely Owners	Weighting Score End to End (column 2)	Comments
Logging / Metering	Network Operator	30	It is unlikely that an organization other than those historically known as a Network Operator could conduct Logging / Metering
CDR Transfer	Network Operator Service Provider	5	Ownership depends on whether CDRs are pushed by switch or pulled by mediation
Mediation	Network Operator Service Provider	10	May be outsourced
Rating	Service Provider Billing Bureau	20	May be outsourced
Bundling / Discounting	Service Provider Billing Bureau	20	
Billing (Post-Pay)	Service Provider Billing Bureau	20	
Credit Decrement (Prepay)	Network Operator Service Provider	40	
Fulfilment	Service Provider Billing Bureau Print House Fulfilment House	5	Fulfilment in this context is simply the printing and despatch / distribution of the Bill, which is frequently outsourced
Order Handling	Network Operator Service Provider Call Centre	20	May be outsourced
Customer Activation	Network Operator Service Provider Call Centre	15	
Complaint Handling	Network Operator Service Provider Call Centre	10	Allowance only if call centre is permitted to issue customer credits
Customer Credits	Network Operator Service Provider	10	
Tariff Management	Network Operator Service Provider Billing Bureau	20	

Apportionment Example.

If the TMBS was formed by a NO, CC, FH and SP and looked similar to the chart below:

Activity	Score	Total	CP
Logging / Metering	30	35	Network Operator
CDR delivery	5		
Fulfilment	5	5	Fulfilment House
Complaints Handling	10	30	Call Centre
Order Handling	20		
Mediation	10	95	Service Provider
Rating	20		
Bundling / Discounting	20		
Customer Activation	15		
Tariff Management	20		
Customer Credits	10		

then the Total Score is 165 which equates to 0.1% (1 : 1K) “**Number Under or Not Charged**” and 0.004% (1 : 25K) “**Number Overcharged**” from Table 1 of the Direction, and using Column 2 as required by the Direction then the apportioned tolerances are as shown below:

CP	Tolerance			
	Number Under or Not Charged		Number Overcharged	
	%	1:?K	%	1:?K
NO	0.021	1:4.7K	0.00085	1:118K
FH	0.003	1:33K	0.00012	1:825K
CC	0.018	1:5.5K	0.00073	1:137K
SP	0.058	1:1.7K	0.0023	1:43K

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