



Project Controls
E X P O

Project Controls Expo – 17th Nov 2017
Emirates Stadium, London

Integrating Project & Portfolio Management



Project Controls
E X P O

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About the Speaker

Name: Lateef Daly

Position: Director of Europe & Middle East Operations

Organization: ARES PRISM 

- 20+ Year of Project Controls & Earned Value Expertise
 - Finance, Estimating, Cost Engineering, Change Mgmt, System Integration
- Industries:
 - Pharmaceuticals, Defence, Infrastructure, Rail, Nuclear, O&G
- Major Project Experience:
 - Crossrail, TFL, High Speed 2, Horizon Nuclear, Expo 2020, Ronald Reagan Ballistic Missile Défense Test Site

About the Topic

Outline:

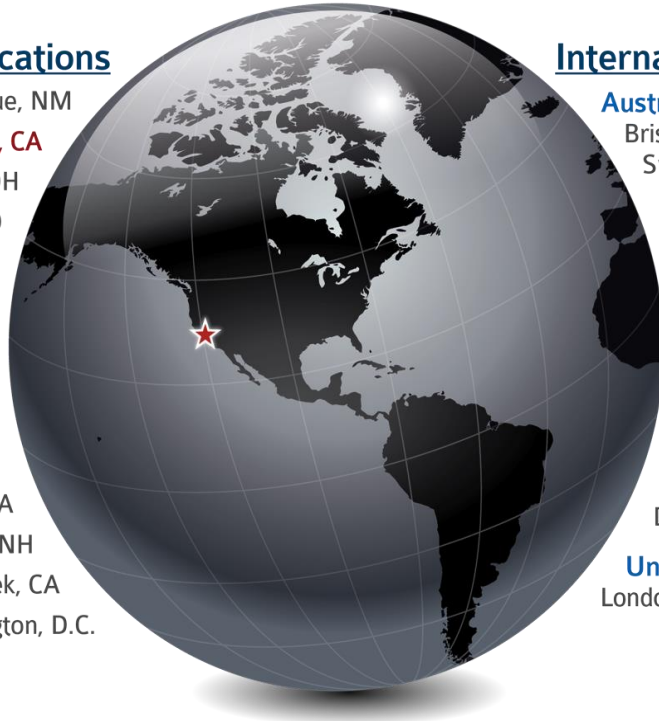
- ARES PRISM Background
- Project Lifecycle Management
- Enterprise Portfolio Management
- Common Coding
- Cost Schedule Integration
- Utilizing Various Progress Methods
- Integration Engine – Client Customizable Integrations
- Benefits of a Data Warehouse
- Data Integrity & Validation
- Reporting

ARES PRISM Background

ARES is a full-service project controls solution provider

U.S. Locations

Albuquerque, NM
Burlingame, CA
Cleveland, OH
Colorado Springs, CO
Denver, CO
Houston, TX
Huntsville, AL
Los Alamos, NM
Los Angeles, CA
Oakland, CA
Richland, WA
Stratham, NH
Walnut Creek, CA
Washington, D.C.



International Locations

Australia

Brisbane
Sydney

Canada

Calgary
Toronto

China

Hong Kong

South Africa

Johannesburg

UAE

Dubai

United Kingdom

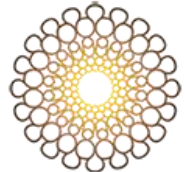
London

- ARES formed in 1992
- First PRISM US Client in 1995
- First UK client in 2009 (Sellafield)
- UK Entity opened in 2010 to support Crossrail
- Multiple EMEA clients today with strong Repeat Business
- Local Support Capability backed by the Central PRISM Team
- Local Services for Project Controls, Estimating, Scheduling and Contract Administration

Global Clients - Common Best Practices



Infrastructure



إكسبو 2020
دبي، الإمارات العربية المتحدة
DUBAI, UNITED ARAB EMIRATES

Nuclear / Energy



Oil & Gas



Mining & Metals



EPC



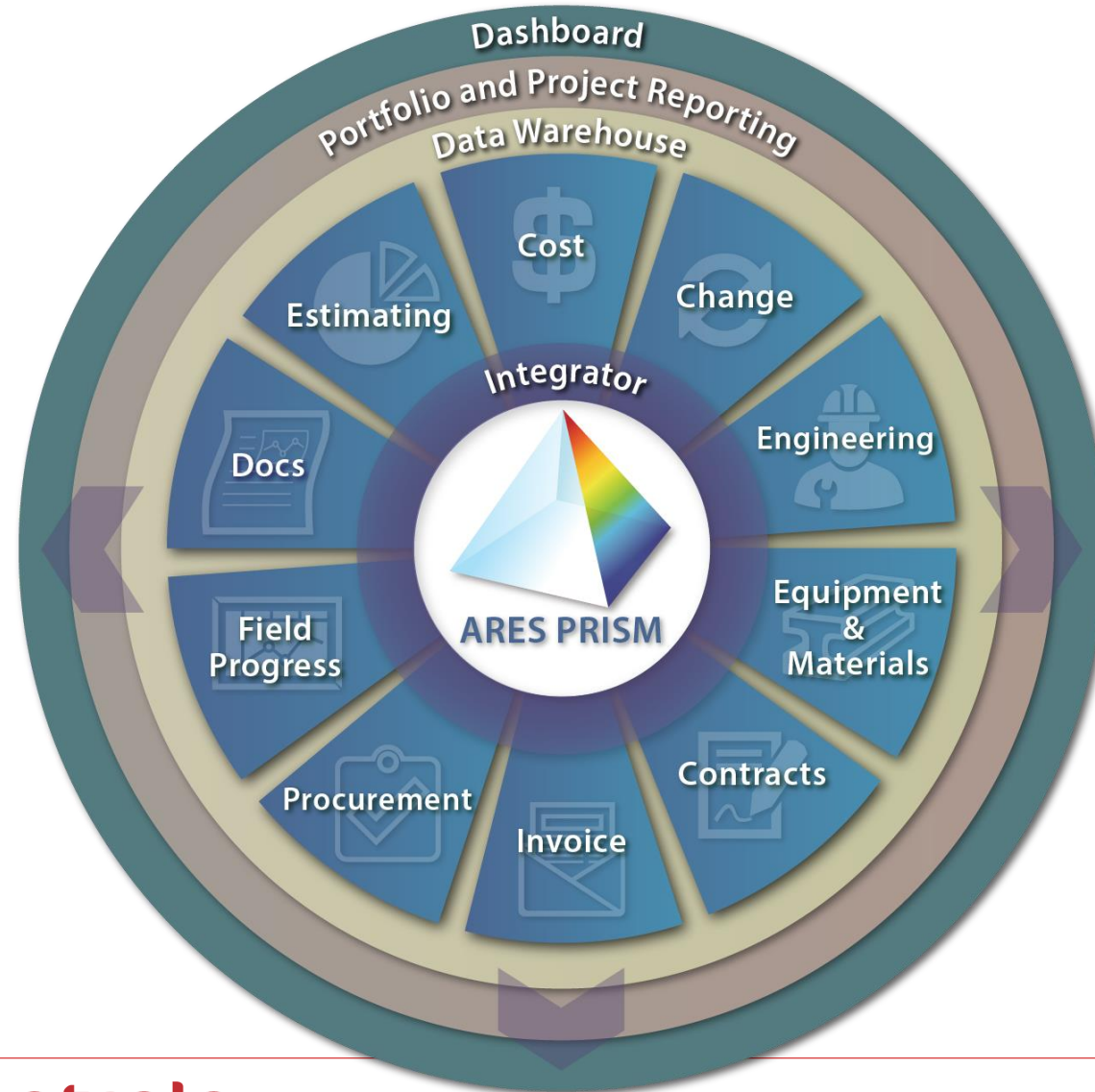
LAING O'ROURKE

Government



Project Controls
E X P O

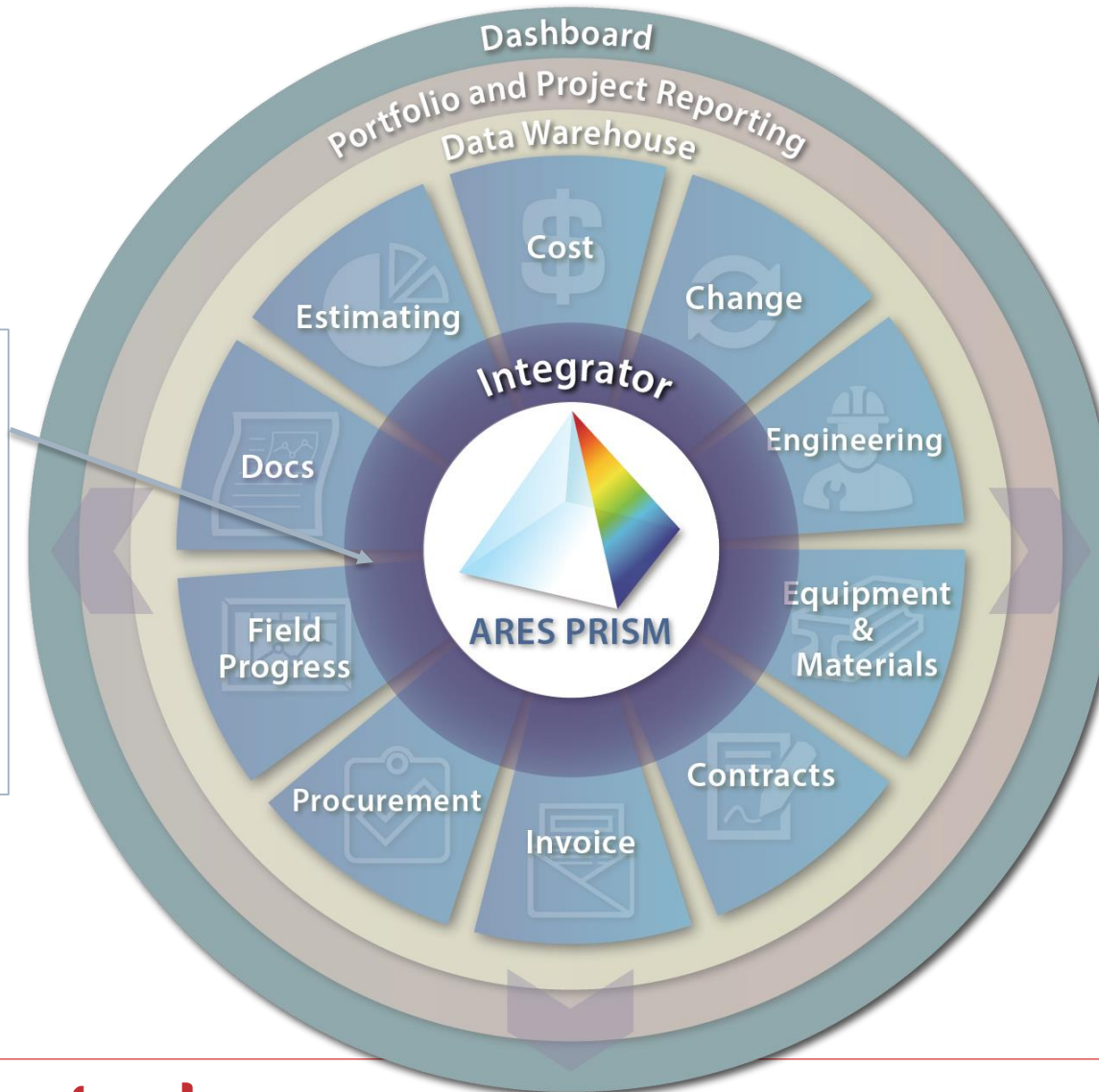
PRISM Integrated Lifecycle Management



Integrator

PRISM Integrator
Provides:

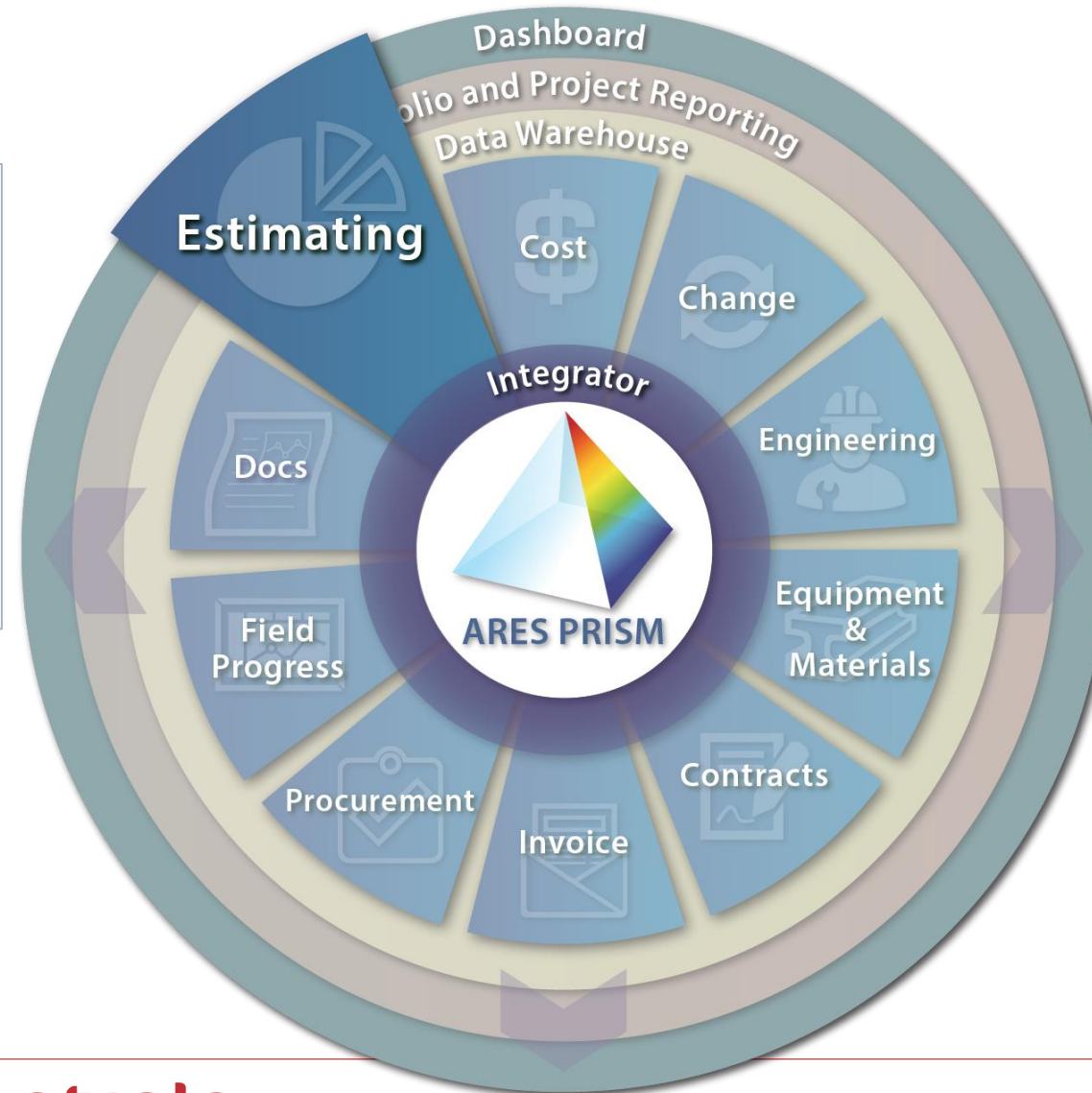
- Connection for IT/
ERP/ Risk/ Financial
Systems
- Workflow Modeling
- Code-Free Data
Mapping



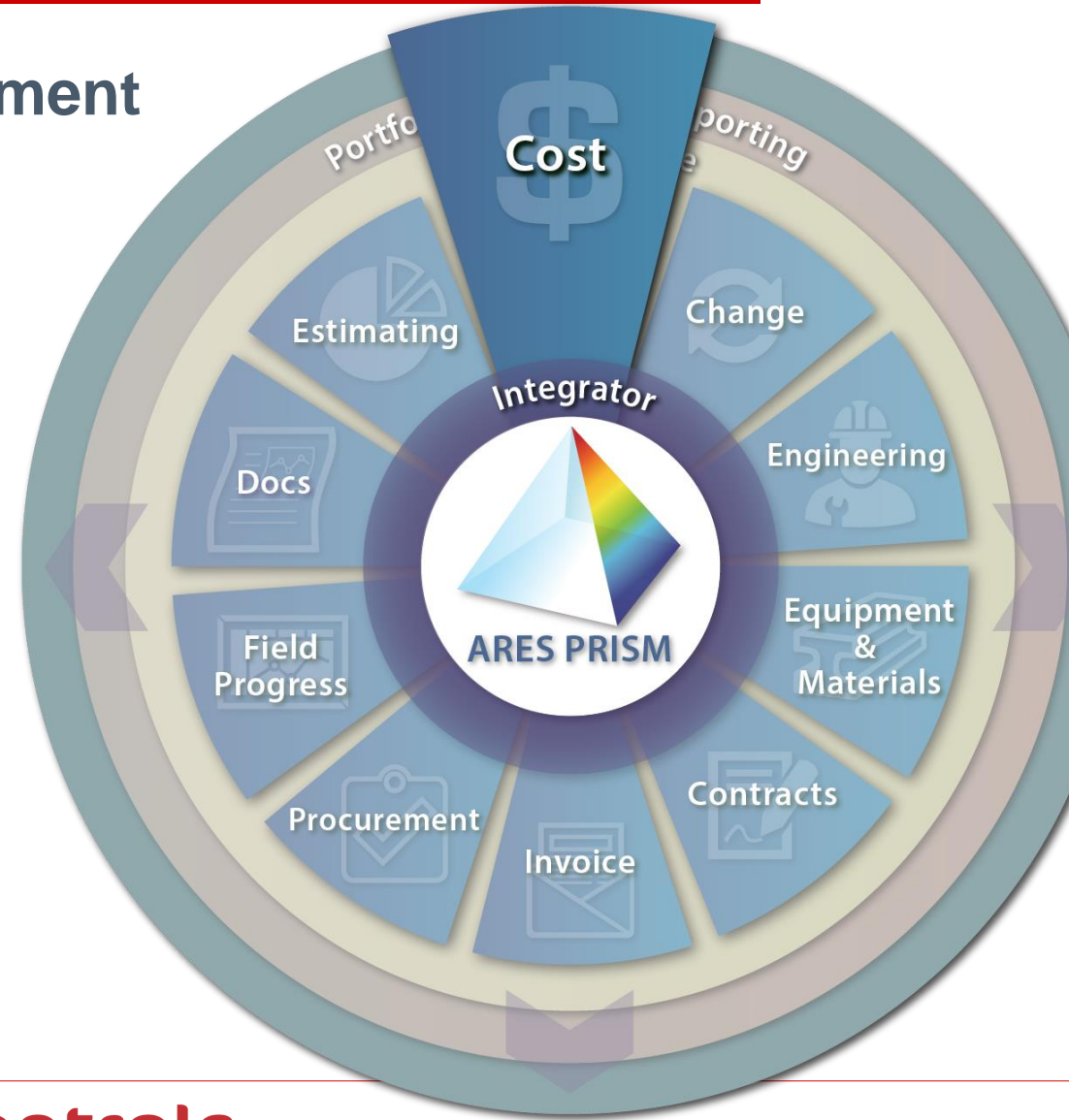
Estimating

PRISM Estimating Provides:

- 2D/3D/GIS/BIM Takeoff
- Centralized Cost Estimates
- Quantity Survey
- Historical Data



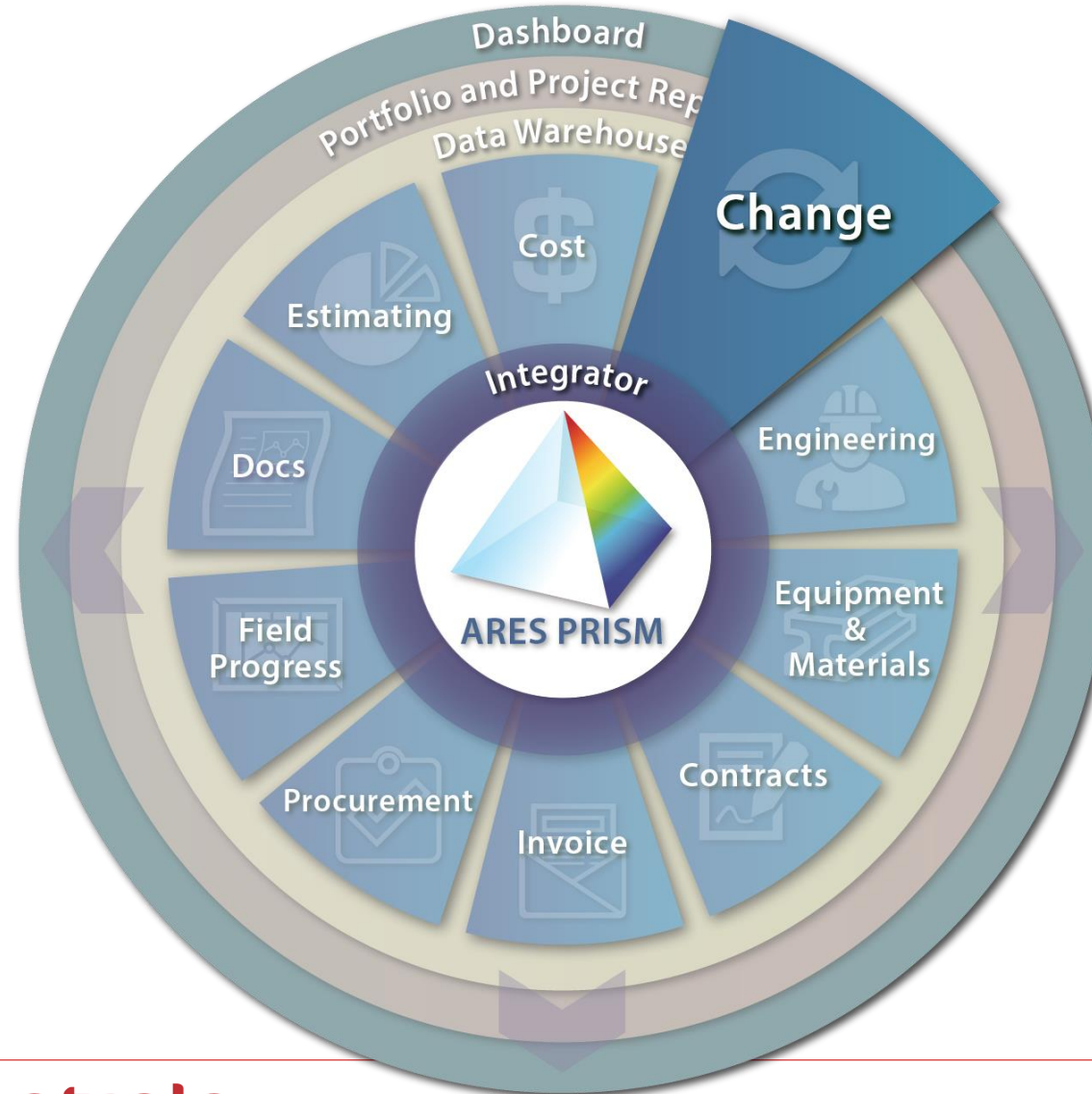
Cost Management



PRISM G2 Cost Management Provides:

- Time-Phased Budgeting
- Resource Planning
- Schedule
- Commitments
- Risk
- Performance Measurement
- Variance Analysis
- Forecasting
- Earned Value

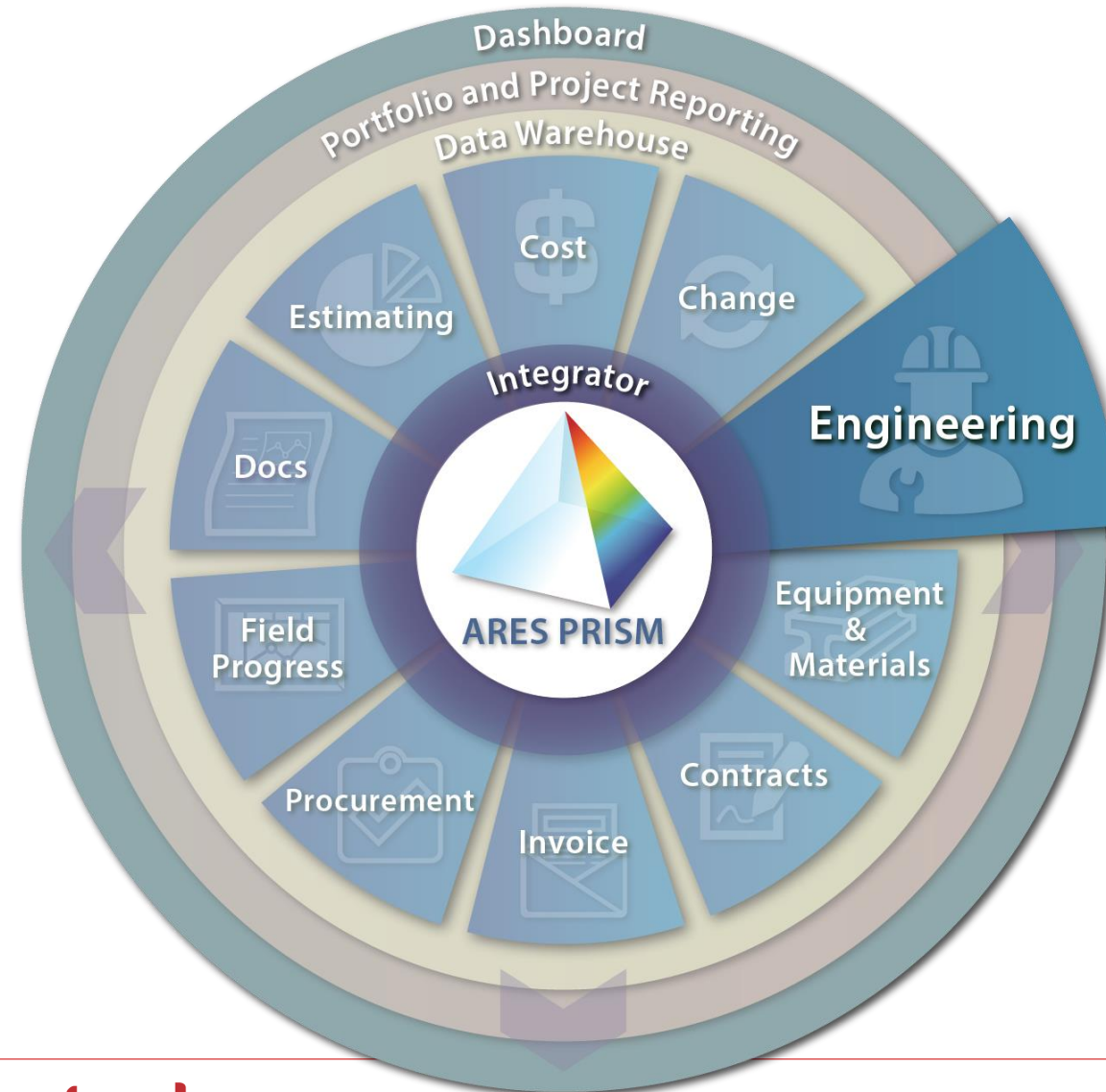
Change



PRISM G2 Change Management Provides:

- Defined Approvers and Reviewers
- Tracks Change Requests
- Manages Change Workflows

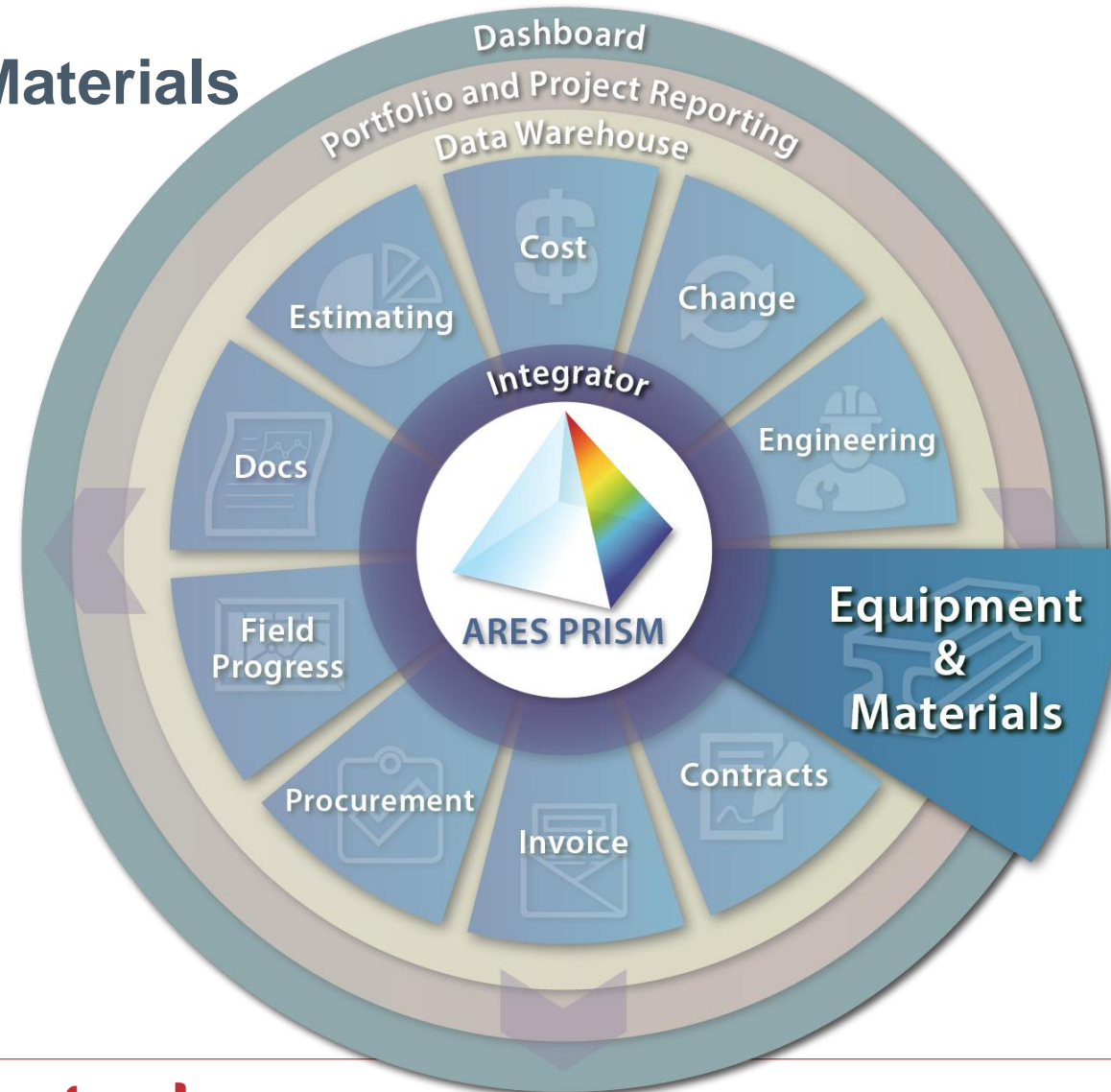
Engineering



PRISM G2 Engineering Provides:

- Deliverable Status and Tracking
- Time-Phased Engineering Packages
- Progress Measurement
- Engineering Performance
- Forecasting

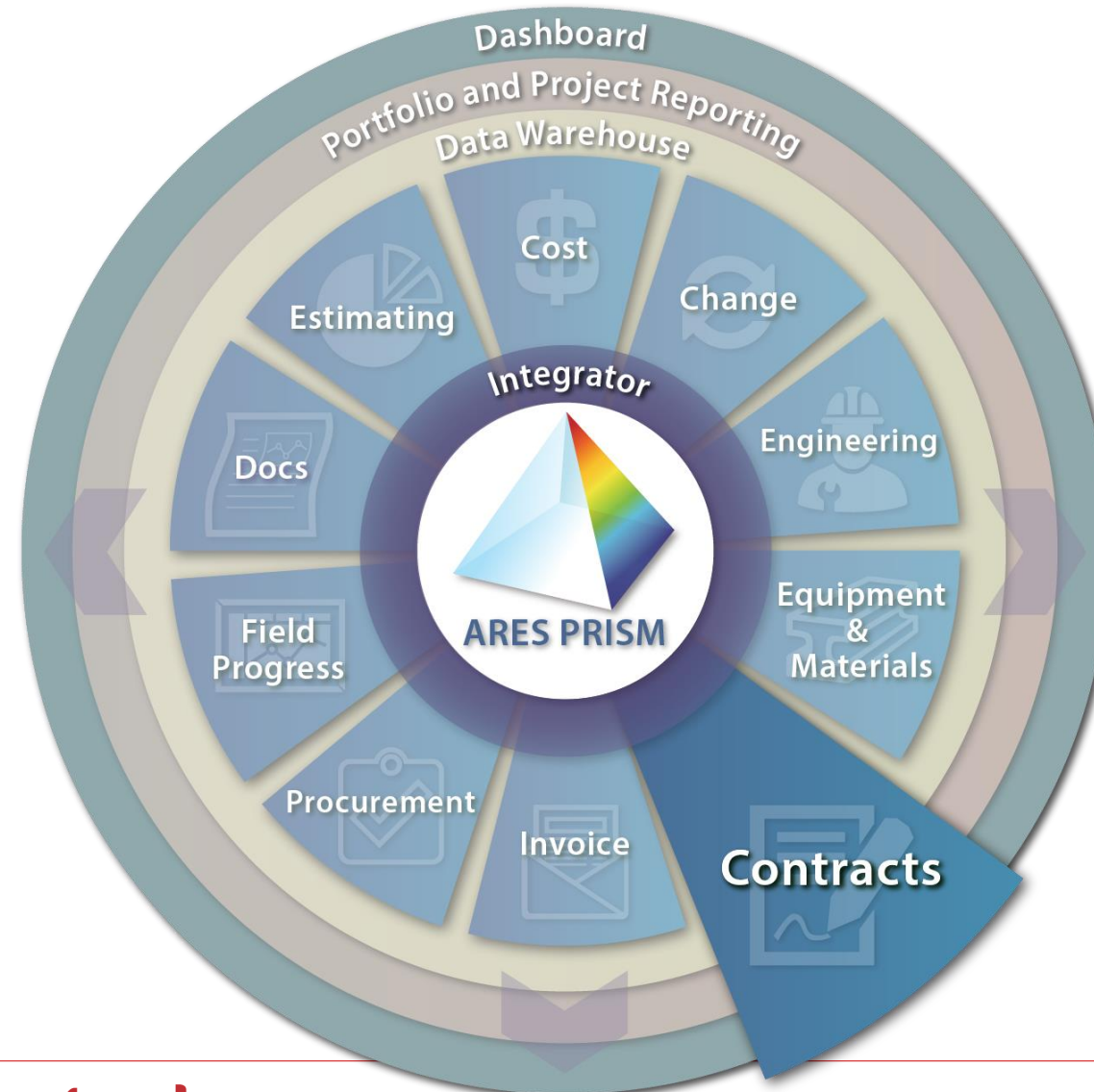
Equipment & Materials



PRISM G2 Equipment & Materials:

- Develops Requisitions
- Tracks Equipment and Attributes
- Tracks Materials

Contracts



PRISM G2 Contracts Administration Provides:

- Contract Bids
- Bid Analysis
- Award Contracts
- Vendor Evaluations
- Contract Scheduling
- Punch List Tracking
- Contract Changes

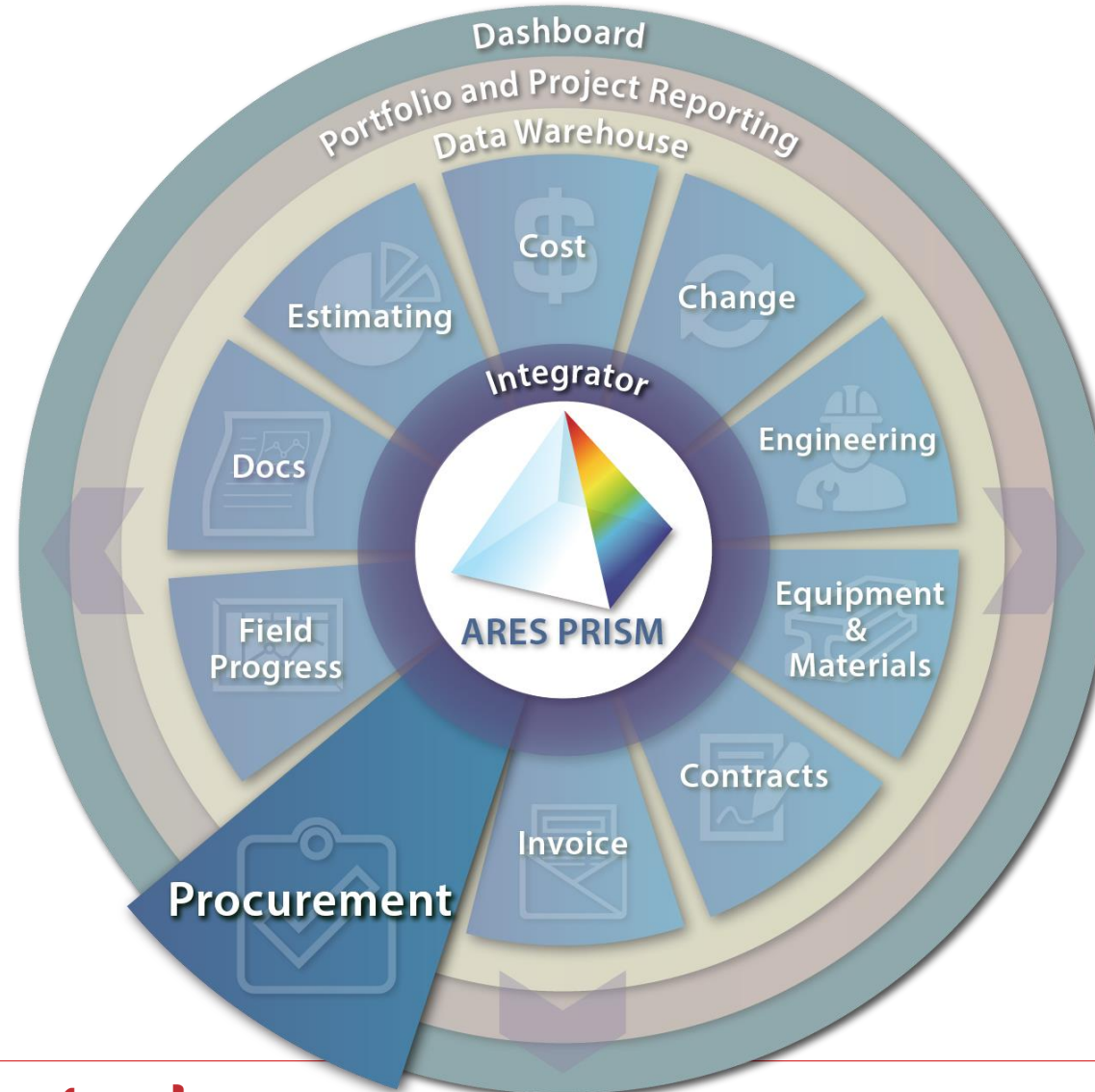
Invoice



PRISM G2 Invoice Management:

- Tracks Invoices From Suppliers
- Tracks Payments
- Traces Back to Purchase Orders and Contracts

Procurement



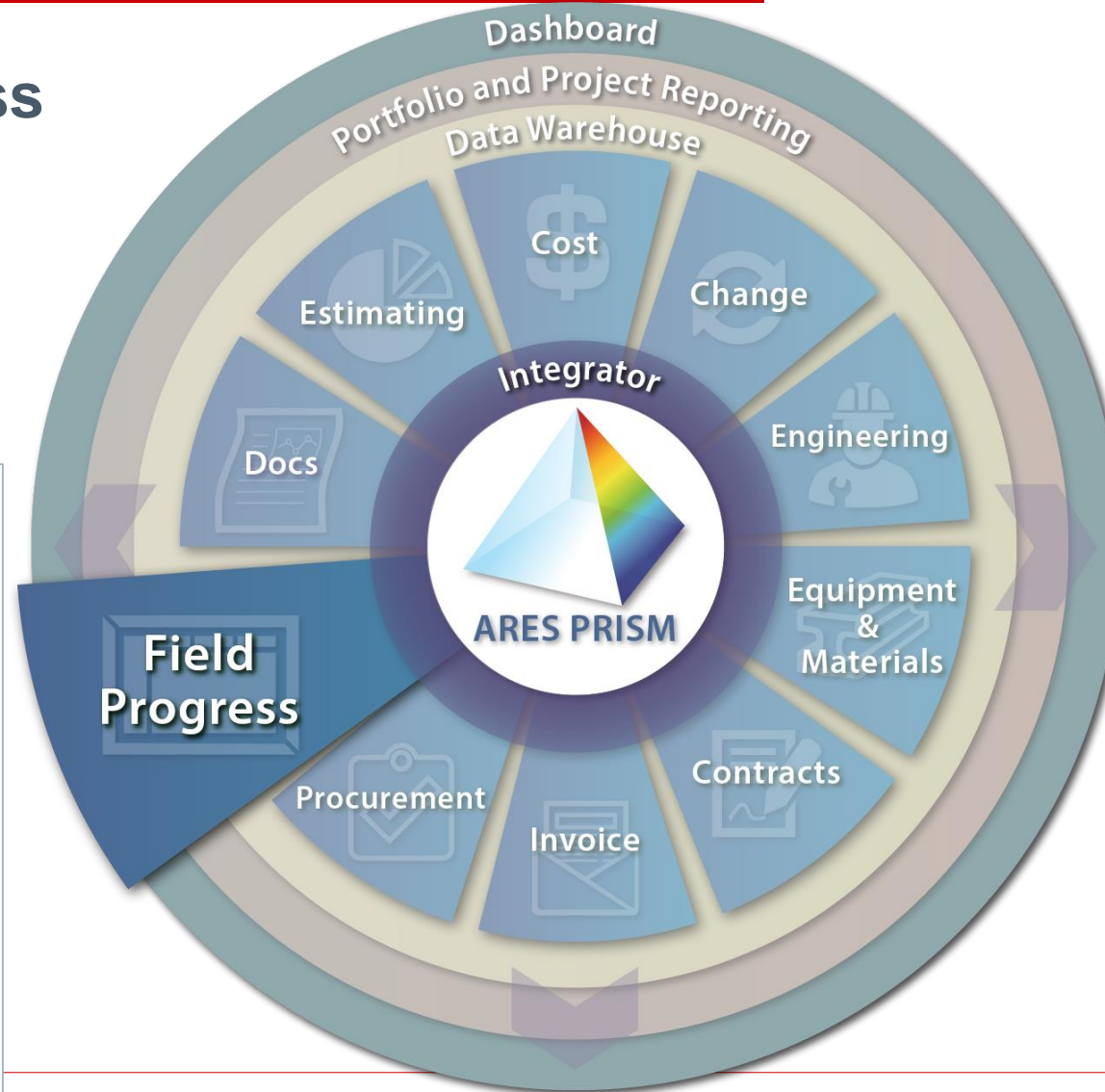
PRISM G2

Procurement Provides:

- Requisitions & Purchase Orders
- Procurement Scheduling
- Shipment Expediting,
- Supplier Evaluations



Field Progress



PRISM G2 Field Progress Provides:

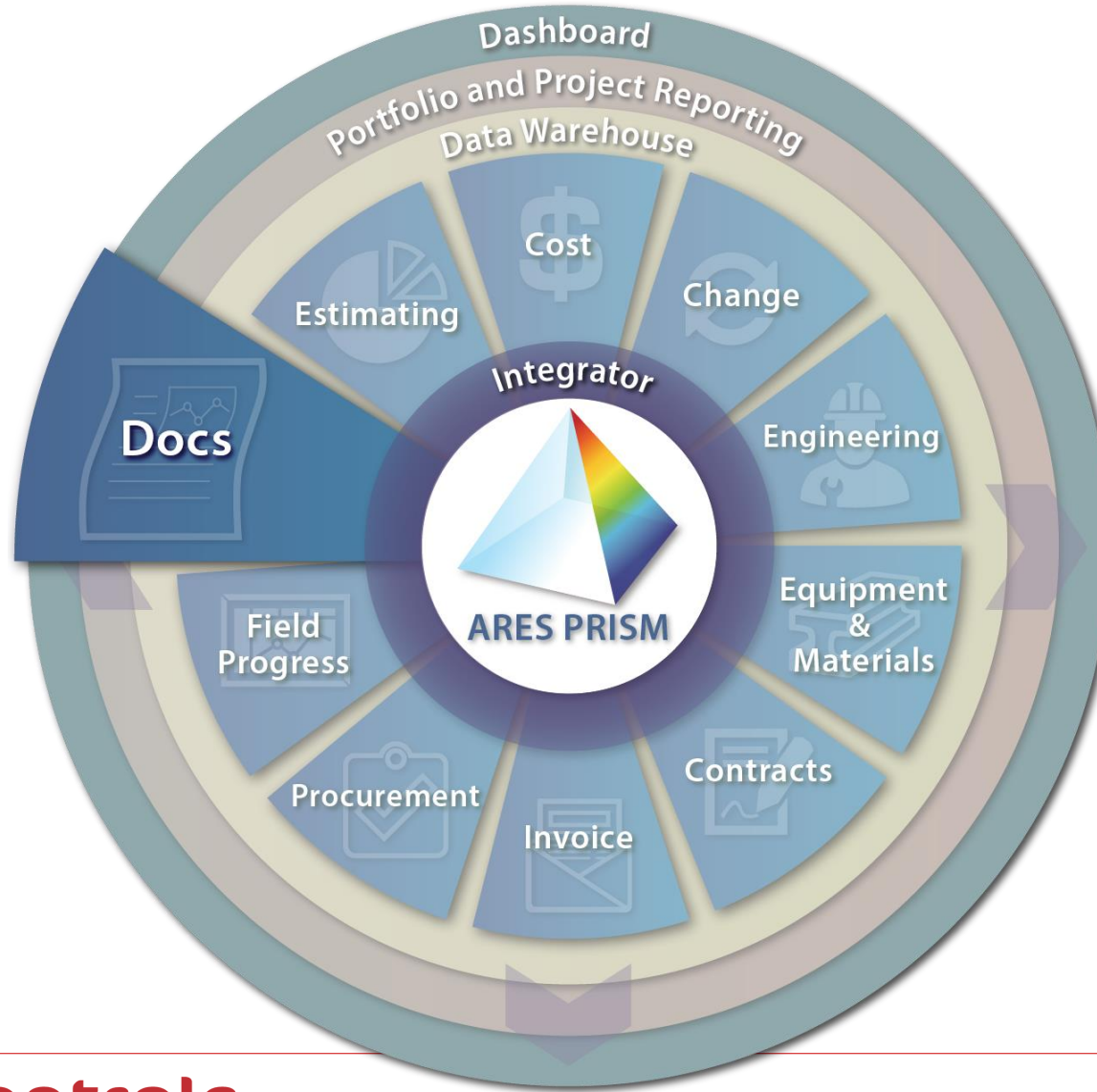
- Construction Progress & Performance
- Installed Quantities
- Unit Rates Analysis
- Rules of Credit
- Mobile Access
- Construction Changes

Docs

PRISM Docs

Provides:

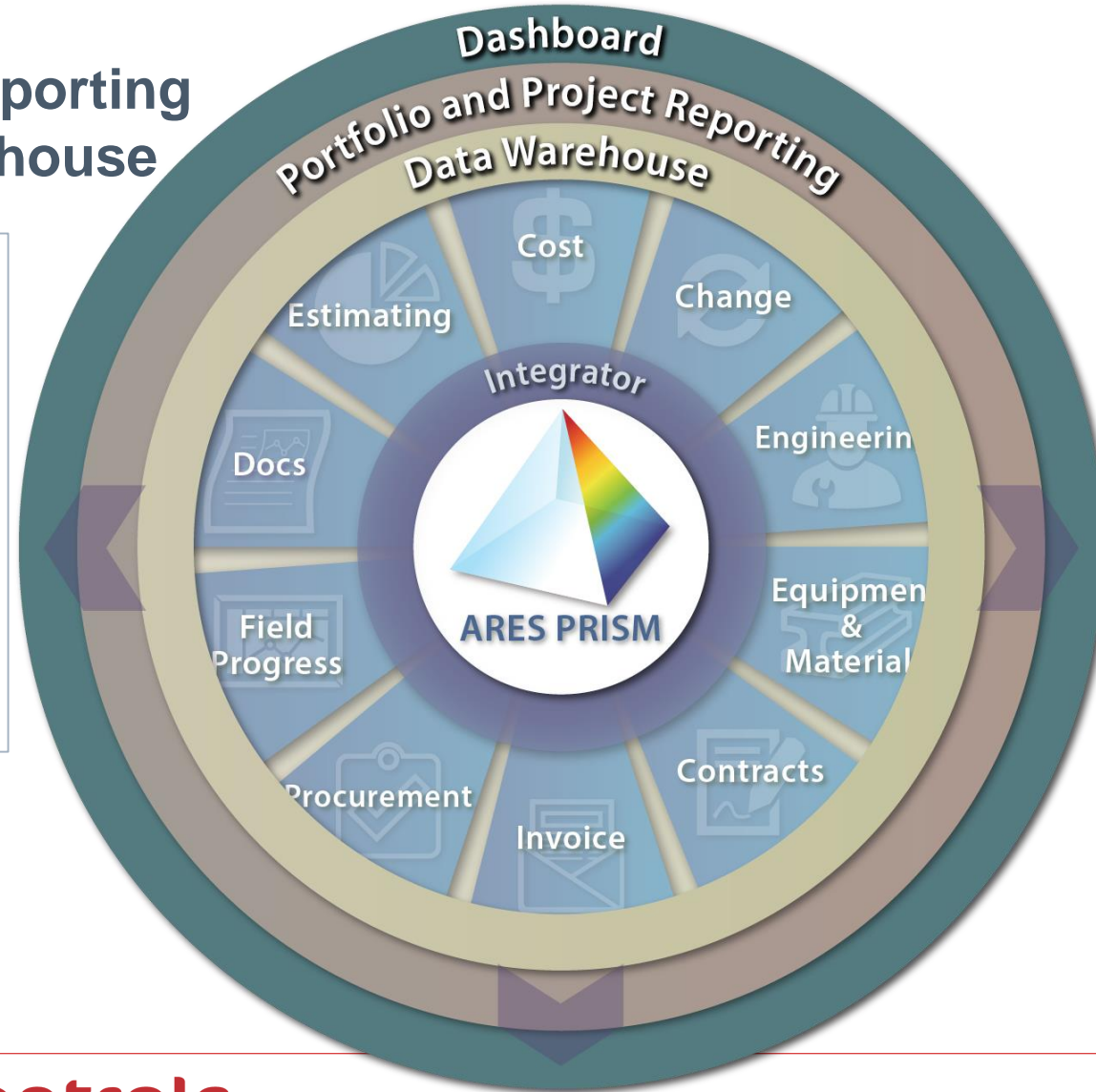
- Document Access and Control
- Automated Processes
- Team Collaboration



Dashboard, Reporting and Data Warehouse

PRISM Dashboard, Reporting & Data Warehouse Provides:

- Executive Insight
- Visualized Data
- Project Performance
- Forecasts
- Embedded KPIs

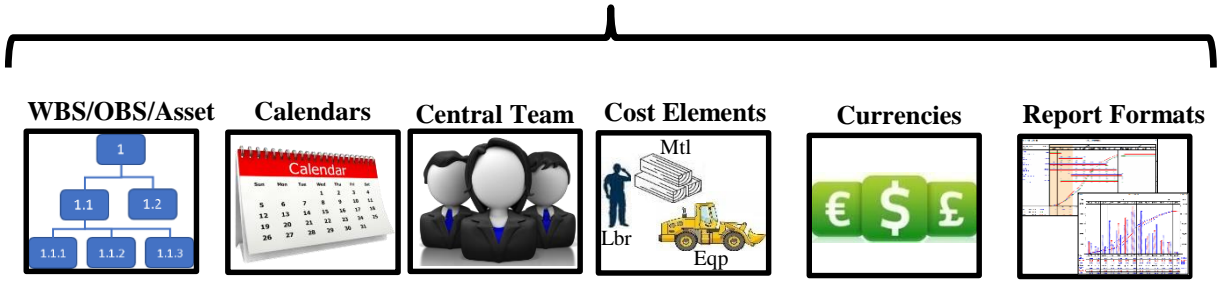


Enterprise Portfolio Management

PRISM Enterprise Configuration

PRISM Enterprise Portfolio Reporting

- *Single point of truth for portfolio reporting*



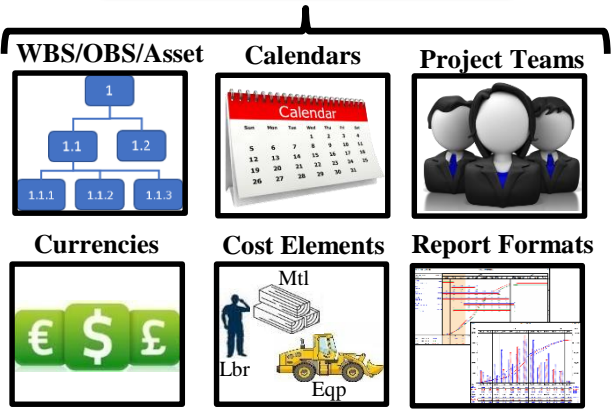
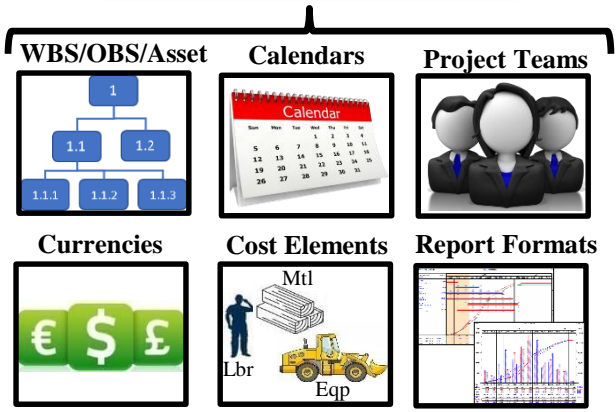
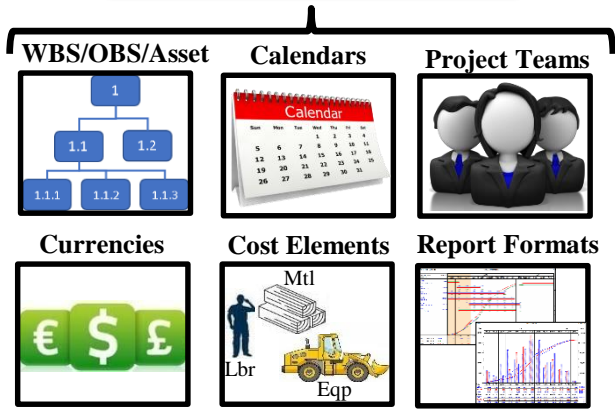
- *Define and promote a Common Enterprise Structure that is clearly defined and shared across all projects*

PRISM Project Specific Configuration

Project A

Project B

Project C



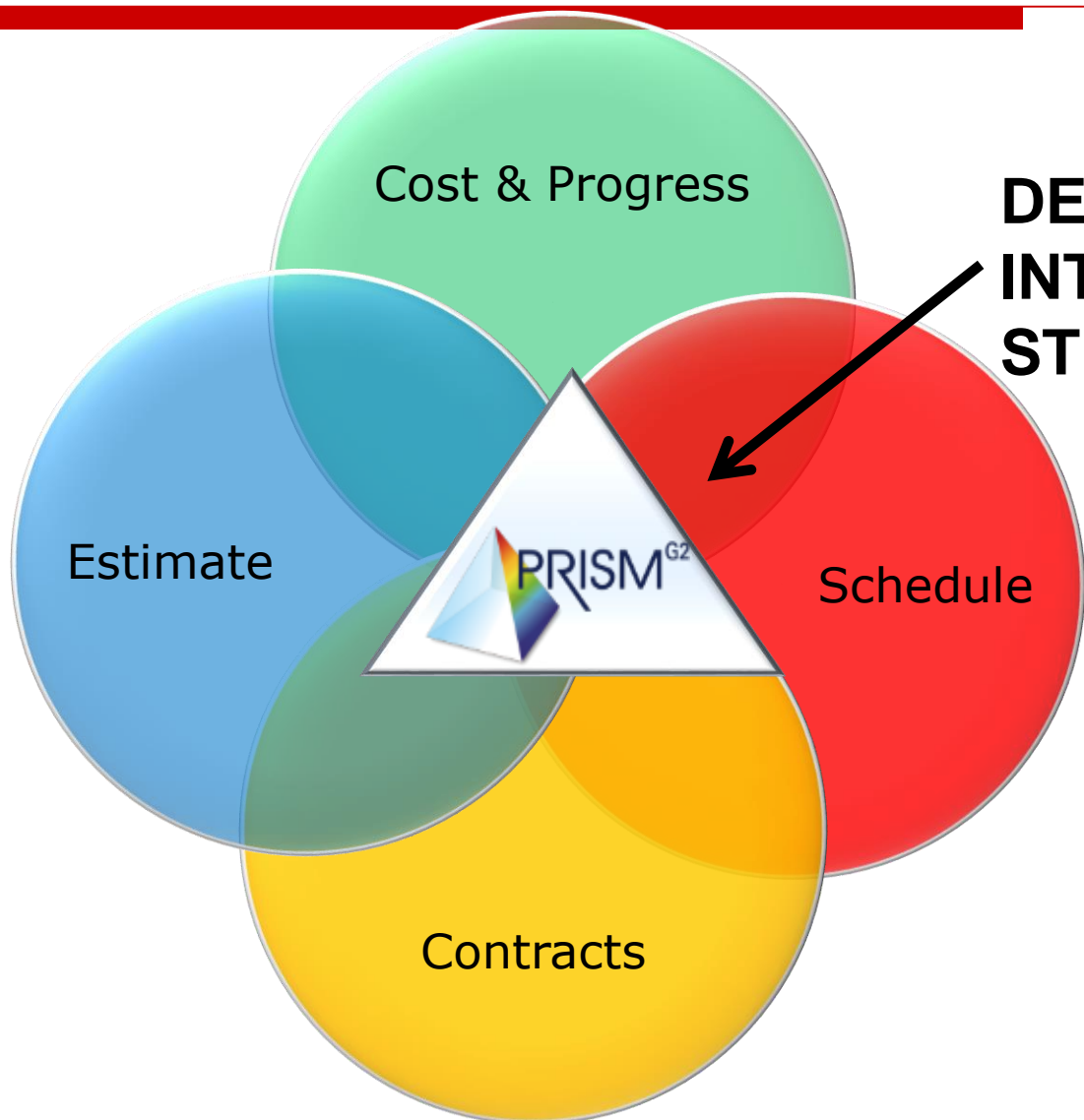
- *Still have flexibility to define project by project specific configurations that rollup to the Enterprise Level*

Can Be Setup Same or Unique

Can Be Setup Same or Unique

Can Be Setup Same or Unique

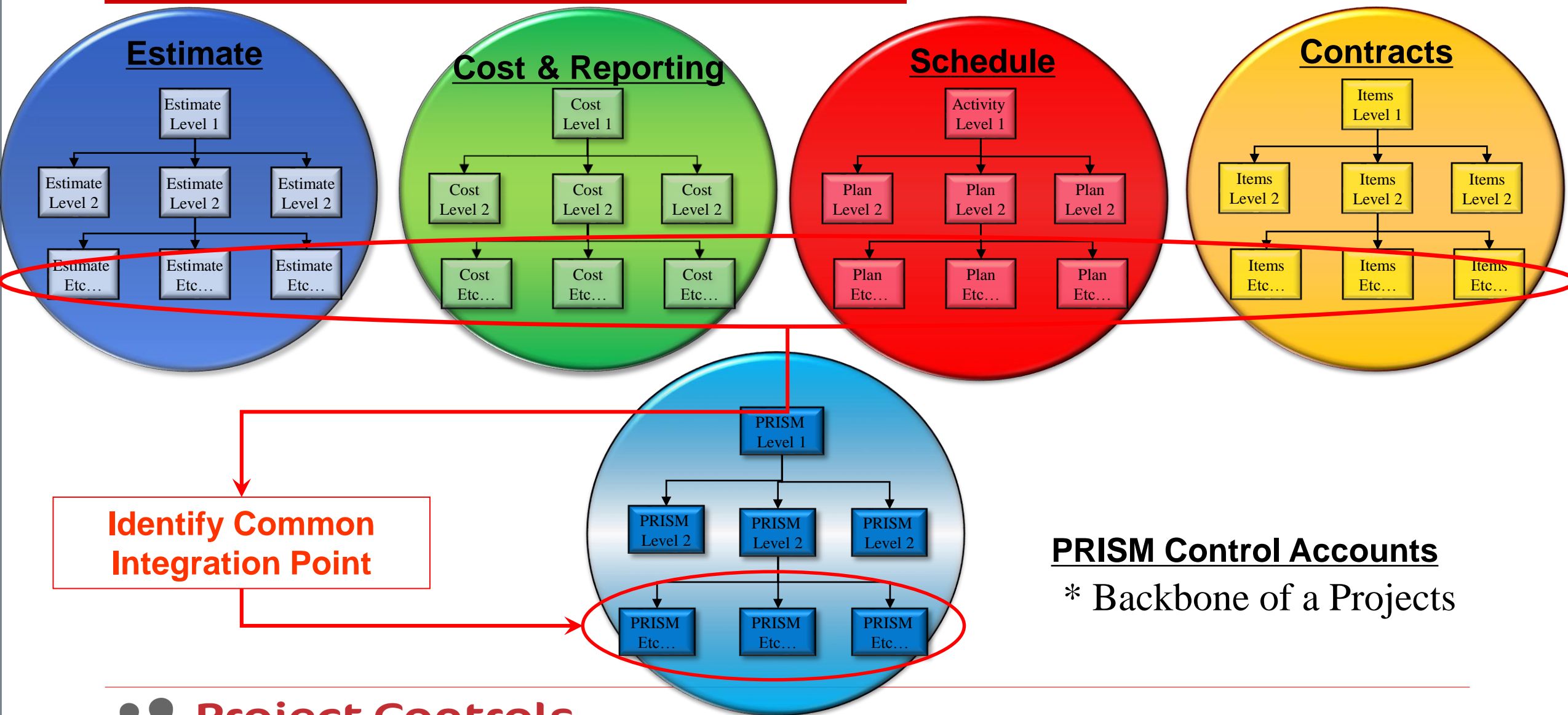
Integrated Coding Structure



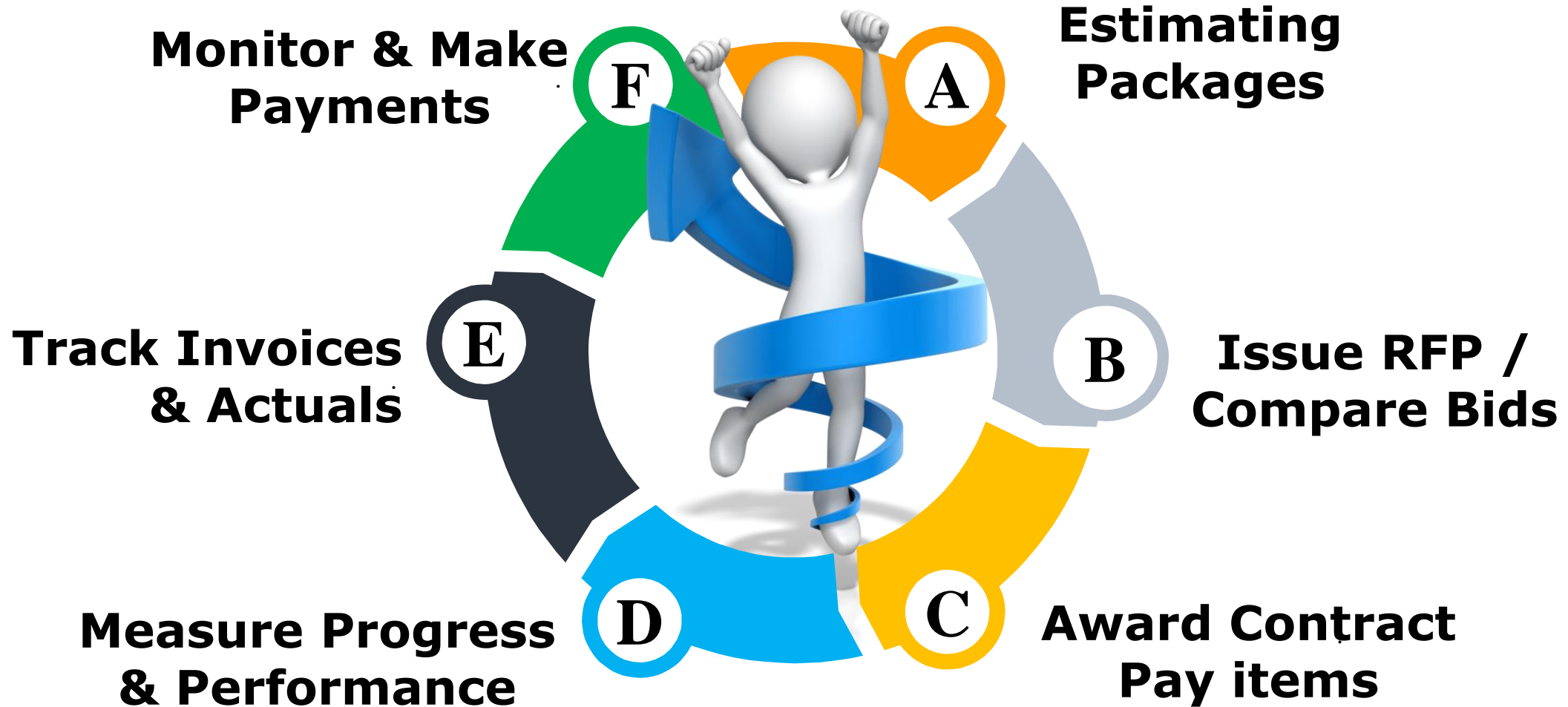
**DEFINE SINGLE
INTEGRATED
STRUCTURE**

** Provides integration & traceability from Original Baseline Estimate and our operating Budget /Cost data, which is then time phased with the Schedule start & finish dates*

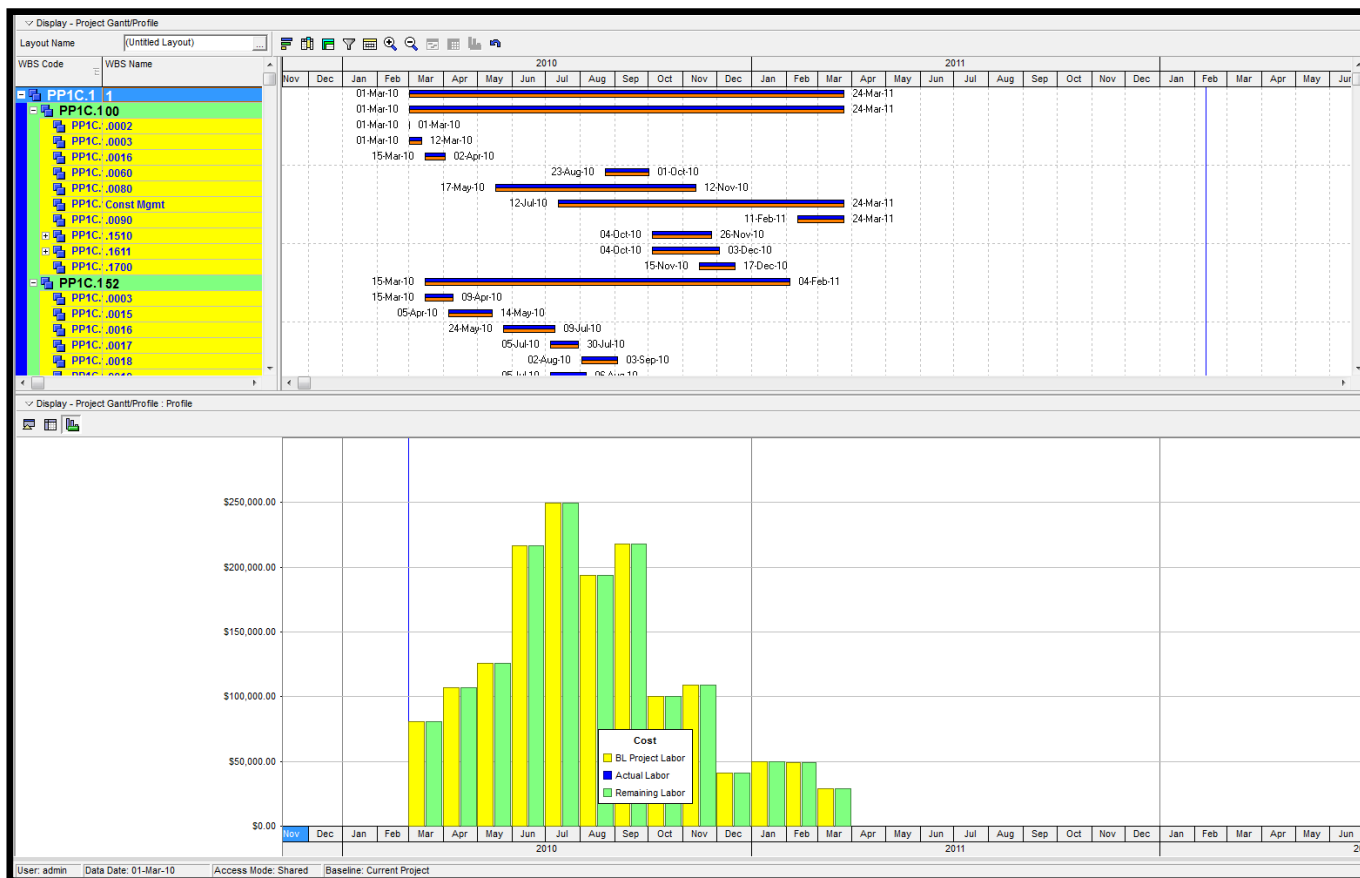
Creation of Integrated Coding Structure



Promote Common Coding at Projects & Portfolio Level



Eliminate Pain Of Cost Loaded Schedules

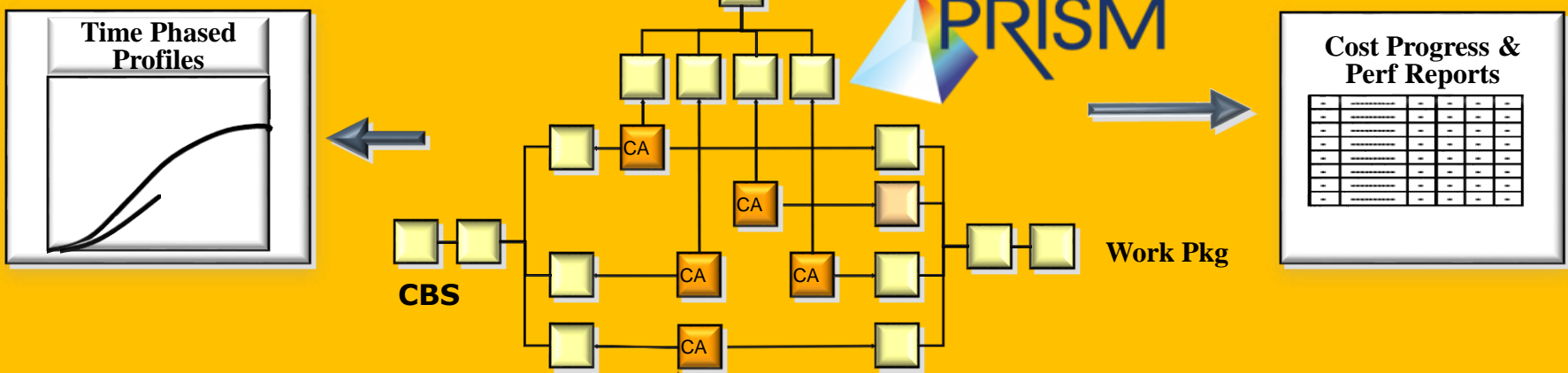


- Level of granularity between estimate & plan not always clear & mappable
- Dates changes in duration can skew historical & to date performance
- Difficult to manage cost changes
- Difficult to manage multiple budgets
- Time consuming to setup & difficult to maintain

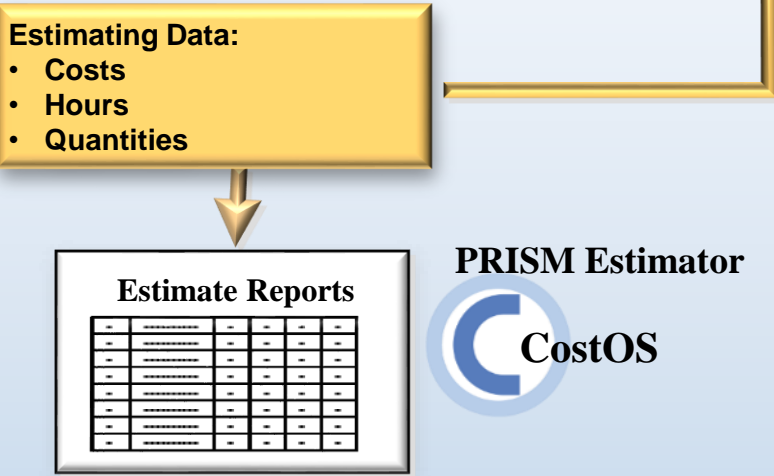
PRISM Cost Schedule Integration



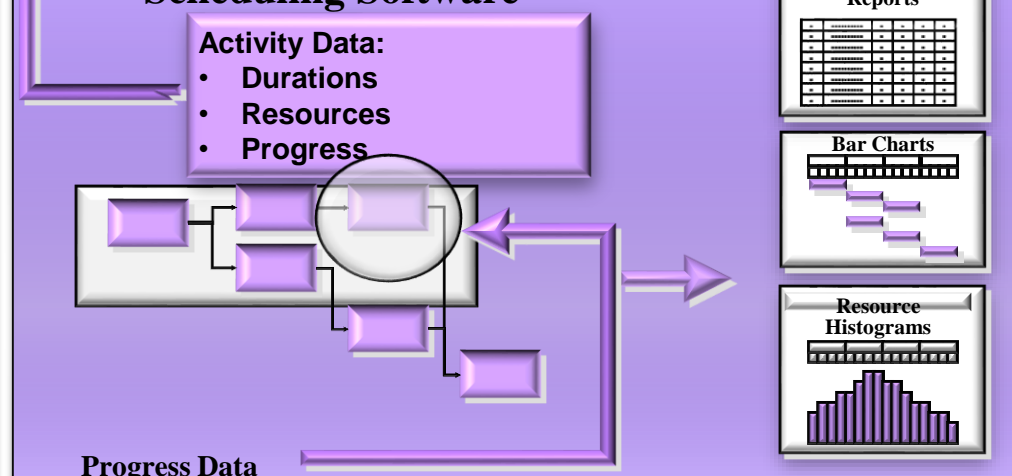
Cost & Project Management Module



Original Baseline Estimating



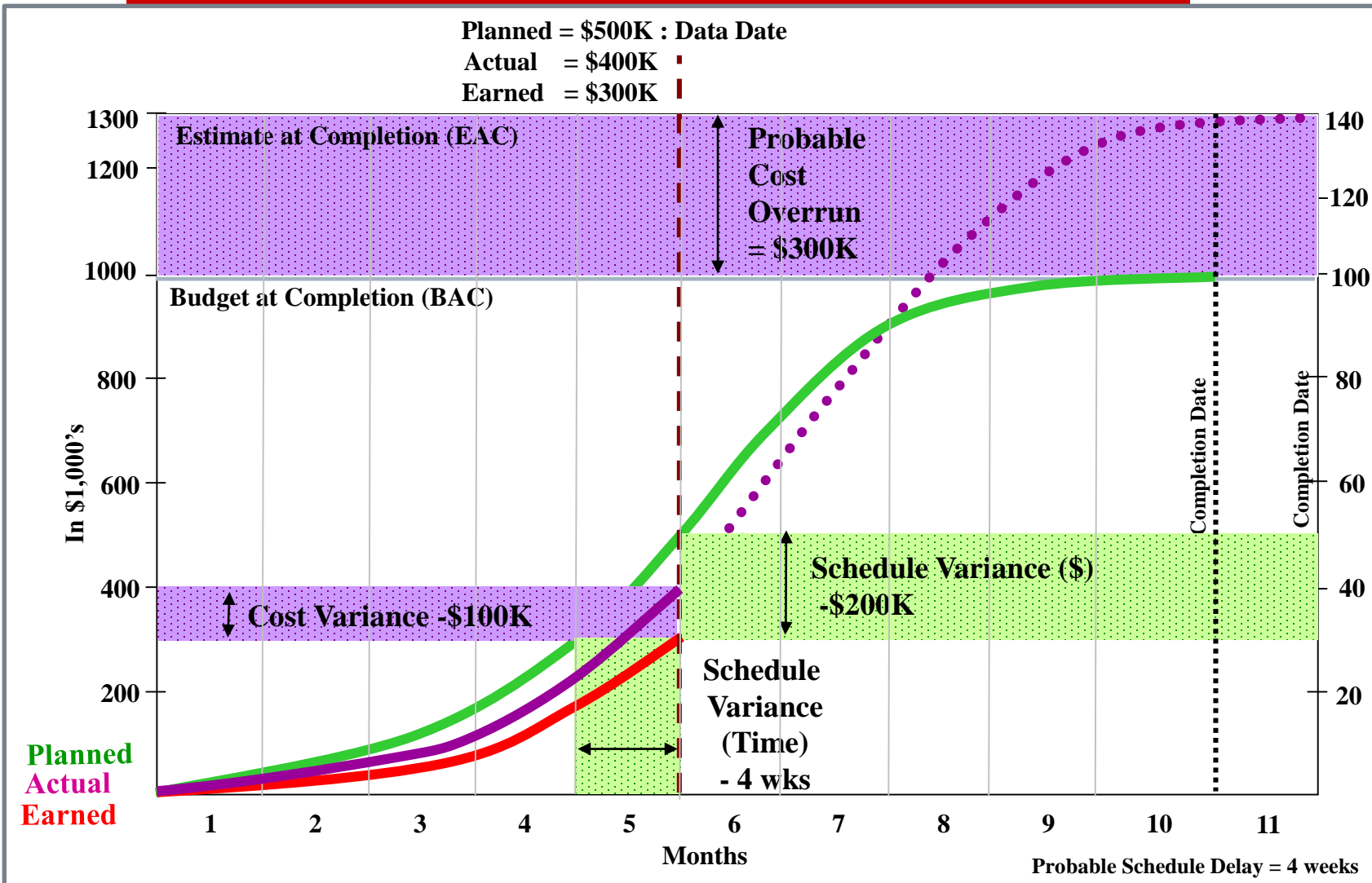
Scheduling Software



- 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



Integrated Performance Measurement



All generated from PRISM

- Project Time Phased Cost Plan
- To Date Actuals Cost of Work
- To Date Earned Value
- To Date Schedule Variance
- To Date Cost Variance
- Estimate At Complete
- Variance At Complete

Utilize Variety of Progressing Methods



COST
MODULE

CONTROL ACCOUNTS

Progress

Progress

Progress

Progress

SAMPLES OF
PROGRESSING METHODS

Schedule Activities



- Progress Detailed Activities
- Map & Weight

Engineering Deliverables



- Progress by Defined Rules
- Track Qty & Hours
- Assess Productivity
- Physical % Complete
- (EPPR)

Procurement & Contracts



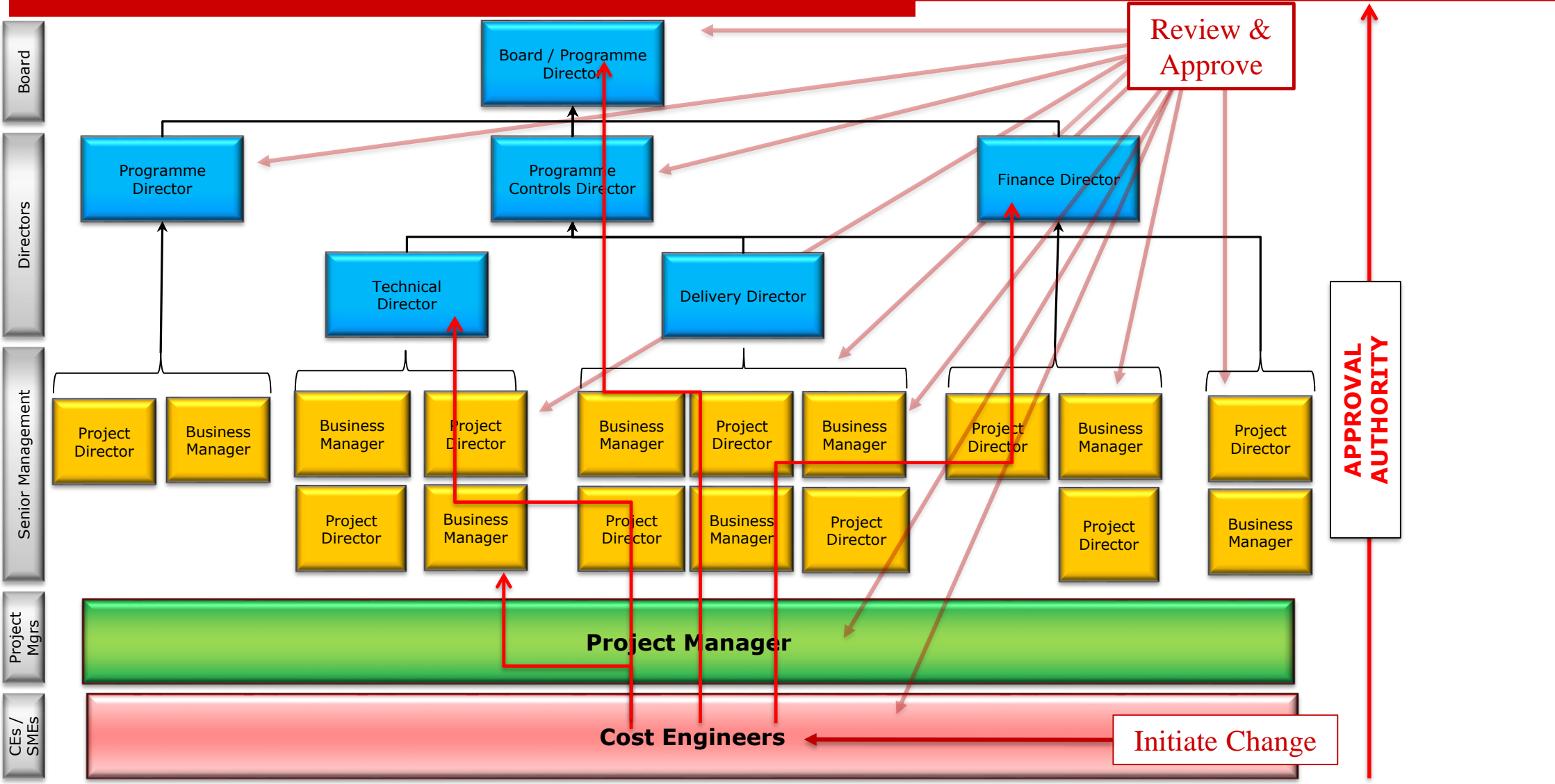
- Progress by Delivered Item or Contractor Pay Items

Construction Qtys Installed

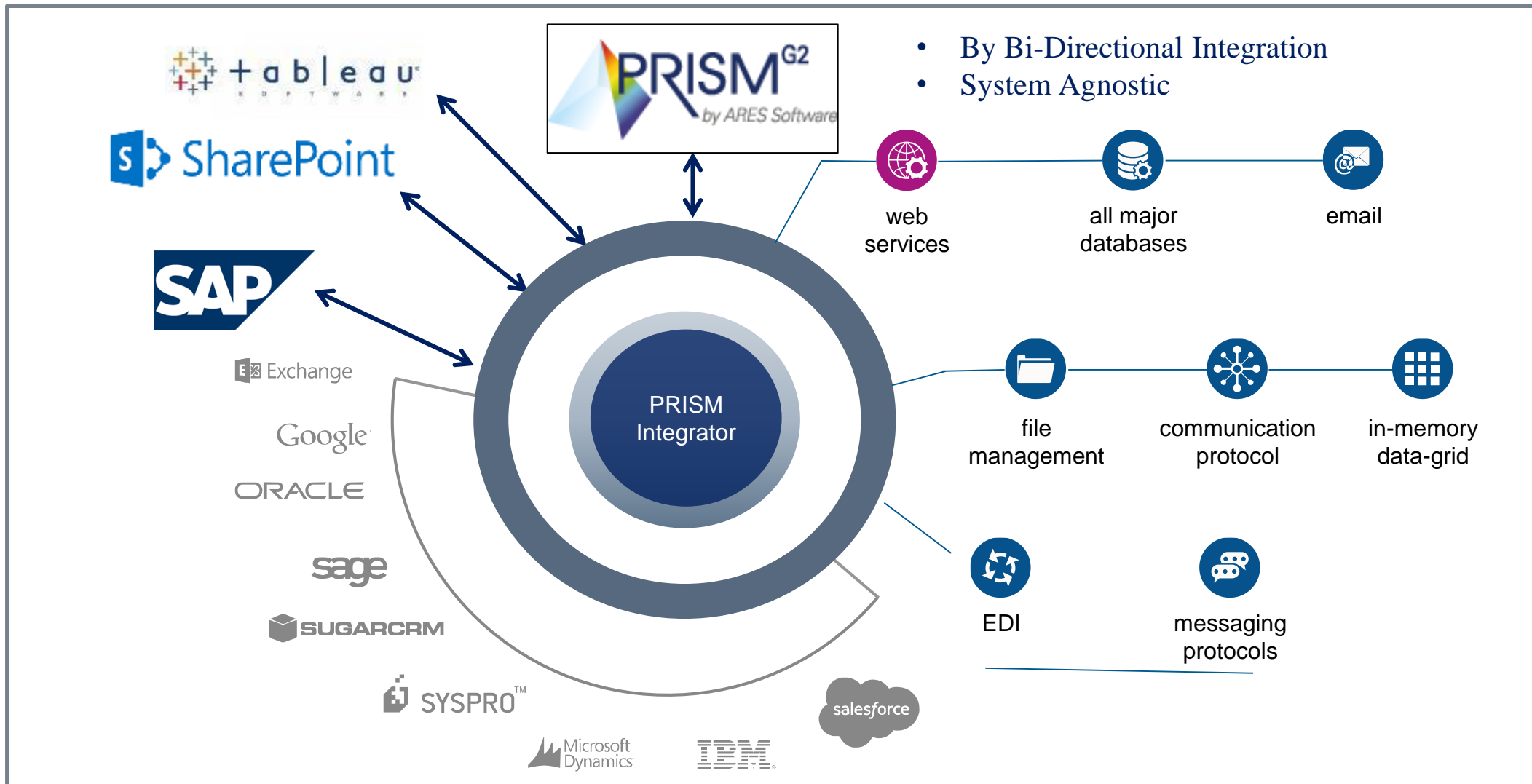


- Progress by Qtys Installed
- Track Qtys & Hours
- Assess Productivity
- Physical % Complete
- (QURR)

Integrated Change Management



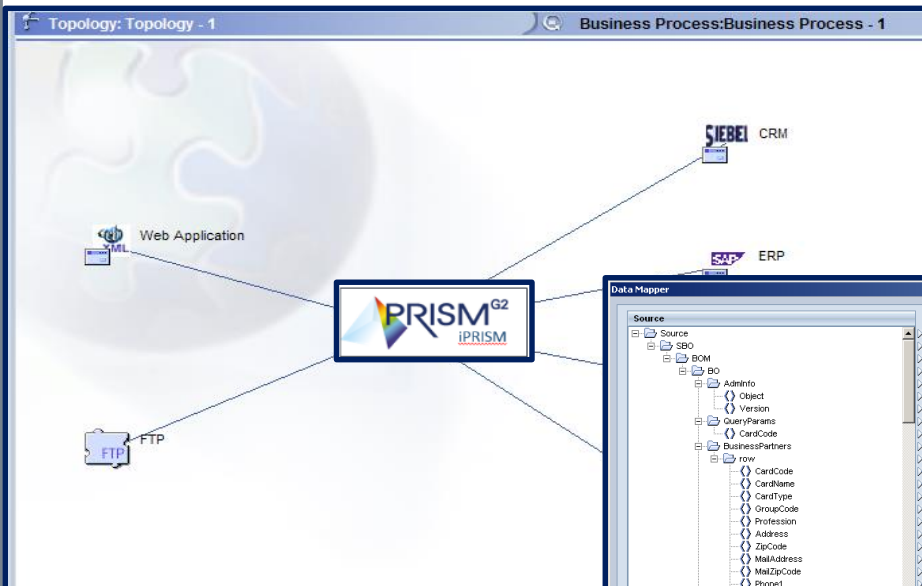
PRISM Integration Engine



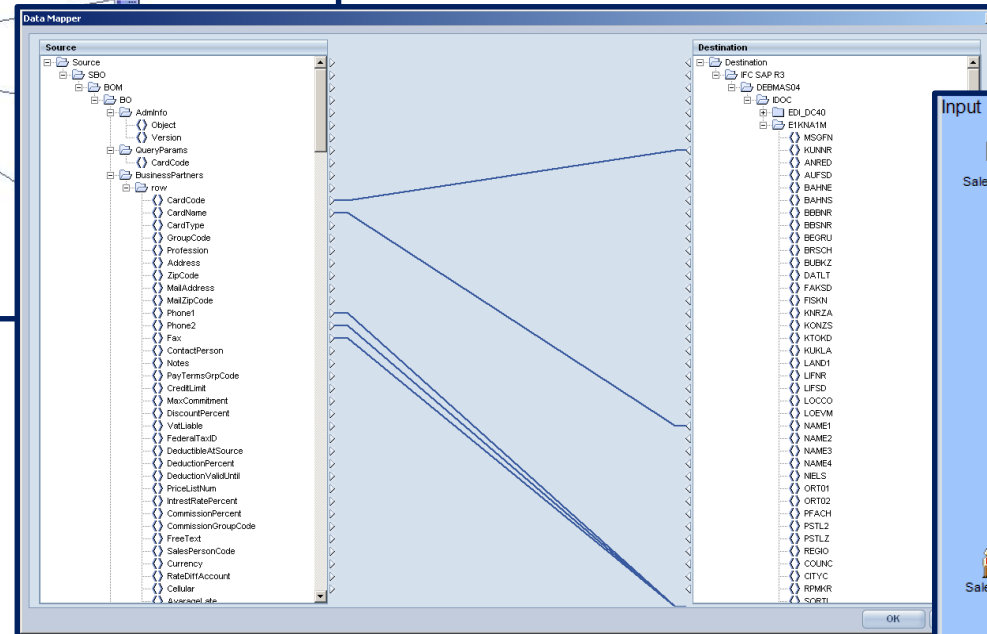
PRISM Integration Engine – Designer Interface



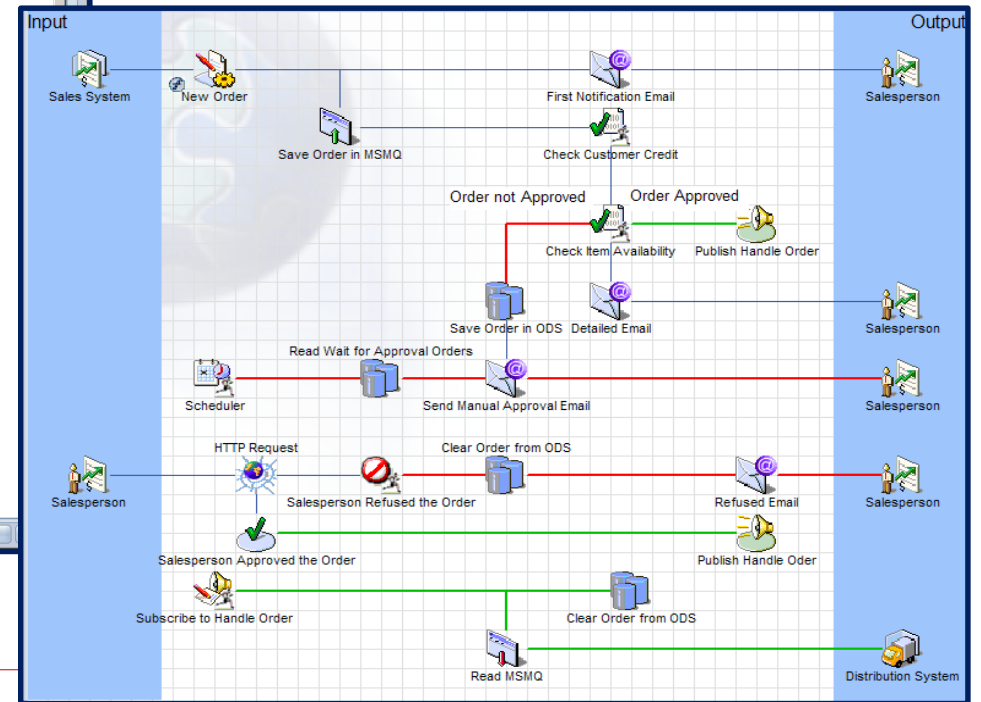
Flexibility to Add & Remove Connections



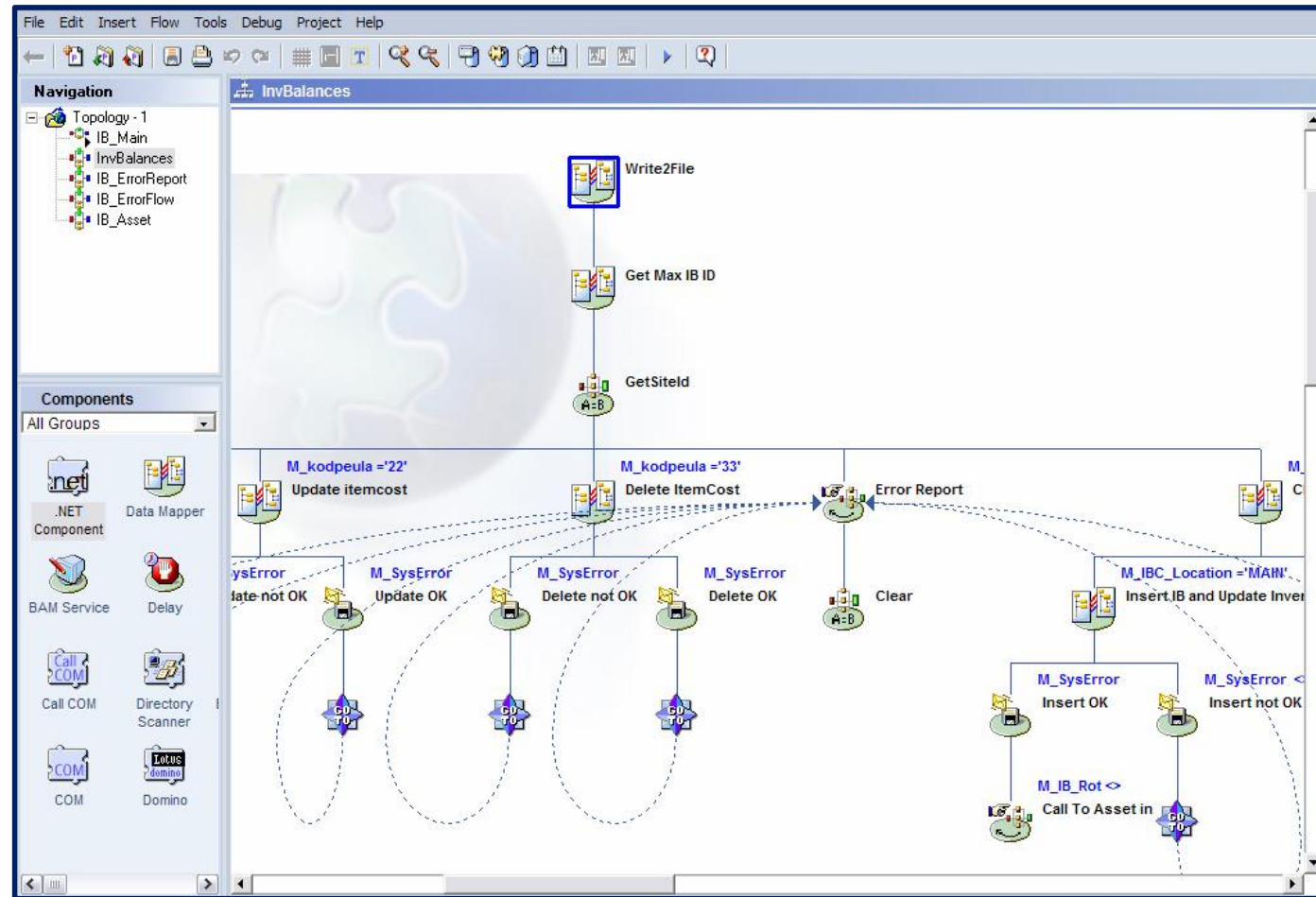
Define & Modify Field Mapping



Define & Customize Workflows



PRISM Integration Engine – Workflow Logic



Synchronized WBS, Integration & Automation

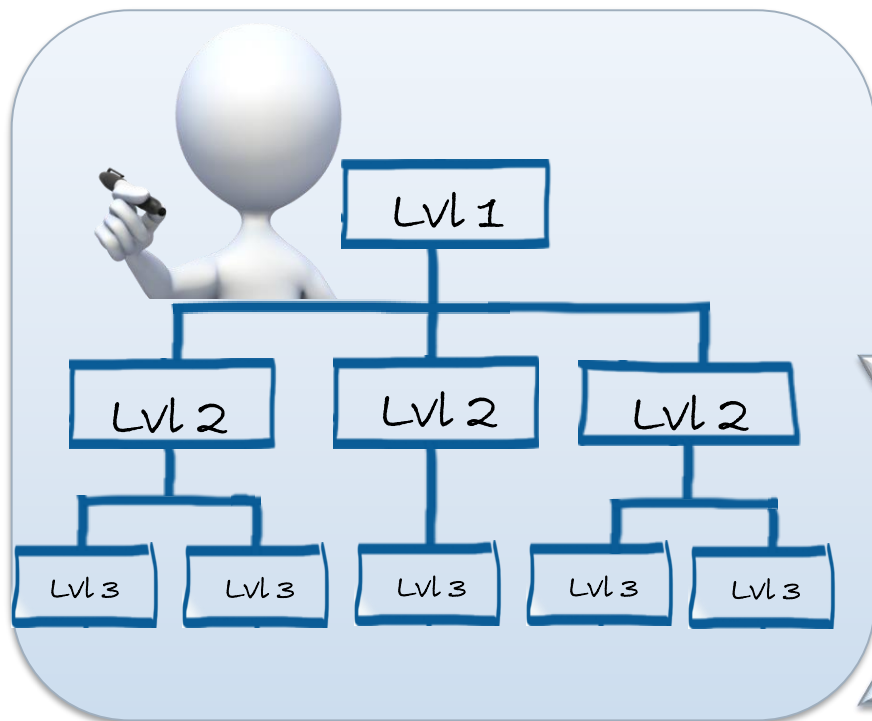


Master WBS Asset Register

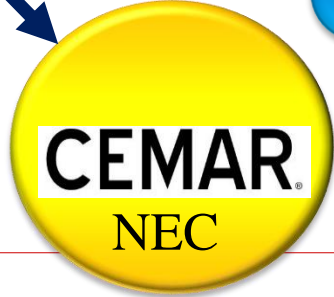
Estimator

Cost Performance

Schedule



PRISM Integrator



3

Payment request in CEMAR are automatically submitted through SAP for validation and payment

2

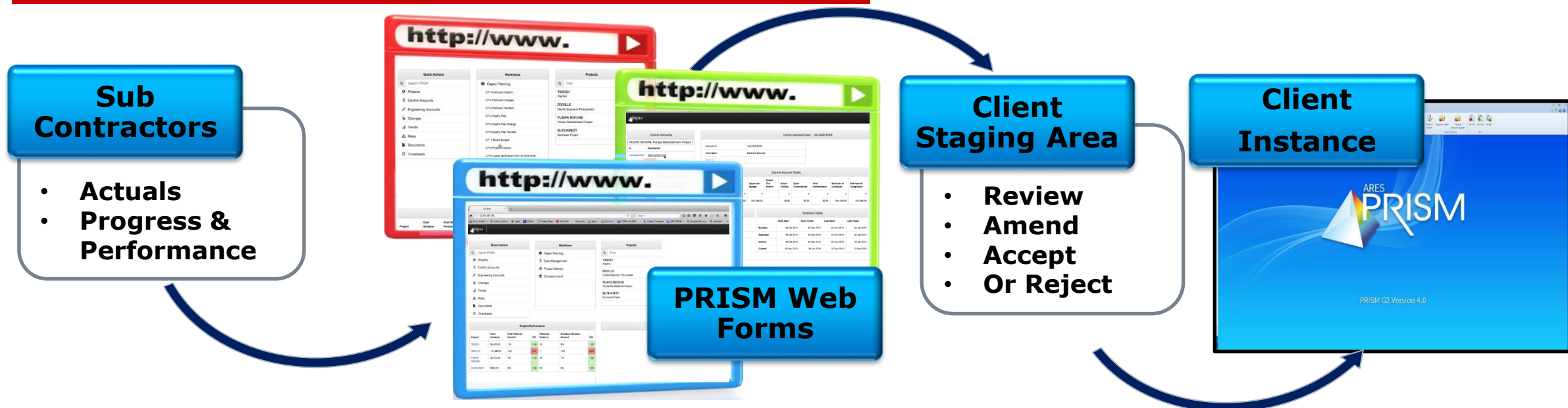
NEC Contract Changes in CEMAR are automatically synchronized with budget & forecast changes in PRISM

1

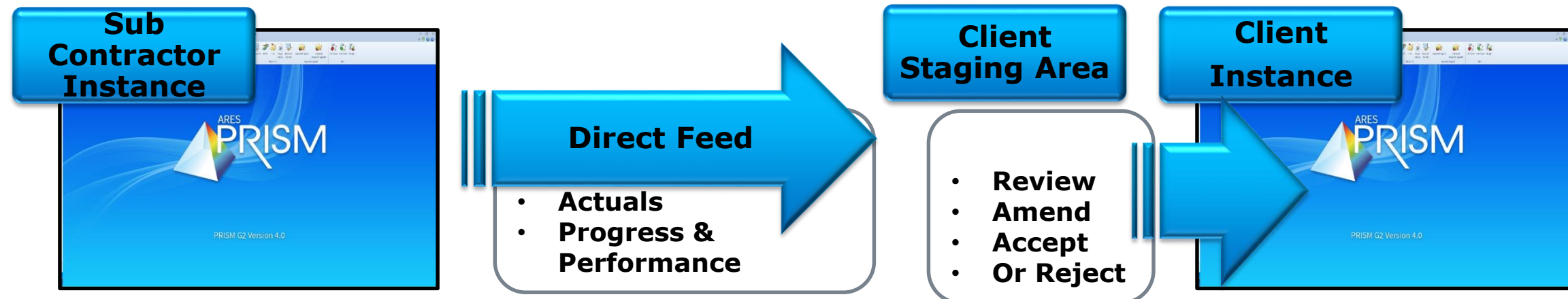
- PRISM Integrator synchronizes the WBS & Asset coding across all applications
- Additions and Changes to the structure require approval from all stake holders

Sub Contractor & Client Integration

WEB FORMS



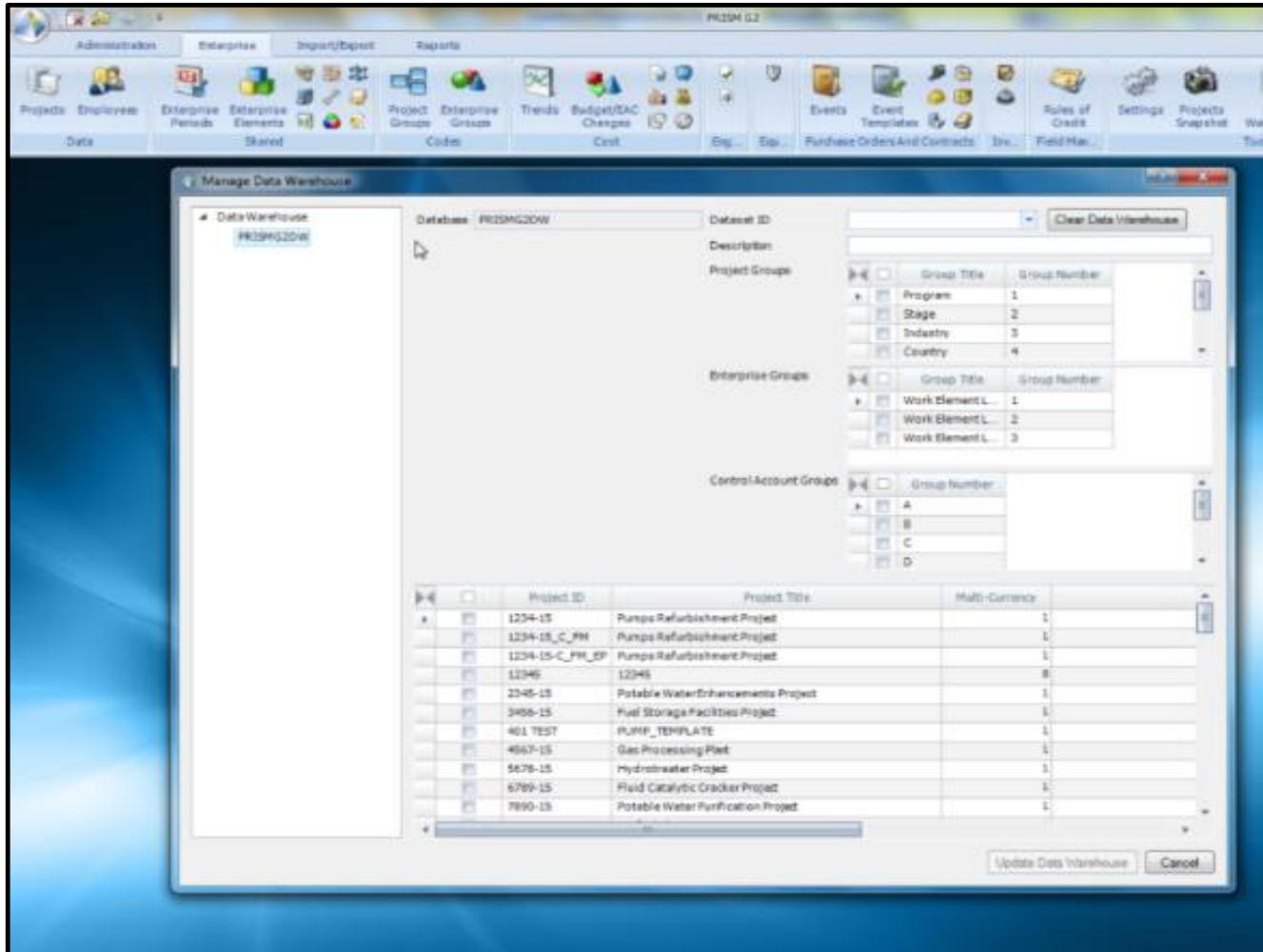
PRISM TO PRISM



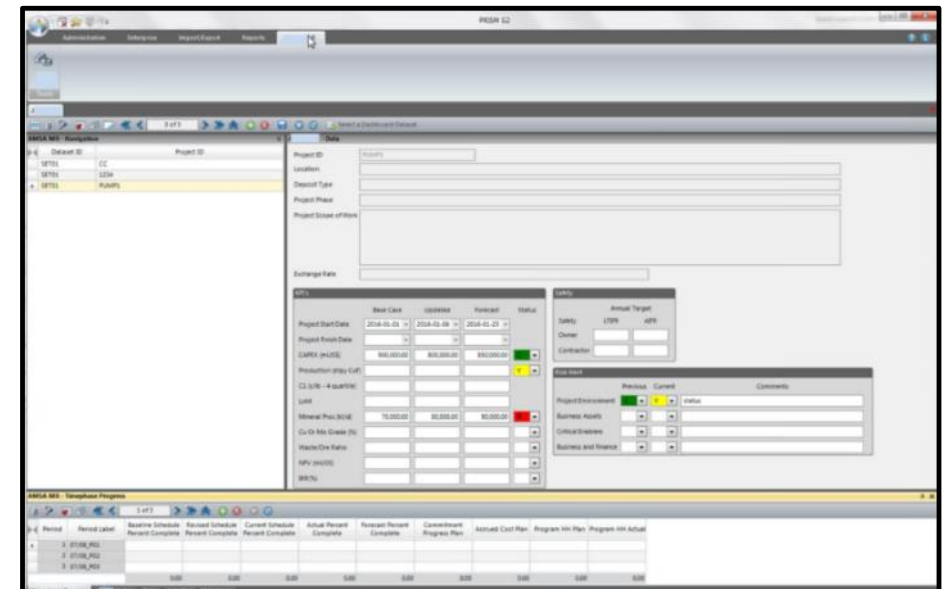
PRISM Data Warehouse



Data Warehouse & Snapshots



Custom Data Entry Forms



Quickly Produce Integrated Dashboards



MANAGEMENT REPORT MODEL

GLOBAL MAP | MGMT KPI Page 1 of 9 | KPI Report Page 2 of 9 | COST Page 3 of 9 | ACTIVITIES Page 4 of 9 | MILESTONE Page 5 of 9 | SCHEDULE Page 6 of 9 | RISK Page 7 of 9 | CHANGE LOG Page 8 of 9 | SAFETY Page 9 of 9

REPORT NO. 11

EXECUTIVE KPI SUMMARY

2nd Pillar

PROJECT DESCRIPTION

LOCATION: SET 02 - ANTEX1 near Sierra Gorda (2,300 masl) LOC
 DEPOSIT TYPE: SET02- ANTEX1 - Oxdas
 PROJECT PHASE: PROJECT PHASE SET 02 ANTEX1
 PROJECT SCOPE OF WORK: Ejecución del Proyecto Antucoya
 EXCHANGE RATE: EJECUCIÓN Base Currency: United States Dollar Exchange Rate: 629

PRODUCTIVITY RATIO

A company generated \$80,000 worth of goods or services with 30 employees. To calculate the labor productivity:
 \$80,000 / 30 Employees = \$2,666 Per Employee a Week

TARGET	ACTUAL	CUMULATIVE	STATUS					
SAFETY	LTFR	APR	LTFR	APR	LTFR	APR	LTFR	APR
Owner	1.7	10.0	100.0	300.0	198.4	304.3		
Contractor	2.5	20.0	6.7	23.3	98.0	111.5		
Total	2.5	20.0	9.7	32.3	98.0	111.5		

KPIs	BASE CASE	CURRENT	FORECAST	KPIs	BASE CASE	UPDATED	FORECAST
Study Finish Date	Apr '14	Apr '14	May '14	Mineral Proc. (t/d)	80,000	55,000	55,000
Study Start Date	Apr '14	Apr '14	Apr '14	Cu Or Me Grade (%)	1.1%	1.5%	1.3%
CAPEX (mUS\$)	1,822.4	1,824.4	1,824.4	Waste/Ore Ratio	10.0	11.0	12.0
Production (troy CuF)	100.0	110.0	110.0	NPV (mUS\$)	1,000.0	1,010.0	1,050.0
CI (ult. - 4 quartile)	80,000	80,000	80,000	Customer Satisfaction	10	8	
LOM	25	25	25	Requirements Performance	100.0%	100.0%	
IRR(%)	12.0%	12.8%	15.0%	Employee Satisfaction	100.0%	80.0%	
ROI(%)	20.0%	15.0%	17.0%	Circle time	90	128	

RISK ALERT

RISK ALERT	PREVIOUS	CURRENT	COMMENTS
Project Environment	●	●	COMMENT ENVIRONMENTAL SET 01
Business Assets	●	●	COMMENT ASSETS SET 01
Critical Enablers	●	●	COMMENT ENABLERS SET 01
Business & Finance	●	●	COMMENT FINANCE SET 01

PROJECT MASTER SCHEDULE

BUDGET | PLAN | ACTUAL | PROGRAM | PLAN | ACTUAL

Commitment Progress (%) 100.0% 102.8% M/MH 1,147K 1,161K

31/12/2013 PERIOD FINISH 17/10/2015 Progress (%) 100.0% 96.8%

■ Baseline Schedule ■ Revised Schedule ■ Current Schedule...

SPIC/PI To Date

Revenue vs. Target

323.3M Under 16%

SAFETY | PROJECT SUMMARY | PROJECTS HIGHLIGHTS

Board Monthly Report/ Projects Performance

Current Period: jun '15

2 Project Summary

PROJECTS	PROJECT TITLE	PROGRESS (Project To Date)							FORECAST (Project And Estimate)				
		Actual (%)	Plan (%)	Var Vs Plan (%)	Committed Actual (US\$m)	Accrued To Date (US\$m)	Accrued Plan (US\$m)	Accrued Var Vs Plan (%)	End Date	Var Vs Plan (months)	Final Cost (US\$m)	Plan (US\$m)	Var Vs Plan (%)
ANTUCOYA	ANTUCOYA - EXECUTION PHASE	99.9%	99.0%	0.9%	1,712.0M	1,624.1M	0.0M	384853965.2	Apr' 14	0	1,924.4M	1,922.9M	0.1%
PROYECTO OPTIMIZACIÓN PELAMBRES	PROYECTO OPTIMIZACIÓN PELAMBRES	78.7%											
PLANTA DISTRITAL Y MOLY	PLANTA DE MOLIBDENO - FASE EJECUCIÓN	97.2%											

Current Period: jun '15

1 Safety Data

PROJECTS	TITLE	FATAL		LTA		NLTA		LTIFR (acc/MMh)		LTISR (days/MMh)				
		YTD	PERIOD	YTD	PERIOD	YTD	PERIOD	PTD	YTD	PREV YEAR	DIFF	YTD	PREV YEAR	DIFF
ANTUCOYA	ANTUCOYA - EXECUTION PHASE	2	0	66	3	27	7	68.0	71.0	60.32	18%	48.4	263.5	-82%
PLANTA DISTRITAL Y MOLY	PLANTA DE MOLIBDENO - FASE EJECUCIÓN	0	0	2	2	5	5	23.3	0.0	18.66	-100%	0.0	74.6	-100%
PROYECTO OPTIMIZACIÓN PELAMBRES	PROYECTO OPTIMIZACIÓN PELAMBRES	0	0	2	2	5	5	181.8	181.8	0.00	0%	181.8	0.0	0%
		2	0	70	7	37	17	59.2	74.4	43.45	71%	54.2	187.0	-71%

LOST TIME ACCIDENTS

DATE	PROJECT	DESCRIPTION
05-Jun-15	ANTEX1	Delta Montajes - ACCIDENT 01 (lost days 12)
05-Jun-15	ANTEX1	Delta Montajes - worker hit his head while removing anti-seismic guards from EW building (lost days 12)
10-Jun-15	DMCMOLEX1	Delta Montajes - ACC2 (lost days 15)
10-Jun-15	ANTEX1	Delta Montajes - while moving materials, worker sprained his ankle (lost days 21)

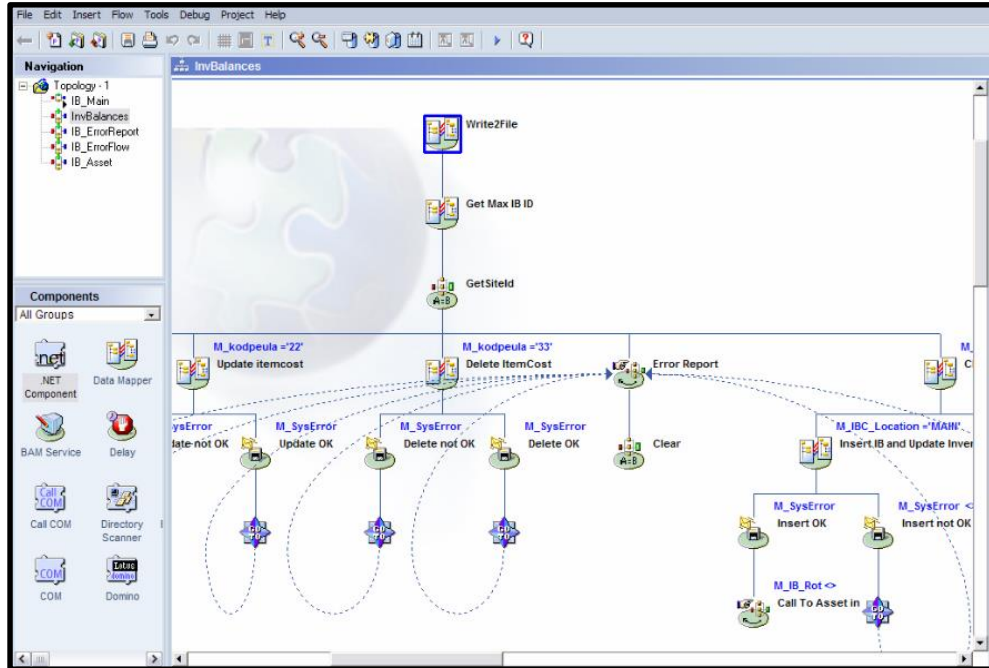
HIGHT POTENTIAL ALMOST ACCIDENTS

DATE	PROJECT	DESCRIPTION
05-Jun-15	DMCMOLEX1	Delta Montajes - worker hit his shoulder while removing anti-seismic guards from EW building
00-Jun-15	ANTEX1	Delta /Promet - Prueba hidrostática línea metálica aducción de agua de 20" desde EB3 a piscina 49.000 fuera de procedimiento y horario. Características del incidente similares al accidente fatal CEN, en investigación

Ensuring Data Integrity with Validation Checks



Automated Data Exception & Error Reporting Rules

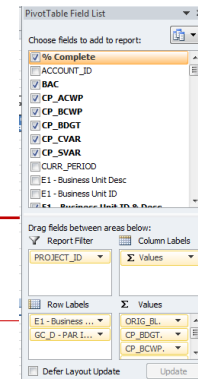


Data Validation Checks:

- (Select All)
- DC 2: Negative ETC
- DC 4: Negative EAC Values
- DC 5: Negative BAC Values
- DC 6: Negative BCWS Values in TimePhase data
- DC 7: ACWP Greater than EAC
- DC 8: % Complete not updated
- DC 9: ACWP not updated
- (blank)
- DC 11: Late Dates before Early Dates
- DC 14: 0% complete and early start is in past
- DC 16: Not 100% complete and early finish is in past

Cost Data Validation:

PRISM Project	Area Description	Project Description	Contract Description	Account	Description	Cost Engineer	Verification Check
01 - Project Site A	North Building Site	Project 101	Contract 880	11-P101-INAF-880-001	Indirects Accomodation & Facilit	Stacie Vanguard	DC 11: Late Dates Before Early Dates DC 14: 0% Complete & Early Start is in Past
				11-P101-INAF-880-002	Central Section Delivery	Stacie Vanguard	DC 14: 0% Complete & Early Start is in Past
				11-P101-INAF-880-010	Indirects Chairmen & CEO Office	Stacie Vanguard	DC 14: 0% Complete & Early Start is in Past
			Contract 920	11-P101-INAF-920-005	Central Section Delivery	Thomas Pritchard	DC 14: 0% Complete & Early Start is in Past
				11-P101-INAF-920-006	Central Section Prgm Mgmt	Thomas Pritchard	DC 14: 0% Complete & Early Start is in Past DC 2: Negative ETC
				11-P101-INAF-920-110	Central Section Health & Safety	Thomas Pritchard	DC 4: Negative EAC Values
		Project 102	Contract 101	11-P102-INFT-101-055	Land & Property	John Phillips	DC 7: ACWP Greater Than EAC
				11-P102-INFT-101-056	Operations	John Phillips	DC 23: Control Account Status-% Complete
			Contract 901	11-P102-INTD-901-100	Foundations	Anna Dyson	DC 2: Negative ETC
				11-P102-INTD-901-110	Site Maintenance & Support	Anna Dyson	DC 14: 0% Complete & Early Start is in Past
			11-P102-INTD-901-115	Programme Controls	Anna Dyson	DC 6: Negative BCWS Values in Time Phased Data	

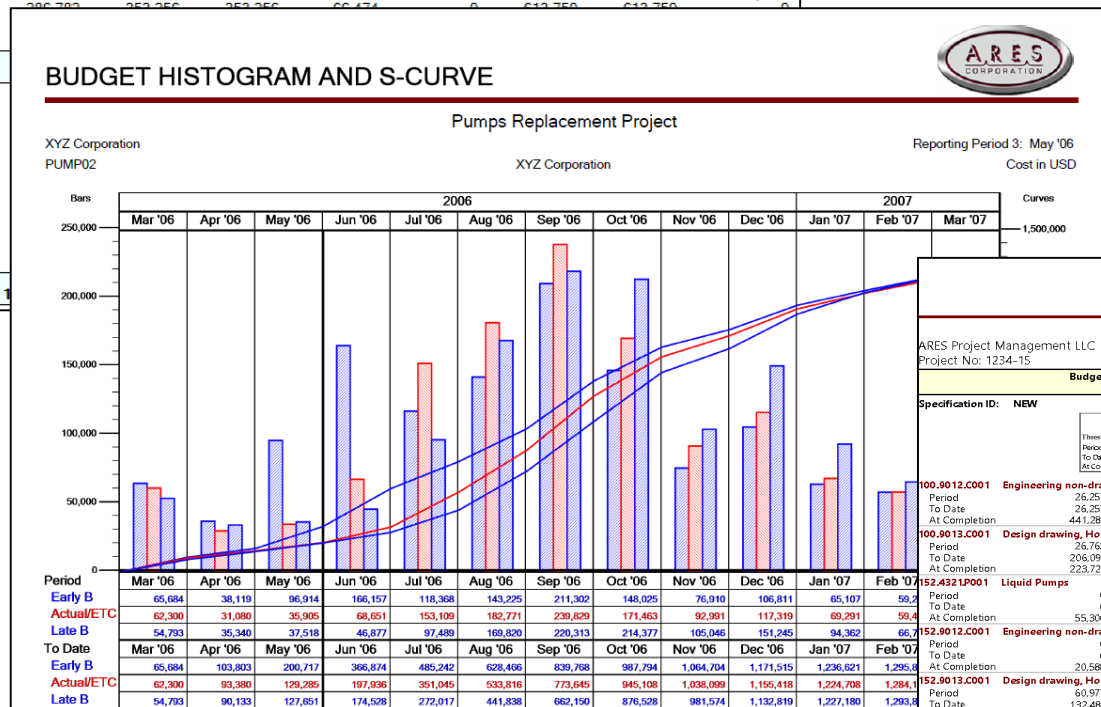


* Control Account ID , Control Account Owner, Data Anomaly or Error

Standard Performance Reporting



WBS Level 3 - Area ID And Description											Cost in		
Period Budget	Period Earned	Period Actual	Period SV	Period CV	To Date Budget	To Date Earned	To Date Actual	To Date SV	To Date CV	Approved Budget	EAC	Variance At Completion	
WBS LEVEL 1 - PHASE: Engineering													
1100	Office Bldg	16,953	16,953	807	0	81,771	106,578	106,578	24,807	0	175,000	60.90 Percent Complete	
1200	PumpHouse	13,452	14,124	673	0	68,127	80,722	80,722	12,595	0	145,800	55.37 Percent Complete	
1300	Process Facility	56,626	59,457	2,831	0	296,783	353,356	353,356	56,574	0	613,750	57.56 Percent Complete	
1400	Site	19,965	20,964	998	0								
WBS LEVEL 1 - PHASE: Engineering													
		106,189	111,498	5,309	0								
WBS LEVEL 1 - PHASE: Procurement													
2100	Structural Steel	0	0	0	0								
2200	Ventilation Equip	0	0	0	0								
2300	Pumps	0	0	0	0								
2400	Piping	0	0	0	0								
2500	Electrical Equip	0	0	0	0								
WBS LEVEL 1 - PHASE: Procurement													
		0	0	0	0								



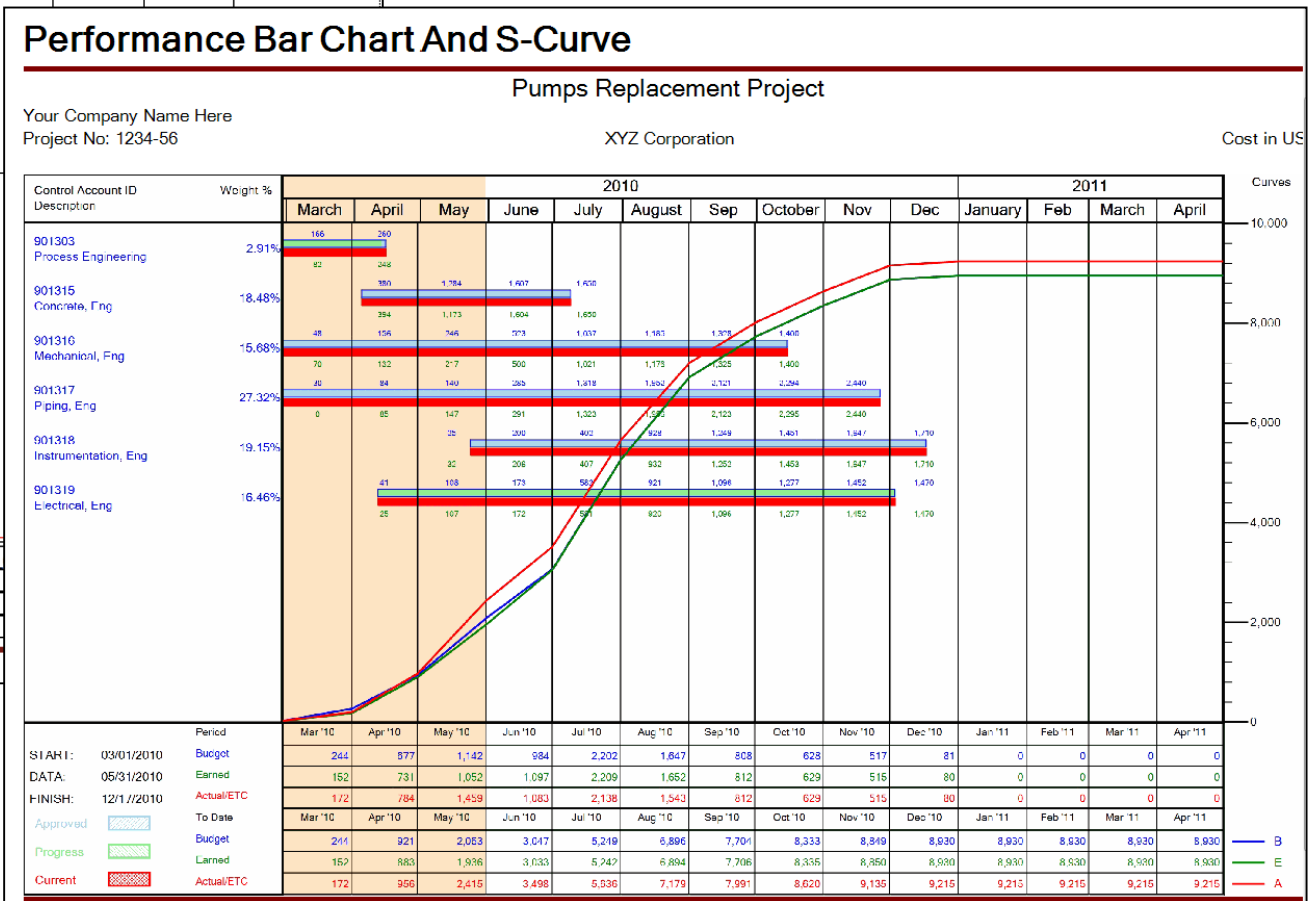
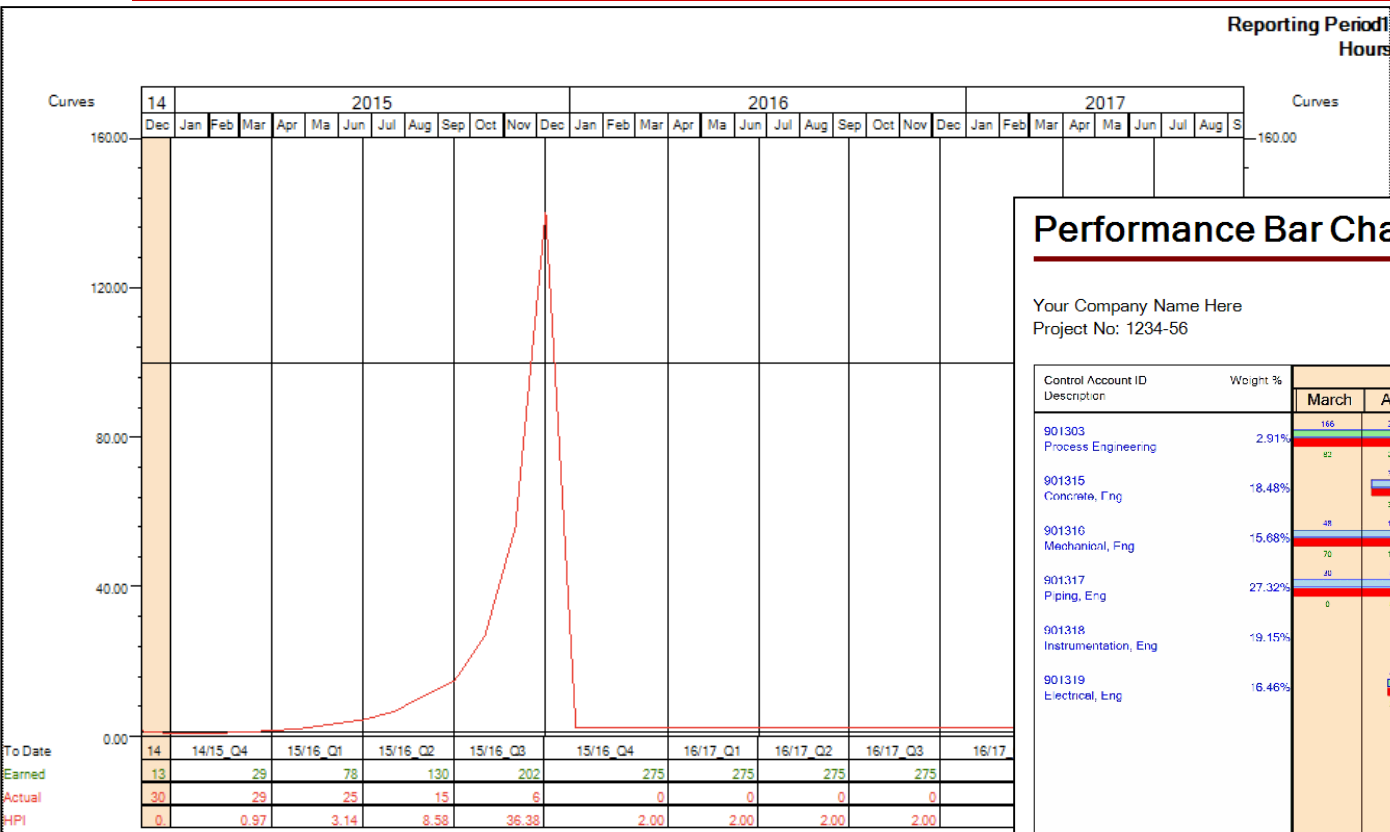
For Evaluation Only
Variance Explanations

Pumps Refurbishment Project
Reporting Period 3: Ending May '14
Cost in USD

Specification ID:	Budget	Earned	Actual	Schedule Variance	Schedule Percent	Schedule Index	Cost Variance	Cost Percent	Cost Index
100.9012.C001 Engineering non-drawing, Home Office Labour									
Period	26,257	11,654	-20,377	-14,563	44.4%	0.45	32,071	274.3	-0.57
To Date	26,257	88,258	55,466	62,001	236.1%	3.36	31,791	36.0	1.56
At Completion	441,288	441,288	441,288	0.0	1.00	1.00	0.0	0.0	1.00
100.9013.C001 Design drawing, Home Office Labour									
Period	26,762	67,311	2,000	40,549	151.5%	2.52	65,311	97.0	33.66
To Date	206,950	110,520	52,000	-94,430	25.4%	0.54	59,520	53.0	2.19
At Completion	223,725	223,725	223,725	0.0	1.00	1.00	0.0	0.0	1.00
152.4321.P001 Liquid Pumps									
Period	0	0	4,544	0	0.0	0.00	-4,544	0.0	0.00
To Date	0	0	4,544	0	0.0	0.00	-4,544	0.0	0.00
At Completion	55,300	55,300	55,300	0.0	1.00	1.00	0.0	0.0	1.00
152.9012.C001 Engineering non-drawing, Home Office Labour									
Period	0	0	0	0	0.0	0.00	0	0.0	0.00
To Date	0	20,588	20,588	20,588	100.0%	1.00	-9,412	-45.7	0.69
At Completion	20,588	20,588	20,588	0.0	1.00	1.00	0.0	0.0	1.00
152.9013.C001 Design drawing, Home Office Labour									
Period	60,977	7,989	16,078	-52,988	13.0%	0.13	-8,090	-101.3	0.50
To Date	132,487	26,503	33,725	-105,984	20.0%	0.20	-7,222	-27.3	0.79
At Completion	1,011,568	1,011,568	1,011,568	0.0	1.00	1.00	0.0	0.0	1.00
152.9016.C001 Procurement, Home Office Labour									
Period	0	1,879	2,510	1,879	100.0%	1.00	-631	-33.6	0.75
To Date	0	11,609	11,608	11,609	100.0%	1.00	1	0.0	1.00
At Completion	20,267	20,267	20,267	0.0	1.00	1.00	0.0	0.0	1.00
173.4321.P002 Liquid Pumps									
Period	0	0	4,216	0	0.0	0.00	-4,216	0.0	0.00
To Date	0	0	4,216	0	0.0	0.00	-4,216	0.0	0.00
At Completion	63,800	63,800	63,800	0.0	1.00	1.00	0.0	0.0	1.00



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Questions ??



Get in Touch if you'd like to know more!

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