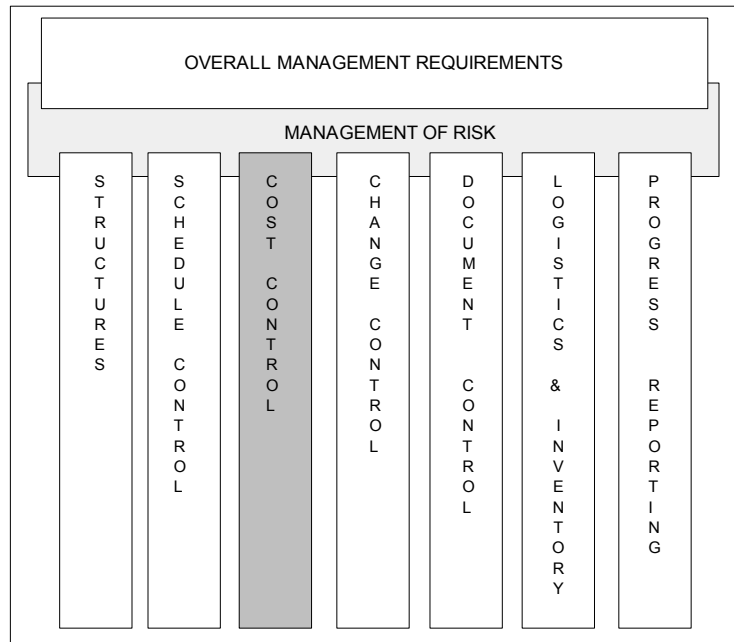


5.0 COST CONTROL MANAGEMENT REQUIREMENTS

5.1 OVERVIEW

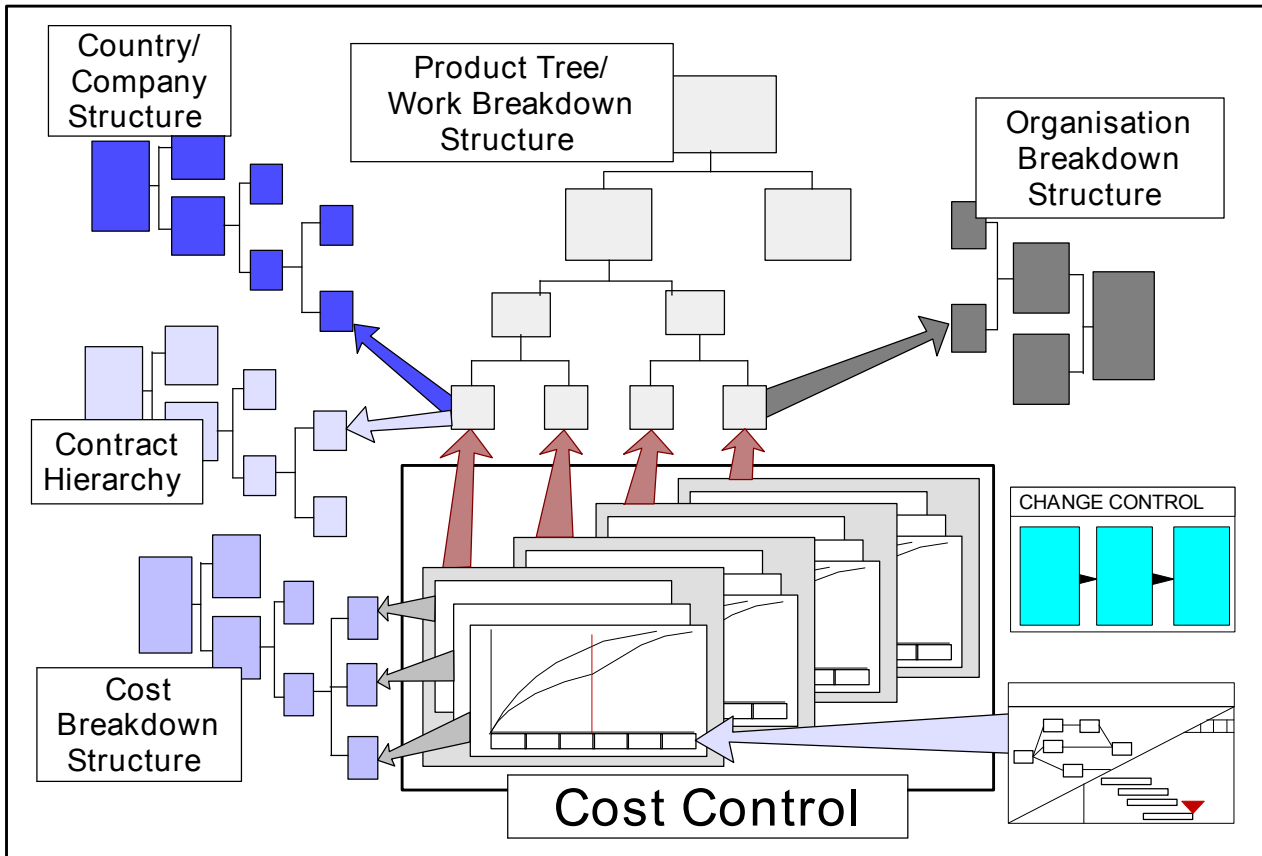
5.1.1 Scope

This section defines ESA's management requirements for the definition, creation, reporting and use of cost and manpower data on industrial contracts.



The primary objectives of cost control are to ensure:

- An agreed cost and manpower basis is established and maintained for all work, across the project and its participants
- Rapid evaluation of actual expenditures, assessment of risks and deviations, and the prediction of potential deviations
- Rapid development, evaluation, and implementation of corrective actions
- The definition, use, and reporting of a consistent set of cost and manpower data



Together with the Project Breakdown Structures, Cost Control provides the means to summarise and report cost and manpower data from the viewpoint of the :

- Product Tree/Work Breakdown Structure
- Project Organisation Breakdown Structure
- Country / Company Structure (Geographical Return)
- Contract Hierarchy
- Cost Breakdown Structure

In conjunction with Schedule Control, it provides the means to harmonise the schedule planning and the cost plans for accurate timephasing of costs and resources.

When used with Change Control, it provides the means to evaluate changes for cost impact

5.1.2 Applicability

These requirements are applicable to all ESA Scientific Projects for Industry Contractors submitting tenders for work in all Phases, and for Industry Contractors working on projects in all Phases.

5.2 REQUIREMENTS

See following tables.

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5.2.1 GENERAL REQUIREMENTS

COST CONTROL	
GENERAL REQUIREMENT	PURPOSE
CC01 Original Contract Baseline Reference Cost And Manpower Plans	
<p>A consistent set of Baseline Cost and Manpower Plans:</p> <ul style="list-style-type: none"> <input type="checkbox"/> For all Control Work Packages in the WBS <input type="checkbox"/> Broken down by the Cost Categories in the CBS <input type="checkbox"/> Timephased by the agreed accounting periods in the Cost Calendar comprised of: <ul style="list-style-type: none"> <input type="checkbox"/> A Development Cost Plan (DCP) for each Contractor <input type="checkbox"/> A DCP for escalation (For fixed price work) <input type="checkbox"/> Milestone Payment Plans for each contract (For fixed price and firm fixed price work) 	<ul style="list-style-type: none"> <input type="checkbox"/> Establish a uniform basis and understanding of the project cost and manpower targets by all participants. <input type="checkbox"/> Ensure the accuracy of all data and reports to the Customer <input type="checkbox"/> Provide a uniform approach across the total project and between projects
CC02 Current Contract Baseline Cost And Manpower Plans	
Cost and Manpower Plans based on the Original Contract Baseline Reference Cost and Manpower Plans and incorporating all agreed changes.	<ul style="list-style-type: none"> <input type="checkbox"/> Ensure the availability of the necessary funds <input type="checkbox"/> Facilitate the accurate calculation of Geographical Return <input type="checkbox"/> Facilitate the visibility of the current project targets at any time
CC03 Recording of Expenditures & Commitments	
Actual cost and manpower expenditures and commitments recorded, assessed and evaluated; and corrective actions developed and implemented where deviations occur, for each Control Work Package, Cost Category and period (Cost Reimbursement contracts only)	<ul style="list-style-type: none"> <input type="checkbox"/> Compare actual performance against that planned <input type="checkbox"/> Analyse and detect risks to and deviations from the plan <input type="checkbox"/> Determine and implement corrective actions to avoid cost overruns <input type="checkbox"/> Facilitate the visibility of the true project status at any time
CC04 Forecast Cost And Manpower Plans	
Regular cost and manpower forecasts developed and evaluated for work in progress; and corrective actions implemented where deviations are predicted with an Estimate At Completion (EAC), based on agreed cut-off dates, showing commitments and payments for the whole contract.	<ul style="list-style-type: none"> <input type="checkbox"/> Ensure the availability of the necessary funds <input type="checkbox"/> Predict, in a timely fashion, potential risks and deviations <input type="checkbox"/> Determine and implement corrective actions to avoid cost overruns <input type="checkbox"/> Facilitate the accurate calculation of Geographical Return <input type="checkbox"/> Facilitate the visibility of the true project status at any time
CC05 Cost And Manpower Reports	
Regular cost and manpower reports to the Customer.	<ul style="list-style-type: none"> <input type="checkbox"/> Give the Customer confirmation of progress in line with the agreed plan <input type="checkbox"/> Highlight risks and deviations and corrective actions to be implemented

5.2.2 SPECIFIC REQUIREMENTS

General Requirement No : CC01			
General Requirement Description : Original Contract Baseline Reference Cost And Manpower Plans			
No	SPECIFIC REQUIREMENT	PURPOSE	RESULTS
01	The Contractor shall ensure that a reconcilable set of cost and manpower data, related to the WBS, is used by all its Contractors	To provide consistent and accurate identification of all data across the project and facilitate the summarisation of costs and manpower through the WBS and other Project Structures for analysis and reporting	
02	All cost and manpower data shall identify its related CBS element	To provide a consistent and accurate identification of all data across the project and facilitate the summarisation of costs and manpower through the CBS for analysis and reporting.	
03	The Contractor shall define a cost calendar for use in the timephasing of all cost and manpower data	To provide an agreed and consistent basis for the identification and timephasing of cost and manpower data across the whole project	
04	All Contractors shall use the current version of the Agency's costing system, ECOS, for the preparation of cost and manpower figures when submitting a response to an Invitation to Tender	To ensure a consistent approach by all Contractors. To facilitate consolidation and analysis of the data across the entire project. To ensure all data is related to the : <input type="checkbox"/> Product Tree <input type="checkbox"/> WBS <input type="checkbox"/> CBS <input type="checkbox"/> Cost Calendar	The processes, procedures and outputs from ECOS are specified in the ECOS User's Manual
05	Each Contractor shall use the Agency's designated formats for documenting the cost and manpower figures of its work	To ensure that accurate and agreed timephased costs are established by the work performer in a consistent format for each Control Work Package in the WBS, broken down by Cost Categories from the CBS	
06	Each Contractor shall ensure that the timephasing of its cost and manpower data is consistent with its schedule when : <input type="checkbox"/> Submitting a response to an Invitation to Tender <input type="checkbox"/> Preparing an Estimate At Completion (EAC)	Consistency between the cost and manpower data, and the schedule is an essential prerequisite for budgeting and the correct assessment of progress	

General Requirement No : CC01			
General Requirement Description : Original Contract Baseline Reference Cost And Manpower Plans			
No	SPECIFIC REQUIREMENT	PURPOSE	RESULTS
07	The Contractor shall agree the cost and manpower figures provided by each of its Contractors	A baseline agreed by all organisations is a basic contractual requirement and an essential element of progress measurement	
08	The Contractor shall assemble the cost and manpower figures for itself and all its Contractors into an Original Contract Baseline Reference in the form of a Development Cost Plan (DCP) to be used as the baseline for the cost reimbursable work, and agree this with its Customer	To formally document the contractually agreed cost and manpower data for cost reimbursable contracts and to identify areas of risk	<input type="checkbox"/> CC01-08-1 Original Contract Baseline Reference DCP Data <input type="checkbox"/> CC01-08-2 Original Contract Baseline Reference DCP
09	For fixed price work (excluding firm fixed price work) the Contractor shall prepare Milestone Payment Plans for each contract and a DCP for escalation as part of the Original Contract Baseline Reference	To formally document the contractually agreed payment terms for fixed price work	<input type="checkbox"/> CC01-09-1 Original Contract Baseline Reference Milestone Payment Plan Data for all Fixed Price work <input type="checkbox"/> CC01-09-2 Original Contract Baseline Reference DCP Data for escalation for all Fixed Price work <input type="checkbox"/> CC01-09-3 Original Contract Baseline Reference Milestone Payment Plans for all Fixed Price work <input type="checkbox"/> CC01-09-4 Original Contract Baseline Reference DCP's for escalation for all Fixed Price work
10	For firm fixed price work the Contractor shall prepare Milestone Payment Plans for each contract as part of the Original Contract Baseline Reference		<input type="checkbox"/> CC01-10-1 Original Contract Baseline Reference Milestone Payment Plan Data for all Firm Fixed Price work <input type="checkbox"/> CC01-10-2 Original Contract Baseline Reference Milestone Payment Plans for all Firm Fixed Price work

General Requirement No : CC02			
General Requirement Description : Current Contract Baseline Cost And Manpower Plans			
No	SPECIFIC REQUIREMENT	PURPOSE	RESULTS
01	The Contractor shall follow the formal change procedures for any change to the cost and manpower baseline	To ensure all changes to the cost and manpower baseline are recorded and an agreed baseline is maintained and used by all Contractors	

General Requirement No : CC02			
General Requirement Description : Current Contract Baseline Cost And Manpower Plans			
No	SPECIFIC REQUIREMENT	PURPOSE	RESULTS
02	The Contractor shall update the DCP's with all agreed changes (except for firm fixed price work)	To formally document the current contractually agreed cost and manpower data	<input type="checkbox"/> CC02-02-1 Current Contract Baseline DCP Data <input type="checkbox"/> CC02-02-2 Current Contract Baseline DCP Data for Escalation <input type="checkbox"/> CC02-02-3 Current Contract Baseline DCP <input type="checkbox"/> CC02-02-4 Current Contract Baseline DCP for Escalation
03	The Contractor shall update MPP's for fixed price work with approved changes		<input type="checkbox"/> CC02-03-2 Current Contract Baseline MPP Data <input type="checkbox"/> CC02-03-2 Current Contract Baseline MPP's

General Requirement No : CC03			
General Requirement Description : Recording of Expenditures & Commitments			
No	SPECIFIC REQUIREMENT	PURPOSE	RESULTS
01	The Contractor shall use its internal systems to record actual expenditures of costs and manpower	To ensure that the same costs are used both internally and for reporting to the Customer	
02	The Contractor shall ensure that all actual expenditures are correctly associated with the : <input type="checkbox"/> Control Work Package <input type="checkbox"/> CBS <input type="checkbox"/> Cost Calendar	To ensure that all cost and manpower data continues to have a consistent basis and reflects the current cost and schedule status to facilitate : <input type="checkbox"/> Progress Measurement <input type="checkbox"/> Viewing the data from the viewpoints of the various project breakdown structures	
03	The Contractor performing the work shall certify achievement of milestones for fixed price work		
04	The Contractor performing the work shall develop and implement corrective actions where deviations from the baseline have occurred	To avoid cost overruns, where possible, and to highlight risks and deviations requiring formal changes and approval of the Customer	



General Requirement No : CC04			
General Requirement Description : Forecast Cost And Manpower Plans			
No	SPECIFIC REQUIREMENT	PURPOSE	RESULTS
01	Each period the Contractor shall assess actual expenditures, and forecast future costs and manpower for the remainder of each Control Work Package	To ensure that : <input type="checkbox"/> Consideration is continuously given to the costs and manpower for all work <input type="checkbox"/> Deviations are forecast in time to resolve them with corrective actions <input type="checkbox"/> Risks are minimised	
02	The Contractor shall develop, evaluate, and implement corrective actions where deviations are predicted		

General Requirement No : CC04			
General Requirement Description : Forecast Cost And Manpower Plans			
No	SPECIFIC REQUIREMENT	PURPOSE	RESULTS
03	The Contractor shall submit an Estimate At Completion (EAC) to its Customer based on agreed cut-off dates showing commitments and payments	To ensure a formal review of future costs and manpower is carried out and the project status is reflected in the plan	<input type="checkbox"/> CC04-03-1 EAC Data <input type="checkbox"/> CC04-03-2 EAC

General Requirement No : CC05			
General Requirement Description : Cost and Manpower Reports			
No	SPECIFIC REQUIREMENT	PURPOSE	RESULTS
01	The Contractor shall provide data and reports in the requested economic conditions	To ensure the accuracy of all data and reports to the Customer and the Agency. To facilitate the visibility of the true project status at any time.	
02	The Contractor shall report to its Customer : <input type="checkbox"/> Manpower Data <input type="checkbox"/> Cost & Financial Data <input type="checkbox"/> Travel Costs Based on : <input type="checkbox"/> The same data used in its internal systems <input type="checkbox"/> Close-out date of the agreed Cost Calendar <input type="checkbox"/> Figures approved by its Project Manager	To ensure a consistent and auditable basis for all reports submitted to the Customer	<input type="checkbox"/> CC05-02-1 Manpower Data <input type="checkbox"/> CC05-02-2 Manpower Data Report <input type="checkbox"/> CC05-02-3 Cost & Financial Data <input type="checkbox"/> CC05-02-4 Cost & Financial Data Report <input type="checkbox"/> CC05-02-5 Travel Costs Data <input type="checkbox"/> CC05-02-6 Travel Costs Report
03	The Contractor shall approve all reports of its Contractors and submit them, with the following summaries to the Customer : <input type="checkbox"/> Manpower Data Reports : <input type="checkbox"/> Total planned/actual/deviation hours per contract <input type="checkbox"/> Total actual hours for all contracts <input type="checkbox"/> Cost & Financial Data Reports : <input type="checkbox"/> Total cost per contract (split between labour & non-labour) <input type="checkbox"/> Total cost for all contracts (split between labour & non-labour) <input type="checkbox"/> Travel Costs Reports : <input type="checkbox"/> Total travel cost per contract <input type="checkbox"/> Total travel cost for all contracts	To ensure that the Customer maintains regular visibility of the : <input type="checkbox"/> Project progress <input type="checkbox"/> Current status of costs and manpower <input type="checkbox"/> Deviations from the plan <input type="checkbox"/> Risks to the plan <input type="checkbox"/> Corrective actions being taken	
04	The Contractor shall submit a yearly statement for itself to the Agency	To allow an effective review of the contractor's cost and manpower data and its accounting procedures	<input type="checkbox"/> CC05-04-1 Company Price Breakdown Data <input type="checkbox"/> CC05-04-2 Company Price Breakdown Form

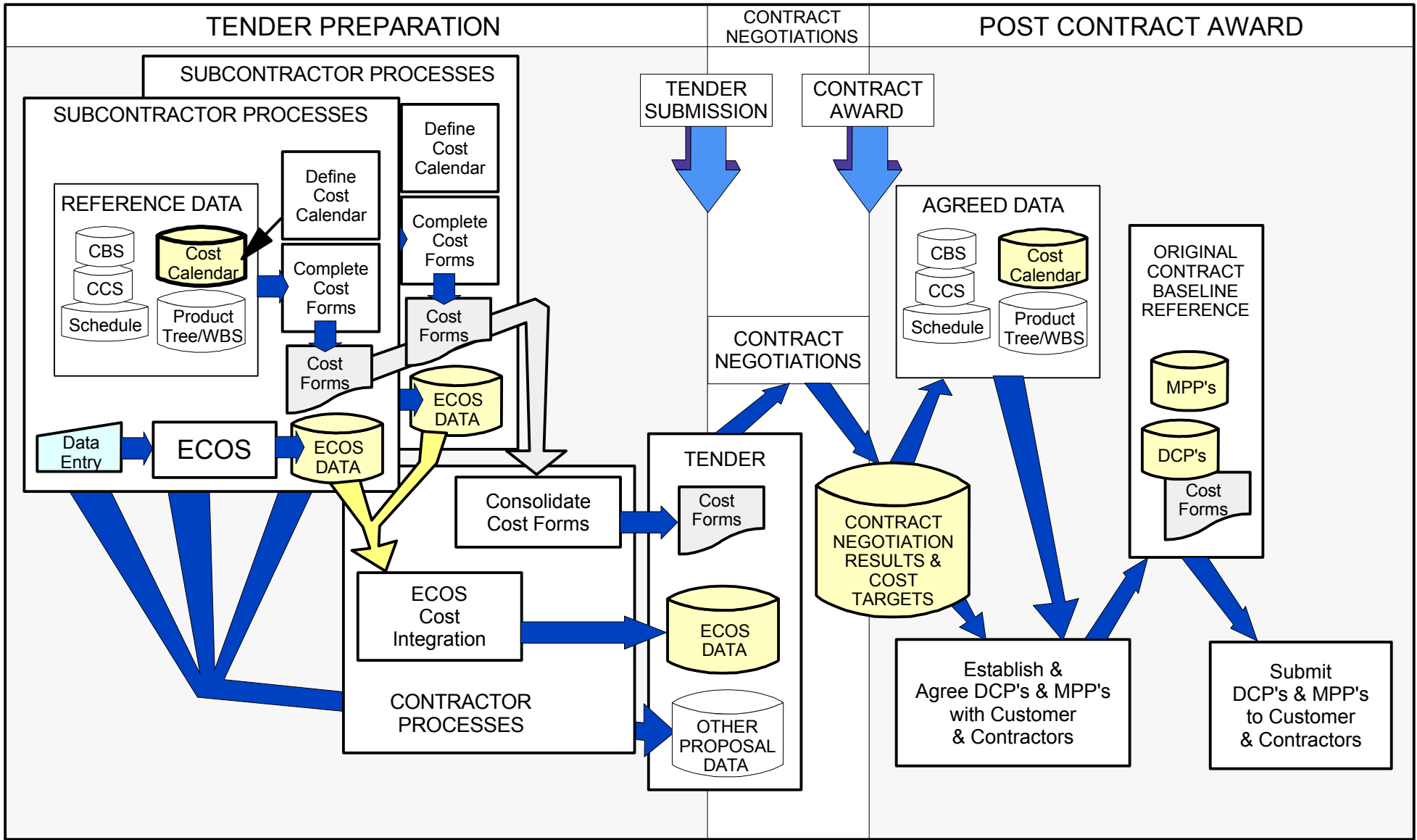
Frequency : W=Weekly nW=n Weekly M=Monthly nM=n Monthly Y=Yearly	COST CONTROL											
	ROLE ⇨		CONTRACTOR						CONTRACTOR AS CUSTOMER			
	CONTRACT SIZE ⇨ & TYPE ⇩		SMALL		MEDIUM		LARGE		MEDIUM		LARGE	
Req No	Requirement	Phase ⇩	Fixed	CR	Fixed	CR	Fixed	CR	Fixed	CR	Fixed	CR

CC03 Recording of Expenditures & Commitments

01	The Contractor shall use its internal systems to record actual expenditures of costs and manpower	B										
		C/D										
02	The Contractor shall ensure that all actual expenditures are correctly associated with the : <input type="checkbox"/> Control Work Package <input type="checkbox"/> CBS <input type="checkbox"/> Cost Calendar	B										
		C/D										
03	The Contractor performing the work shall certify achievement of milestones for fixed price work	B										
		C/D										
04	The Contractor performing the work shall develop and implement corrective actions where deviations from the baseline have occurred	B										
		C/D										

CC04 Forecast Cost And Manpower Plans

01	Each period the Contractor shall assess actual expenditures, and forecast future costs and manpower for the remainder of each Control Work Package	B		1M		1M		1M		1M		1M
		C/D										
02	The Contractor shall develop, evaluate, and implement corrective actions where deviations are predicted	B										
		C/D										
03	The Contractor shall submit an Estimate At Completion (EAC) to its Customer based on agreed cut-off dates showing commitments and payments	B	6M									
		C/D										



SECTION 5 - Cost Control ANNEX 2.1 - Methodology / Application Techniques

METHODOLOGY

Establishing Original Contract Baseline Reference Cost & Manpower Plans

The process of establishing the Original Contract Baseline Reference encompasses the following steps:

- Tender preparation and submission
- Contract negotiation/award
- Establishing Original Contract Baseline Reference

Tender Preparation and Submission

◆ Use of ECOS

The Agency's Costing Software, (ECOS), shall be used by all Contractor's for the preparation and submission of tenders. The processes, procedures and outputs from ECOS are specified in the ECOS User's Manual, covering all aspects of Invitation to Tender (ITT) handling, data entry and tender integration.

◆ Use of ESA Cost Formats

In addition, the Contractor shall submit the following Agency Cost formats to its Customer for its work, together with those received from its Contractors for their work:

- Company Cost Element Data Sheet
- Company Price Breakdown Form
- Manpower and Price Summary (for each major constituent, listing each work package)
- Work Package Manpower and Cost Plan (for each Work Package in the proposed project WBS)
- Price Projection by Contractor

The tenderer shall give special attention to detailed costing of areas of risk and prepare and submit an analysis of areas :

- Which are not yet fully defined
- Which are uncertain
- Which represent a high degree of innovation
- Which have items of significant cost not fully under the control of the tenderer

Identified risks shall be recorded with :

- The related Control Work Package Code
- An explanatory description
- Reasons for their criticality
- Importance of their consequences
- Probability of their occurrence, e.g. :
 - Frequent (>0.2)
 - Reasonably probable (0.10 - 0.2)
 - Occasional (0.01 - 0.10)
 - Remote (0.001 - 0.01)
 - Extremely Unlikely (<0.001)
- The preferred solution, with reasons
- Alternative solutions and contingencies
- Current status, e.g. :
 - Catastrophic
 - Serious
 - Major
 - Significant
 - Negligible

◆ Consistency with Schedule

The Contractor shall compare the proposed schedule with the following formats to ensure the consistent timephasing of cost and manpower data :

- Work Package Manpower and Cost Plan
- Price Projection by Contractor

Contract Negotiation and Award

Contract negotiation establishes specific contract cost related targets for each Contractor. These targets typically include:

- The contract/subcontract types
- The Limit of Liability (LOL) for each contract/subcontract
- Control Work Packages to be used for reporting Cost and Manpower Data and provision of EAC's to the Customer, based on an aggregation of the proposed project WBS work packages
- Payment Milestones and amounts for each Fixed Price contract/subcontract
- Quarterly amounts for escalation purposes, based on the proposed values on the Work Package Manpower and Cost Plan forms
- Formulae for escalation of amounts based on specified indices
- Cut-off dates for submission of EAC's
- Details of other relevant targets such as incentive schemes

The contract award process is not addressed by this document.

Establishing Original Contract Baseline Reference

Based on the agreed contract cost targets the Contractor shall establish an Original Contract Baseline Reference in the form of Development Cost Plans (DCP) and Milestone Payment Plans (MPP).

◆ Development Cost Plan (DCP) for Cost Reimbursable Work

In order to provide a consistent set of cost and manpower data the Development Cost Plan (DCP) shall contain the following agreed data, based on the proposed and negotiated amounts :

- For the whole project :
 - Company Price Breakdown Form
 - Work Package Manpower and Cost Plan
 - Price Projection
- For each organisation :
 - Company Price Breakdown Form
 - Manpower and Price Summary
 - Work Package Manpower and Cost Plan (For each Control Work Package and each contract)
 - Price Projection
 - A Travel Plan

The Contractor shall at the Control Work Package level :

- Ensure the timephasing of costs and manpower correlates with the proposed and negotiated schedule
- Ensure the data references the agreed WBS, CBS and Cost Calendar periods
- Record areas of risk
- Agree the relevant content with each of its Contractors
- Assemble its DCP and the DCP's of its Contractors, and submit the total DCP to the Customer for approval
- Provide a copy of the relevant approved content to each of its Contractors

◆ Development Cost Plan (DCP) for Escalation for Fixed Price Work

For each Fixed Price contract the Contractor shall develop a DCP for escalation, using a Work Package Manpower and Cost Plan form, based on the negotiated Quarterly Amount For Escalation, and identifying the dates for invoicing.

◆ Milestone Payment Plans (MPP) For Fixed Price and Firm Fixed Price Work

For each fixed price and firm fixed price contract the Contractor shall:

- Develop a Milestone Payment Plan, with its Contractors, defining the conditions to be met for payment to be made in the form of a Milestone Activity List and based on:
 - The agreed Original Contract Baseline Reference Schedule
 - The negotiated Payment Milestones
 - The negotiated Payment Milestone amounts
- Agree these with its Contractor and the Customer
- Provide a copy of the approved MPP's to its Contractors

Maintaining Current Contract Baseline

The Current Contract Baseline reflects the Original Contract Baseline Reference plus any agreed contract changes.

The Contractor shall only change the Current Contract Baseline by means of the formal change procedures. Where changes are made, the appropriate related Cost Formats shall be resubmitted to the Customer and the Agency.

Upon agreement of a contract change the Contractor shall:

- Update the DCP's and MPP's with the relevant Cost Forms
- Provide updated copies to the Customer and the Agency
- Notify the Agency of the incorporation of the change
- Record areas of risk

Recording Of Actual Expenditures (For cost reimbursement contracts)

To ensure that the same costs are used both internally and for reporting to the Customer, the Contractor shall use its own internal systems for the recording of actual expenditures. The Contractor shall ensure that all actual cost and manpower data records are coded with the correct:

- Control Work Package WBS Code
- CBS Code
- Cost Calendar Period

For fixed price contracts the Contractor shall certify completion for each payment milestone achieved in the period.

Cost Forecasting

Monthly Review

For cost reimbursement contracts the Contractor shall review each Control Work Package in progress, forecast the future costs and manpower to its completion, and identify potential risks to and deviations from the plan, taking into account the:

- Actual expenditures todate
- Progress todate
- Current Schedule status

Where forecast amounts exceed the Contract Baseline Reference, the Contractor shall, in conjunction with its performing Contractor:

- Develop corrective actions
- Notify the Customer where a formal contract change is not required
- Implement the corrective action
- Update the DCP if requested by the Customer

Where a formal contract change is required this shall be effected by the formal contract change procedure.

The Contractor shall continue to record areas of risk and develop detailed plans and alternative solutions to minimise these, together with contingency plans to be implemented if required. The status of these shall be included in the Progress Report.

Estimate At Completion (EAC)

The Contractor shall submit an EAC to its Customer based on agreed cut-off dates showing commitments and payments comprised of the following based on commitment values:

For Cost Reimbursable Work:

- Company Price Breakdown Form per organisation
- Work Package Manpower and Cost Plan for each Control Work Package (Actuals to cut-off date, forecasts for future)
- Work Package Deviation Summary
- CCN Status identifying :
 - CCN Approved
 - ECP approved
 - ECP submitted
 - Potential changes not yet submitted

For each company:

- Payments status
- Payments forecast used to calculate total projected cost of EAC
- Narrative analysis
- Invoice Status
- Travel Plan

For Fixed Price Work:

- Updated MPP
- DCP for escalation (for fixed price work) incorporating approved CCN's
- CCN Status identifying :
 - CCN Approved
 - ECP approved
 - ECP submitted
 - Potential changes not yet submitted

For each company:

- Payments status
- Payments forecast used to calculate total projected cost of EAC
- Narrative analysis
- Invoice Status

The EAC shall be consistent with the Current Schedule, and include an analysis of the recorded areas of risk and their current status.

APPLICATION TECHNIQUES

Reconcilable Set Of Cost & Manpower Data

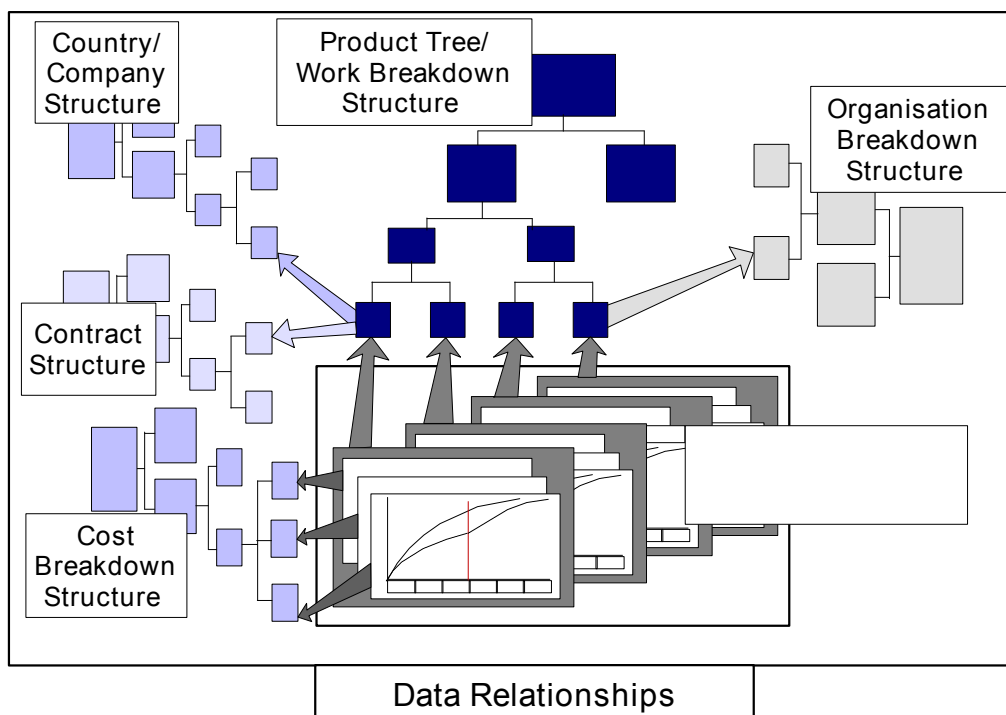
A reconcilable set of cost and manpower data shall be created by each Contractor for internal use and external reporting. That is a set of data consisting of manpower, material and other quantities and costs comprising:

- An Original Contract Baseline Reference as negotiated and finalised at the time of contract award
- A Current Contract Baseline, incorporating all approved changes
- Actual amounts incurred for completed work
- Forecasts for the future work

All cost and manpower data records shall be coded with the related:

- Control Work Package Code as defined in the WBS
- Cost Category as defined in the CBS
- Cost Calendar Period as applicable

This coding will allow the data to be summarised, analysed, viewed and reported from the views of the other Project Breakdown Structures, by means of the Contract Code and Responsibility of the associated Control Work Package.



Control Work Packages

Control Work Packages are agreed during contract negotiations and represent the level of detail required for the reporting of cost and manpower data to the Customer. Thus they may be at different levels of detail depending on the Contractor's position in the contract hierarchy.

They are determined by identifying specific work packages in the proposed WBS as Control Work Packages, or by identifying an agreed aggregation of work packages in the proposed WBS.

The Contractor shall record and maintain its cost and manpower data at least at this level, and at a more detailed level, if necessary.

Cost Breakdown Structure - Rates

The CBS defines cost categories to be used for Cost Control, and provides the framework for cost summarisation with other structures. Thus, both manpower (and other measures of quantity, such as days of usage of test facilities) and cost are recorded with their applicable CBS code.

In order to convert quantities to costs, it is necessary to apply the correct rates, as agreed with ESA Cost Analysis, for the appropriate time periods as follows :

- Original Contract Baseline Reference - rates in force at time OCBR established
- Current Contract Baseline Reference :
 - Actual expenditures - rates in force in period of actual expenditure
 - Forecast expenditures - current agreed rates in force
- Actual expenditures - rates in force in period of actual expenditure
- Forecast expenditures - current agreed rates in force

Cost Calendar

The Contractor shall define a Cost Calendar, and agree this with its Customer, which shall identify the basic periods to be used for the timephasing of cost and manpower data in :

- Months for the next two years
- Quarters for the following two years
- Yearly periods for the remaining time

The Cost Calendar is used for identifying applicable time periods in :

- DCP's
- EAC's
- Reports

Currency Conversion Rates & Escalation

Currency conversions between different local currencies and between local currencies and Accounting Units shall be made using the published ESA conversion rates for the applicable economic condition/price basis of the data.

In order to compare planned and actual cost data it is necessary to perform escalation calculations. This includes :

- Escalation of the planned values from their price basis to that when the cost occurs
- Escalation of planned and actual values from their price bases to the current price basis

Escalation of a 'source' value in one price basis to a 'required' value in another price basis shall take account of changing currency conversion rates and be performed in the following steps :

- Conversion of the 'source' value in AU's to local currency using the ESA conversion rate in force for the price basis of the source value
- Escalation of the local currency amount by application of the relevant formulae
- Conversion to AU's using the ESA conversion rate in force for the price basis of the 'required' value

The Contractor shall specify the economic condition/price basis, and currency, of any data or report submitted.

EAC Procedures

Potential Cost Items

The Contractor shall perform a systematic analysis of the required efforts to complete each Control Work Package and identify the manpower and cost efforts expected from the cut-off date until contract completion.

The EAC shall also contain Potential Cost Items, however their cost shall not be included in the estimate for the work packages, but shall identify the timephased amount separately.

Potential Cost Items may arise from technical and commercial modifications which are possible candidates for implementation into the project, which may have programmatic impacts on cost and/or schedules.

Potential Cost Items shall be listed where they may result in an estimated cost impact of more than 5% of the work package value.

Work Package Deviation Summaries for Cost Reimbursable Contracts

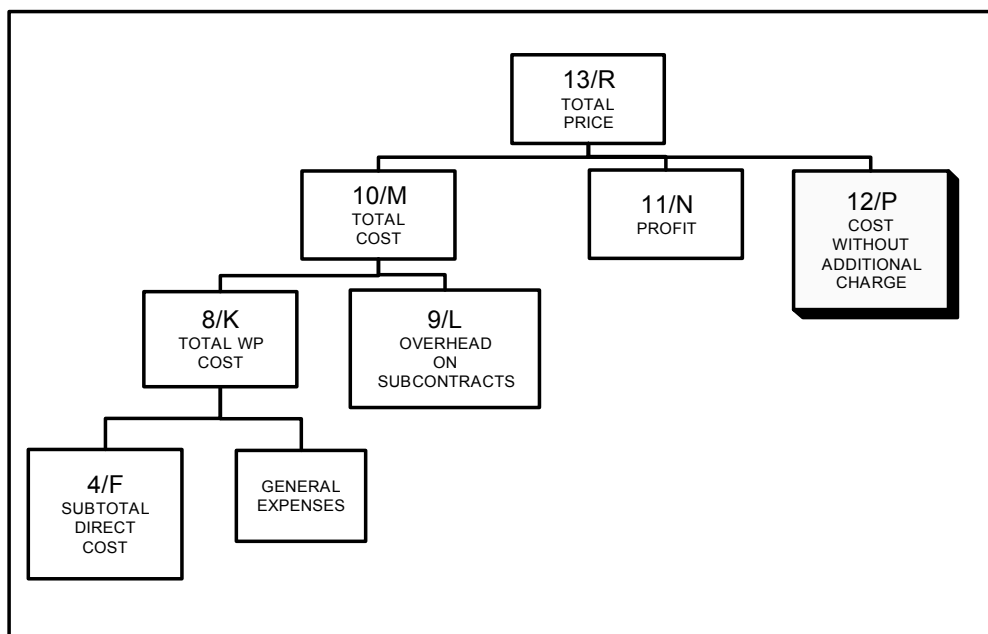
Deviations from the Contract Baseline shall be detailed in the form of Work Package Deviation Summaries where a deviation above an agreed amount of the work package value is estimated.

The deviations shall be classified into three categories :

- Price Level Revisions
- Change Notices
- Others

and shall be presented with concise and clear statements explaining the deviation.

Profits & Overheads On Subcontracts



As defined in the CBS :

Total Price = Total Cost + Profit + Cost Without Additional Charge

where,

Total Cost = Total Work Package Cost + Overhead On Subcontracts

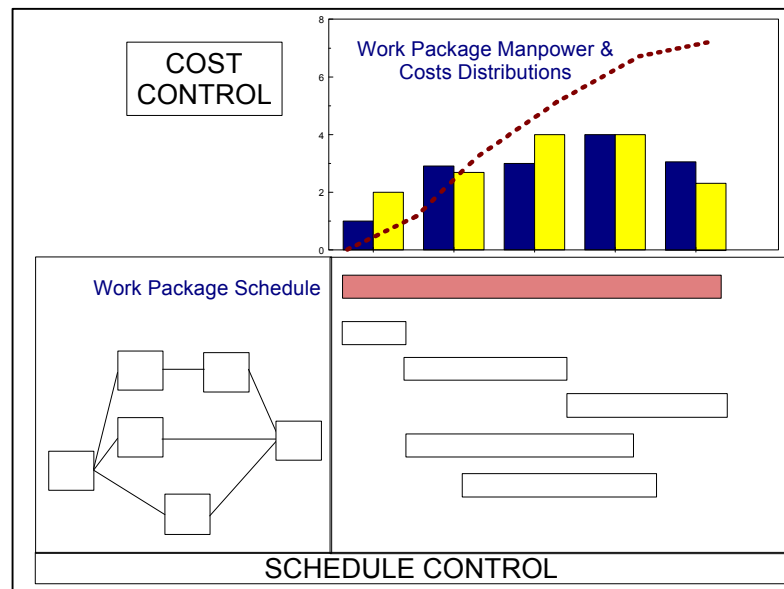
So it can be seen that Profit and Overhead On Subcontracts do not provide any valuable control information at the Work Package level and should wherever possible be utilised only inside Management Work Packages for all such costs affecting one contract.

Consistency With Schedule

In order to provide a sound basis for the assessment of progress, it is essential that the control and forecasting of manpower and costs is consistent with the schedule.

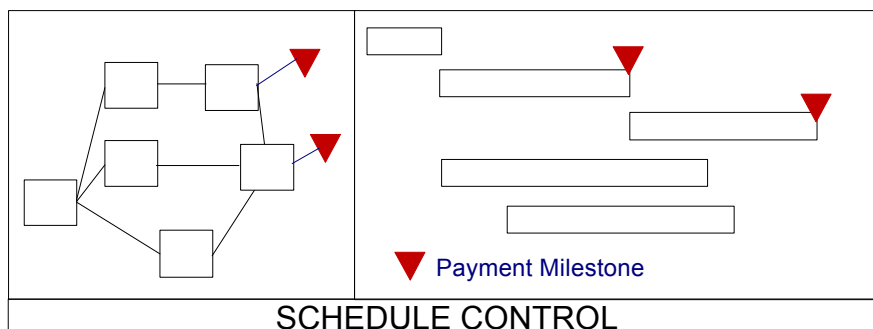
For cost reimbursement contracts, consistency between the manpower, cost and the schedule data is to be performed at the Control Work Package level. This is achieved by two means:

- Ensuring the start and finish of the distribution of manpower and costs for a Control Work Package is in line with the Control Work Package schedule calculated from the summary of all related schedule activities.
- Ensuring the distribution of manpower and costs within a Control Work Package is in line with the planned expenditure of effort (manpower) and materials.



For Fixed Price contracts this requires that Payment Milestones are, wherever possible, included in the schedule and linked to their related activities to ensure that their forecast achievements are at all times consistent with the current schedule.

In addition, when a milestone is completed, the necessary supporting evidence in the form of a list of completed activities is readily available to facilitate the payment to the Contractor.



SECTION 5 - Cost Control
ANNEX 2.2 - Forms

The following formats shall be used :

- Company Cost Element Data Sheet
- Company Price Breakdown Form
- Manpower and Price Summary
- Work Package Manpower and Cost Plan
- Price Projection

Instructions on the completion of these forms are given on the reverse of each form and in the document 'General Conditions of Tender For ESA Contracts'.

**SECTION 5 - Cost Control
ANNEX 2.3 - Report Formats**

OUTPUT	NAME	CONTENT	LAYOUT	SUBMISSION	TO	FIG No	COMMENTS
CC01-08-2	Original Contract Baseline Reference Development Cost Plan	All cost reimbursable work	<input type="checkbox"/> For the whole project : <input type="checkbox"/> Company Price Breakdown Form <input type="checkbox"/> Work Package Manpower and Cost Plan <input type="checkbox"/> Price Projection <input type="checkbox"/> For each Contractor : <input type="checkbox"/> Company Price Breakdown Form <input type="checkbox"/> Manpower and Price Summary <input type="checkbox"/> Work Package Manpower and Cost Plan (For each Control Work Package and each contract) <input type="checkbox"/> Price Projection <input type="checkbox"/> A Travel Plan	Within 1 month of completion of contract negotiations and award		N/A	Timephased cost and manpower data shall be compatible with the agreed schedules.
CC02-02-3	Current Contract Baseline Development Cost Plan			Within 1 month of CCN approval			
CC01-09-3	Original Contract Baseline Reference Milestone Payment Plan	All Payment Milestones for all fixed price and firm fixed price work	<input type="checkbox"/> For each contract and Payment Milestone: <input type="checkbox"/> Milestone Code <input type="checkbox"/> Milestone Description <input type="checkbox"/> Milestone Contract/Actual Completion Date <input type="checkbox"/> Contract/Actual Payment Amount	Within 1 month of completion of contract negotiations and award	Customer	CC1	Payment Milestone Codes and Target Completion Dates shall be the same as those in the agreed schedules, and included in the Milestone Lists and Milestone/ Activity lists identified in the Schedule Control requirements.
CC01-10-2	Current Contract Baseline Milestone Payment Plan			Within 1 month of CCN approval			
CC02-03-2	Current Contract Baseline Milestone Payment Plan			Within 1 month of CCN approval			
CC01-09-4	Original Contract Baseline Reference DCP for Escalation	All fixed price work	<input type="checkbox"/> Work Package Manpower and Cost Plan for each contract	Within 1 month of completion of contract negotiations and award		N/A	Timephased cost and manpower data shall be compatible with the agreed schedules.
CC02-02-4	Current Contract Baseline DCP for Escalation			Within 1 month of CCN approval			

OUTPUT	NAME	CONTENT	LAYOUT	SUBMISSION	TO	FIG No	COMMENTS
CC05-02-2	Manpower Data Report	All active cost reimbursement Control Work Packages in the reporting period broken down into applicable CBS labour categories	<input type="checkbox"/> Reporting Period Start <input type="checkbox"/> Reporting Period Finish For each Control Work Package: <input type="checkbox"/> Work Package Number <input type="checkbox"/> Work Package Title <input type="checkbox"/> By each applicable labour category (as identified in the CBS) : <input type="checkbox"/> Planned Hours <input type="checkbox"/> In Period <input type="checkbox"/> Cumulative to date <input type="checkbox"/> Actual Hours <input type="checkbox"/> In Period <input type="checkbox"/> Cumulative to date <input type="checkbox"/> Deviation Hours (Planned-Actual) <input type="checkbox"/> In Period <input type="checkbox"/> Cumulative to date <input type="checkbox"/> Work Package totals for the above	<input type="checkbox"/> Within 5 days of period finish by subcontractor to Contractor <input type="checkbox"/> Consolidated report to Agency within 10 days of period finish	Customer	CC2	The planned figures shall be those from the Current Contract Baseline Reference or from the latest EAC, as agreed with the Agency
CC05-02-4	Cost & Financial Data Report	All active cost reimbursement Control Work Packages in the reporting period	<input type="checkbox"/> For each Control Work Package, a section in the format of a Company Price Breakdown Form, showing actual amounts expended in the reporting period <input type="checkbox"/> A summary of the above for each contract in total	<input type="checkbox"/> Within 15 days of period finish by subcontractor to Contractor <input type="checkbox"/> Consolidated report to Agency within 21 days of period finish	Customer	N/A	This report shall be the basis for invoice submission. Any discrepancies between amounts shown in this report and the invoice may cause the payment to be withheld. Where this report is available for submission at the same time as the Manpower Data Report, a single report that provides the required information may be submitted.

OUTPUT	NAME	CONTENT	LAYOUT	SUBMISSION	TO	FIG No	COMMENTS
CC05-02-6	Travel Costs Report	All travel in reporting period	For each trip: <ul style="list-style-type: none"> <input type="checkbox"/> Reason for trip <input type="checkbox"/> Destination <input type="checkbox"/> Departure date <input type="checkbox"/> Return date <input type="checkbox"/> Means of transport <input type="checkbox"/> Number of people <input type="checkbox"/> Travel cost <input type="checkbox"/> Subsistence cost <input type="checkbox"/> Other cost, with explanation 	<ul style="list-style-type: none"> <input type="checkbox"/> Within 21 days of period finish by subcontractor to Contractor <input type="checkbox"/> Consolidated report to Agency within 1 month of period finish 	Customer	N/A	
CC04-03-2	Estimate at Completion	Complete project	<ul style="list-style-type: none"> <input type="checkbox"/> Company Price Breakdown Form per organisation <input type="checkbox"/> Work Package Manpower and Cost Plan for each Control Work Package (Actuals to cut-off date, forecasts for future) <input type="checkbox"/> Work Package Deviation Summary <input type="checkbox"/> Updated MPP and DCP for escalation (for fixed price work) incorporating approved CCN's <input type="checkbox"/> CCN Status identifying : <ul style="list-style-type: none"> <input type="checkbox"/> CCN Approved <input type="checkbox"/> ECP approved <input type="checkbox"/> ECP submitted <input type="checkbox"/> Potential changes not yet submitted <input type="checkbox"/> For each company: <ul style="list-style-type: none"> <input type="checkbox"/> Payments status <input type="checkbox"/> Payments forecast used to calculate total projected cost of EAC <input type="checkbox"/> Narrative analysis <input type="checkbox"/> Invoice Status <input type="checkbox"/> Travel Plan per organisation 	Based on agreed cut-off dates	Customer & Agency	N/A	Commitments and payments up to cut-off dates and forecasts for future periods
CC05-04-2	Company Price Breakdown Form	Complete Project	<ul style="list-style-type: none"> <input type="checkbox"/> Company Price Breakdown Form per organisation 	Annually		N/A	Showing rates applied in preceding year

CCS Code of Related Contract: PAS-01-A			National Currency: FF
Milestone Code	Description	Target Completion Date	Payment Amount (NC)
ABC123	Completion of Specification XYZ	27 -SEP-2000	200,000
QWE987	Delivery of Qualification Model	01-APR-2001	500,000
CC1 - Milestone Payment Plan			

CCS Code of Related Contract :PAS-01-A				Planned Figures From :June 1999 EAC			
Reporting Period Start :01-JAN-2000				Reporting Period Finish :31-JAN-2000			
Control Work Package Number :QWE-01110-AC				Control Work PackageDescription : Subsystem AC			
Labour Category	Description	Planned Hours		Actual Hours		Deviation Hours	
		In Period	Cumulative	In Period	Cumulative	In Period	Cumulative
PM	Project Manager	10	20	11	19	1	-1
ADMIN	Project Administrator	20	40	25	50	5	10
Work Package Totals		30	60	36	69	6	9
Control Work Package Number :etc.				Control Work PackageDescription :			
Labour Category	Description	Planned Hours		Actual Hours		Deviation Hours	
		In Period	Cumulative	In Period	Cumulative	In Period	Cumulative
Work Package Totals							
CC2 - Manpower Report							

SECTION 5 - Cost Control
ANNEX 3- INTERFACE REQUIREMENTS

Data Outputs

The following required data outputs shall be provided by means of the electronic interface.

Table 3 : Cost Data								
OUTPUT	NAME	DATA CLASS VALUE *	RECORD IDENTIFIER**		CONTENT		SUBMISSION	TO
CC01-08-2	Original Contract Baseline Reference Development Cost Plan Data	ODCP	511	Company Price Breakdown	Whole Project	All cost reimbursable work	Within 1 month of contract award	Customer
			512	Work Package Manpower & Costs				
			513	Price Projection				
			514	Company Price Breakdown	For Each Organisation			
			515	Manpower & Price Summary				
516	Work Package Manpower & Costs							
517	Price Projection							
CC02-02-3	Current Contract Baseline Development Cost Plan Data	CDCP	521	Company Price Breakdown	Whole Project	All cost reimbursable work	Within 1 month of CCN approval	
			522	Work Package Manpower & Costs				
			523	Price Projection				
			524	Company Price Breakdown	For Each Organisation			
			525	Manpower & Price Summary				
526	Work Package Manpower & Costs							
527	Price Projection							
CC01-09-3	Original Contract Baseline Reference Milestone Payment Plan Data	OMPP	518		All Payment Milestones for all fixed price and firm fixed price work		Within 1 month of contract award	
CC01-10-2								
CC02-03-2	Current Contract Baseline Milestone Payment Plan Data	CMPP	528				Within 1 month of CCN approval	
CC01-09-4	Original Contract Baseline Reference DCP Data for Escalation	ODCPE	519		All fixed price work		Within 1 month of contract award	
CC02-02-4	Current Contract Baseline DCP Data for Escalation	CDCPE	529					

OUTPUT	NAME	DATA CLASS VALUE *	RECORD IDENTIFIER**	CONTENT	SUBMISSION	TO
CC05-02-1	Manpower Data	HRSACTUAL	531	All active cost reimbursement Control Work Packages in the reporting period broken down into applicable CBS labour categories	<input type="checkbox"/> Within 5 days of period finish by subcontractor to Contractor <input type="checkbox"/> Combined data to Agency within 10 days of period finish	Customer
CC05-02-3	Cost & Financial Data	COSTACTUAL	532	All active cost reimbursement Control Work Packages in the reporting period	<input type="checkbox"/> Within 15 days of period finish by subcontractor to Contractor <input type="checkbox"/> Combined data to Agency within 21 days of period finish	
CC05-02-5	Travel Costs Data	TRAVELCOST	533	All travel in reporting period	<input type="checkbox"/> Within 21 days of period finish by subcontractor to Contractor <input type="checkbox"/> Combined data to Agency within 1 month of period finish	
CC04-03-2	Estimate At Completion Data	EAC	541	Complete project	As agreed	Customer & Agency
CC05-04-1	Company Price Breakdown Data	CPBD	542	Complete Project	Annually	
* Values for Data Class to be specified in the Cost Data Type Specific Record						
** Values For Record Identifiers to be specified in the Cost Data Records						

Cost Data File Format

The costs data file shall have "CIX" as the file extension.

The structure of the file is as follows:

One Identification Record, (See Section 2, Annex 2, Table 3 for detailed specifications)

One Data Type Specific Record, (See table 3.1)

Either

Timephased Cost and Quantity Data Records, (See table 3.2)

or

MPP Cost Data Records, (See table 3.3)

Table 3.1 : Cost Data Type Specific Record Attributes

CODE	FIELD NAME	TYPE	MAX LENGTH	DESCRIPTION	COMMENTS	
RID	Record Identifier	INTEGER	3	Record Identifier	Values is 500	
CDC	Data Class	TEXT	10	Class of data being submitted	Valid values for all contracts are :	
					EAC	ECP*
						CCN*
					Valid values for Cost Reimbursable contracts are :	
					ODCP	HRSACTUAL
					CDCP	COSTACTUAL
					CPBD	TRAVELCOST
					Valid values for Fixed Price contracts are :	
					ODCPE	OMPP
CDCPE	CMPP					
ECY	Economic Condition Year	INTEGER	5	Price Basis of cost data	Code as used in ECOS - MM/YY	
PCC	Reference Currency Code	TEXT	4	Code of currency of sender	ISO currency codes, extended to include thousands (e.g. KITL)	
STD	Status Date	DATE	DD-MMM-YYYY	Cost Calendar Cut-off Date	For reference only by receiver	
BRR	Budget Release Ref	TEXT	20	Budget Release Reference		
SUM	Check Sum	DECIMAL	n/a	Total of all data costs		
All fields are mandatory, where applicable.						
* See Section 6, Change Control						

Table 3.2: Timephased Cost DataRecord Attributes

CODE	FIELD NAME	TYPE	MAX LENGTH	DESCRIPTION	COMMENTS
RID	Record Identifier	INTEGER	3	Record Identifier	Values as specified in Table 3
WBS	WBS Code	TEXT	20	Related Work Package Code	As defined in the WBS
CBS	CBS Code	TEXT	20	Related CBS Code	As defined in the CBS
COS	Amount	DECIMAL	N/A	Period Cost Value in National Currency or Accounting Units	
QTY	Quantity	DECIMAL	N/A	Period Quantity Value in units specified below	
UOM	Unit of Measure Code	TEXT	8	Applicable units for Quantity Value	
CCC	Currency Code	TEXT	4	Currency code of cost value	ISO currency codes, extended to include thousands (e.g. KITL), or AU if values in Accounting Units
PSD	Period Start Date	DATE	N/A	Start of the applicable time period	As defined in the Cost Calendar
PFD	Period Finish Date	DATE	N/A	Finish of the applicable time period	
All fields are mandatory where applicable					
This format is used for Data Classes other than CMPP, CMPP					

Table 3.3 : MPP Cost Data Record Attributes

CODE	FIELD NAME	TYPE	MAX LENGTH	DESCRIPTION	COMMENTS
RID	Record Identifier	INTEGER	3	Record Identifier	Values as specified in Table 3
WBS	WBS Code	TEXT	20	WBS Code of related WBS element	
MNO	Milestone Code	TEXT	20	Unique code of Payment Milestone	
MDS	Milestone Description	TEXT	60	Description of Payment Milestone	
MCD	Milestone Contract Date	DATE	N/A	Completion Date of Payment Milestone	
MPD	Milestone Planned Date	DATE			
MAD	Milestone Achieved Date	DATE			
MCA	Milestone Contract Amount	DECIMAL	N/A	Payment Milestone amount in National Currency or AU's	
MPA	Milestone Paid Amount	DECIMAL	N/A	Amount Actually Paid	
CCC	Currency Code	TEXT	4	Currency code of cost value	ISO currency codes, extended to include thousands (e.g. KITL), or AU if values in Accounting Units
CNO	Certification Document Reference	TEXT	20	Reference document number certifying achievement	
All fields are mandatory where applicable					
This format is used for Data Classes CMPP, CMPP					