

# Changing the Game:

System-Driven Collaboration's Secret  
Sauce for Business Value



**Contruent**

 **Project Controls**  
**EXPO**  
Melbourne, Australia

# Meet the Speaker



Director of Implementations  
Rik Falch, Contruent

Experience Leading Digital Transformation and  
Business Intelligence Solutions

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Bachelor of Mathematics and Petroleum,  
Advanced Diploma Aeronautical, MBA

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# About Contruent



## Our Mission

Empowering decision-makers to build our world's infrastructure with precision and speed.



## Con·tru·ent

Derived from 'construction' + 'true' + '-ent' (performing, promoting, or causing a specific action)



## Origin

1990s: Began as ARES PRISM, project controls software.

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# What We Do



## Empowering decision-makers to build our world's infrastructure with precision and speed.

- We work as a global team across 5 offices and operate in 26 countries, now headquartered in Naperville, Illinois.
- We work with industry leaders across Infrastructure, Oil, Gas, Mining, Rail, Energy, Utilities & Nuclear.
- Proven ROI across the entire project lifecycle working with sophisticated customers and complex projects spanning the globe.

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# Who's in the Audience Today?

- Project Controls Manager
- Cost Engineer
- Scheduler/Planners
- Risk Manager
- Contract Manager
- Change Manager



# Today's Focus

## How to get business value out of **Change Management** in construction project management.

- Know what constitutes Business Value to your organization (Reduced Risk, better Public Perception, Lower Costs, Increased Revenue, etc.)
- Connect that Business Value to practical application of Tools & Processes
- Understand what drives Change on your projects
- Know what makes Change so Expensive in your Organization
- Build the right Infrastructure to Manage that Change

# The Problem with Projects!

**27%**

Average cost over-run. [PMI]

**45%**

Projects aren't delivered on time and on budget. [KPMG study]

**3.8x**

Projects are more likely to fail without full integration of systems and processes. [Logikal study]

**Higher probability of success if you utilize project controls!**  
[KPMG]

# Change is a Key Driver of these Statistics!

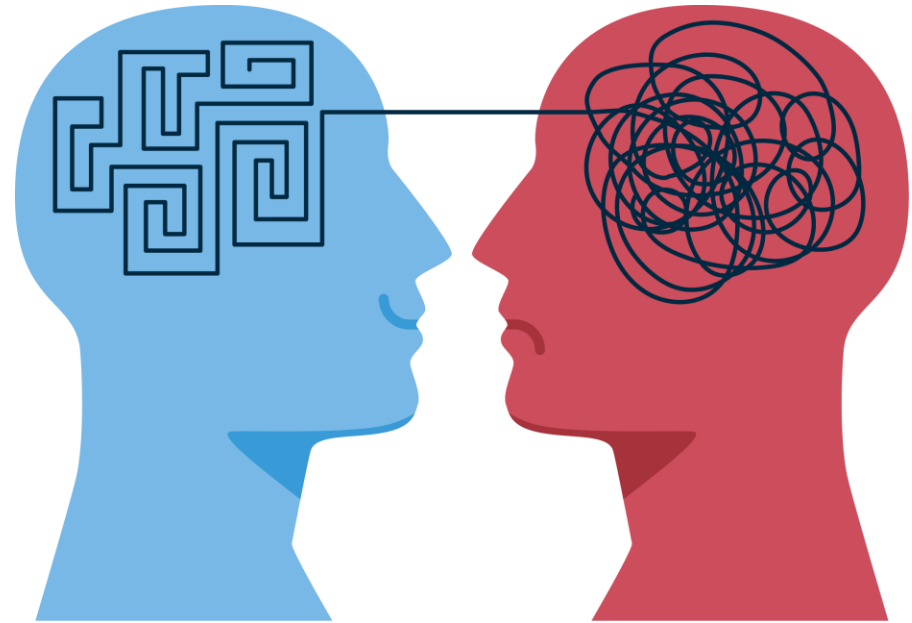


- The average construction project is subject to a 5-10% increase in contract value as the direct result of change orders and contract modifications.
- Oxford Economics estimated the total global construction contract value to be \$10.7 trillion in 2020.
- So, the global cost of changes to construction contracts in 2020 was between \$535 billion and \$1.07 trillion.



# What Causes Change?

- Architectural Design Errors
- Engineering Specification Omissions
- Communication Issues b/t Owners & Supply Chain
- Inefficient Project Plan
- Defective Workmanship
- Financial Challenges (e.g., currency fluctuation)
- Legal or Regulatory Issues
- Additional Work from Asset Owner (scope creep)
- Organizational Change
- External Forces (e.g., weather, new technology, etc.)



# Why is Change so Expensive?



Change impacts all Stakeholders: Owner, Contractors, Workers, Financiers, Insurers, Community, etc.

- New Scope = New Budget
- Rework = \$\$\$
- Added Administration & Tracking = \$\$\$
- Added Approvals = \$\$\$
- Risk to Public Perception

# Project Controls Can't Solve It Alone!

## Executive Business Drivers



# Why does Executive Engagement Matter?



- When Executives care, cultures change
- Change Management is typically reactive, but good Change Management is Proactive!
- Shift perception of Change Management as busy work to being a Core Function.
- Change needs focus at all levels/phases: Design, Planning, Contracting, Delivery

# Connect Business Value to Project Controls

## Optimize Project Spend & Performance

Reduce annual spending due to better forecasting & fewer overruns

Average annual reduction in project spending



**2%**

Ex. \$20M Per \$1Billion in Annual Project Spend

## Improve Visibility to Make Informed Decisions

Reduce time spent on data collection, entry, and validation

Average annual reduction in FTE labor hours



**80%**

Ex. \$952K Per 10 Project Controls FTEs

## Account for Change & Maximize Efficiency

Reduce contract overspending due to improper change management

Average annual reduction in contract overspend



**4%**

Ex. \$4M Per \$100 Million in Annual Contract Overspend

## Managing Contracts & Getting Progress From Vendors

Reduce time spent on contract administration

% reduction in time spent on contract administration



**50%**

Ex. \$178K Per \$1Billion in Annual Project Spend

**Total Value and Savings over 5 years is \$157M**
















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# Six Steps to Better Control Change



# Customer Case Study Zone

**1**

**Plan for  
Change**



# Plan for Change



- Big Picture = Scope, Estimate, Budget, Schedule
- Avoid Common Planning Fallacies (Biases for Uniqueness, Attachment, Optimism, etc.)
- Assess Risk & Contingency (known unknowns)
- Plan at every Stage of the Project Life Cycle

# Plan at every Project Lifecycle Stage

## Business Planning Phase

- Set baseline scope early
- Build a contracting strategy that allows for change

## Project Planning Phase

- Write contracts that clearly establish project cost, scope, schedule
- Plan contingency in anticipation of unforeseen project changes

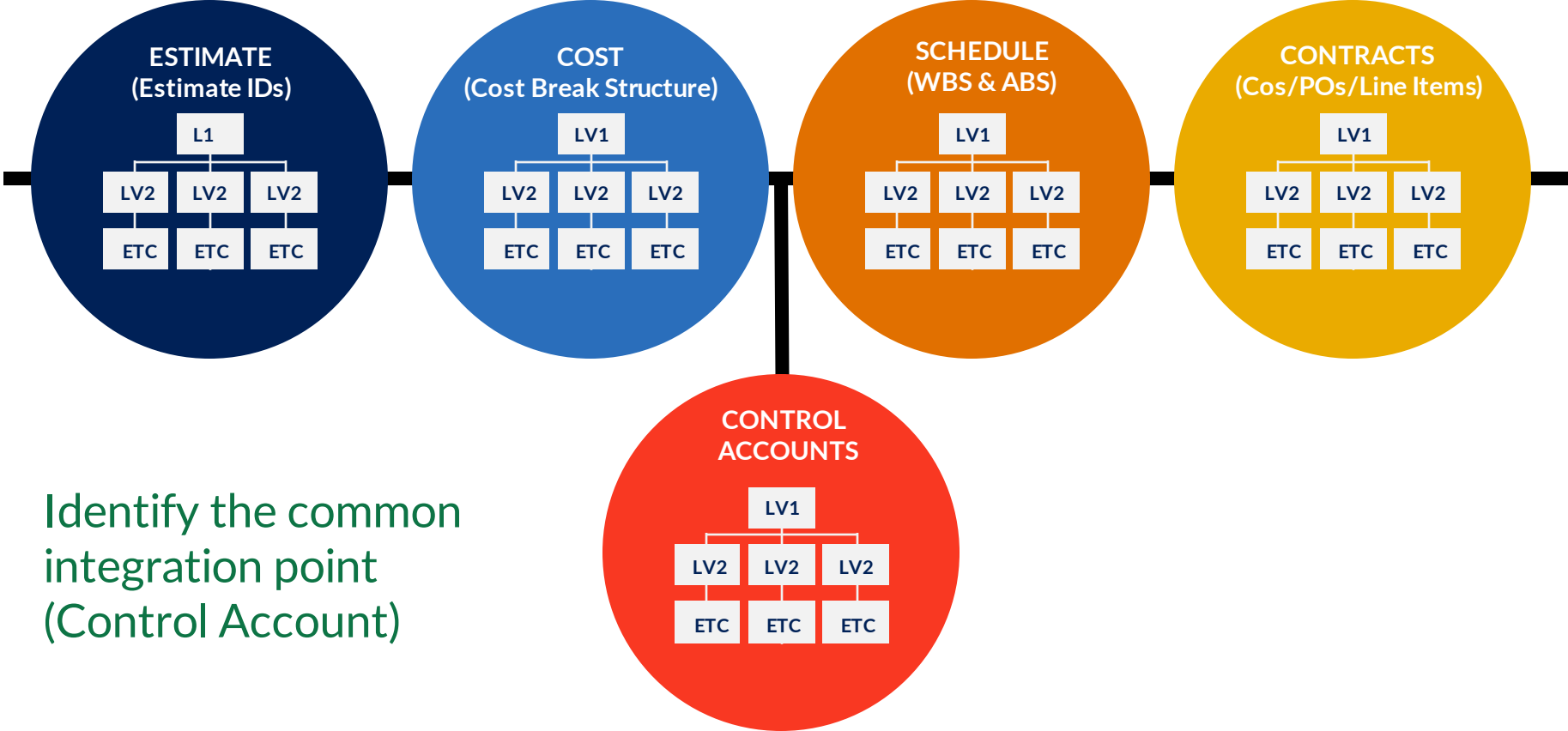
## Detailed Design Phase

- Scrutinize architectural design and engineering specs (before scope changes cause cost/schedule overruns)
- Finalize project scope and benchmark all changes against this iteration of plan

## Construction Phase

- Educate stakeholders on change program and change order policy
- Install a culture of change by empowering stakeholders to recognize the need for change
- Be aware of changing market conditions that may require a change in project scope

# Create System-wide Traceability of Change



Identify the common integration point (Control Account)

# Budget for Change



## CONTROL ACCOUNT TYPES

	Financial Budget	Control Budget	Approved Budget	Forecast
Risk Register Forecast			RISK TEAM	
Contingency	ACCOUNTING AND FINANCE TEAM	CONTRACTS	SR. MANAGERS AND DIRECTORS	
Target / Scope			DELIVERY TEAMS AND MANAGERS	

2

Structure  
for Change

# Change Control Structure



## Robust Change Control includes:

- Clear Change Policy
- Structured Change Types (Trend vs. Change)
- Communication Plans (Roles & Responsibilities)
- Approval/Delegation Processes
- Escalation Processes
- Contingency Management
- Reporting & Success Metrics

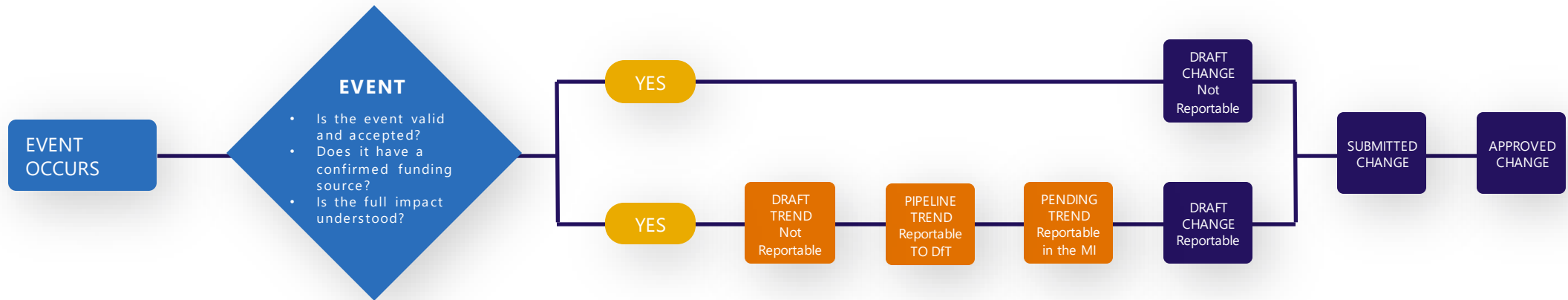
# Change Types



## TREND CHANGE

**CERTAIN** event, **UNCERTAIN** impact  
**CERTAIN** event, **CERTAIN** impact

**Pressure** or **Saving** to the current baseline  
**Change** to the current baseline



# Change Types and Impacts

Customer  
Best  
Practice

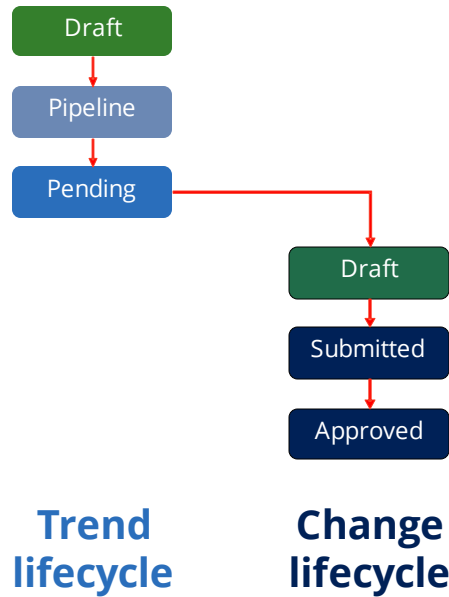
Type	Impact	Total Value Nets to Zero	
<b>CHANGES</b>	Investment Authority/Authorization to Spend in Budget	Yes	
	New Scope Award	Yes	
	Original Baseline	No	
	Owner Baseline Changes	No	
	Inflation	Yes – if budgeted for in Contingency	
	Contractor Baseline Changes	Sometimes	
	Decompose	Yes	
	Scope Swaps (outside contract)	Yes	
	Transfer (within contract/contingency)	Yes – if budgeted for in Contingency	
<b>TRENDS</b>	Change to AFC	No	
	New Scope Award	No	
	Pressure (Positive Trends) or Efficiencies and Savings (Negative Trends)	Contacto Baseline Change	No
		Transfer	Yes
		Savings	No



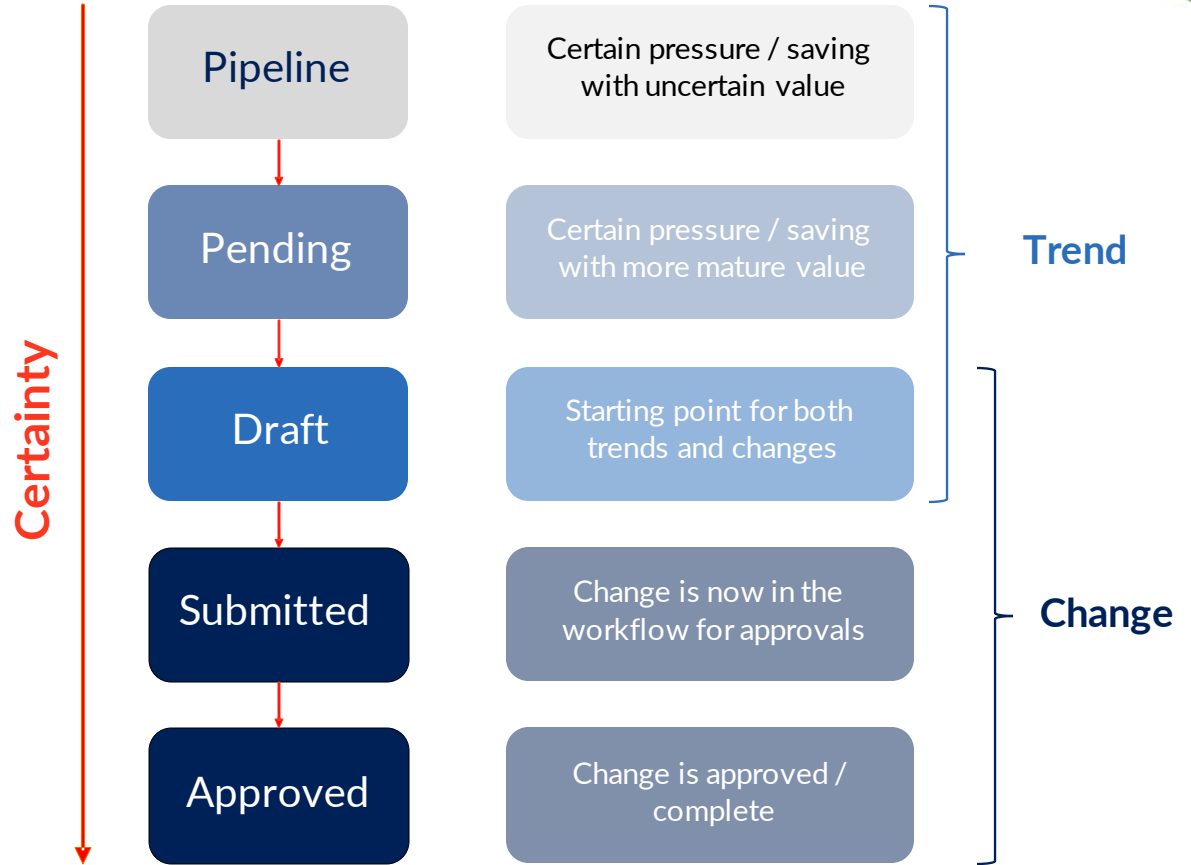
# Change Status



The certainty and maturity of the request grows as it progresses through the Trend and Change lifecycles:

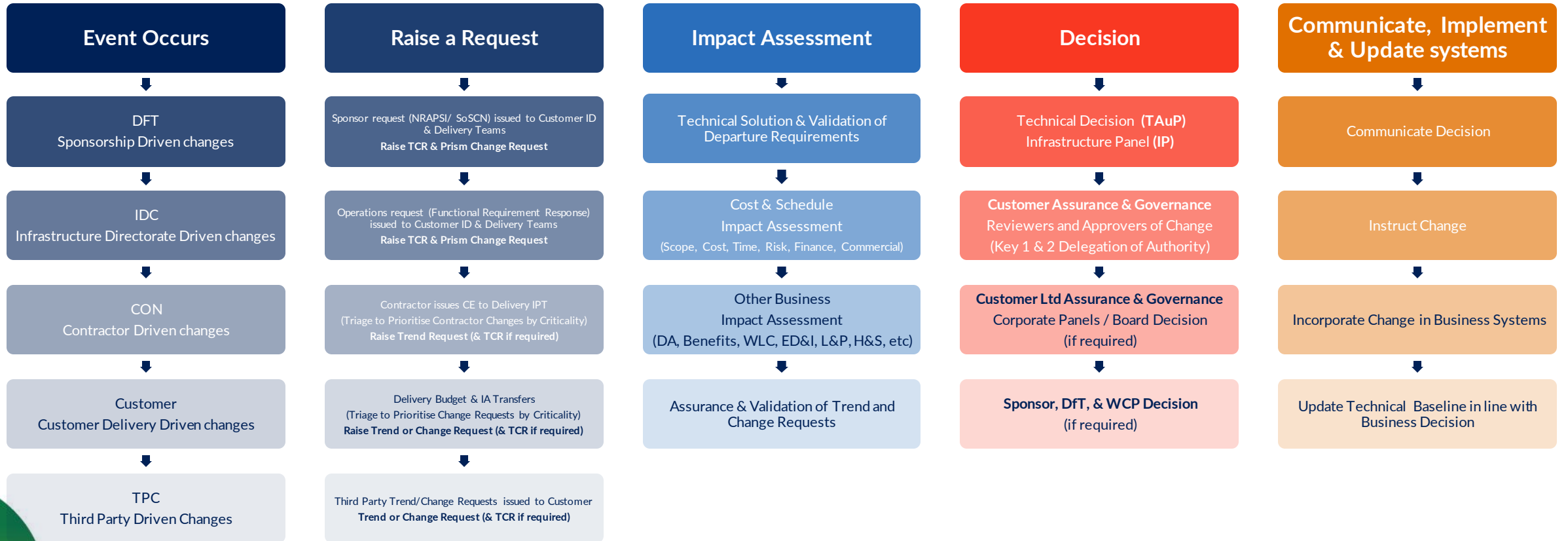


Rejected and Cancelled status apply to both Trends and Changes where they either did not make the criteria to proceed to implementation or they are no longer valid



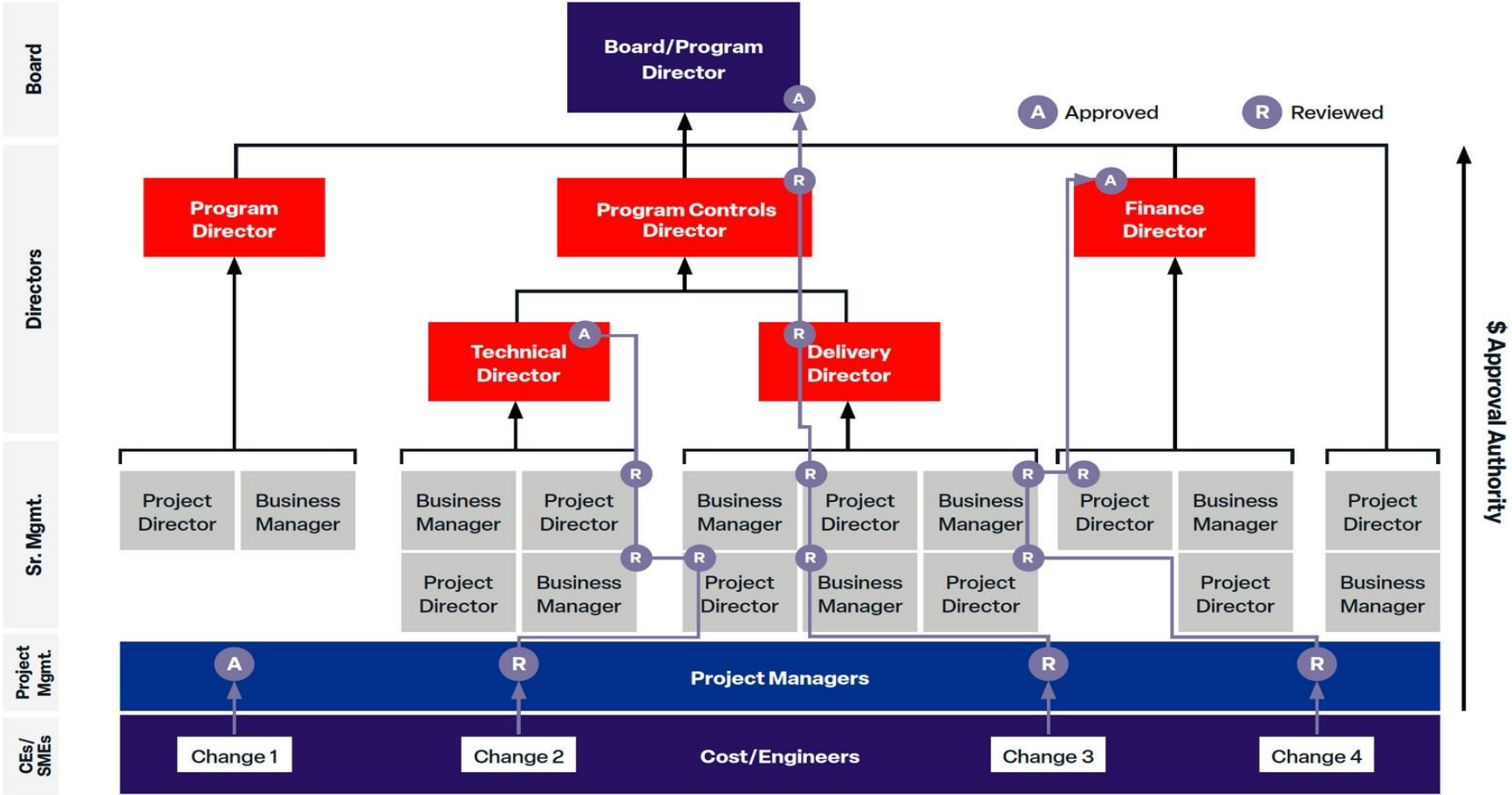
# Change Review

Customer Best Practice



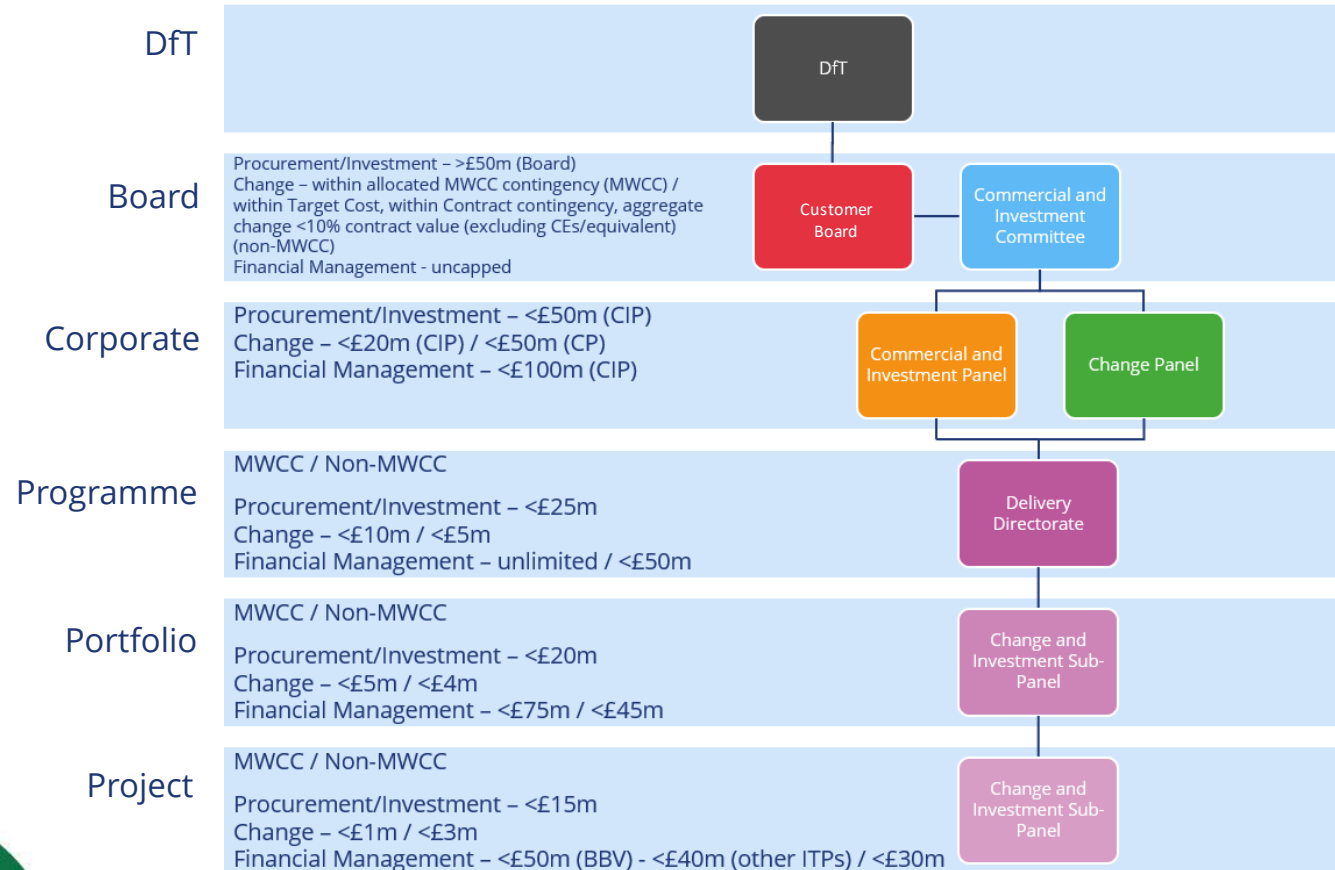
# Change Approval

## Change Categories, Approval Thresholds and Escalation Rules



# Sample Governance Principles

Customer Best Practice

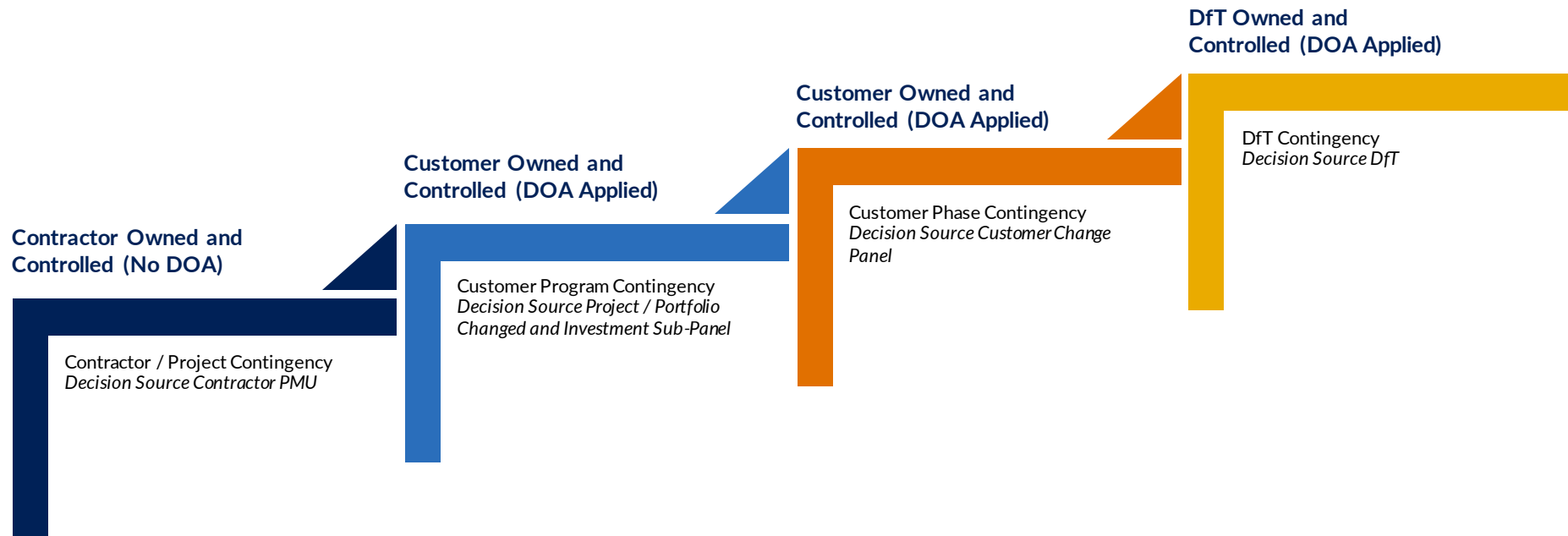


- Governance of change is based on the organisational hierarchy to ensure all changes will be reviewed and approved (or rejected) as required, based on the delegation of authority (**Governance thresholds**).
- For transparency and traceability, **Contruent is the Customer approved system for capturing all change decisions**. Contruent will generate a Change Form with an audit trail of all impacts, reviewers and approvers.
- The Contruent system will automatically generate reviewers and approvers based on the governance thresholds.

# Change Funding (Contingency)

Customer  
Best  
Practice

- Devolution of contingency drawdown encourages responsibility, collaboration, and ownership of issues at all levels of the organization.
- Contingency drawdown requires change approval through delegation of authority and escalated upwards per governance structure.



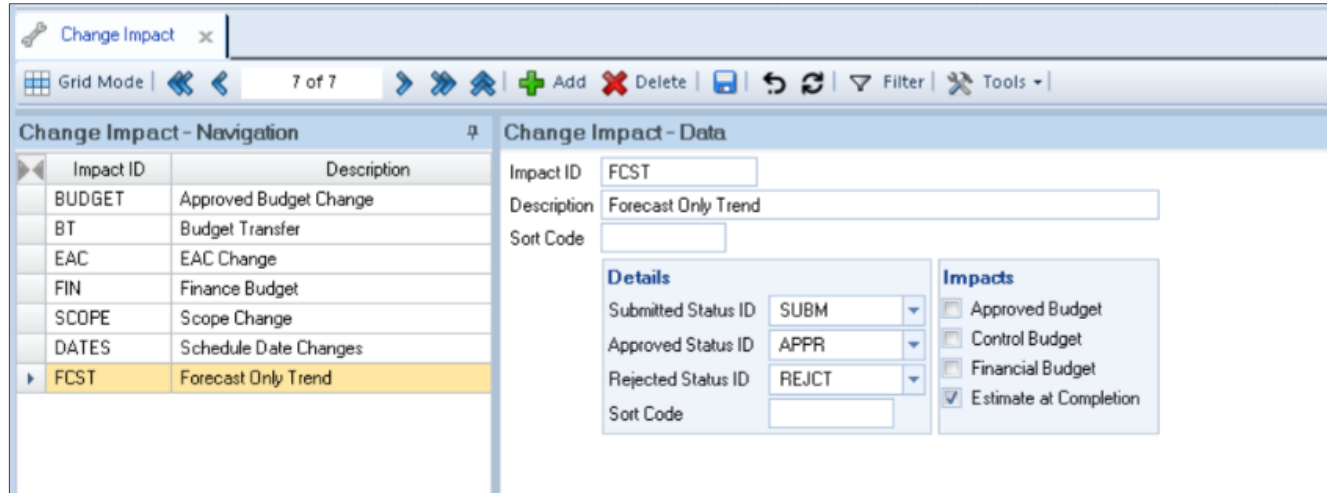
# Smart Use of Contingency Adds Value



- Fewer approvals needed for “expected/planned” change
- Faster processing - budgeted in contingency
- Less administrative burden (saves money)
- Protects public perception of publicly funded projects

# Systematize the Process

Change Impact



Impact ID	Description
BUDGET	Approved Budget Change
BT	Budget Transfer
EAC	EAC Change
FIN	Finance Budget
SCOPE	Scope Change
DATES	Schedule Date Changes
FCST	Forecast Only Trend

Change Impact - Data

Impact ID: FCST  
 Description: Forecast Only Trend  
 Sort Code:

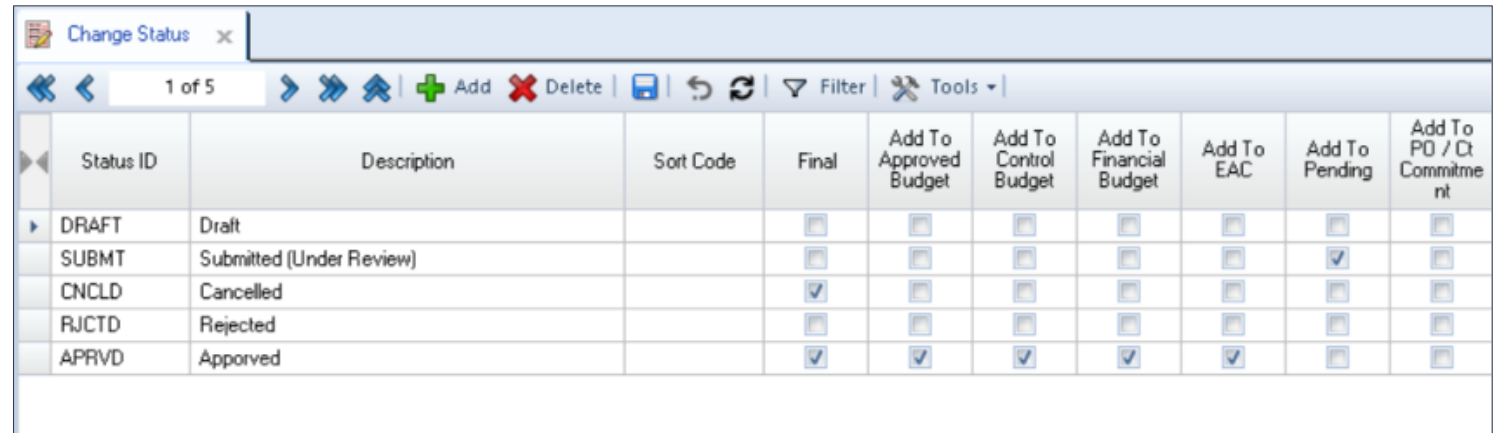
**Details**

Submitted Status ID: SUBM  
 Approved Status ID: APPR  
 Rejected Status ID: REJECT  
 Sort Code:

**Impacts**

Approved Budget  
 Control Budget  
 Financial Budget  
 Estimate at Completion

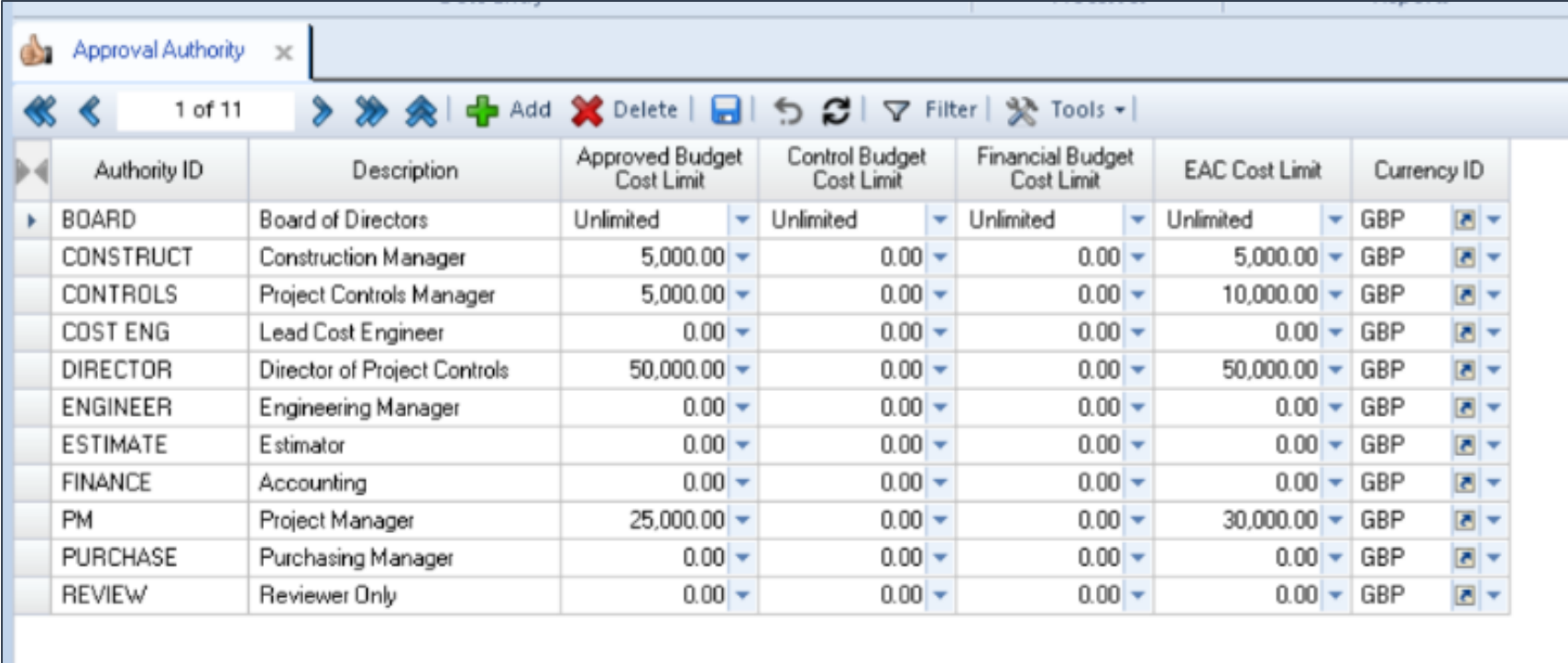
Change Status



Status ID	Description	Sort Code	Final	Add To Approved Budget	Add To Control Budget	Add To Financial Budget	Add To EAC	Add To Pending	Add To PO / Ct Commitment
DRAFT	Draft		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SUBMT	Submitted (Under Review)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CNCLD	Cancelled		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RJCTD	Rejected		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
APRVD	Approved		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Systematize Approvals

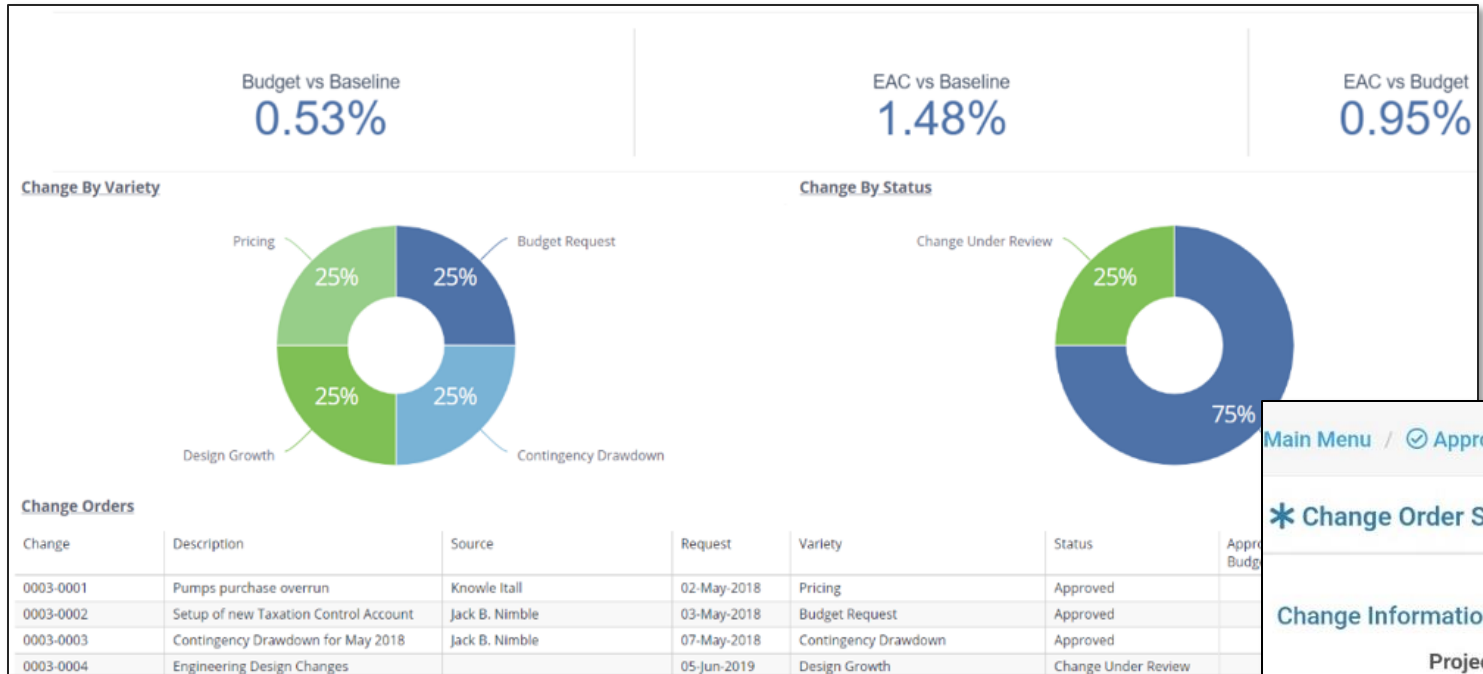
Change Approval Authorities



Authority ID	Description	Approved Budget Cost Limit	Control Budget Cost Limit	Financial Budget Cost Limit	EAC Cost Limit	Currency ID
BOARD	Board of Directors	Unlimited	Unlimited	Unlimited	Unlimited	GBP
CONSTRUCT	Construction Manager	5,000.00	0.00	0.00	5,000.00	GBP
CONTROLS	Project Controls Manager	5,000.00	0.00	0.00	10,000.00	GBP
COST ENG	Lead Cost Engineer	0.00	0.00	0.00	0.00	GBP
DIRECTOR	Director of Project Controls	50,000.00	0.00	0.00	50,000.00	GBP
ENGINEER	Engineering Manager	0.00	0.00	0.00	0.00	GBP
ESTIMATE	Estimator	0.00	0.00	0.00	0.00	GBP
FINANCE	Accounting	0.00	0.00	0.00	0.00	GBP
PM	Project Manager	25,000.00	0.00	0.00	30,000.00	GBP
PURCHASE	Purchasing Manager	0.00	0.00	0.00	0.00	GBP
REVIEW	Reviewer Only	0.00	0.00	0.00	0.00	GBP



# Automate the Flow of Work



Approvers receive email notifications and can utilize mobile devices to make decisions.

Change management with workflows for an in-program user notification, action items, review and approval.

Main Menu / Approvals / Change Summary / 0005-0005

**\* Change Order Summary - 0005-0005** Approved Rejected

Change Information		Status Details	
<b>Project ID</b>	PROJECT A - Sample Project A	<b>Status</b>	SUBMITTED -
<b>Change ID</b>	0005-0005	<b>Status Date</b>	-
<b>Description</b>	scope update		<b>Not Final</b>
<b>Details</b>	This change is regarding a scope update in the concrete pouring volume. The revised amounts have been reflected in this change order		
<b>Comments</b>			

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Staff  
for Change

# Staff for Effective Change Control



## No Accountability = No Control

- Who is Responsible for change control on your Project?
- Is there a career path for that person?
- Does that person have authority/access to Executives?
- Do you Train teams on your change process?
- Do Reviewers/Approvers know your process?
- Are performance metrics tied to effective execution?

4

Measure  
Change

# Measure Change

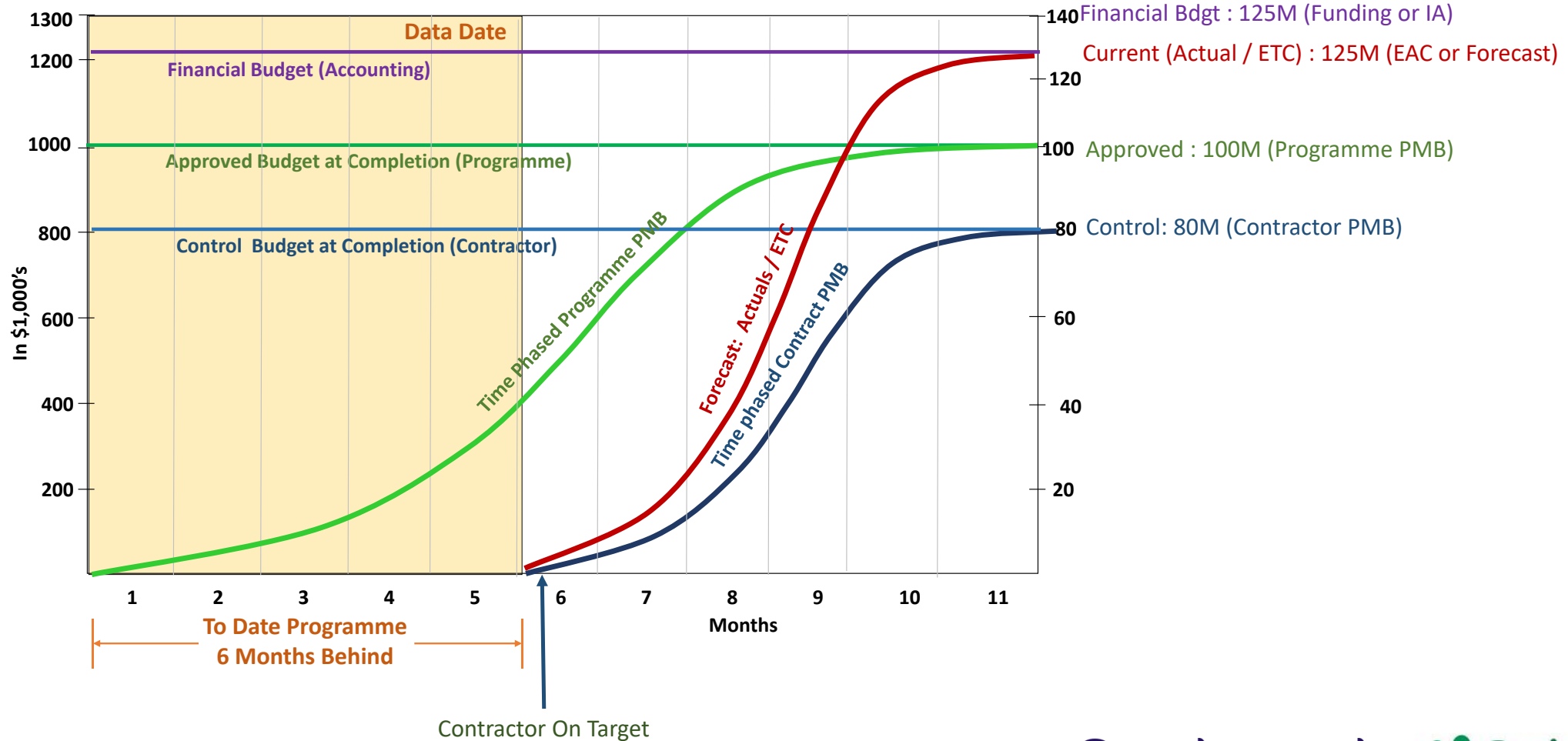
CONTROL ACCOUNT TYPES	Financial Budget	Control Budget	Approved Budget	Forecast
Risk Register Forecast			RISK TEAM	
Contingency	ACCOUNTING AND FINANCE TEAM	CONTRACTS	SR. MANAGERS AND DIRECTORS	
Target / Scope			DELIVERY TEAMS AND MANAGERS	

## If You Can't Measure It, You Can't Manage It!

- Need to measure project impact (# and \$ of changes)
- Does your process work?
- What ROI are you getting?

# Manage Multiple Performance Budgets

Programme vs Contractor - Baseline Management & Comparison



# But Don't Just Measure Change

Measure How Well Your Process Controls It!

Performance Metric	How to Measure	ROI
Reduced time spent on contract admin / changes	Hours/month x FTE rate	% Reduction in time spent = \$\$
Number of missed/delayed payments to contractors per month	Avg. cost of fines or interest	Avoidance of risk protect public image
More effective tracking and forecasting to reduce surprises and contract overspend	Average amount by which contract budgets are overspent	% Reduction in contract overspend = \$\$

5

Forecast  
Change



# Forecast Change



- If you measure change, you can forecast for it
- Earlier identification to Avoid/Mitigate impact
- Evaluate (and reevaluate) Risks to spot drivers
- Track the trends...
- Know your critical path
- Know the impact of change to all functions

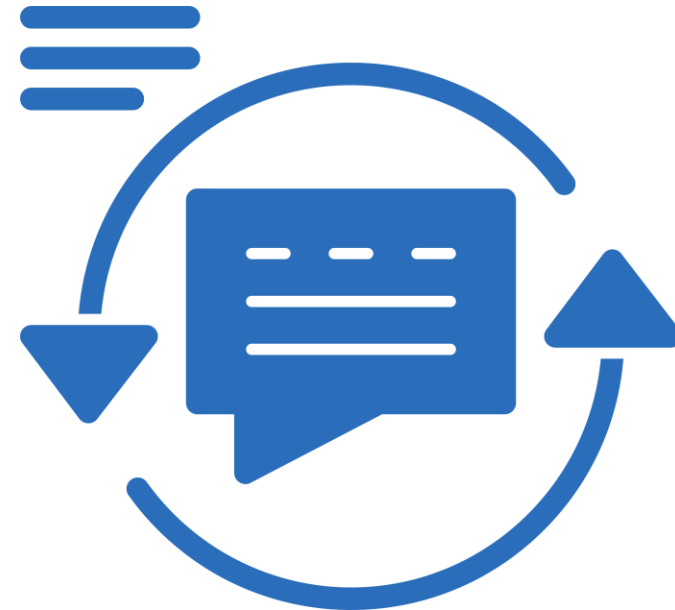
6

Learn from  
Change

# Learn Lessons from Change

## You know what changed but do you...

- Benchmark?
- Store learnings to apply next time?
- Measure how well your process works?
- Have feedback loops in your process?
- Rate suppliers to improve selection?
- Rate customers to improve your contracts?



# Back to the Business Value!

## Executive Business Drivers



# Contruent Connects Business & Functional Value

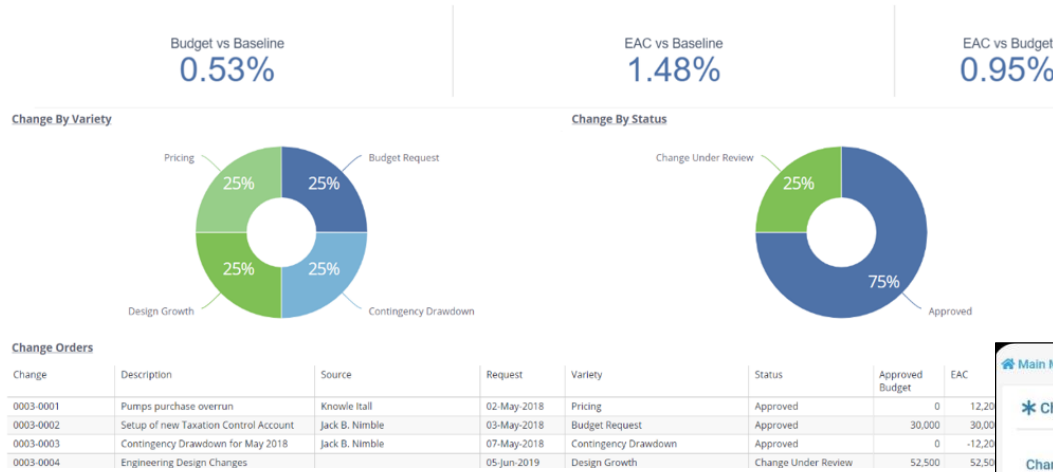
Account for Change and Maximize Efficiency

Reduce contract overspending due to improper change management

Average annual reduction in contract overspend

# 4%

Ex. \$4M Per \$100 Million in Annual Contract Overspend



Advanced change management with workflows for an in-program user notification, action items, review and approval

Auto-generate the list of approvers based on PRE-configured delegation of authority policies

Main Menu / Approvals / Change Summary / 0005-0005

**\* Change Order Summary - 0005-0005** Approved Rejected

**Change Information**

Project ID: PROJECT A - Sample  
Project A  
Change ID: 0005-0005  
Description: scope update  
Details: This change is regarding a scope update in the concrete pouring volume. The revised amounts have been reflected in this change order

**Status Details**

Status: SUBMITTED -  
Status Date: -  
X Not Final

Comments

Approvers receive email notifications and can utilize mobile devices to make decisions

Change Orders - Approvals

1 of 6 | Add | Delete | Filter | Tools | Generate | Submit

User ID	Name / Description	Team	Authority ID	Sort Code	Approved Budget Change Cost	Control Budget Cost	Financial Budget Cost	EAC Cost
HOWARD			PURCHASE	1-A	1,000.00	0.00	0.00	1,000.00
OTTO			ESTIMATE	1-B	1,000.00	0.00	0.00	1,000.00
JUSTIN			COST ENG	1-C	2,000.00	0.00	0.00	2,000.00
BEN			SCHEDULE	1-D	2,000.00	0.00	0.00	2,000.00
EARL			CONSTRUCT	2-A	1,000.00	0.00	0.00	1,000.00
DONW			CONTROLS	2-B	2,000.00	0.00	0.00	2,000.00

Detailed Description | Control Accounts | Budget Details | **Approvals** | Documents | Events | Action Items | Time Phased Data Setup | Activities | Links | Revision History

# Contruent = Faster to Deliver!

- 1 Optimize project spend and performance
- 2 Improve visibility to make informed decisions
- 3 Account for change and maximize efficiency
- 4 Manage contracts and contractor activity



# Engage with Us!

Visit our website: [Contruent.com](https://www.contruent.com)

Request a demo: [Info@Contruent.com](mailto:Info@Contruent.com)

Email today's presenter: [RFalch@Contruent.com](mailto:RFalch@Contruent.com)

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**THANK YOU**