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# COST VERIFICATION

## Verification of Defined Cost Procedure

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3.0	This document has been reviewed and is fit for continued use. The content remains unchanged.

Learning Legacy Document

## Contents

<b>1</b>	<b>Introduction .....</b>	<b>4</b>
1.1	Background .....	4
1.2	Policy .....	4
1.3	Abbreviations .....	5
1.4	Scope .....	5
1.5	Objectives .....	6
<b>2</b>	<b>Processes .....</b>	<b>8</b>
2.1	Overall Cost Verification Function Process .....	8
2.2	New Contract Screening Process .....	9
2.3	Contract Risk Diagnosis .....	10
2.4	Contract Dashboard Process .....	11
2.5	Programme Dashboard Process .....	12
2.6	Contract Administration Cost Reviews Process .....	13
2.7	Final Account Process (Cost Verification).....	14
<b>3</b>	<b>Accounts and Records .....</b>	<b>15</b>
3.1	Control Report Observations .....	15
<b>4</b>	<b>Stakeholders and Communications .....</b>	<b>15</b>
4.1	Reporting Levels .....	15
4.2	Liaison with Site Staff .....	15
4.3	Audits by External Bodies .....	15
<b>5</b>	<b>Reference Documents .....</b>	<b>16</b>
<b>6</b>	<b>Standard Forms / Templates .....</b>	<b>16</b>
6.1	New Contracts Questionnaire .....	17
6.2	Example Payment Assessment Template .....	21
6.3	Example Cash Book Template.....	22
6.4	Potential Disallowed Cost Register.....	23
6.5	Contract Administration Cost Review.....	24
6.6	Example of Cost Verification Contract Dashboard and Framework.....	25
6.7	Example of Cost Verification Programme Dashboard Report.....	26
<b>7</b>	<b>Sampling Methodology .....</b>	<b>27</b>
7.1	Selection and Sampling of Records.....	27

# **1 Introduction**

## **1.1 Background**

The Project Managers and Project Managers' Representatives have the responsibility for ensuring that the contracts are administered correctly and payments to the contractors are correct.

This procedure covers the verification of Defined Cost under the Crossrail NEC contracts. It should be read in conjunction with the Contract Administration Manual (in particular Section 5) for a complete view of the administration of the contracts' provisions for payment but is designed to be a stand-alone document.

Verification means the substantiation of, and assessment of contractual entitlement to, reimbursement of the costs within the Contractors' applications for payment of Defined Cost. Costs which do not fall within the definition of Defined Cost are inadmissible and are covered by the Fee(s) and Working Area Overhead (if any). Disallowed Cost is defined in Core Clause 11.2 (25).

The contracts are to be administered in a spirit of mutual trust and co-operation (see Core Clause 10.1). To this end the parties should collaborate through all stages of the assessment and verification of Defined Costs. The contracts require the Contractors to keep financial, project and other records and accounts. They also provide the Employer, Project Manager and others with the right to carry out audits and verify that the payments of Defined Cost are fully supported by those records and accounts to ensure that the Contractors fulfil their obligations under the contracts. The requirement for access thereto is passed down to Subcontractors as appropriate and where relevant. This is one of the requirements for acceptance of Subcontractors.

## **1.2 Policy**

Crossrail's Contract Administration Policies CAP 5, CAP 6, CAP 7 and CAP 11 refer.

**CAP 5** 'The *Project Manager* should use both the Target Price mechanism and Defined Cost to incentivise *Contractors* to best manage and minimise the cost'

**CAP 6** 'The *Project Manager* should determine both the principle and valuation of compensation events in a progressive and timely and efficient manner'

**CAP 7** 'The *Project Manager* should apply Disallowed Costs contemporaneously adopting a fair and reasonable position after discussion with *Contractors*'

**CAP 11** 'In carrying out their duties under the CRL NEC3 Contract the *Project Manager* should act impartially'

The aim is to embed across the Central Section of Crossrail a visible, consistently applied and fully integrated cost verification function to ensure that the contracts are correctly administered and capable of passing external and internal audit. Understanding of the Contractors' costs will also allow informed decision-making enabling successful delivery of the Programme's objectives.

### **1.3 Abbreviations**

- The following abbreviations are used in this Procedure:
- ACCD – Area Control and Commercial Director
- ACA – Area Contract Administrator
- PBM – Project Business Manager
- LCA – Lead Contract Administrator
- CACR - Contract Administration Cost Reviews
- CACRS - Contract Administration Cost Review Summary
- CCS – Contractor’s Cost Collection System
- CRL – Crossrail Ltd
- CVA – Cost Verification Analyst
- CVF – Cost Verification Function
- PMC – Project Manager’s Communication
- NDDCR – Not Defined/Disallowed Cost Register
- PBA - Project Bank Account (Note: For the purposes of this procedure, this includes project-specific accounts which are not covered by clause Z6)
- PM - Project Manager
- PMR – Project Manager’s Representative
- SoCC – Schedule of Cost Components (Note that in this document SoCC means either the SoCC or the Shorter Schedule of Cost Components (SSoCC) as appropriate).

### **1.4 Scope**

This procedure applies to all Contracts executed by CRL which have a Defined Cost element either for calculating the Price of Work Done to Date or valuing Compensation Events. The majority of in-scope contracts are NEC3 ECC Options C and E.

## **1.5 Objectives**

1. Support the Project Managers in their responsibility to make a fair and valid assessment of Defined Cost under CRL's contracts.
2. Proactively drive improved cost controls and processes in order to prevent submission of non-Defined or Disallowed Costs and to create an environment of deterrence against non-compliant Defined Cost submissions, fraud and corruption.
3. Measure and communicate to management and stakeholders the outputs of the Cost Verification team and Project teams in enhancing cost controls and preventing overpayments, thereby contributing to stakeholder confidence in the commercial management of the Programme.
4. Obtain and publish intelligence from cost and operational data to aid evidence-based decision making throughout the Programme.
5. Support the Project Manager and the Employer in establishing a consistent interpretation of Defined Cost elements of the NEC contract across the Programme.
6. Ensure that Contractors are paid only Defined Cost (plus Fee(s) and Working Area Overhead where applicable) and do not over-recover their costs on Option C and E contracts.
7. Carry out Contract Administration Cost Reviews (CACR) in accordance with an agreed cost verification programme, communicated via PMC and demonstrated on monthly dashboards

## **1.6 Delegations, Roles & Responsibilities**

The Project Manager is accountable for the correct verification and assessment of Defined Cost and all other components of the amount due.

The PM will normally delegate responsibility to the PMR, who is supported by the Contract Administration team and the Cost Verification Function.

The division of responsibility between the two groups will be:

A. The contract administration team will:

- Administer payment to the main contractor and raise the Contract Payment Certificate each period
- Maintain the NDDCR
- Verify that Contractor's payments to subcontractors are in accordance with the terms of their subcontract, including validation of Compensation Events as necessary;
- Perform an overview of staff and labour records for time spent on the contract, Equipment records for Equipment charged to the contract and Materials charged to the contract. In each case they will flag potential issues for in depth review by the CVA.
- Monitor the contractor's performance and manage Disallowed Cost as necessary for matters of performance (resources / plant / materials not used to Provide the Works, failure to give an early warning and failure to follow an accepted procurement procedure)
- Ensure capture / disallowance of defined costs associated with Insurable events, Non-conformance, defective works, and resources not used to provide the works  
Communicate CACR terms of reference and reports to the Contractor by PMC.

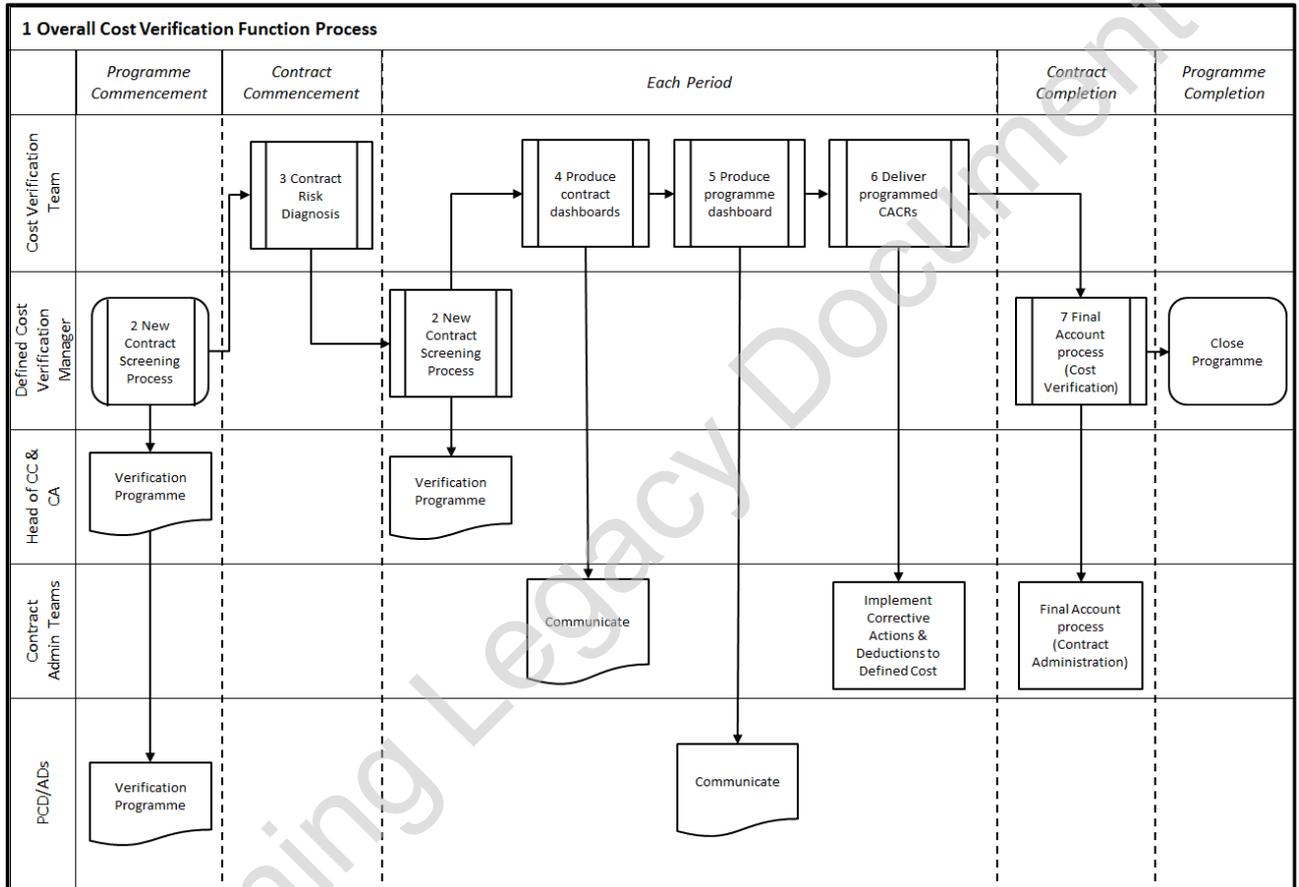
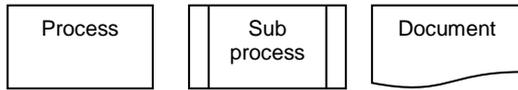
B. The roles and responsibilities of the Cost Verification team are detailed under 2. Processes, below. In summary, the cost Verification Function will:

- Verify Defined Costs under the SoCC
- Verify sub-contract costs which are chargeable on an emerging cost basis
- Develop the cost verification plan on a risk based approach, taking account of the assessment of contractor financial controls and contract performance in complying with the contract in matters of cost.
- Consult and collaborate with the PM, PMR and CA teams in performance of these functions
- Provide expertise in the assessment and control of cost
- Report to CRL management on the status of payment, assessment of controls and risk, and levels of disallowed cost
- Report to the PM, PMR and LCA on finding of CACRs and make recommendations of disallowances or withholding of payments
- Input assessment of contractor controls and compliance to the Commercial Assurance Process and the Performance Assurance Process.

## 2 Processes

### 2.1 Overall Cost Verification Function Process

The process map below sets out the overall Cost Verification (CV) process from programme commencement to programme completion. The CV sub-processes, for example the New Contract Screening process, are detailed below.



## 2.2 New Contract Screening Process

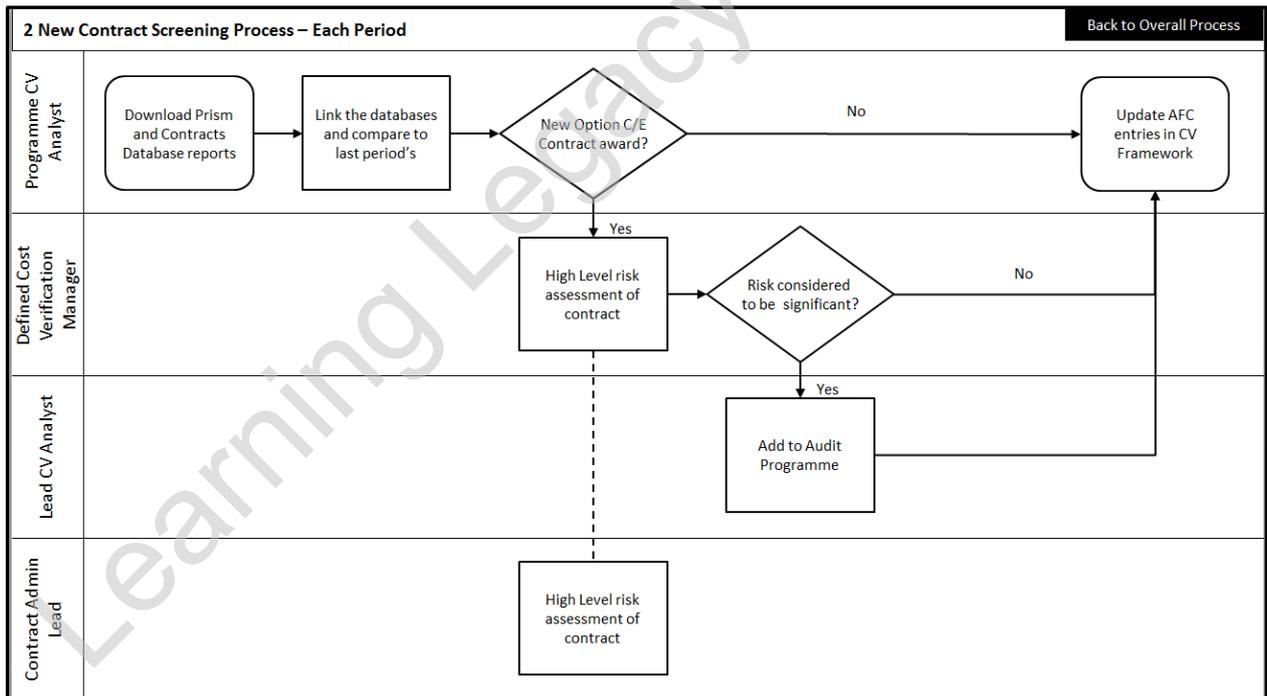
### 2.2.1 New Contract Screening Objectives

The New Contract Screening process identifies which contracts form the scope of the Cost Verification function. The process monitors anticipated expenditure reported by Prism and checks the form of contract to assess whether it is a target or cost reimbursable contract that should be included within the scope of the CV function.

### 2.2.2 New Contract Screening Delivery Roles

Activities	Cost Verification Team							Project Stakeholders							
	Assistant CV Analyst	CV Analyst	Lead CV Analyst	Programme CV Analyst	Equipment CV Analyst	CV Manager	Head of CC & CA	Contractor	Contract Admin	Project Manager	Project Business Manager	Cost Engineer	Area Cost Eng	Area Director/Area Cost & Comm	Area Accountant
Initial project risk screening	I	I	I	I	I	R/A	C								
Initial Contractor risk screening	I	I	I	I	I	R/A	C								
Programmewide NEC Interpretation issues	I	I	I	I	I	C	C		I	I					
Out of Scope reviews															
DLR	I	R	I	I	I	A	C	C					I	I	
LUL	I	I	I	I	I	R/A	C	C	C				I	I	
Utilities	I	R	I	I	I	A	C	C					I	I	
Design	I	I	I	I	I	R/A	C	C							
Single Issue Review															
Assessment of risk	I	I	I	I	I	R/A	C		C	C	I				
Cost/benefit analysis	I	I	R	I	I	A	C		C	C	I				
Decision to proceed	I	I	I	I	I	R	A		I	I	I				
Investigation of issue	I	I	R	I	I	A		C	C	C					
Report	I	I	R	I	I	A	I		I	I	I				
Maintain disallowable cost register	I	I	I	I	I	I	I	I	R/A	I	I				

### 2.2.3 New Contract Screening Process Map



## 2.3 Contract Risk Diagnosis

### 2.3.1 Contract Risk Diagnosis Objectives

The depth into which the risks are tested depends on the judgement of risk against each element of the framework. Where a low level of risk is identified, testing will be limited whereas high risk areas will be tested in detail.

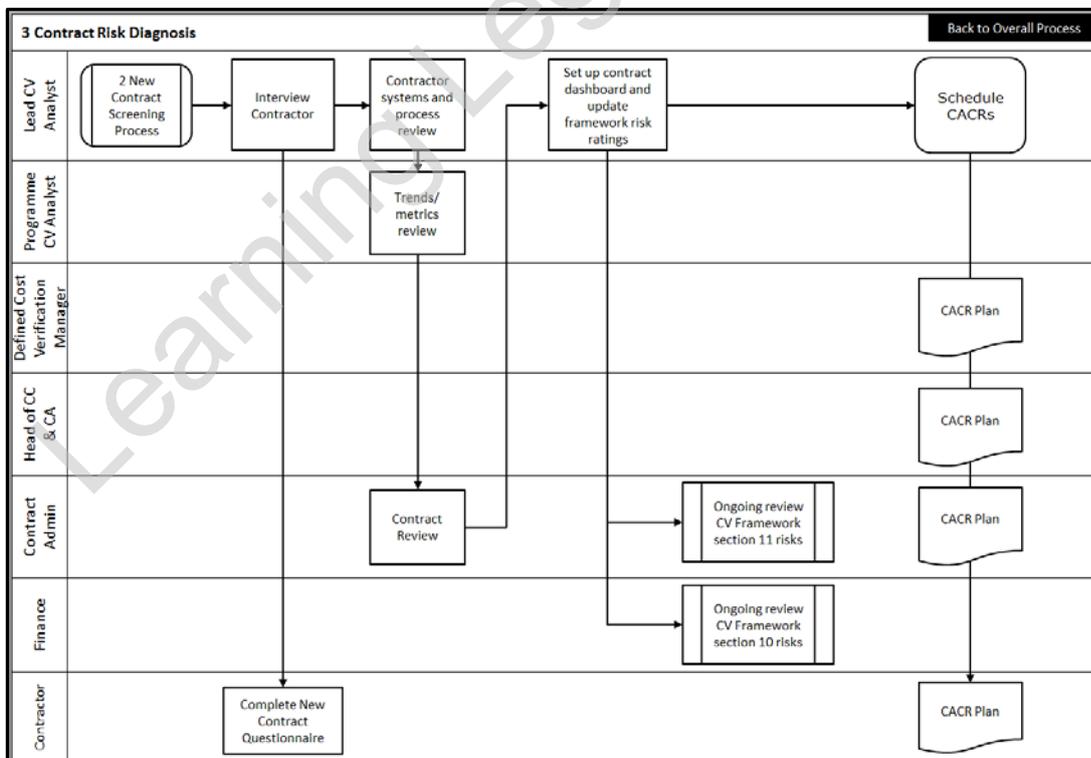
The Contract Risk Diagnosis process is concerned with setting up the CV Framework for the new contract, commencing with the assessment of risks associated with the contract, and creating Cost Administration Cost Review (CACR) programme. This ensures that an efficient, risk-based approach is adopted.

The risk assessment process and the criteria are set out in the Cost Verification Framework Guide (document number xxx).

### 2.3.2 Contract Risk Diagnosis Delivery Roles

Activities	Cost Verification Team							Project Stakeholders							
	Assistant CV Analyst	CV Analyst	Lead CV Analyst	Programme CV Analyst	Equipment CV Analyst	CV Manager	Head of CC & CA	Contractor	Contract Admin	Project Manager	Project Business Manager	Cost Engineer	Area Cost Eng	Area Director/Area Cost & Comm	Area Accountant
Contract review			R/A												
Accounts & Administration Plan Review			R/A												
Start up meeting with contractor			R					R	R/A						
Process review - Equipment			R/A					C							
Process review - Financial			R/A					C							
Process review - Contract Administration			R/A					C							R
Process review - Other			R/A					C							
Trend/benchmark review			A	R				C							
Risk Assessment			R/A												
Update of CV Framework			R			A									
Define CACR verification plan			R			A									

### Contract Risk Diagnosis Process Map



## 2.4 Contract Dashboard Process

### 2.4.1 Contract Dashboard Objectives

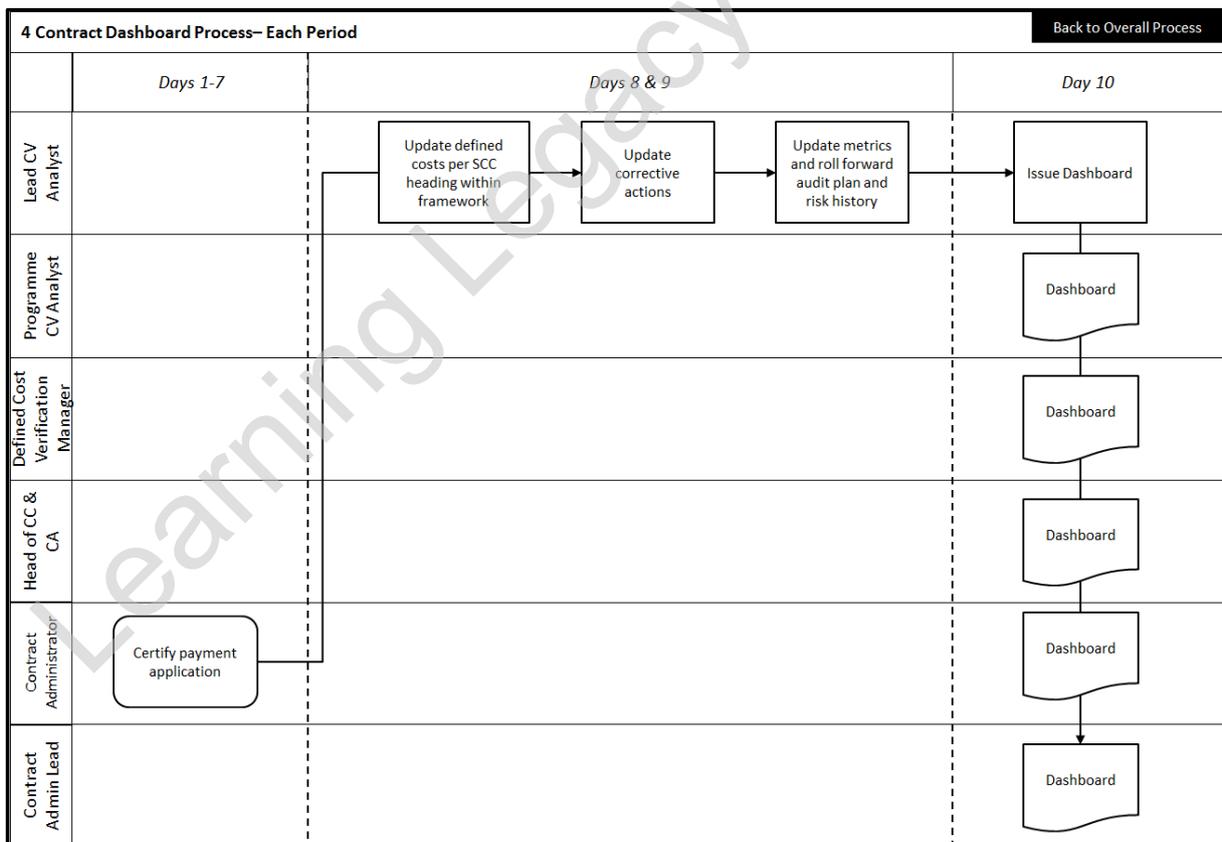
The Contract Dashboard is a tool to both manage the CV of the contract and also to report the outputs of the CV function.

- The CV Framework helps the Lead CV Analyst document the CV risks and plan future CACRs
- The Corrective Actions Tracker helps the Lead CV Analyst and Contract Administrator monitor and manage outstanding actions against the contractor.
- The dashboard provides progress metrics to help monitor the performance of the Contractor and ensure the CACR programme is delivering assurance.

### 2.4.2 Contract Dashboard Delivery Roles

Activities	Cost Verification Team							Project Stakeholders							
	Assistant CV Analyst	CV Analyst	Lead CV Analyst	Programme CV Analyst	Equipment CV Analyst	CV Manager	Head of CC & CA	Contractor	Contract Admin	Project Manager	Project Business Manager	Cost Engineer	Area Cost Eng	Area Director/Area Cost & Comm	Area Accountant
Issue CV dashboard (contract)															
Maintenance of CV framework				R		A									

### 2.4.3 Contract Dashboard Process Map



## 2.5 Programme Dashboard Process

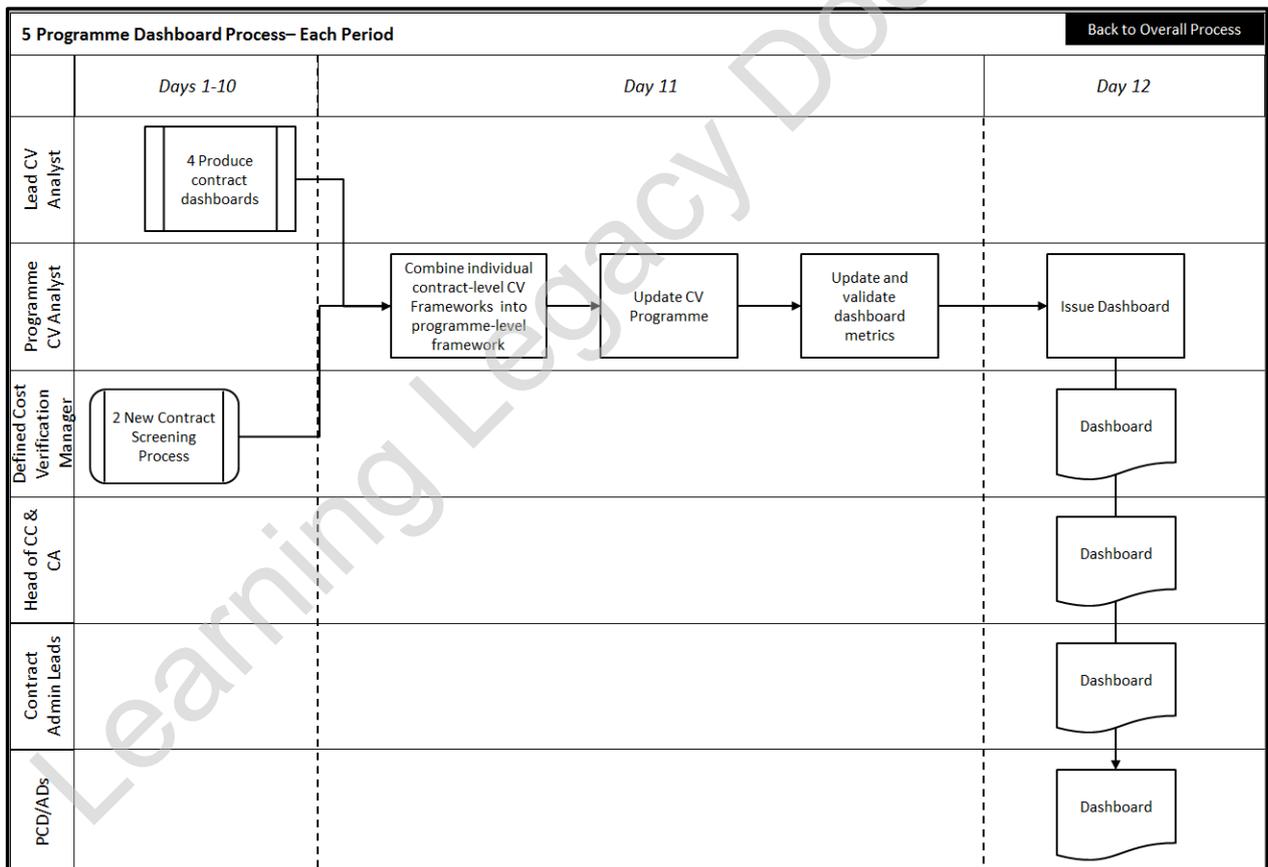
### 2.5.1 Programme Dashboard Objectives

The Programme Dashboard is aimed at providing senior management with information to help them understand the scope, coverage and performance of both the CV function and the supply chain.

### 2.5.2 Programme Dashboard Delivery Roles

Activities	Cost Verification Team							Project Stakeholders							
	Assistant CV Analyst	CV Analyst	Lead CV Analyst	Programme CV Analyst	Equipment CV Analyst	CV Manager	Head of CC & CA	Contractor	Contract Admin	Project Manager	Project Business Manager	Cost Engineer	Area Cust Eng	Area Director/Chief Cost & Control	Area Accountant
Update audit programme	I	I	C	R	I	A	I								
Issue CV dashboard (programme)	I	I	C	R	I	A	I						I	I	I
Maintain programme CV disallowable cost report	I	I	C	R	I	A	I						I	I	I
Data Mining	I	I	I	R	I	A	I								
Collation of payment applications	I	I	I	R	I	A	I								
Maintenance of Defined cost database	I	I	I	R	R	A	I								

### 2.5.3 Programme Dashboard Process Map



## 2.6 Contract Administration Cost Reviews Process

### 2.6.1 Contract Administration Cost Reviews Objectives

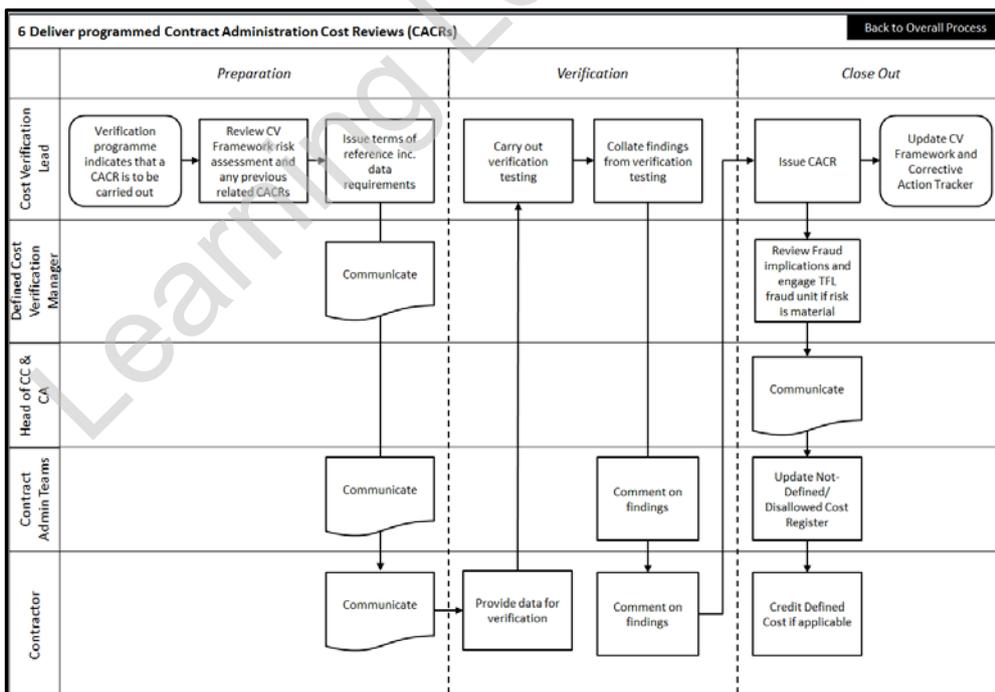
The Contract Administration Cost Reviews (CACRs) provide verification of whether the risks that have been diagnosed have actually materialised, and assess whether payments applied for are compliant with the contract. The process gathers cost information and tests it for compliance with the contract. A report is produced which provides evidence of any non-compliant costs claimed by the Contractor, details improvement actions or further information required, and makes recommendations for disallowed or withheld amounts. This information is then used by the Project Manager in assessing the Price for Work Done to Date. The PM issues the CACR report to the contractor and instructs actions to the contractor via the PMC / PMI process.

The results of the CACR are fed back into the CV Framework in order to update the assessment of relevant Risk Drivers.

### 2.6.2 Contract Administration Cost Reviews Delivery Roles

Activities	Cost Verification Team							Project Stakeholders							
	Assistant CV Analyst	CV Analyst	Lead CV Analyst	Programme CV Analyst	Equipment CV Analyst	CV Manager	Head of CC & CA	Contractor	Contract Admin	Project Manager	Project Business Manager	Cost Engineer	Area Cost Eng	Area Director/Area Cost & Comm	Area Accountant
Start up meeting	I	I	R	I	I	I	I	R	R/A						
Data gathering	R	R	A	I	I	I	I	R							
Execute CACR verification plan - Equipment	I	I	A	I	R	I	I	C							
Execute CACR verification plan - Financial	I	I	C	I	I	I	I	C							
Execute CACR verification plan - Contract Adm	I	I	C	I	I	I	I	C	R/A						
Execute CACR verification plan - Other	R	R	A	I	I	I	I	C							
Maintain audit working papers	R	R	A	I	I	I	I	I							
Day to day contractor contact	R	R	R/A	I	I	I	I	C							
Validation of findings with contractor	I	I	R	I	I	I	I	C	R/A						
Produce CACR report	R	R	R/A	I	I	I	I	C	C						
Issue CACR report	I	I	I	I	I	I	I	I	R	A	I				
Update disallowable cost register	I	I	I	I	I	I	I	I	R/A	A	I				
Update corrective actions register	R	I	A	I	I	I	I	I	I	I	I		I	I	
Implement corrective action	I	I	C	I	I	I	I	R	R/A	C	C				
Update of CV Framework (project)	I	I	R/A	I	I	I	I	I		I	I		C	C	

### 2.6.3 Contract Administration Cost Reviews Process Map



## 2.7 Final Account Process (Cost Verification)

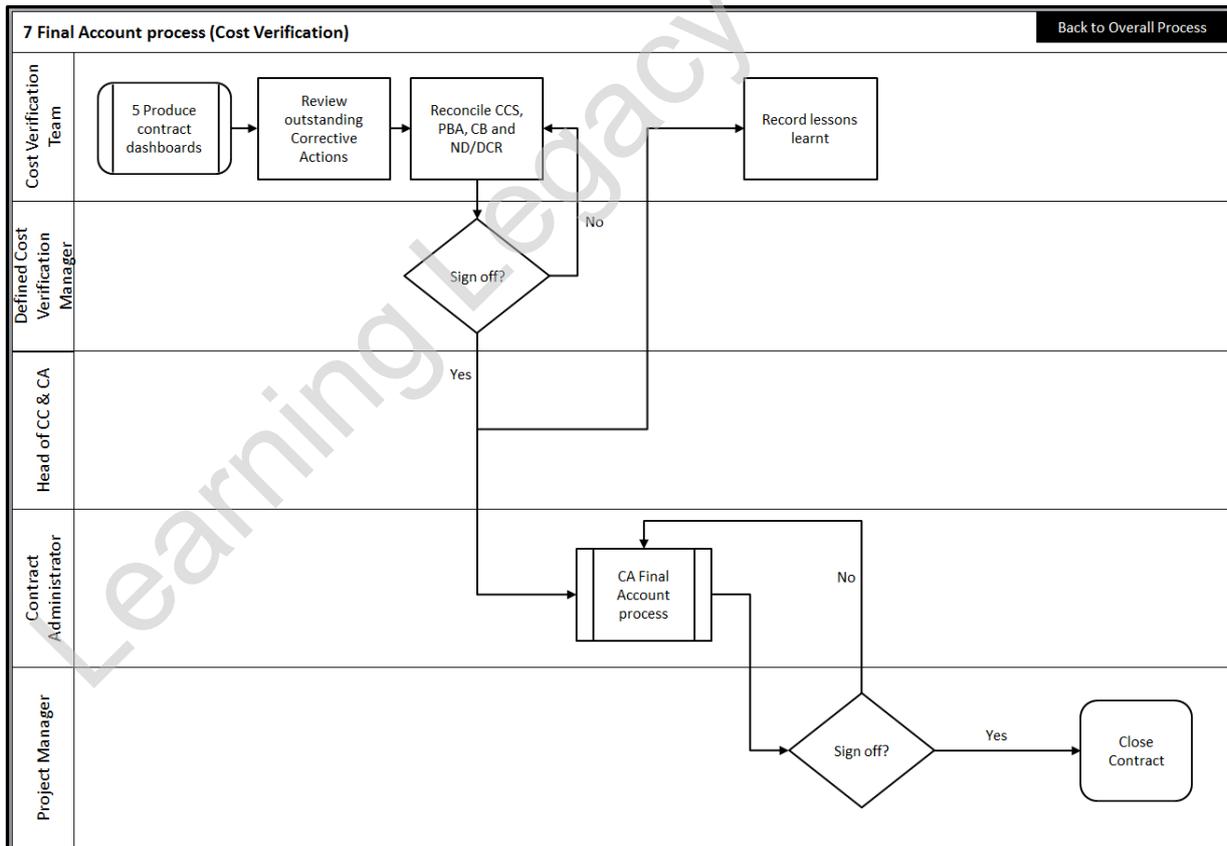
### 2.7.1 Final Account Process (Cost Verification) Objectives

The process concludes the verification of costs prior to approval of the Final Account by the Project Manager. All testing and corrective actions should be completed, and all cost reports and records received and reconciled. Not Defined and Disallowed Cost should have been credited back to Defined Cost. In cases where it is not possible to fully conclude a specific element of the CV process, the potential impact of the resulting uncertainty around amounts due to the Contractor should be taken into consideration during the Project Manager's final assessment.

### 2.7.2 Final Account Process (Cost Verification) Delivery Roles

Activities	Cost Verification Team							Project Stakeholders							
	Assistant CV Analyst	CV Analyst	Lead CV Analyst	Programme CV Analyst	Equipment CV Analyst	CV Manager	Head of CC & CA	Contractor	Contract Admin	Project Manager	Project Business Manager	Cost Engineer	Area Cost Eng	Area Director/Area Cost & Comm	Area Accountant
Final Account Process															
Review outstanding corrective actions	I	I	R	I	I	C	C	C	A	C	I				
Reconcile CCS, PBA, CB and ND/DCR	I	I	R	I	I	A	C	C	I	I	I				
Sign off of Cost Verification of Final Account	I	I	I	I	I	R/A	C	C	I	I	I				
Completion of Final Account Process	I	I	C	I	I	C	C	C	R	A	I				
Cost Verification lessons learnt	C	C	R	C	C	A	I	C	C	I	I	I	I	I	I

### 2.7.3 Final Account (Cost Verification) Process Map



### **3 Accounts and Records**

#### **3.1 Control Report Observations**

The Contractor should produce a number of control reports for review by the CV team.

A list of the control reports which should be monitored include:

- Purchase order values compared with invoices paid
- Subcontract order values compared with applications for payment by subcontractor
- Cost collection schedules
- Equipment Report
- Temporary asset register

Observations from control reports will highlight problems where order values are exceeded, purchase order and subcontractor order values compared with invoiced amounts; cost collection schedules; and accrual schedules.

### **4 Stakeholders and Communications**

#### **4.1 Reporting Levels**

The Cost Verification Function is part of the Programme Controls Directorate. Management information is provided to the Programme Controls Director and to CRL Directors and management via the Programme Controls reporting function.

The Cost Verification Function reports findings to the Project Manager via the Contract Administration teams based on site.

#### **4.2 Liaison with Site Staff**

The key personnel in this respect are the contract administrators, the controls and cost engineers, and the field engineers. The Cost Verification Function will rely on these people to identify areas of investigation that result from problems and disputes that have arisen and that are causing concern. The principal role of the Cost Verification Function will be to carry out financial and accounting audits and reviews, but all areas of cost verification may be undertaken where necessary.

#### **4.3 Audits by External Bodies**

From time to time financial reviews and audits may be carried out by the Sponsors or other Government bodies, or by CRL / TfL Internal Audit. The HCCCA and the Defined Cost Verification Manager will act as the liaison point with these bodies and will respond to issues without further input from the Area / Project teams as far as possible.

Adequate prior notice will be given of these visits and full details of the reviews or audit programmes to be undertaken will be provided to CRL in advance so that the necessary arrangements can be made and site personnel alerted in good time.

## 5 Reference Documents

Ref:	Document Title	Document Number:
1.	None	
2.		
3.		
4.		

## 6 Standard Forms / Templates

The following templates are available on the Cost Verification sharepoint site and from the Cost Verification Team. Examples of each template are attached as follows:

- 5.1 **New Contract Questionnaire**
- 5.2 **Application for Payment - Payment Assessment**
- 5.3 **Application for Payment – Cash Book**
- 5.4 **Application for Payment – Potential Disallowed Cost Register**
- 5.5 **Contract Administration Cost Report (CACR)**
- 5.6 **Cost Verification Contract Dashboard Report and Framework Guide (ref CRL1-XRL-Z9-GUI-CR001-50001)**
- 5.7 **Cost Verification Programme Dashboard Report**

## 6.1 New Contracts Questionnaire



### Cost Verification New Contract Questionnaire

Contract No: -

Current Contract Value:

Contractor: -

Contract Start Date:

Contract Description:-

Contract Completion:-

Present: -

I

Date of Review:-

---

The contract requires the Contractor to keep financial, project and other records and accounts. It also provides the Employer, Project Manager and others with the right to carry out audits and cost verification of those records to ensure that the Contractor is fulfilling his obligations under the contract.

In accordance with the Contract the requirement for records and accounts and access thereto is passed down to Subcontractors as appropriate and where relevant.

The Management and Administration of the Works part 14 requires the Contractor to make transparent all record keeping and financial management.

---

- Accounts & Records of Defined Cost – An Accounts Administration Plan should be submitted within 4 weeks of starting date.
- The Accounts & Administration Plan must detail how the Contractor intends to manage the following:-
  - Cash Book & Bank Reconciliations
  - Cost Collection System
  - Purchase & Sales Ledger

Page 1 of 4

- Sub-contract
  - Temporary Assets
  - Equipment Hire
  - Plant & Materials
  - Staff & Labour
  - Independent Time and Attendance controls
  - Staff Expenses & Petty Cash
- Site based Accountant? Name of contact.
  - Which functions will be undertaken on site with regard to administration of Accounts & Records
  - What source documents will be retained on site?
  - Cost Collection System to be utilised.
  - Cost Collection System must categorise cost into Schedule of Cost Components categories and Subcontract.
  - All costs must be coded in accordance with the Project coding system and the Work Breakdown Structure?
  - Have Vat Registration and CIS certificate details been provided?
  - Has a separate bank account been set up by the Employer in the name of the Employer?
  - A copy of Trust Deed detailing signatories of those authorised to sanction payment from Project Bank Account must be provided.
  - All payments of Defined Cost incurred in connection with this contract must be made through the Project Bank Account?
  - A cashbook must be established in a format satisfactory to the Project Managers requirements? Detailed analysis columns in cashbook must categorise cost by SCC and S/C. (Template available if required)
  - Has the Fair Payment Charter been signed by the Contractor?
  - Is the Contractor aware of his obligations under the charter with respect to timely payment of his subcontract and supplier accounts and the need to cascade this requirement down his supply chain?

- The Fair Payment Performance Report to be included within the Four Weekly Progress Report as instructed in Part 14 Management & Administration of the Works?
- Has a Delegated Authority been prepared? Copy required.
- Staff Organogram / Staff resource chart -- Copy required.
- The Contractor is to provide an attendance register / weekly timesheet for salaried staff, highlighting periods of study, sickness, absenteeism, holidays etc.
- Do all staff prepare timesheets? If not, why not?
- Where is weekly and monthly payroll prepared? - Contact name and telephone number for payroll administrator:-
- Are there any Sub-Contract accounts that will be let as NEC3 Option C or E?
- Are audits carried out by the Contractor on Sub-Contract accounts let as NEC 3 - Option C or Option E contracts? If not why not?
- Who will be the main Labour supplier for this contract? (Value of order if relevant)
- The terms and conditions for all operatives employed on contract are to be regulated in accordance with the provisions of the appropriate national working rule agreement in accordance with the Contractor's or his approved subcontractor's type and scope of work. Through a process of reviews and reports the contractor is required to demonstrate compliance to the Project Manager.
- The Contractor has a commitment to confirm and demonstrate compliance with their obligations under Contract Clause 28 -The London Living Wage.
- Will an electronic swipe card/clock card system be in use for independent recording of hours worked?
- If not, how is time recorded & who is authorised to sign timesheets? (Working on more than one job/contract in pay period.)

- Are there any items of Equipment listed in the Contract Data?
  
- Is Equipment being hired internally?
  
- Copy of Equipment Hire Register required – covering internal & external hire in a format acceptable to the Project Manager.
  
- Are we paying for people who are outside the working area? Design Teams etc
  
- Establish an Asset Register. Contact name and telephone number for person responsible for management of temporary assets.
  
- Does the contractor actively review cost and determine that all transactions processed are covered under the Schedule of Cost Components.
  
- Does the contractor fully understand the nature of a NEC3 Option C or Option E contract? All expenditure must be based on actual Defined Cost and original source documentation must be available for inspection.
  
- How will the Contractor ensure all cost relevant to the Contract is captured in Cost Collection System as soon as cost is incurred?

**Any Other Issues:**

**Templates to be provided by Cost Verification Team:**

Temporary Asset Register  
Cashbook  
Assessment for Payment  
Disallowed Cost Register

## 6.2 Example Payment Assessment Template

PAYMENT ASSESSMENT SUMMARY SHEET					
<b>Contractor Name</b>					
To: Crossrail Ltd London	Date: <input type="text" value="Date"/>		Note - This column relates to comments made by a Contract Administrator after he has reviewed and where necessary adjusted the original Contractor assessment.		
	Assessment Number: <input type="text" value="# for Period #"/>				
	Assessment Date: <input type="text" value="Date"/>				
	Job No: <input type="text" value="??"/>				
Summary	Amount due		Project Manager's Assessment @ No ??		
	£		Cumulative £	Withheld Cost	Comment
<b>1 DEFINED COST as at Assessment Date</b>	<b>Nett</b>				
(Cost as per Cashbook Payments SOCC & Subcontract excluding Fee & VAT)					
1 Subcontract	£0.00		£0.00		
1 People	£2,642.50		£2,642.50		
1 Equipment	£0.00		£0.00		
1 Plant & Materials	£70,373.24		£70,373.24		
2 Charges	£0.00		£0.00		
2 Manufacture and Fabrication	£0.00		£0.00		
2 Design	£0.00		£0.00		
2 Sales	£0.00		£0.00		
<b>Defined Cost as at Assessment Date</b>	<b>Sub Total</b>	<b>£73,015.74</b>	<b>£73,015.74</b>		See Cash Book
<b>2 Disallowed/Not Defined Cost</b>					
2 Less Disallowed/ Not Defined Cost - Agreed	£0.00		£0.00		See Potential Disallowed Cost/Not Defined
2 Less Disallowed/ Not Defined Cost - To Be Agreed			£0.00		
<b>3 FORECAST of DEFINED COST to Next Assessment Date</b>					
(See 4 week Look ahead schedules attached)					
3 Subcontract	£685,750.00		£646,387.28	-£39,362.72	
3 People	£ 920,663.22		£207,429.71	-£713,233.51	
3 Equipment	£ 60,000.00		£0.00	-£60,000.00	
3 Plant & Materials	£ 565,473.46		£189,860.25	-£375,613.21	
4 Charges	£0.00		£0.00	£0.00	
4 Manufacture and Fabrication	£0.00		£0.00	£0.00	
4 Design	£0.00		£0.00	£0.00	
4 Sales	£0.00		£0.00	£0.00	
<b>Forecast of Defined Cost as at Assessment Date</b>	<b>Sub Total</b>	<b>£2,231,886.68</b>	<b>£1,043,677.24</b>	<b>-£1,188,209.44</b>	
<b>Total Defined Cost claimed as at Assessment Date</b>			<b>£2,304,902.42</b>	<b>£1,116,692.98</b>	<b>-£1,188,209.44</b>
<b>Plus 5% contract Fee - Please amend to correct Fee %</b>			<b>£115,245.12</b>	<b>£104,522.46</b>	
<b>Total Price for Work Done To Date as at Assessment Date</b>			<b>£2,420,147.54</b>	<b>£1,221,215.45</b>	
<b>Less Previously Certified on Payment Certificate No. ?</b>			<b>-£2,500,000.00</b>	<b>-£2,500,000.00</b>	
<b>Total Assessment for Payment as at Assessment Date</b>			<b>-£79,852.46</b>	<b>-£1,278,784.55</b>	All Sums Paid on Account until cost verification and audits are carried out to verify the ledger/Defined cost.

6.3 Example Cash Book Template

CROSSRAIL PROJECT BANK ACCOUNT - DEFINED COST / CASHBOOK												ANALYSIS OF DEFINED COST FOR ASSESSMENT PURPOSES (NET COST)											
Contract No: ?? Contractor: ?? Sheet Title: Defined Cost / Cash Book As at:																							
Own Re	Trans. Date	Trans Typ	Value (Net)	VAT (17.5)	Value (Gross)	Cumulative Balance inc VAT (£)	Paye	Description	Charged Y/N	Bank Statement Reconciliation (date)	Crossrail Receipts	Tfr of Management Fee	VAT to / from HMRC	Interest Received	People	Equipment	Plant & Materials	Charges	Manufacture & Fabrication	Design	Sales	Sub Contract	
Opening Balance						0.00																	
24/09/2010	TRF		357,892.77	62,631.23	420,524.00	420,524.00		AN Other	Y	17/09/10	£357,892.77												
24/09/2010	TRF		935,615.95	163,732.79	1,099,348.74	1,519,872.74		AN Other	Y	23/09/10	£935,615.95												
01	17/09/2010	CHQ	-71.99	-12.60	-84.59	1,519,788.15		AN Other	Y	13/07/10													
02	17/09/2010	CHQ	-80.00	-14.00	-94.00	1,519,694.15		AN Other	Y	20/07/10													
03	17/09/2010	CHQ	-51.61	-9.03	-60.64	1,519,633.51		AN Other	Y	13/09/10													
04	17/09/2010	CHQ	-289.00	-50.58	-339.58	1,519,293.93		AN Other	Y	17/09/10													
05	17/09/2010	CHQ	-355.00	-62.13	-417.13	1,518,876.80		AN Other	Y	15/10/10													
06	17/09/2010	CHQ	-353.25	-61.82	-415.07	1,518,461.73		AN Other	Y	23/09/10													
07	17/09/2010	CHQ	-1,821.91	-318.83	-2,140.74	1,516,320.99		AN Other	Y	10/08/10													
08	17/09/2010	CHQ	-1,838.04	-321.66	-2,159.70	1,514,161.29		AN Other	Y	11/08/10													
09	27/09/2010	CHQ	-400.00	-70.00	-470.00	1,513,691.29		AN Other	Y	23/09/10													
10	27/09/2010	CHQ	-1,600.00	-280.00	-1,880.00	1,511,811.29		AN Other	Y	23/09/10													
12	07/10/2010	CHQ	-300.00	-52.50	-352.50	1,511,458.79		AN Other	Y	23/09/10													
13	07/10/2010	CHQ	-192.50	-33.69	-226.19	1,511,232.60		AN Other	Y	28/09/10													
14	07/10/2010	CHQ	-150.00	-26.25	-176.25	1,511,056.35		AN Other	Y	23/09/10													
15	08/10/2010	CHQ	-50.40	-8.82	-59.22	1,510,997.13		AN Other	Y	23/09/10													
16	08/10/2010	CHQ	-610.90	-106.91	-717.81	1,510,279.32		AN Other	Y	24/09/10													
17	08/10/2010	CHQ	-146.90	-25.71	-172.61	1,510,106.71		AN Other	Y	14/10/10													
18	08/10/2010	CHQ	-15,862.09	-2,775.87	-18,637.96	1,491,468.75		AN Other	Y	15/10/10													
19	08/10/2010	CHQ	-929.00	-162.57	-1,091.57	1,490,377.18		AN Other	Y	15/10/10													
20	08/10/2010	CHQ	-2,876.70	-503.42	-3,380.12	1,486,997.06		AN Other	Y	14/10/10													
21	08/10/2010	CHQ	-6,752.59	-1,181.70	-7,934.29	1,479,062.77		AN Other	Y	15/10/10													
22	08/10/2010	CHQ	-289.00	-50.58	-339.58	1,478,723.19		AN Other	Y	14/10/10													
23	08/10/2010	CHQ	-104.51	-18.29	-122.80	1,478,600.39		AN Other	Y	14/10/10													
24	08/10/2010	CHQ	-1,177.50	-206.06	-1,383.56	1,477,216.83		AN Other	Y	19/10/10													
25	08/10/2010	CHQ	-649.80	-113.72	-763.52	1,476,453.31		AN Other	Y	14/10/10													
26	08/10/2010	CHQ	-1,241.64	-217.29	-1,458.93	1,474,994.38		AN Other	Y	15/10/10													
000018	15/10/2010	TRF	188,665.52	33,016.47	221,681.99	1,696,676.37		AN Other	Y	19/10/10	£188,665.52												
26	27/10/2010	CHQ	-2,635.00	-461.13	-3,096.13	1,693,580.24		AN Other	Y	20/10/10													
26	29/10/2010	TRF	143,455.08	26,154.64	175,609.72	1,869,189.96		AN Other	Y	14/10/10	£149,455.08												
26	29/10/2010	TRF	634,502.14	110,377.87	745,540.01	2,614,729.97		AN Other	Y	14/10/10	£634,502.14												
26	03/11/2010	CHQ	-13,494.48	-2,361.53	-15,856.01	2,598,873.96		AN Other	Y	14/10/10													
26	02/11/2010	CHQ	-18,931.91	-3,271.09	-21,963.00	2,576,910.96		AN Other	Y	02/11/10													
			2,193,115.71	383,795.25	2,576,910.96						£2,266,131.46	£0.00	£0.00	£0.00	£2,642.50	£0.00	£470,373.24	£0.00	£0.00	£0.00	£0.00		

£2,193,115.71

**6.4 Potential Disallowed Cost Register**

	<b>Register of Potential Not Defined/Disallowed Cost</b>														
Contract No -															
Contractor -															
<b>NOT DEFINED/DISALLOWED COST CATEGORIES</b>															
RECORDS	not justified by the Contractor's accounts and records or the terms of this contract.														
S/C & PO ERROR	should not have been paid to a Subcontractor or supplier in accordance with his contract,														
PROC FAILURE	incurred because the Contractor did not follow an acceptance or procurement procedure etc														
EW FAILURE	incurred because the Contractor did not give an early warning which this contract required														
DEFECTS POST	the cost of - correcting Defects after Completion,														
DEFECTS NON C	the cost of -correcting Defects caused by the Contractor not complying with a constraint o														
CONTRACTOR DEFECTS	the cost of - correcting Defects before Completion caused by the Contractor not complying														
PM DEFECTS	the cost of - correcting Defects notified to the Contractor by the Project Manager which the Contractor failed previously to notify to the Project Manager having had the opportunity to notify such Defect,														
UNINCORP GOOD	the cost of - Plant and Materials not used to Provide the Works (after allowing for reasonable wastage) unli														
UNINCORP	the cost of - resources not used to Provide the Works (after allowing for reasonable availability and utilisati														
PROCEEDINGS	the cost of - preparation for and conduct of an adjudication or proceedings														
NOT DEFINED	Deemed by the Project Manager as not falling under the categories as pay:														
<b>Learning Legacy Document</b>															
DIC Ref No.	Category for Disallowed Cost	App No.	SoCC Cat or S/C	Description	Date	Source (Inv)	Reference	Comment	Net Value	Category for Disallowed Cost	Accepted by Contractor	Comment	Credit Note Number	Date Credited	Amount Credited/Removed
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
									£0.00						£0.00

**6.5 Contract Administration Cost Review**

CONFIDENTIAL					
		<b>CONTRACT ADMINISTRATION COST REVIEW</b>		Page:	1 of 1
				Ref No:	CACR-1
Contract No:	#	Contractor:	Name		Contract Description:
Subject:	Type of Review			Date:	
Location:		Meeting: <input type="checkbox"/>	Other: <input type="checkbox"/>	Prepared by:	Cost Verification Analyst
		Review: <input checked="" type="checkbox"/>	<input type="checkbox"/>		
In attendance:		Sent to:		CC:	
<b>Section A - FINDING</b>					
Required Condition:					
<i>Reference Contract Clause</i>					
Condition Found:					
 <i>Insert Detailed Findings</i>					
Lead Cost Verification Analyst:					
Date:					
<b>Section B - CORRECTIVE ACTION</b>					
<i>Detail Corrective Actions</i>					
Pending resolution of the above issues to the Project Manager's satisfaction £?? to be added to the Not Defined/ Disallowed Cost Register by the relevant Lead Contract Administrator.					
Close Out Date:					
Action Agreed by: Crossrail Project Manager			Action Agreed by: Crossrail Contract Administrator		
sign/print name/date:.....			sign/print name/date:.....		
<b>Section C - Action Taken:</b>					
Action Verified & Issue Closed					
CROSSRAIL Contract Administrator:					
sign/print name/date .....					
CROSSRAIL Cost Verification Team					
sign/print name/date .....					

## 6.6 Example of Cost Verification Contract Dashboard and Framework



### Cost Verification | Contract Dashboard - C330

Contractor: Costain Skanska JV

Cost Metrics	£m	Corrective Action Metrics	
Anticipated Final Cost	21.8	Total Corrective Actions	10
Defined Cost of In-Scope Contracts	20.2	Closed	7
Defined Cost Reviewed by CVT	16.2	Open - Due	0
Coverage	80%	Open - Overdue	3
Disallowable/Not Defined Cost	0.9	% Open Actions Overdue	100%
% Recovery of Verified Cost	5.4%	Average Age of Corrective Actions	373

All outstanding actions are reflected in the correct amount of Disallowed Cost £457,882.

	Initial Period		3-Period Look Back			4-Period Look Ahead								
	P12 12/13	P3 13/14	P4 13/14	P5 13/14	P6 13/14	P7 13/14	P8 13/14	P9 13/14	P10 13/14	P11 13/14	P12 13/14	P13 13/14	P1 14/15	P2 14/15
1 People	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2 Plant & Materials	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3 Equipment	●	●	●	●	●	●	●	●	●	●	●	●	●	●
4 Charges	●	●	●	●	●	●	●	●	●	●	●	●	●	●
5 Subcontract	●	●	●	●	●	●	●	●	●	●	●	●	●	●
6 Manufacture & Fabrication and Design	●	●	●	●	●	●	●	●	●	●	●	●	●	●
7 Fee/Overhead	●	●	●	●	●	●	●	●	●	●	●	●	●	●
8 Payment	●	●	●	●	●	●	●	●	●	●	●	●	●	●
9 Records	●	●	●	●	●	●	●	●	●	●	●	●	●	●
10 Financial	●	●	●	●	●	●	●	●	●	●	●	●	●	●
11 Contract Administration	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Overall	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Key Issues
Contract at Final Account Stage
Pension over recovery

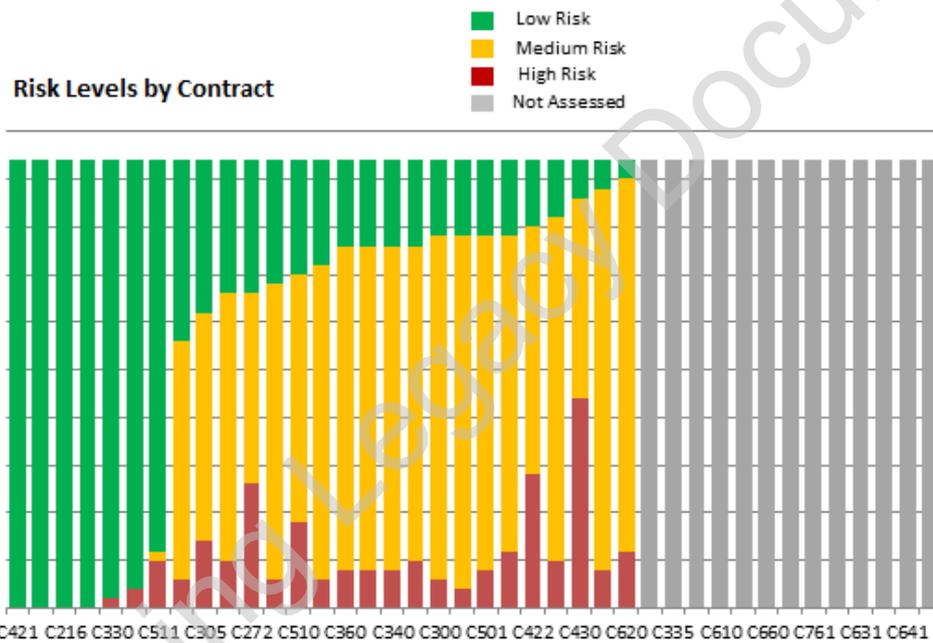
Contract	Contractor	Response	Contract Driver	Risk Driver	Risk	Driver Type	Likelihood	Likelihood	Risk Rating Rationale	AFI	Defined Cost	Verified Cost	Coverage	Coverage	Deductible	Deductible	Deductible	Deductible
681 C330	Costain / Skanska JV	Met	Contract Total	Contract Total	0	Contract Total	●	●		*****	20,185,248	*****	80%	●	975,288	0	0	4.34%
682 C330	Costain / Skanska JV	Met	People	Summary	1	Summary	●	●			5,474,613	*****	95%	●	251,836	0	0	4.60%
683 C330	Costain / Skanska JV	Met	People	Staff - Missing Level	101	Trend/Benchmark	●	●					0%	●				
684 C330	Costain / Skanska JV	Met	People	Staff - Times and Attendance	102	Process	●	●					0%	●				
685 C330	Costain / Skanska JV	Met	People	Staff - Exchange process	103	Process	●	●	CACR3 Position			5,200,882	0%	●	124,768.19			
686 C330	Costain / Skanska JV	Met	People	Staff - Rate	104	Trend/Benchmark	●	●					0%	●				
687 C330	Costain / Skanska JV	Met	People	Expenses	105	Process	●	●					0%	●				
688 C330	Costain / Skanska JV	Met	People	People outside the working area, e.g. designers	106	Process	●	●	CACR3.647				0%	●	127,070.22			
689 C330	Costain / Skanska JV	Met	People	Labour - Missing level	107	Trend/Benchmark	●	●	Not carried out				0%	●				
690 C330	Costain / Skanska JV	Met	People	Agency Staff - Agreement	108	Process	●	●					0%	●				
691 C330	Costain / Skanska JV	Met	People	Labour - Time approval	109	Process	●	●					0%	●				
692 C330	Costain / Skanska JV	Met	People	Labour Direct - Payroll process	11	Process	●	●					0%	●				
693 C330	Costain / Skanska JV	Met	People	Labour Rate	111	Trend/Benchmark	●	●	Not carried out				0%	●				
694 C330	Costain / Skanska JV	Met	People	Labour - SC - SC Order/Agreement	112	Process	●	●					0%	●				
695 C330	Costain / Skanska JV	Met	People	Labour - SC - SC payment	113	Process	●	●					0%	●				
696 C330	Costain / Skanska JV	Met	Plant & Materials	Summary	2	Summary	●	●			2,282,615	*****	60%	●	0	0	0	0.00%
697 C330	Costain / Skanska JV	Met	Plant & Materials	Plant & Materials Procurement	2.01	Process	●	●					0%	●				
698 C330	Costain / Skanska JV	Met	Plant & Materials	Delivery	2.02	Process	●	●				1,385,568	0%	●				
699 C330	Costain / Skanska JV	Met	Plant & Materials	CV / CA - Quantity Quality Checks	2.03	Trend/Benchmark	●	●	Not carried out				0%	●				
700 C330	Costain / Skanska JV	Met	Equipment	Summary	3	Summary	●	●			1,797,150	*****	60%	●	0	0	0	0.00%
701 C330	Costain / Skanska JV	Met	Equipment	Equipment - Procurement	3.01	Process	●	●					0%	●				
702 C330	Costain / Skanska JV	Met	Equipment	Equipment order trail - PO, DN, GRN, Invoice	3.02	Process	●	●				1,078,230	0%	●				
703 C330	Costain / Skanska JV	Met	Equipment	Equipment - Rate comparison	3.03	Trend/Benchmark	●	●	Not carried out				0%	●				
704 C330	Costain / Skanska JV	Met	Equipment	Equipment Utilisation Controls	3.04	Process	●	●					0%	●				
705 C330	Costain / Skanska JV	Met	Equipment	Off Hire of Equipment	3.05	Process	●	●					0%	●				
706 C330	Costain / Skanska JV	Met	Equipment	Temporary Asset Register in prescribed format	3.06	Process	●	●	CACR3 - Status invoices to be raised for the jobs of all temporary assets and recorded within CVJV Status accounts. Copies of invoices to be forwarded to S Egan and S Franco.				0%	●				
707 C330	Costain / Skanska JV	Met	Equipment	Equipment in contract data	3.07	Process	●	●					0%	●				
708 C330	Costain / Skanska JV	Met	Charges	Summary	4	Summary	●	●			2,267	2,267	100%	●	0	0	0	0.00%
709 C330	Costain / Skanska JV	Met	Charges	Accounting Process for Charges	4.01	Process	●	●					0%	●				
710 C330	Costain / Skanska JV	Met	Charges	Correct Application of Working Area Overhead	4.02	Process	●	●					0%	●				
711 C330	Costain / Skanska JV	Met	Subcontract	Summary	5	Summary	●	●			10,352,500	*****	80%	●	0	0	0	0.00%
712 C330	Costain / Skanska JV	Met	Subcontract	Option A - Procurement	5.01	Process	●	●					0%	●				
713 C330	Costain / Skanska JV	Met	Subcontract	Option A - Order value / spend	5.02	Trend/Benchmark	●	●	Not carried out				0%	●				
714 C330	Costain / Skanska JV	Met	Subcontract	Option CIE - Procurement	5.03	Process	●	●					0%	●				
715 C330	Costain / Skanska JV	Met	Subcontract	Option CIE - Order value / Cost To Date	5.04	Trend/Benchmark	●	●	Not carried out				0%	●				
716 C330	Costain / Skanska JV	Met	Subcontract	Option CIE - Tier 2 Checks	5.05	Process	●	●					0%	●				
717 C330	Costain / Skanska JV	Met	Manufacture & Fabrication	Summary	6	Summary	●	●			0	0	0%	●	0	0	0	0.00%
718 C330	Costain / Skanska JV	Met	Manufacture & Fabrication	Manufacture & Fabrication	6.01	Process	●	●					0%	●				
719 C330	Costain / Skanska JV	Met	Manufacture & Fabrication	Manufacture & Fabrication	6.02	Process	●	●					0%	●				
720 C330	Costain / Skanska JV	Met	Manufacture & Fabrication	Manufacture & Fabrication	6.03	Process	●	●					0%	●				
721 C330	Costain / Skanska JV	Met	Fee	Summary	7	Summary	●	●			0	0	0%	●	623,952	0	0	
722 C330	Costain / Skanska JV	Met	Fee/Overhead	AFP Calculation	7.01	Process	●	●					0%	●				
723 C330	Costain / Skanska JV	Met	Fee/Overhead	Not Defined Cost	7.02	Process	●	●	CACR3.647 Non Recoverable cost identified in JV recharge invoice system				0%	●	206,045.75			
724 C330	Costain / Skanska JV	Met	Fee/Overhead	Costs Applied for but covered by WAO	7.03	Process	●	●	CV No.1				0%	●	417,905.03			
725 C330	Costain / Skanska JV	Met	Payment	Summary	8	Summary	●	●			0	0	0%	●	0	0	0	
726 C330	Costain / Skanska JV	Met	Payment	AFP Process	8.01	Process	●	●	CACR1, CACR4				0%	●				
727 C330	Costain / Skanska JV	Met	Payment	Values Reimbursed and discounts	8.02	Process	●	●	Monthly equipment spend £2m				0%	●				
728 C330	Costain / Skanska JV	Met	Payment	AFP vs Target	8.03	Trend/Benchmark	●	●	Gain in Final Account £25K				0%	●				
729 C330	Costain / Skanska JV	Met	Records	Summary	9	Summary	●	●			0	0	0%	●	0	0	0	
730 C330	Costain / Skanska JV	Met	Records	Management of JV accounting process	9.01	Process	●	●					0%	●				
731 C330	Costain / Skanska JV	Met	Records	Electronic Sub Ledger	9.02	Process	●	●					0%	●				
732 C330	Costain / Skanska JV	Met	Records	Availability of primary Records - Inv, PO, GRN, Certs	9.03	Process	●	●	CACR1				0%	●				
733 C330	Costain / Skanska JV	Met	Financial	Summary	10	Summary	●	●			0	0	0%	●	0	0	0	
734 C330	Costain / Skanska JV	Met	Financial	Insurance of Crossrail assets	10.01	Process	●	●					0%	●				
735 C330	Costain / Skanska JV	Met	Financial	Tax registration	10.02	Process	●	●					0%	●				
736 C330	Costain / Skanska JV	Met	Financial	GRN Tax	10.03	Process	●	●					0%	●				
737 C330	Costain / Skanska JV	Met	Financial	Foreign Exchange Risk	10.04	Process	●	●					0%	●				
738 C330	Costain / Skanska JV	Met	Financial	Commodity Price Risk	10.05	Process	●	●					0%	●				
739 C330	Costain / Skanska JV	Met	Financial	Underwriting & Accruals	10.06	Process	●	●					0%	●				
740 C330	Costain / Skanska JV	Met	Contract Administration	Summary	11	Summary	●	●			276,103	276,103	100%	●	0	0	0	
741 C330	Costain / Skanska JV	Met	Contract Administration	Subcontractors - CE Establishment	11.01	Process	●	●					0%	●				
742 C330	Costain / Skanska JV	Met	Contract Administration	Subcontractors - CE Validation	11.02	Process	●	●					0%	●				
743 C330	Costain / Skanska JV	Met	Contract Administration	Subcontractors - Non Conformance Reporting	11.03	Process	●	●					0%	●				
744 C330	Costain / Skanska JV	Met	Contract Administration	Insurance	11.04	Process	●	●				276,103	0%	●				
745 C330	Costain / Skanska JV	Met	Contract Administration	Plant & Materials Storage	11.05	Process	●	●					0%	●				
746 C330	Costain / Sk																	

6.7 Example of Cost Verification Programme Dashboard Report



## Cost Verification Programme Dashboard - P5 2013

	£m
Defined Cost of In-Scope Contracts	x
Defined Cost Reviewed by CVT	x
Coverage	x
Disallowable/Not Defined Cost	x
% Recovery of Verified Cost	x



## **7 Sampling Methodology**

### **7.1 Selection and Sampling of Records**

#### Records

Using a quantitative method to test a sample of the population gives the user the ability to make observations about the whole population without incurring time and cost testing the whole population.

For the results to be statistically significant (unlikely to occur by chance alone) the sample size must be appropriate for the set of data. The Sample Calculator program should be used to obtain the appropriate sample size based on the population of transactions under review.

The sample should be generated using IDEA using a combination of the following techniques:

#### Random Sampling

A completely random selection of the entire population. The selection must not be influenced by any factors. The advantages are any data in the population has equal probability of being selected. The disadvantages are the sample may not make up a true view of the population and the inability to analyse subgroups.

#### Systematic Sampling

Used to select samples from intervals. The first interval is randomly chosen, with the remaining intervals at K thereafter where  $k = \text{population size} / \text{sample size}$ . This is a form of probability sampling.

A random sample may pick too many samples from the high cost end, giving an unfair view of the data. A systematic sample will ensure the samples are spread evenly.

#### Stratified Sampling

Often a population will have its own distinct categories. E.g. cost data organized by region. It is often appropriate to test these sub-categories. Each category should be separated into what we call "Strata". Each strata is then sampled as a separate sub-population using an appropriate method of sampling (such as simple random or systematic). These enable observations to be made about subgroups which may have not been visible sampling the population as a whole.