Ref:	**NR/L3/INI/PG115/PS/015**
Issue:	2
Date:	4 December 2010
Compliance date:	4 December 2010

Use of Earned Value Reporting in Investment Projects

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Contents

1 Purpose 3

2 Scope 3

3 Definitions 3

4 Earned Value Processes 6

Figure 1 – Summary Process Chart for Earned Value 6

Table 1 – RACI Chart 7

5 Progress Update Cycle 8

Figure 2 – Typical NR IP Period End update cycle 8

6 Assessing and Recording Cost of Work Done (COWD) 9

7 Change Implementation 9

8 Reporting and variance analysis 10

Figure 3 – Example Project Report 11

Figure 4 – Example Project Portfolio Report 12

9 Compliance and review 14

Appendix A Check List for Using Earned Value 15

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1 Purpose

This standard forms part of the suite of documents comprising the Planning and Programme Controls manual and relates to the use of Earned Value within Investment Projects.

2 Scope

This Network Rail standard specifies the process for using Earned Value on specified projects delivered within Investment Projects.

This module is supported by two Guidance Note modules that outline the methodologies and the accepted approaches for the use of Earned Value within Investment Projects and how to use the Primavera planning application in support.

- NR/L3/INI/PG115/PS/016, *Earned Value Reporting – Guidance on definitions and acceptable practices*;
- NR/L3/INI/PG115/PS/017, *Earned Value Reporting – Guidance on set Up and maintenance of Primavera.*

This module specifies:

- the roles and responsibilities in implementing Earned Value, who does what and when, including actions required when variances arise;
- the processes that assures the integrity of the information in baselines and for progress and forecasts in and out of the planning system.

3 Definitions

For the purpose of this standard, the following terms and definitions apply.

Planned Value (PV) or Budgeted Cost of Work Scheduled (BCWS)
budget allocated to implement a piece of work

NOTE It is the agreed cost estimate planned to be spent on the piece of work (activity) and when it is time phased what should have been achieved/spent by a specific point in time can be established.

Cost of Work Done (COWD) or Actual Cost (AC) or Actual Cost of Work Performed (ACWP)
actual cost incurred in completing a piece of work

NOTE At the project level, it is the valuation of the liability of the project for all goods and services to that project at a point in time.

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Earned Value (EV) or Budgeted Cost of Work Performed
percentage of the Planned Value equal to the percentage of the work actually completed/achieved to date

Budget at Completion (BAC)
project level summation of the planned cost of all the work required on the project

Estimate to Completion (ETC)
most knowledgeable estimate of the remaining requirements scope, schedule and cost, the amount forecasted to complete the scope of work

Cost Performance Index (CPI)
measure of efficiency against the budget for the project/stage/work package and is calculated as Earned Value divided by Cost of Work Done

CPI = EV/COWD

Cost variance (CV)
calculated as Earned Value – Cost of Work Done.

NOTE This quantifies the value of over or under spend and, when used with the Cost Performance Index (CPI), and helps focus on those projects/stages/work packages that require the most help.

CV = EV – COWD

Schedule Performance Index (SPI)
measure of time performance against the plan and is calculated as Earned Value divided by Planned Value

SPI = EV/PV

Schedule Variance (SV)
calculated as Earned Value – Planned Value.

NOTE This quantifies the £ value of slippage against the budget plan

SV = EV – PV

Estimate at Complete (EAC) or Anticipated Final Cost (AFC)
calculated as Cost of Work Done (COWD) + Estimated Cost to Complete (ETC); the latter is the most knowledgeable estimate of the remaining requirements scope, schedule and cost

EAC = COWD + ETC.

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Future Efficiency - To Complete Performance Index (TCPI)
calculated by the formula, *TCPI = (BAC – EV)/(EAC – COWD*).

NOTE if this indicates an unrealistic level of efficiency for the rest of the project, it suggests the Estimate to Complete for the project might also be unrealistic/optimistic, as EAC = COWD + ETC.

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