



Impact Assessment for ELEXON IA011

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2004-09-14	7.1	Update following version 2.0 of P157	M Pinks / M Langford



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1 Impact Assessment Summary

A formal request for an Impact Assessment was received from Elexon. This IA considers Requirements Specification for Modification Proposal P157, 'Replacement of current Supplier Charges rules' 1.3, 10 May 2004, following the implementation of IA003, as a result of *Supplier Charge Specification 1.0 16 February 2004*.

The Impact Assessment has been undertaken under the terms of Schedule 11 (Change Control Procedure) of the PARMS agreement dated 13 November 2003. The preparation of the initial version of the IA has consumed 30 hours of the provision specified therein.

This version of the Impact Assessment has been created following an e-mail request from Emrah Cevik sent at 15:31 on 31 August 2004 to provide additional information to that supplied in the previous version. This version also against P157 Requirements Specification v2.0, dated 1 September 2004 [P157AS].

The Impact Assessment discusses several changes. This will allow Elexon to select the appropriate solution. The costs for these changes are detailed in the following subsections. In summary, the subsections are:

- Cutover Control
- Redistribution Based on Average Performance on SP08a
- Charging (including SP01 and SP02 changes)
- Reporting – without Option 1 change to Supplier Trading Report
- Reporting – with Option 1 change to Supplier Trading Report

The total cost would be an accumulation of the costs detailed below.

In each case, **a maximum lead time of 2 weeks would be desired.**

- A total solution for P157 option 1 would include either:



1. Cutover Control, Redistribution Based on Average Performance on SP08a, Charging, and Reporting – without Option 1 change to Supplier Trading Report

Approx. 4 months duration, costing £180,000, +/-18%

OR

2. Cutover Control, Redistribution Based on Average Performance on SP08a, Charging, and Reporting – with Option 1 change to Supplier Trading Report

Approx. 4 months duration, costing £182,000 +/-18%

- A total solution for P157 option 2 would include Cutover Control, Charging, and Reporting – without Option 1 change to Supplier Trading Report

Approx. 2 months duration, costing £68,000 +/-14%



1. Cutover Control

Effort Breakdown (days)		Cost
	PM	2
	Consultancy (Req. & Design)	1
	Developer (Code & Impl)	1
	Tester (Sys & Regr)	7
		<hr/> 11
		£8,000

Timescale: 9 days

LogicaCMG is pleased to offer an **indicative price** for this change of **£8,000 (eight thousand) excluding VAT**. Indicative prices are provided for budgetary purposes only and may carry a tolerance of +/-10% assuming no significant change to the business and user requirements. This does not constitute a formal offer. LogicaCMG may also seek to uplift the maintenance charge for the system to cover the additional functionality. This will be reviewed after Phase 3 has been implemented, in order to accurately judge the degree of change.



2. Redistribution Based on Average Performance on SP08a

Effort Breakdown (days)		Cost
	PM	33
	Consultancy (Req. & Design)	20
	Developer (Code & Impl)	33
	Tester (Sys & Regr)	56
		<hr/> 142
		£112,000

Timescale: 109 days

LogicaCMG is pleased to offer an **indicative price** for this change of **£112,000 (one hundred and twelve thousand) excluding VAT**. Indicative prices are provided for budgetary purposes only and may carry a tolerance of +/-20% assuming no significant change to the business and user requirements. This does not constitute a formal offer. LogicaCMG may also seek to uplift the maintenance charge for the system to cover the additional functionality. This will be reviewed after Phase 3 has been implemented, in order to accurately judge the degree of change.



3. Charging (including SP01 and SP02 changes)

Effort Breakdown (days)			Cost
	PM	6	£26,000
	Consultancy (Req. & Design)	4	
	Developer (Code & Impl)	5	
	Tester (Sys & Repr)	21	
		<hr/> 36	

Timescale: 30 days

LogicaCMG is pleased to offer an **indicative price** for this change of **£26,000 (one hundred and forty seven thousand) excluding VAT**. Indicative prices are provided for budgetary purposes only and may carry a tolerance of +/-15% assuming no significant change to the business and user requirements. This does not constitute a formal offer. LogicaCMG may also seek to uplift the maintenance charge for the system to cover the additional functionality. This will be reviewed after Phase 3 has been implemented, in order to accurately judge the degree of change.



4. Reporting – without Option 1 change to Supplier Trading Report

Effort Breakdown (days)		Cost
PM	12	£34,000
Consultancy (Req. & Design)	3	
Developer (Code & Impl)	9	
Tester (Sys & Regr)	20	
	<hr/> 44	

Timescale: 32 days

LogicaCMG is pleased to offer an **indicative price** for this change of **£34,000 (thirty four thousand) excluding VAT**. Indicative prices are provided for budgetary purposes only and may carry a tolerance of +/-15% assuming no significant change to the business and user requirements. This does not constitute a formal offer. LogicaCMG may also seek to uplift the maintenance charge for the system to cover the additional functionality. This will be reviewed after Phase 3 has been implemented, in order to accurately judge the degree of change.



5. Reporting – with Option 1 change to Supplier Trading Report

Effort Breakdown (days)		Cost
	PM	13
	Consultancy (Req. & Design)	3
	Developer (Code & Impl)	10
	Tester (Sys & Regr)	20
		<hr/> 46
		£36,000

Timescale: 33 days

LogicaCMG is pleased to offer an **indicative price** for this change of **£36,000 (thirty six thousand) excluding VAT**. Indicative prices are provided for budgetary purposes only and may carry a tolerance of +/-15% assuming no significant change to the business and user requirements. This does not constitute a formal offer. LogicaCMG may also seek to uplift the maintenance charge for the system to cover the additional functionality. This will be reviewed after Phase 3 has been implemented, in order to accurately judge the degree of change.



2 Introduction

The document provides details of the change requirements, the impact on the PARMS application, a proposed solution and the resultant cost for implementing the solution.

The following subscripts are used to describe calculations in this document. Note that these subscripts supersede any definitions in the BSC.

Subscript	Definition
z	Supplier
h	GSP Group
r	SC Reporting Period
a	Adjustment Reporting Period
y	Financial Year
p	Trading Party
d	Settlement Day
t	Settlement Type



3 Change Requirements

The main changes are:

- To modify Supplier Charges Calculations for serials SP01 and SP02, and introduce additional database entities. These serial calculations are assumed to be introduced in Phase 3 and 4 and are modified by this change. Calculations for SP04 and SP08 a, b and c also require minimal supporting data changes.
- Revised Capping calculations
- Revised Charge Distribution calculations – one of two possible options
- Additional standing data (CAP), database storage entity, and maintenance interface.

The requirements discuss a direct ‘Implementation’ date, where the new P157 rules take effect, and so the P99 PARMS system would no longer require Pre P99 Serials, or their associated calculations. However, since data will ‘run off’ up to the start date of P157, their continued presence will not affect the operation of P157.

The proposed implementation of the above requirements will take place in one Phase. This will be called Phase 5, following on from Phases 3 and 4, which are assumed implemented as a result of *Supplier Charge Specification 1.0 16 February 2004*.



4 Overall Assumptions

Assumptions have been made by LogicaCMG due to the fact that, at the time of preparing this Impact Assessment, changes to the PARMS system due to IA003 (as a result of ELEXON's Supplier Charge Specification 1.0 16 February 2004), **had not been designed**.

It is assumed that this Impact Assessment is based on changes to the P99 PARMS system, in which IA003 (as a result of ELEXON's Supplier Charge Specification 1.0 16 February 2004) **has been implemented**

It is also assumed that the software elements (in particular PL/SQL packages and procedures) that are **assumed implemented** as a result of ELEXON's Supplier Charge Specification 1.0 16 February 2004 correlate **discretely** to the functions defined in that document, unless specifically stated otherwise in IA003.

Unless explicitly stated in this Impact Assessment, it is assumed that all the existing software elements from Phases 1 and 2 remain unchanged (unless otherwise stated in IA003), and that any elements introduced by IA003 (as a result of ELEXON's Supplier Charge Specification 1.0 16 February 2004) also remain unchanged (again, **unless explicitly stated in this Impact Assessment**).

4.1 Pre P99 Serials

Pre P99 Serials 1, 2, 3, 4, 5, 6, 7, 9, 10 and 11 are no longer required in the P99 PARMS system, as indicated by paragraph 3, section 1.1 of the P157 requirements document – "...there is no need for the old set of rules to be "run off" over a period of 14 months". Pre P99 rules will be run off in the old system, and the P157 rules will begin exclusively from the 'implementation date'. There is therefore no cross-over period, which may introduce further complexity.

4.2 Apply Force Majeure

The Force Majeure requirements stated in *Supplier Charge Specification 1.0 16 February 2004* remain in effect in the P99 PARMS system.



4.3 Calculate Caps

For Use if Funds- Redistribution (option 1), the 1% element of the Cap calculation will be configurable.

4.4 Calculate Interest

Interest calculations remain unchanged, as per *Supplier Charge Specification 1.0 16 February 2004*.

4.5 Calculate Party Allocations

The Calculate Party Allocations function implemented in Phases 3 and 4 remain unchanged.

4.6 Serial Receipt and Charge Calculation

Serials for which Supplier Charges are to be calculated are SP01, SP02, SP04 and SP08a, SP08b and SP08c.

This assumes that, compared to *Supplier Charge Specification 1.0 16 February 2004*, SP01 and SP02 charges change, in both calculation and storage.

It has been assumed that only changes are required to the Supplier Charge charging parameters for Serials SP04 and SP08 a, b, and c.

It is also assumed that there are no changes to the SP04 and SP08 Output Data file structures.

4.7 New Interfaces

No new files are to be received into the P99 PARMS system.

4.8 Modification of Database Tables

Where it is necessary to store data by a new Primary Key, the existing table is not amended, but a new table added.



4.9 Alteration of SP08 b and c during P99

It has been identified by Elexon during the preparation of Modification Proposal P157 version 1.8 that the receipt of SP08 data and the corresponding SP08 Supplier Charge entity proposed by *Supplier Charge Specification 1.0 16 February 2004* are insufficient, such that Supplier Charges based on SP08 b and c values will be stored on a monthly, rather than daily basis. To this end, this document assumes that the P99 SP08 Supplier Serial has been split into two entities – one for storing SP08 a charges **on a daily basis**, as is currently proposed in P99, and another for storing SP08 b and c charges **on a monthly basis**. It is assumed that these changes are covered by P99, and not part of this IA.

This document will continue to refer to the SP08 Supplier Serial entity, under the assumption that this entity will continue to store (and only store) SP08 a data. For the purposes of this Impact Assessment, SP08 b and c data is assumed to be stored in an “SP08 b&c Supplier Serial” entity.



5 Change Impact

The main impact of implementing the requirements in section 3 is described in the following section.

The Impact Assessment also includes the impact of removing and/or modifying the current modules where required.

The impact is based upon changes to implemented PARMS elements post Phase 4 of the project, i.e., post changes made due to the full implementation of IA003 (as a result of *Supplier Charge Specification 1.0 16 February 2004*).

The main impact centres around the modification of Supplier Charge calculations, Capping, and Use of Funds- Redistribution.



6 Impact Detail

The changes are in three main areas: Cutover Control, Serial Charges, and Use of Funds- Redistribution.

Cutover Control deals with the requirements for “cutting over” from P99 to P157 logic.

The Use of Funds- Redistribution has two options. The first of these requires a change to Cap calculations, Supplier Charges, and Distribution. It also requires new functions to calculate Supplier Shares and Market Average.

Within this first option, there are two further options – to store the GSP NHH Average, and to retrieve SP01 and SP02 values from Serial Charge entities that are changed as in Section 6.3 of this Impact Assessment.

The second option requires a new controlling function, plus new functions for calculating SP01, SP02 and SP04 charge distribution and SP08 charge distribution.

This Impact Assessment also addresses a change required to Serial Charge calculations. Serials SP01 and SP02 require new calculations and storage entities. SP04 and SP08 require minimal changes to supporting data.

In areas, any new tables will be added to the archive process.



6.1 Cutover Control

6.1.1 Process

All new software elements will be implemented in the existing system while it is already live.

A new parameter will be added to the System Parameters entity, “P157 Start Date”, to identify when P157 processes should take effect, and the P99 processes that they replace cease.

A check will be added to the existing Supplier Charge controlling function and data retrieval functions (for reports), to check this parameter each time Supplier Charges are run. If the current system date/time is later than or equal to this Start Date, the new P157 processes will be called. Otherwise, existing P99 processes will be called.

This mechanism applies to both the Use of Funds- Redistribution changes, the Charge changes, and the Reports changes.

Note, the Reports are generated using the client application. Therefore complete Cutover Control should include the rollout of the new client when the cutover is to take effect.

6.1.2 Impact on Testing

Modification of the Supplier Charge test specification is required for the new Cutover functionality.

Rerun of the tests for the above test specifications.

Rerun of the Witnessed FAT for the above test specifications.

Regression testing using the end-to-end tests.



6.2 Redistribution Based on Average Performance on SP08a

6.2.1 Process

6.2.1.1 Calculate 'Average Performance' for each GSP Group in the Reporting Month

- a. Create **temporary list (not stored to a database entity)** of GSP Groups, their sum of Actual NHH Energy settled on AA's in SP08 Supplier Serial entity for all Supplier Id's and Settlement Days (where the Run Type is RF), **and** their sum of Total NHH Energy in SP08 Supplier Serial entity for all Supplier Id's and Settlement Days (where the Run Type is RF) in the Reporting Month.
- b. For the Reporting Month, for each GSP Group identified in (a), divide the two sums, and **store as Average Performance to new column "Average Performance" in existing GSP Group Energy entity:**

$$\text{Average Performance } AP_{th} = \frac{\sum_{zd} \text{"SP08.NHH Energy Settled on AA's}_{rzhdt}"}{\sum_{zd} \text{"SP08.Total NHH Energy}_{rzhdt}"} \text{ (where } t = \text{'RF'})}$$

- a. $\sum_{zd} \text{"SP08.Total NHH Energy}_{rzhdt} \text{ (where } t = \text{'RF'})}$

6.2.1.1.1 Tables

Tables changed from Phases 1 – 2:

None

Tables assumed changed from Phases 3 – 4:

GSP Group Energy – new column "Average Performance"

New tables required:

None



6.2.1.1.2 Procedures

Procedures requiring amendment from Phases 1 – 2:

None

Procedures requiring amendment from Phases 3 – 4:

None

New procedures required:

Procedure to calculate average

6.2.1.1.3 Screens

Screens requiring change:

None

New screens required:

None

6.2.1.1.4 Notes and Assumptions

None



6.2.1.2 Calculate Supplier's Performance for each GSP Group in the Reporting Month

- b. Create **temporary list (not stored to a database entity)** of distinct Suppliers and their GSP Groups for the Reporting Month from the SP08 Supplier Serial entity.
- c. For each Supplier/GSP Group identified in (a), create temporary list (not stored to a database entity) of **sum of all NHH Energy Aggregated on Actuals values for all Settlement Days, Run Type 'RF'**, and **sum of all Total NHH Energy values for all Settlement Days, Run Type 'RF'**.
- d. For each Supplier/GSP Group in (b), divide the two sums, **add to temporary list**, and **store as Supplier Performance to new column "Supplier Performance" in existing Supplier Charge entity**:

$$\text{Supplier Performance } SP_{rzh} = \frac{\sum_d \text{"SP08.NHH Energy Settled on AA' } s_{rzhdt} \text{"}}{\sum_d \text{"SP08.Total NHH Energy }_{rzhdt} \text{" (where } t = \text{'RF'})}$$

- e. Pass list to next procedure

6.2.1.2.1 Tables

Tables changed from Phases 1 – 2:

None

Tables assumed changed from Phases 3 – 4:

Supplier Charge – new column "Supplier Performance"

New tables required:

None



6.2.1.2.2 Procedures

Procedures requiring amendment from Phases 1 – 2:

None

Procedures requiring amendment from Phases 3 – 4:

None

New procedures required:

Procedure to calculate Supplier Performance

6.2.1.2.3 Screens

Screens requiring change:

None

New screens required:

None

6.2.1.2.4 Notes and Assumptions

None



6.2.1.3 Calculate Effective Market Share

- a. For the current Reporting Period, look up the effective SP08a standard (in existing Performance Target table)

- b. **For each Supplier/GSP Group in list passed from 6.2.1.2,**

- i. Look up the Average Performance in the existing GSP Group Energy entity, calculate 'Amount Supplier is above Average', and **add to temporary list**:

If 'Average Performance AP_{rh} ' is greater than SP08a Standard:

'Amount Supplier is above Average' AbA

$$= SP_{rzh} - SP08a \text{ Standard}$$

Otherwise:

'Amount Supplier is above Average' AbA

$$= SP_{rzh} - AP_{rh}$$

- ii. If 'Amount Supplier is above Average' is greater than or equal to zero:

1. Calculate 'Above Standard' as difference between 'Supplier Performance' and SP08a standard, and **add to temporary list**:

$$'Above \text{ Standard}' \text{ } AbS = SP_{rzh} - SP08a \text{ Standard}$$

2. If 'Above Standard' AbS is **greater than or equal to zero**, calculate 'Effective Market Share Denominator', and add to existing 'Effective Market Share Denominator' **running total** for previous Supplier/GSP Groups:



$$\begin{aligned} \text{'Effective Market Share Denominator'} &= \\ &\sum_d \text{"SP08.Total NHH Energy}_{\text{rzhdt}} \text{" (found in 6.2.1.2 (b))} \\ &* \\ &(\text{'Amount Supplier is above Average' AbA} + 1) * 2 \end{aligned}$$

3. If 'Above Standard' AbS is **less than zero**, calculate 'Effective Market Share Denominator', and add to existing 'Effective Market Share Denominator' **running total** for previous Supplier/GSP Groups:

$$\begin{aligned} \text{'Effective Market Share Denominator'} &= \\ &\sum_d \text{"SP08.Total NHH Energy}_{\text{rzhdt}} \text{" (found in 6.2.1.2 (b))} \\ &* \\ &(\text{'Amount Supplier is above Average' AbA} + 1) * 1 \end{aligned}$$

- c. Once all Supplier/GSP Groups have been processed in (b), **add 'Effective Market Share Denominator' to new 'Effective Market Share Denominator' column in existing GSP Group Energy table.**
- d. **For each Supplier/GSP Group in list passed from 6.2.1.2:**
- (i) Look up 'Effective Market Share Denominator' for GSP Group and Reporting Period in GSP Group Energy table.
 - (ii) If 'Amount Supplier is above Average' is **greater than or equal to zero:**

- 1. If 'Above Standard' AbS is **greater than or equal to zero**, calculate 'Effective Market Share' as follows:

$$\begin{aligned} \text{'Effective Market Share'} &= \\ &(\sum_d \text{"SP08.Total NHH Energy}_{\text{rzhdt}} \text{" (found in 6.2.1.2 (b))} \end{aligned}$$



*

(‘Amount Supplier is above Average’ AbA + 1) * 2)

/

‘Effective Market Share Denominator’

2. If ‘Above Standard’ AbS is **less than zero**, calculate ‘Effective Market Share’ as follows:

‘Effective Market Share’ =

(\sum_d “SP08.Total NHH Energy_{rzhd}” (found in 6.2.1.2 (b)))

*

(‘Amount Supplier is above Average’ AbA + 1) * 1)

/

‘Effective Market Share Denominator’

(iii) If ‘Amount Supplier is above Average’ is **less than zero**, ‘Effective Market Share’ equals **zero**.

(iv) Store ‘Effective Market Share’ to **new ‘Effective Market Share’ column in existing Supplier Charge entity**.

6.2.1.3.1 Tables

Tables changed from Phases 1 – 2:

None

Tables assumed changed from Phases 3 – 4:

GSP Group Energy – new column “Effective Market Share Denominator”

Supplier Charge – new column “Effective Market Share”



New tables required:

None

6.2.1.3.2 Procedures

Procedures requiring amendment from Phases 1 – 2:

None

Procedures requiring amendment from Phases 3 – 4:

None

New procedures required:

Procedure to calculate share

6.2.1.3.3 Screens

Screens requiring change:

None

New screens required:

None

6.2.1.3.4 Notes and Assumptions

None



6.2.1.4 Calculate Supplier Monthly Cap

For each Supplier Id and GSP Group Id for the Reporting Period identified by 6.2.1.2:

- a. Look up **Supplier Cap Take** from existing Supplier Energy entity.
- b. Look up Credit Assessment Price from **new Credit Assessment Price entity** for the Reporting Period
- c. Look up “Cap Factor” in **new “Cap Factor” entity** for the Reporting Period.
- d. Calculate the Cap level as follows, and **store to existing “Supplier Monthly Cap” entity**:

$$\text{Cap Factor} * \text{Credit Assessment Price} * \text{Supplier Cap Take}$$

6.2.1.4.1 Tables

Tables changed from Phases 1 – 2:

None

Tables assumed changed from Phases 3 – 4:

None

New tables required:

Credit Assessment Price:

Effective From Reporting Period

Credit Assessment Price

Cap Factor:

Effective From Reporting Period



Cap Factor

6.2.1.4.2 Procedures

Procedures requiring amendment from Phases 1 – 2:

None

Procedures requiring amendment from Phases 3 – 4:

Data Receipt and Despatch:

To keep the impact to a minimum, this procedure will still be triggered by the receipt of the P0120002 file.

New procedures required:

Supplier Monthly Cap

6.2.1.4.3 Screens

Screens requiring change:

Administration Tab

New screens required:

Credit Assessment Price Maintenance screen

Cap Factor Maintenance screen

6.2.1.4.4 Notes and Assumptions

The Credit Assessment Price and Cap Factor will be maintained through the Administration section of the existing client application. They shall be stored in the database by Effective From Date and Effective To Date (where the Effective To Date is optional).



It is assumed that only **one** Credit Assessment Price will apply for the Reporting Period.



6.2.1.5 Calculate Supplier Charges

For each Supplier Id, GSP Group Id and Reporting Period identified by 6.2.1.2:

- a. Sum the Post FM Charge (“SP08a Charge_{razhdt}”) from the SP08a Supplier Serial entity for the Reporting Month, Run Type ‘RF’, **aggregating across all Adjustment Reporting Periods.**
- b. Sum the Post FM Charge (“SP08 b and c Charge_{razhdt}”) from the SP08 b&c Supplier Serial entity for the Reporting Month, Run Type ‘RF’, **aggregating across all Adjustment Reporting Periods and Settlement Days.**
- c. Add together (a) and (b) to give a single **Sum of Post FM SP08 Charges** value for the Supplier Id, GSP Group and SC Reporting Period, and store to **new SP08 Charge column in existing Supplier Charge entity.**
- d. Look up the current value of the “Supplier Payment Disbursement Factor” (SPDF_r) for the given Reporting Month.
- e. Calculate the Supplier’s Own Receipts (SOR_{rz}) as follows, and **store to existing “Supplier Charge” entity:**

$$\text{SOR}_{\text{rz}} = \text{“SP08 a, b and c Charge}_{\text{rzt}}\text{”} * \text{SPDF}_{\text{r}} * \text{“Effective Market Share}_{\text{rz}}\text{”}$$

- f. Calculate the Supplier’s Net Liability (SNL_{rz}) as follows, and **store to existing “Supplier Charge” entity:**

$$\text{SNL}_{\text{rz}} = \text{“SP08 a, b and c Charge}_{\text{rz}}\text{”} - \text{SOR}_{\text{rz}}$$

- g. Look up the Cap value for the Reporting Month, Supplier Id, GSP Group and Settlement Day in the **existing Supplier Monthly Cap entity.**
- h. If the Supplier’s Net Liability (SNL_{rz}) is less than or equal to the Cap value:



Store the “SP08 a, b and c Charge_{rzh}” in the **existing Supplier Charge entity** for the Reporting Month, Supplier Id and GSP Group in the **new “Capped SP08 a, b and c Charge_{rzh}” column.**

Otherwise:

Calculate the “Supplier Charge” SCH for the Reporting Month, Supplier Id and GSP Group as follows, and store it in the **existing Supplier Charge entity**, in the **new “Capped SP08 a, b and c Charge_{rzh}” column:**

$$\begin{aligned} \text{“Capped SP08 a, b and c Charge}_{rzh}\text{”} = \\ \text{“SP08 a, b and c Charge}_{rzh}\text{”} \\ * \\ (\text{Cap} / \text{SNL}_{rzh}) \end{aligned}$$

- i. Add the “Capped SP08 a, b and c Charge_{rzh}” to the respective *Post FM Charge* values stored in the SP04 Serial Charge entity for the given Reporting Month, Supplier Id and GSP Group, and store it as Supplier Charge (SCH_{rzh}) in the **existing Supplier Charge entity**.
- j. Count the distinct GSP Groups in the SP08 and SP04 Serial Charge entities in the given Reporting Month.
- k. For each Supplier Id in the Reporting Month, retrieve the *Post FM Charge* values stored in the **new P157 SP01 Serial Charge and P157 SP02 Serial Charge entities** (see Charging section) for the given Reporting Month and Supplier Id, **sum together**, divide by the count found in (j), and add the same amount to Supplier Charge (SCH_{rzh}) in the **existing Supplier Charge entity** for each GSP Group, for the Reporting Month and Supplier Id
- l. Calculate the final amount to charge the Supplier for the Reporting Month, and GSP Group as follows, and store it as Final Amount Charged to the **existing Supplier Charge entity**. This will be used for the **unchanged Calculate Interest function**.



$$SRC_{\text{razh}} = SCH_{\text{razh}} \text{ where } r=a$$

$$SRC_{\text{razh}} = SCH_{\text{razh}} - CACOLD_{\text{razh}} \text{ otherwise}$$

Where $CACOLD_{\text{razh}}$ is derived in the same way as Phases 3 and 4 (**yet to be determined at the time of preparing this Impact Assessment**).

6.2.1.5.1 Tables

Tables changed from Phases 1 – 2:

None

Tables assumed changed from Phases 3 – 4:

Supplier Charge – new column “SP08 Charge”

Supplier Charge – new column “Capped SP08 Charge”

New tables required:

None

6.2.1.5.2 Procedures

Procedures requiring amendment from Phases 1 – 2:

None

Procedures requiring amendment from Phases 3 – 4:

None.

Note here that since the process for Supplier Charge calculation is significantly changed since that of Phases 3 and 4, alteration of this for the purposes of P157 is considered more time consuming than creating a new function entirely.

New procedures required:



P157 Calculate Supplier Charges

6.2.1.5.3 Screens

Screens requiring change:

None

New screens required:

None

6.2.1.5.4 Notes and Assumptions

The Phase 3 – 4 procedure “Calculate Serial Totals” will remain unchanged. I.e., it will still aggregate the Serial level *Post FM Charge* values (and *Charge* values for Pre-P99 serials – these should be null when P157 is implemented) for the given SC Reporting Period, for each Supplier, Adjustment Reporting Period, GSP Group and Serial, and store the results to the existing Supplier Serial Charge entity. This is required for the Phase 3/4 (**assumed unchanged**) procedure “**Calculate Interest**”, **which is also assumed unchanged**.

A method will be needed to cease using P99 logic for Supplier Charges (see Cutover Control).



6.2.1.6 Calculate Distribution

- a. Sum the Supplier Charges in the **existing Supplier Charge entity** for the Reporting Month and GSP Group, across all the Suppliers ($\sum_z SCH_{razh}$).
- b. Look up the current value of the “Supplier Payment Disbursement Factor” (SPDF_r) for the given Reporting Month.
- c. Calculate the Supplier Allocation as follows:

$$\text{Supplier Allocation}_{rah} = \sum_z SCH_{razh} * SPDF_a$$

- d. Look up the “Effective Market Share” for the Reporting Month, Supplier and GSP Group from the **existing Supplier Charge entity**.
- e. Calculate Supplier Receipt for the Reporting Month, Supplier and GSP Group as follows:

$$\begin{aligned} \text{Supplier Receipt}_{razh} = \\ \text{Supplier Allocation}_{razh} * \text{“Effective Market Share}_{razh}” \end{aligned}$$

- f. Sum up the Supplier Receipts for the Reporting Month for each Supplier, across all their GSP Groups, **to give a Supplier Receipt value for each Supplier for the month**.
- g. Begin Party Allocation and Receipt calculations: For the Reporting Month, sum the Supplier Charges in the **existing Supplier Charge entity**, across all the Suppliers and GSP Groups ($\sum_{zh} SCH_{razh}$).
- h. Calculate the Party Allocation as follows:

$$\text{Party Allocation}_{ra} = \sum_{zh} SCH_{razh} * (1 - SPDF_a)$$



6.2.1.6.1 Tables

Tables changed from Phases 1 – 2:

None

Tables assumed changed from Phases 3 – 4:

None

New tables required:

None

6.2.1.6.2 Procedures

Procedures requiring amendment from Phases 1 – 2:

None

Procedures requiring amendment from Phases 3 – 4:

None

New procedures required:

Calculate Distribution

6.2.1.6.3 Screens

Screens requiring change:

None

New screens required:

None



6.2.1.6.4 Notes and Assumptions

Party Receipts logic will be copied from the existing Calculate Distribution function.



6.2.2 Impact on Functional Design

The functional design models and associated specification (functional and technical) will need modifying to incorporate the new functionality. The Logical Data Model will need modifying to incorporate the new entities and the new data items:

Modification of existing entities in Appendices

Addition of new entities in Appendices

Addition of new entities, and associated attributes and relationships to LDM

Addition of function in FDS to calculate P157 Option 1 Average Performance

Addition of function in FDS to calculate P157 Option 1 Supplier Performance

Addition of function in FDS to calculate P157 Option 1 Effective Market Share

Addition of function in FDS to calculate P157 Option 1 Supplier Monthly Cap

Addition of function in FDS to calculate P157 Option 1 Supplier Charges

Addition of function in FDS to calculate P157 Option 1 Distribution

Addition of screen in FDS to maintain Credit Assessment Price.

Addition of screen in FDS to maintain Cap Factor.

6.2.3 Physical Database

The Physical Data Model will need modifying to incorporate the new columns in existing tables. The Oracle database will also need bringing into line with the Physical Data Model.



6.2.3.1 New Columns

GSP Group Energy – new column “Average Performance”

GSP Group Energy – new column “Effective Market Share Denominator”

Supplier Charge – new column “Supplier Performance”

Supplier Charge – new column “Effective Market Share”

Supplier Charge – new column “SP08 Charge”

Supplier Charge – new column “Capped SP08 Charge”

6.2.3.2 New Tables

Credit Assessment Price:

Effective From Reporting Period (Primary Key)

Credit Assessment Price

Cap Factor:

Effective From Reporting Period (Primary Key)

Cap Factor

6.2.4 Impact on Application Development

New PL/SQL Package to contain Option 1 logic

New PL/SQL Procedure to calculate P157 Option 1 Average Performance

New PL/SQL Procedure to calculate P157 Option 1 Supplier Performance

New PL/SQL Procedure to calculate P157 Option 1 Effective Market Share

New PL/SQL Procedure to calculate P157 Option 1 Supplier Monthly Cap

New PL/SQL Procedure to calculate P157 Option 1 Supplier Charges



New PL/SQL Procedure to calculate P157 Option 1 Distribution

New VB screen to maintain Credit Assessment Price.

New VB screen to maintain Cap Factor.

Addition of screens to Client Administration tab.

6.2.5 Impact on Implementation

New software upgrade required.

6.2.6 Impact on Testing

Modification of the Supplier Charge test specification is required for the new Supplier Charge functionality.

Modification to the Standing Data test specification is required for the new Credit Assessment Price and Cap Factor screens.

Rerun of the tests for the above test specifications.

Rerun of the Witnessed FAT for the above test specifications.

Regression testing using the end-to-end tests.

6.2.7 Impact on Other Documentation

6.2.7.1 Training Manuals

Modify to include changes to Supplier Charge reports and the addition of the Credit Assessment Price and Cap Factor screens.

6.2.7.2 User Guidelines

Modify to include the new Credit Assessment Price and Cap Factor screens.



6.2.7.3 Working Instructions

Modify to include management of the new Credit Assessment Price and Cap Factor screens.

6.2.8 Impact on Hardware

No impact.

6.2.9 Impact on Operational Software

No impact.



6.3 Charging

6.3.1 Process

6.3.1.1 SP01

The SP01 charge will be aggregated for the Settlement Days Late to Supplier Id level only (i.e., not to Supplier Id and GSP Group level).

The charge should no longer be active for a set time after the Reporting Period being calculated. This will be achieved by adding a new column to the Serial table, “Active Period” (in days). Any procedure retrieving data from this entity will first check this value, and compare it to (the system date – date being calculated), to determine whether the Active Period has been breached or not.

6.3.1.1.1 Tables

Tables changed from Phases 1 – 2:

Serial - new column “Active Period”

Tables assumed changed from Phases 3 – 4:

None

New tables required:

P157 SP01 Serial Charge:
SC Reporting Period (Primary Key)
Supplier Id (Primary Key)
Reported Value
Initial Charge
Post FM Charge

6.3.1.1.2 Procedures

Procedures requiring amendment from Phases 1 – 2:

None

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Procedures requiring amendment from Phases 3 – 4:

None

New procedures required:

Procedure to calculate P157 SP01 Serial Charge



6.3.1.2 SP02

The SP01 charge will be aggregated for the Settlement Days Late to Supplier Id level only (i.e., not to Supplier Id and GSP Group level).

The charge should no longer be active for a set time after the Reporting Period being calculated. This will be achieved by adding a new column to the Serial table, “Active Period” (in days). Any procedure retrieving data from this entity will first check this value, and compare it to (the system date – date being calculated), to determine whether the Active Period has been breached or not.

6.3.1.2.1 Tables

Tables changed from Phases 1 – 2:

Serial:

New column: Active Period

Tables assumed changed from Phases 3 – 4:

None

New tables required:

P157 SP02 Serial Charge:

SC Reporting Period (Primary Key)

Supplier Id (Primary Key)

Reported Value

Initial Charge

Post FM Charge

6.3.1.2.2 Procedures

Procedures requiring amendment from Phases 1 – 2:

None



Procedures requiring amendment from Phases 3 – 4:

None

New procedures required:

Procedure to calculate P157 SP02 Serial Charge



6.3.1.3 SP04

A change is required to the Charge Rate values for the SP04 Supplier Charge process.

This is only a change to data in the **existing Performance Target entity**.

6.3.1.3.1 Tables

Tables changed from Phases 1 – 2:

None

Tables assumed changed from Phases 3 – 4:

None

New tables required:

None

6.3.1.3.2 Procedures

Procedures requiring amendment from Phases 1 – 2:

None

Procedures requiring amendment from Phases 3 – 4:

None

New procedures required:

None



6.3.1.4 SP08

A change is required to the Target Type values for the SP08 Supplier Charge process, such that less Target Types will exist for SP08.

This is only a change to data in the **existing Performance Target** entity.

6.3.1.4.1 Tables

Tables changed from Phases 1 – 2:

None

Tables assumed changed from Phases 3 – 4:

None

New tables required:

None

6.3.1.4.2 Procedures

Procedures requiring amendment from Phases 1 – 2:

None

Procedures requiring amendment from Phases 3 – 4:

None

New procedures required:

None



6.3.2 Impact on Functional Design

The functional design models and associated specification (functional and technical) will need modifying to incorporate the new functionality. The Logical Data Model will need modifying to incorporate the new entities and the new data items:

Addition of two new entities to Archiving function

Modification of existing entities in Appendices

Addition of new entities in Appendices

Addition of new entities, and associated attributes and relationships to LDM

Addition of function in FDS to calculate P157 SP01 Serial Charge

Addition of function in FDS to calculate P157 SP02 Serial Charge

6.3.3 Physical Database

The Physical Data Model will need modifying to incorporate the new tables, and the new columns in existing tables. The Oracle database will also need bringing into line with the Physical Data Model.

6.3.3.1 New Columns

Serial - new column "Active Period"

6.3.3.2 New Tables

P157 SP01 Serial Charge:
SC Reporting Period (Primary Key)
Supplier Id (Primary Key)
Reported Value
Initial Charge
Post FM Charge



P157 SP02 Serial Charge:
SC Reporting Period (Primary Key)
Supplier Id (Primary Key)
Reported Value
Initial Charge
Post FM Charge

6.3.4 Impact on Application Development

Addition of new entities to Archiving function

New PL/SQL Procedure to calculate P157 SP01 Serial Charge

New PL/SQL Procedure to calculate P157 SP02 Serial Charge

Modification of supporting Standing Data (Performance Targets)

Addition of new entities to Business Objects Universe

6.3.5 Impact on Implementation

New software upgrade required.

6.3.6 Impact on Testing

Modification of the Supplier Charge test specification is required for the new Supplier Charge functionality.

Rerun of the tests for the above test specifications.

Rerun of the Witnessed FAT for the above test specifications.

Regression testing using the end-to-end tests.



6.3.7 Impact on Other Documentation

6.3.7.1 Training Manuals

No impact

6.3.7.2 User Guidelines

No impact

6.3.7.3 Working Instructions

No impact.

6.3.8 Impact on Hardware

No impact.

6.3.9 Impact on Operational Software

No impact.



6.4 Reporting

6.4.1 Process

6.4.1.1 New Report

A new report for Charges per Supplier Id is required. A single report is produced for each Supplier, detailing their total charges **per Serial across all GSP Groups**.

- For each distinct Supplier Id in the Reporting Period in the **new P157 SP01 Supplier Serial entity**, sum all Post FM Charges.
- For each distinct Supplier Id in the Reporting Period in **new P157 SP02 Supplier Serial entity**, sum all Post FM Charges.
- For each distinct Supplier Id in the Reporting Period in **existing Supplier Serial Charge entity**, sum all Charge and Adjustment Charge values, where the Serial Id = 'SP04'.
- For each distinct Supplier Id in the Reporting Period in **existing Supplier Serial Charge entity**, sum all Charge and Adjustment Charge values, where the Serial Id = 'SP08'.

6.4.1.1.1 Tables

Tables changed from Phases 1 – 2:

None

Tables assumed changed from Phases 3 – 4:

None

New tables required:

None



6.4.1.1.2 Procedures

Procedures requiring amendment from Phases 1 – 2:

None

Procedures requiring amendment from Phases 3 – 4:

None

New procedures required:

Procedure to sum Supplier Charges across their GSP Groups in the **existing Supplier Serial Charge entity, and new P157 Supplier Charge entities.**

6.4.1.1.3 Notes and Assumptions

This report will be added to the existing reporting “framework”.

It is assumed that this report will **not be grouped by Trading Party**.

It is also assumed that the Supplier Serial Charge entity will continue to be populated by the P99 process.



6.4.1.2 Supplier Charge Apportionment Report

The **existing Supplier Charge Apportionment Report** requires the following amendments:

- Change Apportionment Ratios section **labels** for SP08a, SP08b and SP08c
- Change existing procedure to retrieve data for SP08a, SP08b and SP08c for Apportionment Ratios section
- Add check for Cutover Control
- Remove SP01 and SP02 from Apportioned Charges section

6.4.1.2.1 Tables

Tables changed from Phases 1 – 2:

None

Tables assumed changed from Phases 3 – 4:

None

New tables required:

None

6.4.1.2.2 Procedures

Procedures requiring amendment from Phases 1 – 2:

None

Procedures requiring amendment from Phases 3 – 4:

Procedure to retrieve data for report



New procedures required:

None

6.4.1.2.3 Notes and Assumptions

This report will be added to the existing reporting “framework”.



6.4.1.3 Supplier Trading Report

The **existing Supplier Trading Report** requires the following amendments:

- Remove GSP Group Monthly Liability Cap from GSP Group section
- Remove Supplier Group Monthly Liability Cap from Supplier section
- Add Credit Assessment Price label and field to Supplier section
- Add to existing procedure to retrieve data for report, to include Credit Assessment Price
- Add Supplier Monthly Cap label and field to Supplier section
- Add to existing procedure to retrieve data for report, to include Supplier Monthly Cap
- Remove SP01 and SP02 from Performance Analysis section
- Add check for Cutover Control

The following changes apply to Option 1 only:

- Add Average Performance label and field to GSP Group section
- Add to existing procedure to retrieve data for report, to include Average Performance

6.4.1.3.1 Tables

Tables changed from Phases 1 – 2:

None

Tables assumed changed from Phases 3 – 4:

None



New tables required:

None

6.4.1.3.2 Procedures

Procedures requiring amendment from Phases 1 – 2:

None

Procedures requiring amendment from Phases 3 – 4:

Procedure to retrieve data for report

New procedures required:

None

6.4.1.3.3 Notes and Assumptions

This report will be added to the existing reporting “framework”.

6.4.1.4 PAA Summary Supplier Charges Report

The **existing PAA Summary Supplier Charges Report** requires the following amendments:

- Add SP01 and SP02 Supplier Charges field to “Summary of Supplier Charges by GSP Group” section
- Add to existing procedure to retrieve data for report, to include SP01 and SP02 data separately
- Add check for Cutover Control

6.4.1.4.1 Tables

Tables changed from Phases 1 – 2:

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None

Tables assumed changed from Phases 3 – 4:

None

New tables required:

None

6.4.1.4.2 Procedures

Procedures requiring amendment from Phases 1 – 2:

None

Procedures requiring amendment from Phases 3 – 4:

Procedure to retrieve data for report

New procedures required:

None

6.4.1.4.3 Notes and Assumptions

This report will be added to the existing reporting “framework”.



6.4.2 Impact on Functional Design

The functional design models and associated specification (functional and technical) will need modifying to incorporate the new functionality. The Logical Data Model will need modifying to incorporate the new entities and the new data items:

Addition of function in FDS to produce New Report

Modification of function in FDS to produce Supplier Charge Apportionment Report

Modification of function in FDS to produce Supplier Trading Report

Modification of function in FDS to produce PAA Summary Supplier Charges Report

6.4.3 Physical Database

No impact.

6.4.4 Impact on Application Development

Creation of PL/SQL procedure to retrieve data for "New Report"

Modification of PL/SQL Procedure to retrieve Supplier Charge Apportionment Report data

Modification of PL/SQL Procedure to retrieve Supplier Trading Report data

Modification of PL/SQL procedure to retrieve data for PAA Summary Supplier Charges Report

Creation of new Crystal Report for "New Report"

Modification of Supplier Charge Apportionment Report

Modification of Supplier Trading Report



Modification of PAA Summary Supplier Charges Report

Modification of PL/SQL supporting Supplier Charges screen

Modification of PL/SQL supporting Reporting screen

6.4.5 Impact on Implementation

New software upgrade required.

6.4.6 Impact on Testing

Modification of the Supplier Charge test specification is required for the new Supplier Charge functionality.

Modifications to the Reporting test specification to include changes to the reported values.

Rerun of the tests for the above test specifications.

Rerun of the Witnessed FAT for the above test specifications.

Regression testing using the end-to-end tests.

6.4.7 Impact on Other Documentation

6.4.7.1 Training Manuals

Modify to include changes to Supplier Charge reports.

6.4.7.2 User Guidelines

No impact

6.4.7.3 Working Instructions

No impact.



6.4.8 Impact on Hardware

No impact.

6.4.9 Impact on Operational Software

No impact.