

Project Controls Expo UK - 13th November 2019
Emirates Arsenal Stadium, London

Lessons Learned on Rail Megaprojects

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Director of Operations, ARES PRISM



About the Speaker

Simon Johnson – ARES PRISM

- Simon is the Director of Operations and Principal Consultant UK, European and the Middle East. In this role, he is responsible for supporting ARES PRISM, a fully-integrated project controls solution designed to manage local and multinational capital projects from conception to completion.
- Simon provides advisory services to major programs and supports the successful deployment of effective change management processes.



About the Topic

Lessons Learned on Rail Megaprojects

- Discussing lessons learned on rail megaprojects and where they are going in the future.



Pieces of our PMO Jigsaw



Bring All Together for 2020 Project Controls



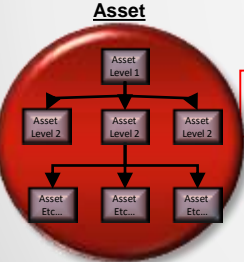
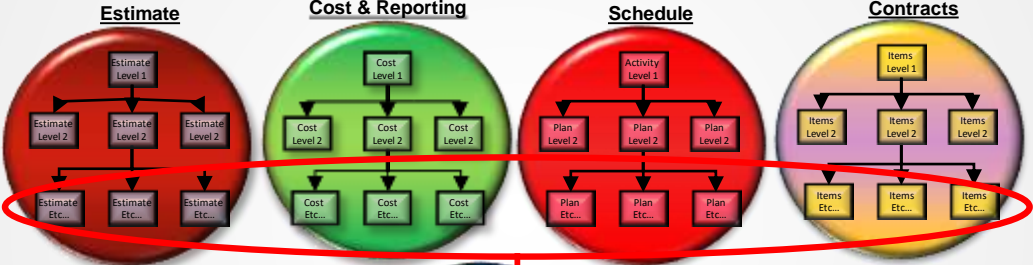
PMO Jigsaw Puzzle



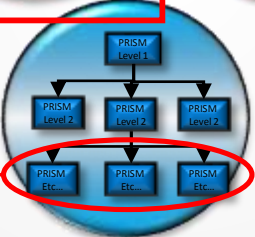
Common Coding Throughout Programme



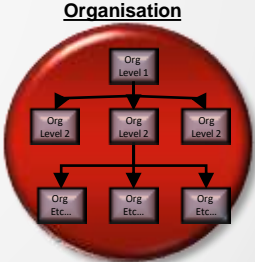
Creation of Integrated Coding Structure



Identify Common Integration Point

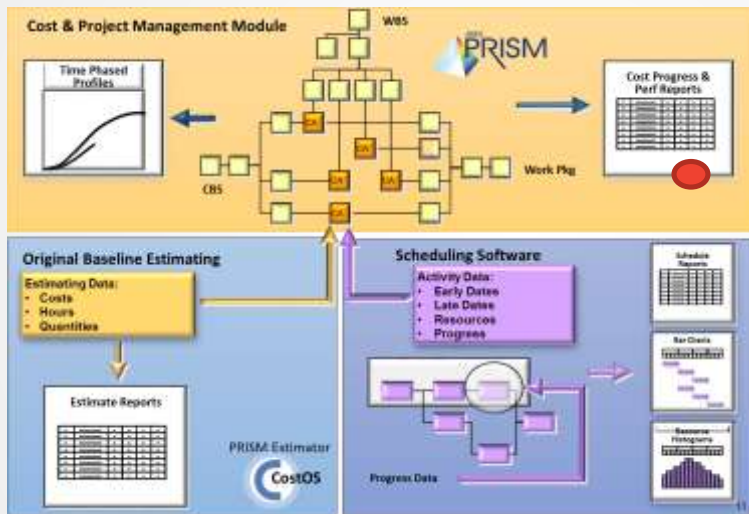


*PRISM Control Accounts



* Backbone of a Programme

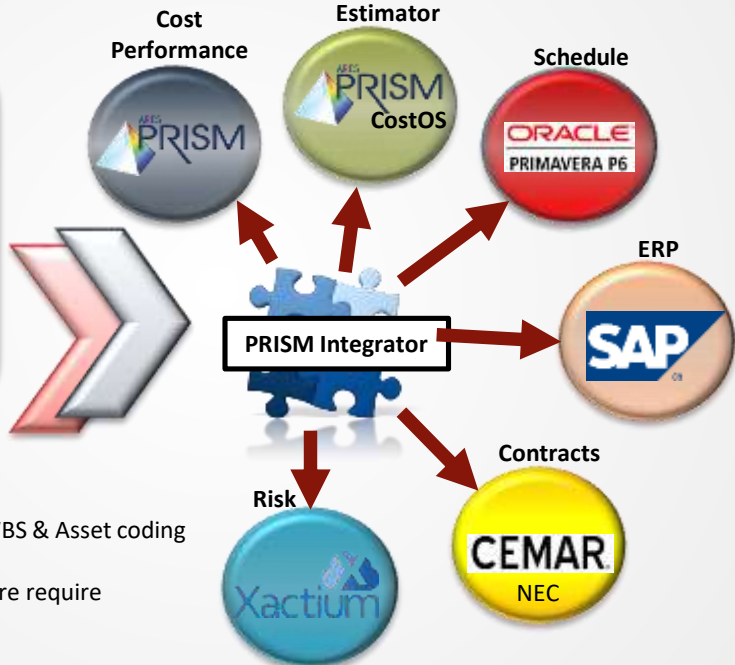
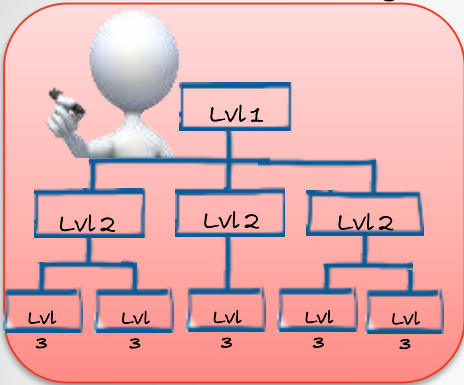
Common Coding Enables Integration



- Use the right tool for the right job
- True Integration of disciplines
- Clear Traceability between systems
- Eliminates Need to Cost Load Schedule
- Single point of Truth



Master WBS Asset Register



- PRISM Integrator synchronizes the WBS & Asset coding across all applications
- Additions and Changes to the structure require approval from all stake holders

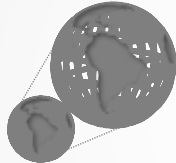
PMO Jigsaw Puzzle



Why PRISM Estimator powered by CostOS



**Integrated
with Core
Processes**



**Enterprise &
Fully
Scalable**



**Compliant with
Several
International
Standards**



**Intelligent
Parametric
Assemblies**



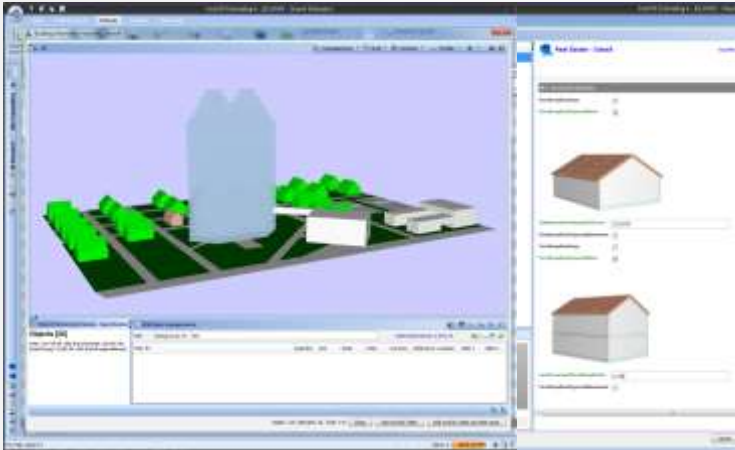
**Core BIM and 3D
Plant Technologies**

Concepts – Develop Estimates on Map



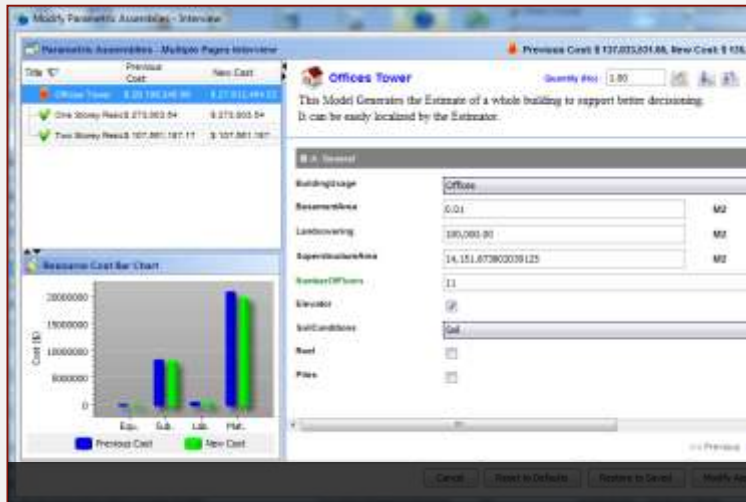
Class 5 Conceptual Estimating

Concepts – Combine Sketches & Questionnaires



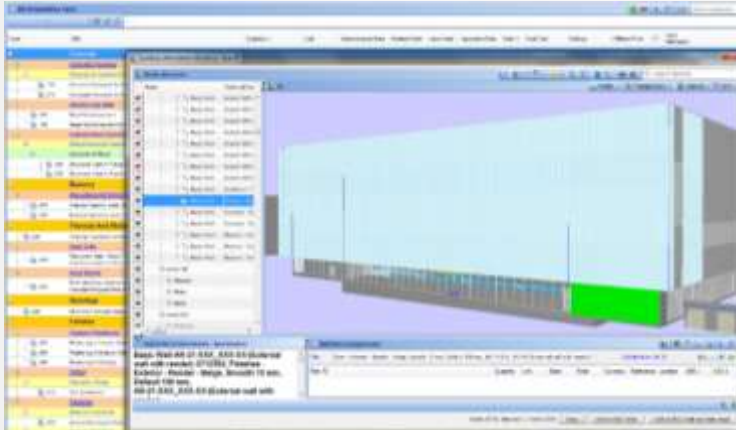
Class 4 Factored Estimating or Rule of Thumb

Parametric Estimating – Optimise Project Scopes



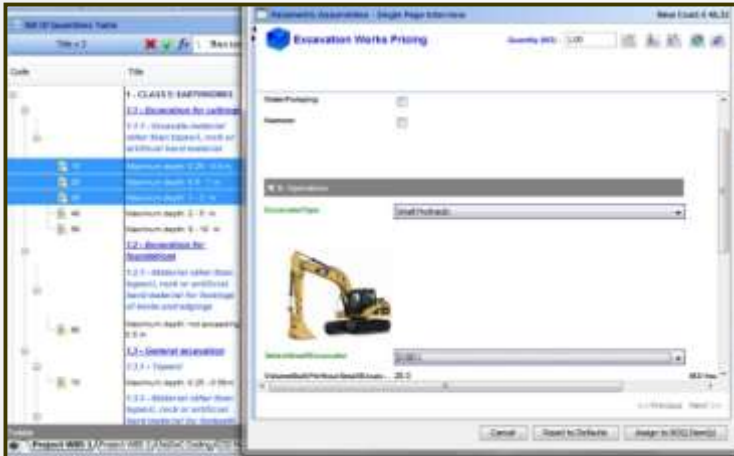
Class 3 Parametric Assemblies

BID Preparation – Use BIM for Takeoffs



Class 2 Forced Tenders with not full information

BID Preparation – and transfer to Performance Measurement Baseline



Class 1 Final BIDs and Rate Build Up

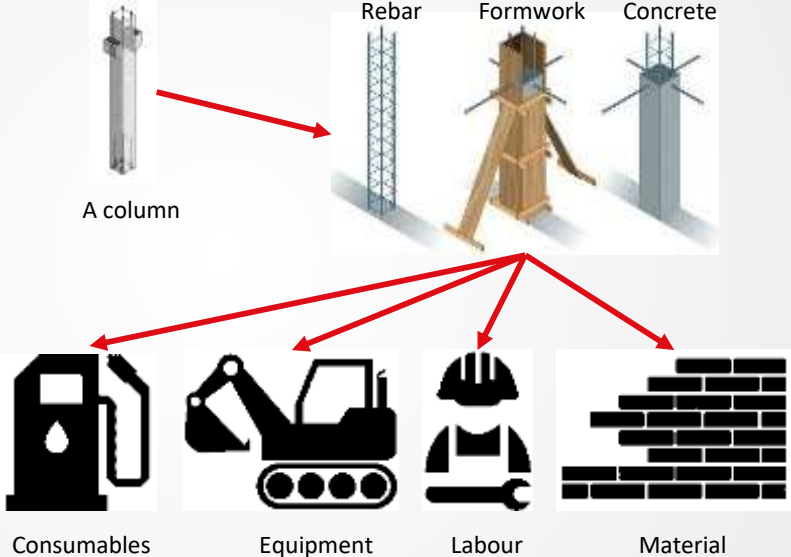
Estimating Logic (ref SCS - Digital Construction Week)

Well developed BIM models are base of take-off

Logic of take-off turned from trade to object orientated

Uniclass 2015 codes trigger CESMM4 take-off 'recipes'

CESMM4 methods trigger detailed resource build-ups



PMO Jigsaw Puzzle



Control Account – data points & sources

Project Controls Data

Client data

Client Schedule Information

Baseline - Start Finish
Current Baseline – plus approved Change
Forecast – Current forecast

Client Cost Management data

Original Budget - Approved Budget
Current Budget – plus approved Change
Forecast – Current forecast

Client EVM data

Baseline – Budget timespread in alignment with baseline Schedule
Current Baseline - sum of Let Scope current baseline and Current Budget
Forecast – client forecast

Finance
Investment Authority
PO
P2P data (invoiced, paid etc)

ARES PRISM

Let Scope
Control
Account

Contract Management
Original Contract Sum
ICE's
Current Contract Sum
AFP / Certified

Supplier data from Supplier systems

Estimate Data
Design - BIM Models/2d Dwgs
Rate Books
BOQ

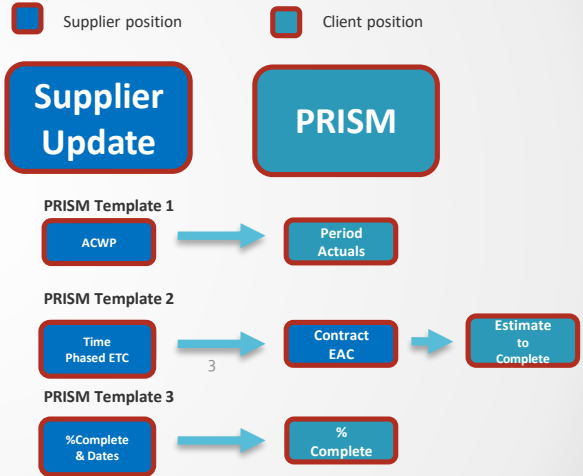
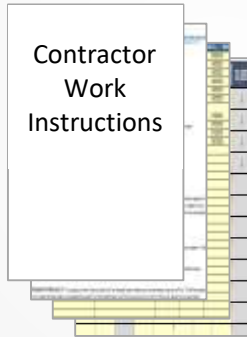
Supplier Schedule Information
Baseline start / finish – 1st accepted schedule
Current Baseline – 1st accepted schedule plus change
Forecast – Current schedule

Supplier EVM data
Baseline – 1st Accepted programme; budget loaded with Initial contract sum
Current Baseline – Current Contract sum profiled against Current Baseline dates
Forecast – AFC profiled against current schedule
ACWP
Cash flow – Aligned to AFP dates

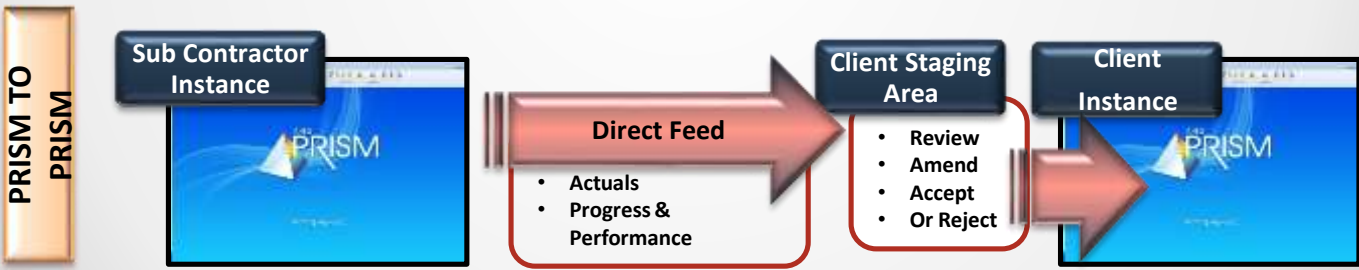
Progress data
Actual % Complete – Quantified progress update
Schedule % Complete – Progressed schedule

Supply Chain Updates – Cost Performance

- Supply chain data received and loaded into PRISM by cost teams in order to generate outputs for review and analysis.
- Data loaded includes:
 - ACWP
 - ETC
 - % Complete and Current Dates
- Initially, the ETC is loaded into the Contract EAC field as a formal record of the Contractors submission.
- Following review the Client View of EAC is loaded into the EAC field. This may or may not include overlays from Client which would need to be identified and explained.



Sub Contractor & Client Integration



The PRISM Suite

- The PRISM Suite has recently expanded its product offerings: PRISM Go
- PRISM Go is a web extension complement to PRISM G2
- Can be accessed remotely with mobile flexibility
- Provides increased visibility to management with hundreds of pre-configured reports
- Facilitates Team Collaboration via Workflows & Email notifications
- Allows various record creation and data updates (Progress, Trends & Change Orders, Invoices, and more)
- Mapped to Works Information



ARES PRISM PRISM Go

Web Access to Robust Project Management Software

PRISM Go Benefits

Business Intelligence:

- Detailed reports and dashboards Active anywhere, out of the office

Team Collaboration:

- Workflows
- Email integration
- Customized reports and alerts

Real-Time Information:

- Make remote updates using mobile devices

Mobile Flexibility:

- Web-based data entry
- Intuitive, user-friendly interface

1. Dashboards: Analytics at a Glance!

Review and analyze data across all projects with business intelligence dashboards

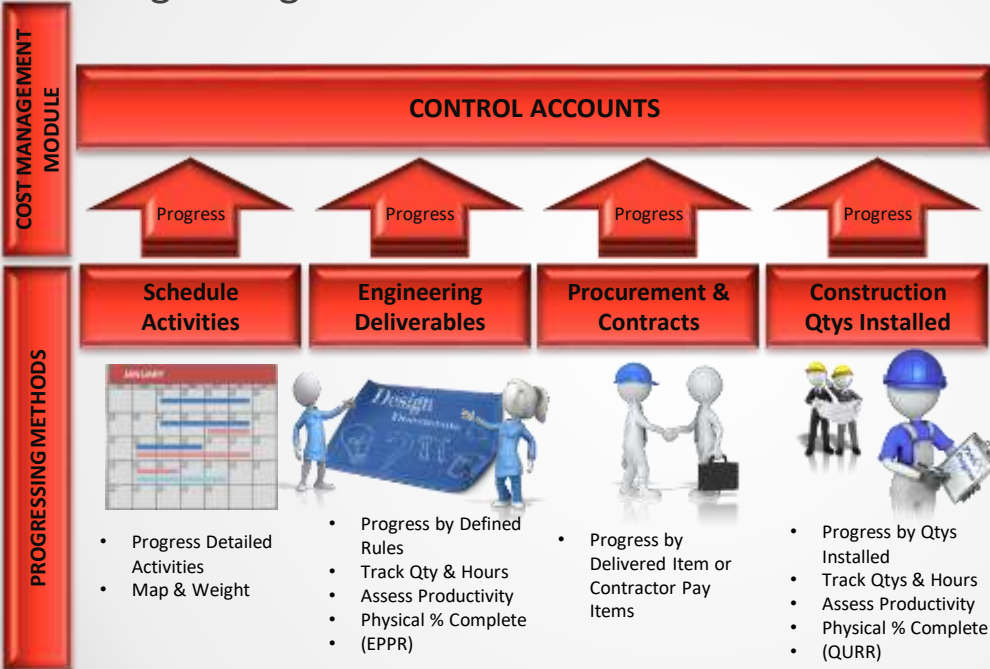


2. Reports: Hundreds of Reports in Your Pocket!

View an example of PRISM's mobile-friendly reports on your mobile device and find hundreds more in the PRISM Go app

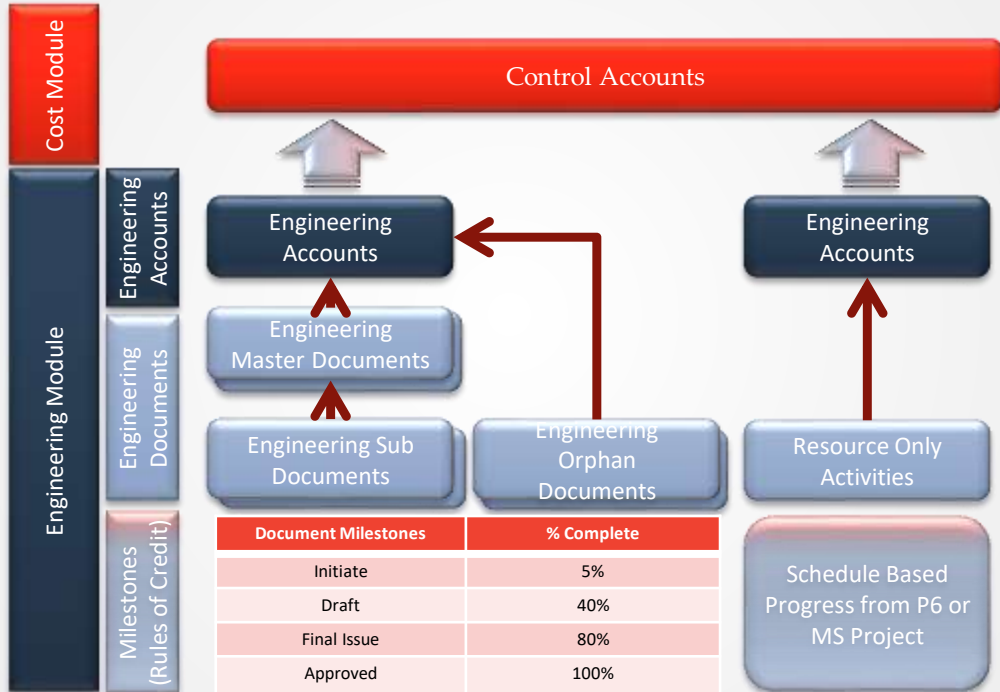


Progressing Methods



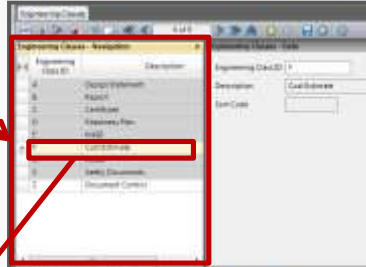
- These are examples of commonly used progressing methods, however PRISM has over 30 different methods which can be assigned against accounts within PRISM.
- The scope of the account will generally determine the progressing method used, and the best relevant method will be assigned by the account owner

Engineering Progress Management



Define Progress Rules

1 Define your Document classes



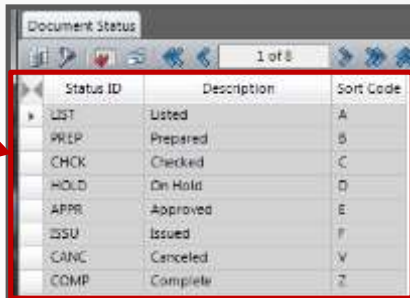
2 For Each Class Define Milestone Earning Method or Rules of Credit

Engineering Classes - Milestones

Milestone	Milestone Description	Percent Complete	Days
1	Initiate	10.00	0
2	Plan	30.00	0
3	Contracting and Procure	70.00	0
4	Install Schedule	80.00	0
5	Commencement Schedule	100.00	0

Define Status Types

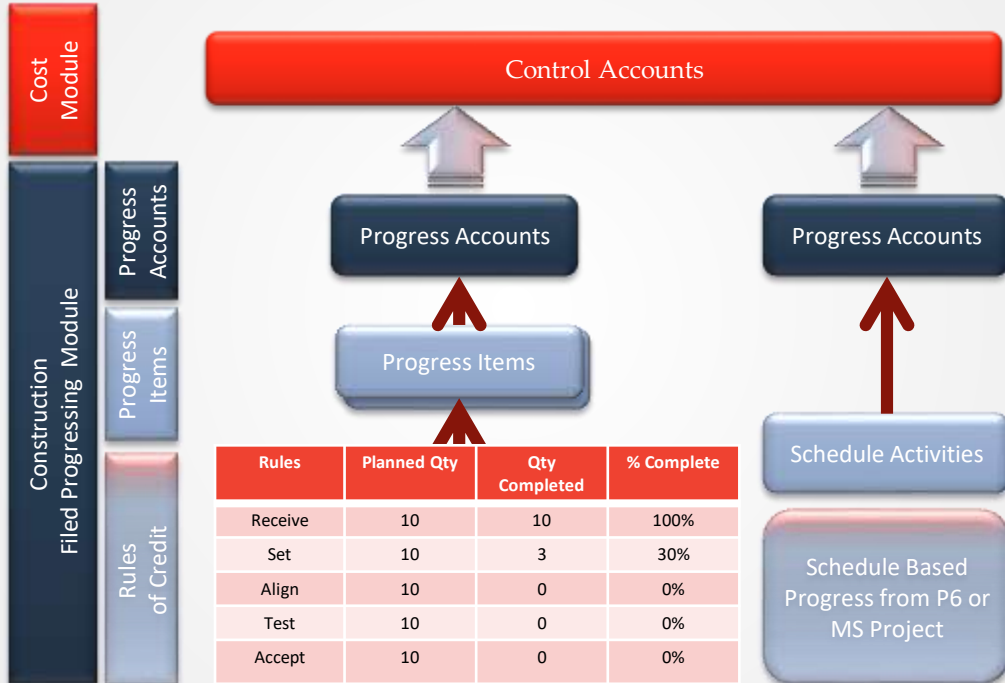
Define Document Status
Types to be used for
group, sorting and
reporting



The screenshot shows a window titled "Document Status" with a toolbar at the top containing icons for search, refresh, and navigation. Below the toolbar is a table with three columns: "Status ID", "Description", and "Sort Code". The table contains eight rows of data. A red arrow points from the text on the left to the table.

Status ID	Description	Sort Code
LIST	Listed	A
PREP	Prepared	B
CHCK	Checked	C
HOLD	On Hold	D
APPR	Approved	E
ISSU	Issued	F
CANC	Canceled	V
COMP	Complete	Z

Construction Field Progress

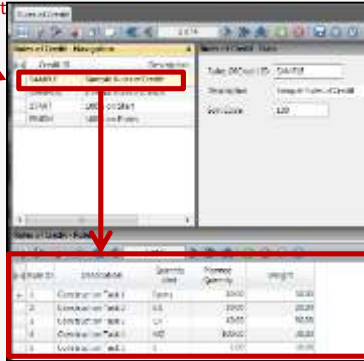


Define Field Progressing Rules of Credit



1

Define your Rules of Credit



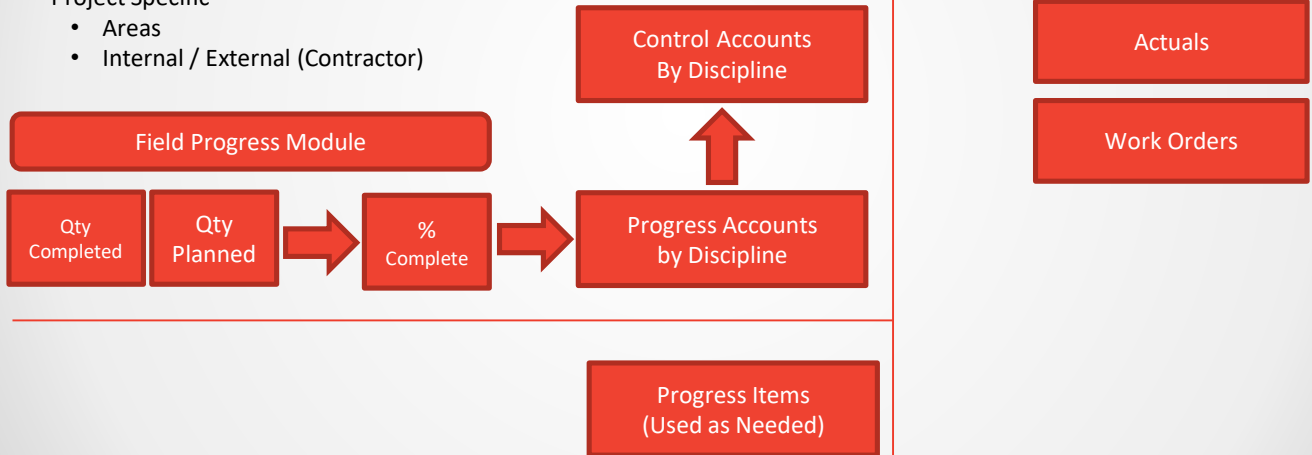
The screenshot shows the 'Rules of Credit' dialog box with the 'General' tab selected. The 'General Rules of Credit' section is highlighted with a red box. Below this, a table lists the defined rules:

Order	Description	Quantity	Price	Weight
1	Construction Task 1	1000	1000	1000
2	Construction Task 2	500	500	500
3	Construction Task 3	250	250	250
4	Construction Task 4	125	125	125
5	Construction Task 5	62.5	62.5	62.5

Physical Progressing – High Level by Qty

GROUP CODE ATTRIBUTES:

- Common
 - Project
 - Phase / Process
 - Discipline
- Project Specific
 - Areas
 - Internal / External (Contractor)



PMO Jigsaw Puzzle



Baseline Budget

What is it?

Original Quantities, Hours and Cost

Time Phasing

- Automated Spread

Update

- Rebaseline

Approved Budget

What is it?

- Baseline + change
- The budget against which PERFORMANCE is measured

Time Phasing

- As per Area requirements in line with Schedule

Update

- Following approved change control

Control Budget

What is it?

- Contractor's Budget

Time Phasing

- As per Contractor's first post contract submission

Update

- Via change control in conjunction with ICE's and Contract Management System

Financial Budget

What is it?

- Finance view

Time Phasing

- As per agreed Business Plan from Finance

Update

- Quarterly Review

EAC

What is it?

- Total forecast as per guidance set out in the Cost Management Handbook

Time Phasing

- Based upon agreement between Client Cost Team and Contractor's submission

Update

- Monthly, via Change Control

Schedule Dates

What is it?

- Approved Dates
- Contract Dates
- Current Dates

Time Phasing

- As per Clause 31/32 programme if applicable.
- If not, the planning team to advise.

Update

- Via change control utilising the curve functionality in the advanced change module.

Change Control

Maintaining The PMB

BASELINE
BUDGET

APPROVED
BUDGET

CONTRACT
BUDGET

FINANCE
BUDGET

EAC

TREND

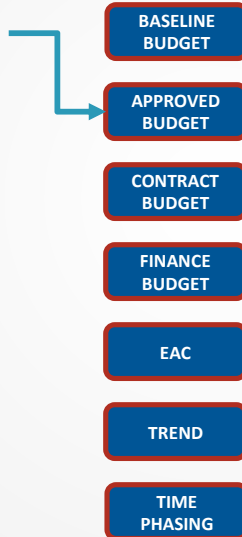
TIME
PHASING

- All budgets are subject to change control
- Different change types impact different budgets within PRISM
- EAC is also under change control
- Budget time phasing via manual input or subject to change control via dates and curves or activities.

Change Control

Maintaining The PMB

Top Down Programme Change



- Top down programme change is change identified by the client and predominantly involves a drawdown from contingency.
- It will impact the Approved Budget
- If the contract is let at the same time, it can simultaneously impact the Contract Budget, but more often than not there is a timing difference between the change to Approved Budget and the Award of the Contract/ICE

Change Control

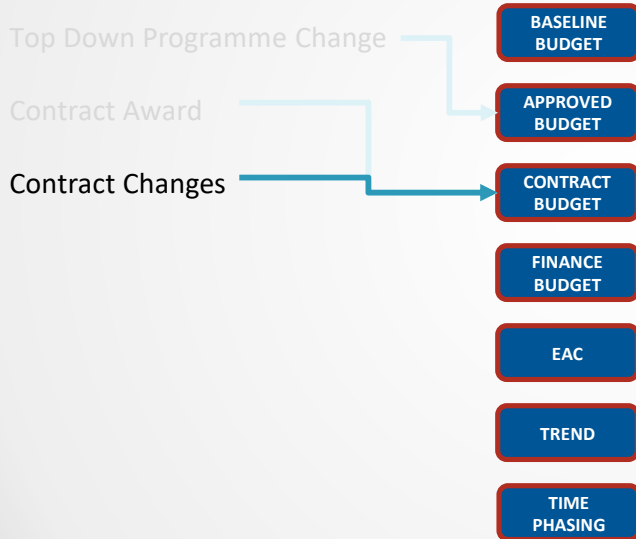
Maintaining The PMB



- Contract Awards are a type of change that impacts the Contract Budget.
- When a Contract is let, a change is enacted to add Contract Budget to the Control Account

Change Control

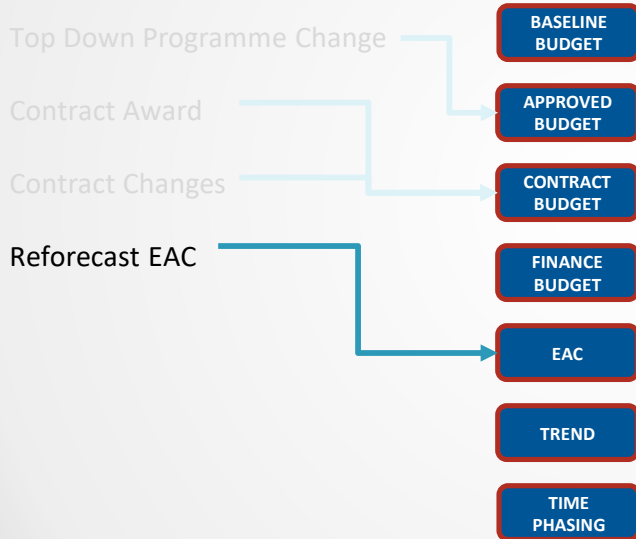
Maintaining The PMB



- Contract Changes impact the Contract Budget
- They are driven by Variations within the contract management system.
- They are a specific type of change to allow the reporting of the Initial Contract Sum and Current Contract Sum in Management reports

Change Control

Maintaining The PMB

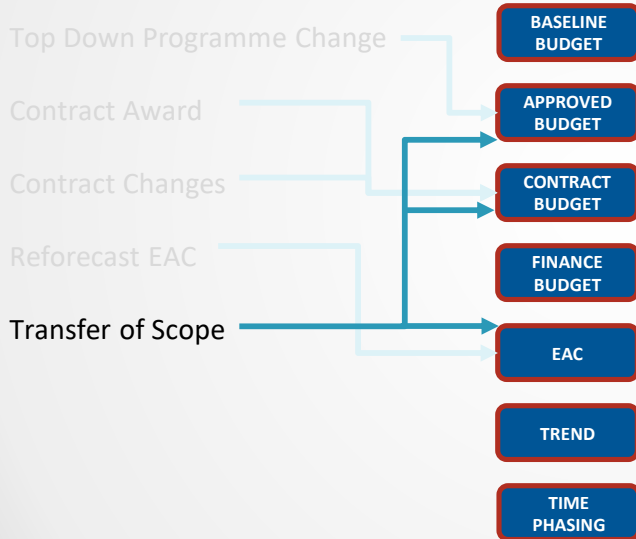


- Changes to EAC are enacted via a reforecast EAC change. As with all other changes, a detailed description is required to justify these changes.

TREND INTRODCUTION with light touch review and approval

Change Control

Maintaining The PMB

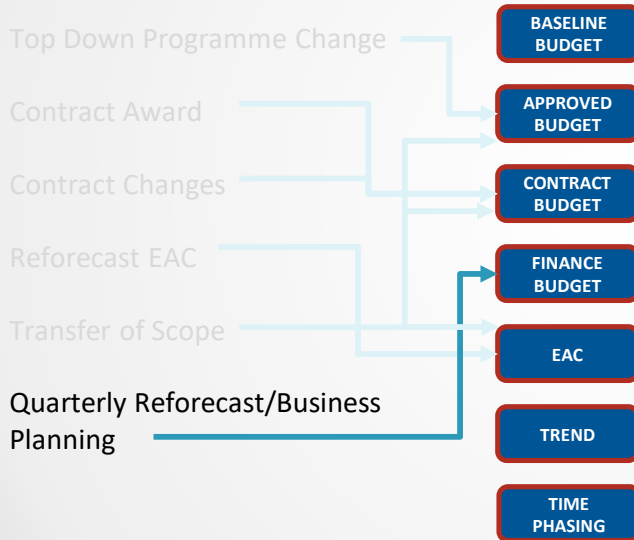


- Scope transfers between Unlet control account and let control accounts when work is awarded are enacted via and scope transfer change type.
- It can impact the Approved Budget and Control Budget simultaneously or through separate Changes.
- It can also impact the EAC at the same time.

Note - this would be a 'Contract Award/CE' if there was any change to the Contract Budget

Change Control

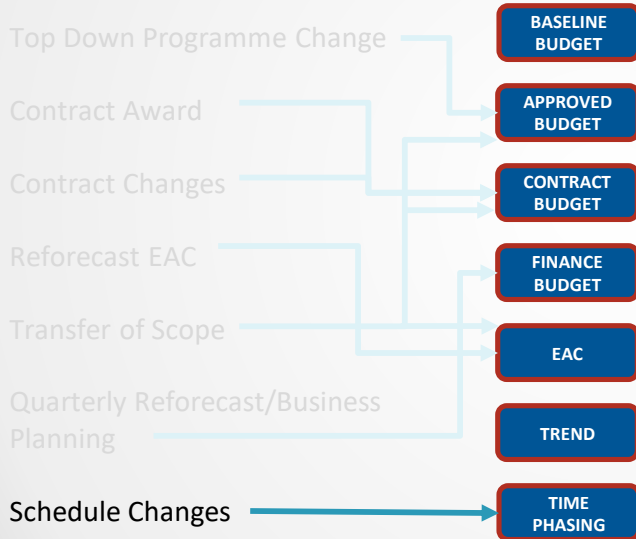
Maintaining The PMB



- The Finance Budget is held separately for reporting purposes only.
- When the quarterly reforecast is agreed, it will be updated via one single change control.
- It can also hold the agreed Business Plan figures for the subsequent funding period.

Change Control

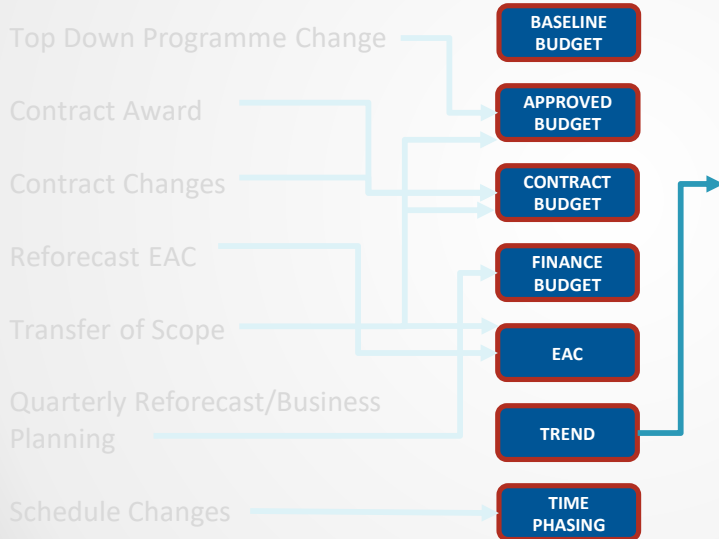
Maintaining The PMB



- All control accounts will be set up with dates and curves appropriate to their time phasing.
- This time phasing is locked down and updated via change control.
- The change will include a set of dates and a curve type which is absorbed by the existing curve to incorporate the spread of the change.

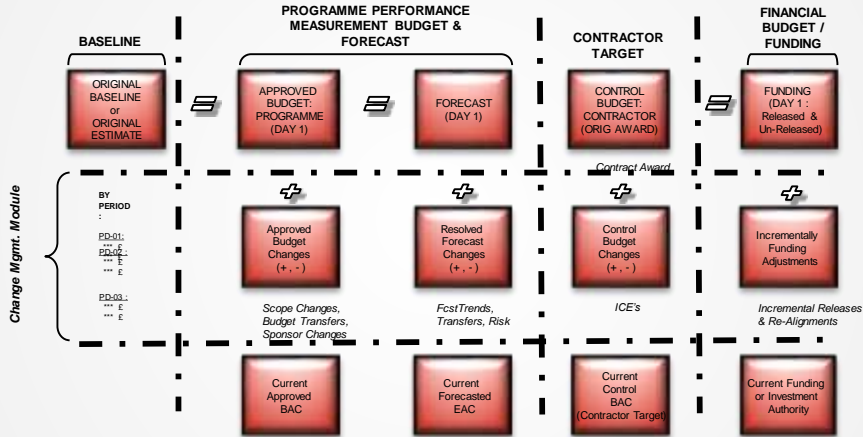
Change Control

Maintaining The PMB



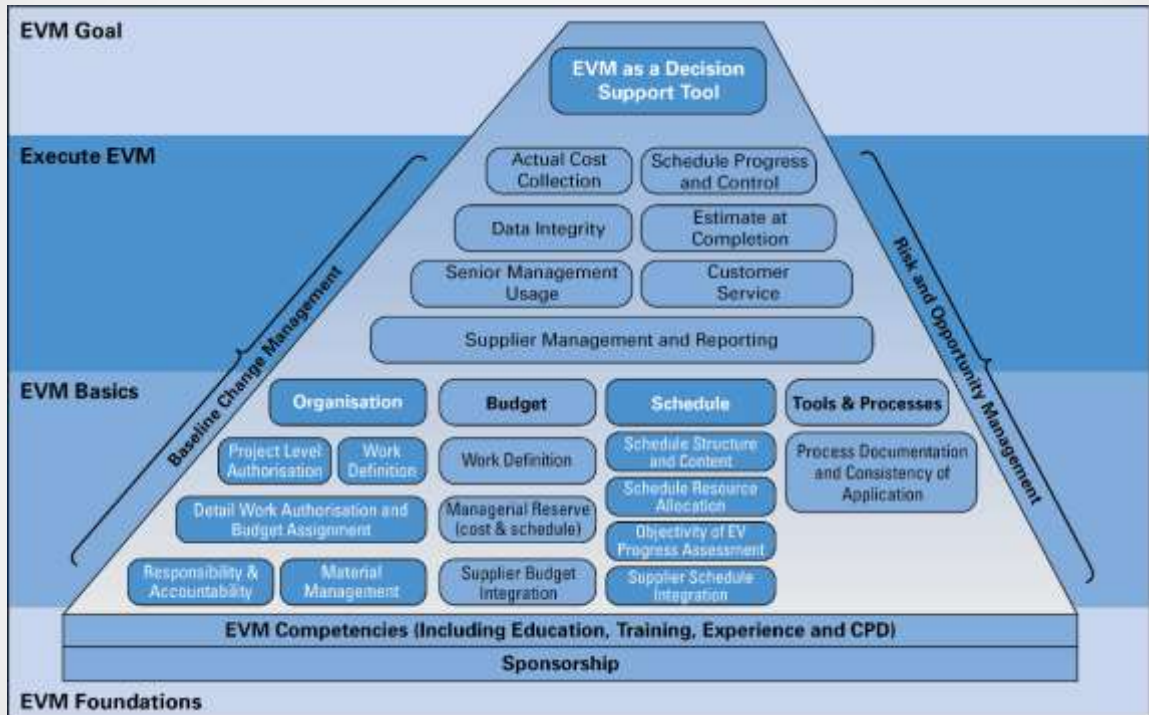
- Trends are captured via change control within PRISM, but are kept separate from the EAC (with option to include for reporting) and do not form part of an approved change until they are resolved as highly likely.

Managing Change – Programme vs Contractor



PMO Jigsaw Puzzle





Any Questions?

See us on Stand 4



Project Controls
EXPO
London, UK

The PRISM Suite

PRISM Cost Management

PRISM G2 Engineering

PRISM Procurement

PRISM Contracts

PRISM Dashboard

PRISM Integrator

PRISM Field

PRISM Estimating

PRISM Reporting

PRISM Scheduling

PRISM Analytics

PRISM Integration

PRISM Support

- Enterprise-wide performance
- Enterprise-wide financials packages
- Microsoft® Project
- Microsoft® Excel
- Reduce project down time
- Estimate project cost and
- Estimate project schedule
- Estimate project resource
- Estimate project budget and
- Estimate project changes
- Estimate project overhead
- Estimate project completion
- Estimate project analysis
- Estimate project productivity
- Estimate project physical progress
- Estimate project executive summary
- Estimate project and more!

