


**Implementing AS4817-2019
ISO 21508 (MOD)
Earned Value in Project and Programme
Management**


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Agenda

- ▶ What is EVM?
- ▶ The abridged history of EVM (AUS centric)
- ▶ The competing views of EVM
- ▶ Why does EVM persist?
- ▶ The biggest barrier to EVM
- ▶ Ten Benefits of EVMS
- ▶ How will AS4817-2019 / ISO 21508:2018 (MOD) affect the application of EVM (in AUS)?
- ▶ Close including Q&A


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What is EVM?

▶ Poorly understood!

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What is EVM?, Part 1 of 3

- ▶ Project management methodology
 - Pre-dates PMI (1969)
 - C/SCSC (1967)
- ▶ AS4817-2003, 2006 and 2019 process model of EVM depicted
 - **Adopted by ISO EVM Standard 21508:2018**
- ▶ AUS process model of EVM developed due to perceived overheads of USA “criteria based” EVM

5.1 General
The earned value management process steps are shown in Figure 1.

```

            graph TD
            subgraph PLANNING
            1[1 Decompose the project scope] --> 2[2 Assign responsibility]
            2 --> 3[3 Schedule the work]
            3 --> 4[4 Develop time-phase budget]
            4 --> 5[5 Assign objective measures of performance]
            5 --> 6[6 Set the performance measurement baseline]
            end
            subgraph EXECUTION_AND_CONTROL
            7[7 Authorise and perform the work] --> 8[8 Accumulate and report performance data]
            8 --> 9[9 Analyse project performance data]
            9 --> 10[10 Take management action]
            10 --> 11[11 Maintain the baseline]
            11 --> 7
            end
            6 --> 7
            11 --> 3
            11 --> 4
            11 --> 5
            11 --> 6
            
```

Figure 1 — Earned value management process steps
The earned value management process steps shall consist of the steps described in Clause 5.2 to Clause 5.12.

PGCS What is EVM?, Part 1 of 3



- ▶ The language of **“Control Accounts and Work Packages”**
 - *Is the language of Earned Value Project Management (EVPM)*
- ▶ EVPM is so embedded into the DMO, now CASG way of doing business
 - *Most people in CASG probably don't even realise they are using EVPM WHEN THEY ARE!*

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PGCS What is EVM?, Part 2 of 3



- ▶ EVM is a System – EVMS
 - Software toolset which collates the required inputs (mostly data) and produces:
 - S Curve and other graphical charts
 - EVMS Reports
 - Formats 1 through 5
 - **Format 5 (Variance Analysis) reports require human thought, input, effort and action**
 - *Describe cause(s) of and Corrective Action Plan to address over threshold variances*

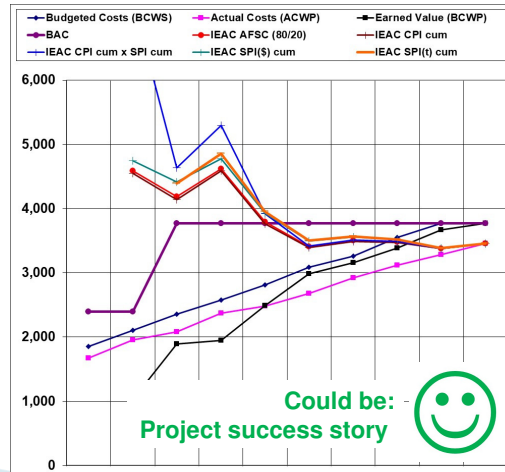
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PGCS What is EVM?, Part 3 of 3



▶ EVM is the measure(s) and metrics

- S Curve charts
- Variance Charts,
 - CV, SV and SV(t)
- Efficiency Indexes
 - CPI, SPI and SPI(t)
- Completion Predictors
 - IEAC, IEAC(t) and IECD
- Future efficiency indicators
- TCPI (BAC and EAC)
- TSPI (PD and ED)



PGCS The competing views of EVM

- A valuable methodology
- Modest cost and effort
- Provides useful project performance metrics
- Improves PM decision making
 - *If intelligently applied*



- Time consuming and costly
- A reporting overhead
- Doesn't provide useful information for managing a project

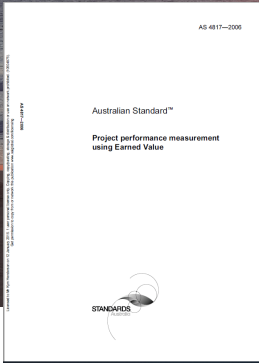


- The greatest project management method and toolset since sliced bread
- Does everything for you on a project except make the morning coffee
- "The EV Religion"



“Doing EVM” (by itself) has no intrinsic value

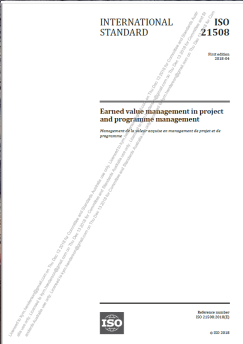
PGCS The AUS centric abridged history of EVM



- 1967:** USAF published Cost/Schedule Control System Criteria, US DoD Instruction 7000.1
- 1989:** Adoption by Australian DoD C/SCSC and CSSR ("EVM lite")
- 1998:** ANSI EIA Standard 748-A (USA) (32) "criteria based" EVM
- 2003:** AS4817-2003 (AUS)
- 2005:** PMI Practice Standard for EVM 1st edition
- 2006:** AS4817-2006 (AUS)
11 step "process model" of EVM
Developed in response to perceived overheads of USA "criteria" based EVM

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PGCS The AUS centric abridged history of EVM



- 2012:** PMI Practice Standard for EVM 2nd edition
Complete rewrite from 1st edition
Included Earned Schedule (Lipke: 2003)
- 2018:** ISO EVM Standard (21508:2018)
Global EVM standard (informative)
Adopted AUS 11 step process model of EVM
Included Earned Schedule (Lipke: 2003)
- 2019:** AS4817-2019 Modified adoption of 21508:2018
Approved, publication expected mid Sep 2019
Reinstated AS4817-2006 normative req'ts
- 2019:** ISO EVM Implementation Guide project
Global EVM Implementation Guide
Kick-off teleconference scheduled 29 Aug 19

Update: AS4817-2019 is available for sale from the SAI Global website at:
https://infostore.saiglobal.com/en-au/Standards/AS-4817-2019-121505_SAIG_AS_AS_2761048/

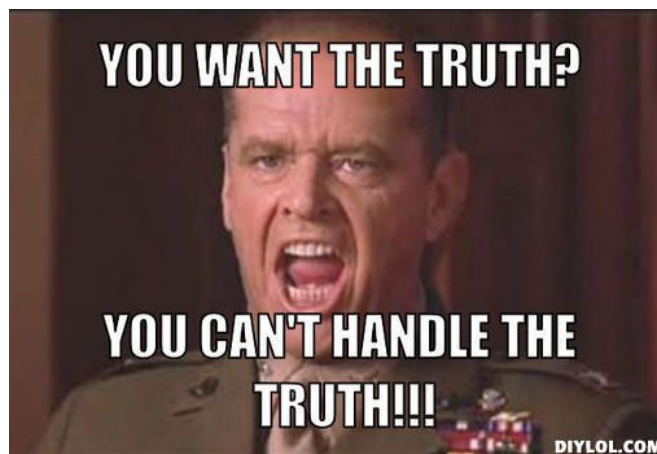
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PGCS Why does EVM persist?

- ▶ Nobody has invented anything better
 - Uniquely integrates cost, schedule and technical performance metrics into a single consolidated Project Management Information System (PMIS)
- ▶ EVM predictive capabilities are the only ones currently in existence with a capacity to address “Fitzgerald’s Law” of major programs
 - *Too early to tell*
 - *Too late to stop*

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PGCS The biggest barrier to EVM?



A Few Good Men, Movie (1992)

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PGCS The biggest barrier to EVM?

Or maybe



A Few Good Men, Movie (1992)

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Source: The Costs And Benefits Of The Earned Value Management Process; David S. Christensen, Ph.D. Acquisition Quarterly Fall 1998 <http://www.dau.mil/pubs/arg/98arg/chrisevm.pdf> or <http://www.suu.edu/faculty/christensend/cbaevms.pdf>

Ten Benefits of EVMS

1. It is a single management control system that provides reliable data
2. It integrates work, schedule, and cost using a work breakdown structure
3. *The associated database of completed projects is useful for comparative analysis*
4. The cumulative cost performance index (CPI) provides an early warning signal
5. The schedule performance index provides an early warning signal
6. The CPI is a predictor for the final cost of the project
7. *It uses an index-based method to forecast the final cost of the project*
8. The “to-complete” performance index allows evaluation of the forecasted final cost
9. The periodic (e.g., weekly or monthly) CPI is a benchmark
10. The management by exception principle can reduce information overload
11. Earned Value has developed a large body of public domain knowledge and Government case studies. These studies includes information that would be extremely sensitive and classified “commercial in confidence” in the private sector

PMI SeminarsWorld® 2007 V3.2

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PGCS First Principles Review of Defence Perspective

- ▶ Policy and Procedures
 - There has been no consistent application of **fundamental tools** such as Earned Value Management. *Such tools will be required to support the new leadership team.*
- ▶ The preceding statement was most remarkable
 - In an organisation which routinely manages complex projects and programs we found it remarkable that there is no common project management architecture or artefacts to support it. *There are no standardised reporting mechanisms (reporting is informal, anecdotal, local or crisis based)* or management processes, with all divisions having different methodologies and management systems.
 - First Principles Review Creating One Defence p40

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PGCS How will AS4817-2019 affect the practice of EVM [in AUS]?

- ▶ The standard EVM answer: “it all depends”
- ▶ One possibility: **NO CHANGE**
 - ISO adopted the AUS 11 step process model of EVM
 - The normative requirements in AS4817-2006 have been reinstated **unchanged** into AS 4817-2019
 - Substitute Chapter 5
 - Important for obtaining all important Defence agreement for Australia’s modified adoption of ISO EVM Standard
- ▶ It might (possibly, maybe, hopefully ...) make EVM a more attractive option for adoption
 - *When you don’t have to!*

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PGCS How will AS4817-2019 affect the practice of EVM [in AUS]?

- ▶ Another possibility: **Opportunity(s) in the guidance for advances to practice**
- ▶ ISO EVM Standard guidance reflects the global consensus on EVM best practice
- ▶ The language of the standard has been updated to the 21st century
 - Brevity
 - Assumed knowledge of EVM
 - “Tutorial aspects” explaining EVM removed
 - **More discussion on benefits of EVM**

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PGCS The importance of schedule Two quotes

- ▶ Dr. Steve Gumley, [then] CEO of [then] DMO

“We need to maintain our attention on schedule delivery. Data tells us that since July 2003, real cost increase in projects accounted for less than 3 percent of the total cost growth. ... *Therefore, our problem is not cost, it is SCHEDULE.*”

▶ DMO Bulletin, July 2006, Issue 61, page 3
- ▶ LTGEN Hans "Whitey" Driessnack USAF

“Engineering problems will first manifest themselves in a schedule slip someplace. Generally, as I have learned since then, if you have a technical problem someplace, or some kind of a problem, it will manifest itself first as a schedule slip. Then, it will eventually become a cost problem. If you wait to see the cost problem, something has already happened over which you have long since lost control. I always believed in the old adage, ‘Time is money’; *but if you could control the schedule, you could in fact control the cost ultimately in what was going on.*”

▶ Source: GAO Expert Meeting Minutes, September 29, 2015, page 9

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PGCS Closing Thought

- ▶ The **Global** ISO EVM Standard 21508:2018 includes Earned Schedule (Annex B)
- ▶ AS4817-2019 – 21508:2018 (MOD) includes Earned Schedule
- ▶ The approved scope for the ISO EVM Implementation Guide includes Earned Schedule
- ▶ While the paradigm shift would be massive due to the “cost-centric” legacy of EVM
 - *The value proposition for Earned Schedule is such that it could/should become the primary focus of EVM over time*

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Takeaways and Q&A

- ▶ **EVM is here to stay**
 - Recent developments should make that clear
- ▶ **ISO 21508:2018, AS4817-2019 and ISO EVM Implementation Guide**
 - Offer opportunities for [much needed] advances to practice
- ▶ **Questions**

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