Deltek Acumen Risk

An In-Depth Review…

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Agenda

- Introductions
- Introduction to Acumen Risk
  - Why Acumen Risk is different
  - Uncertainty Factors
  - Risk Advisor
  - Risk Register
- Risk reporting
  - Risk histogram
  - Risk tornado chart
  - Risk critical paths
- Creating risk-adjusted schedules

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PMFocus Introductions

Legacy & Background

- 20 years experience
- Founder of
  - Pertmaster NA (Primavera)
  - Acumen (Deltek)
- Inventor of
  - Acumen Fuse/Risk/360
  - Schedule Index™
- Facilitated
  - 100's of CAPEX risk workshops
  - EPC, Owner, JV

Focus & our DNA

- Confidence management
- Project forecast certainty
- Project intelligence
- Deltek partner

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Introduction to Project Risk Analysis

- Scheduling
  - Science behind forecasting project completion
  - Doesn't account for scope uncertainty, unknowns
- Project Risk Registers
  - Becoming more prevalent
  - Still isolated from true risk analysis
- Risk Analysis
  - Gain true insight into schedule achievability
  - Pinpoints risk hotspots that will cause delay
  - Structured approach to **reducing** risk exposure

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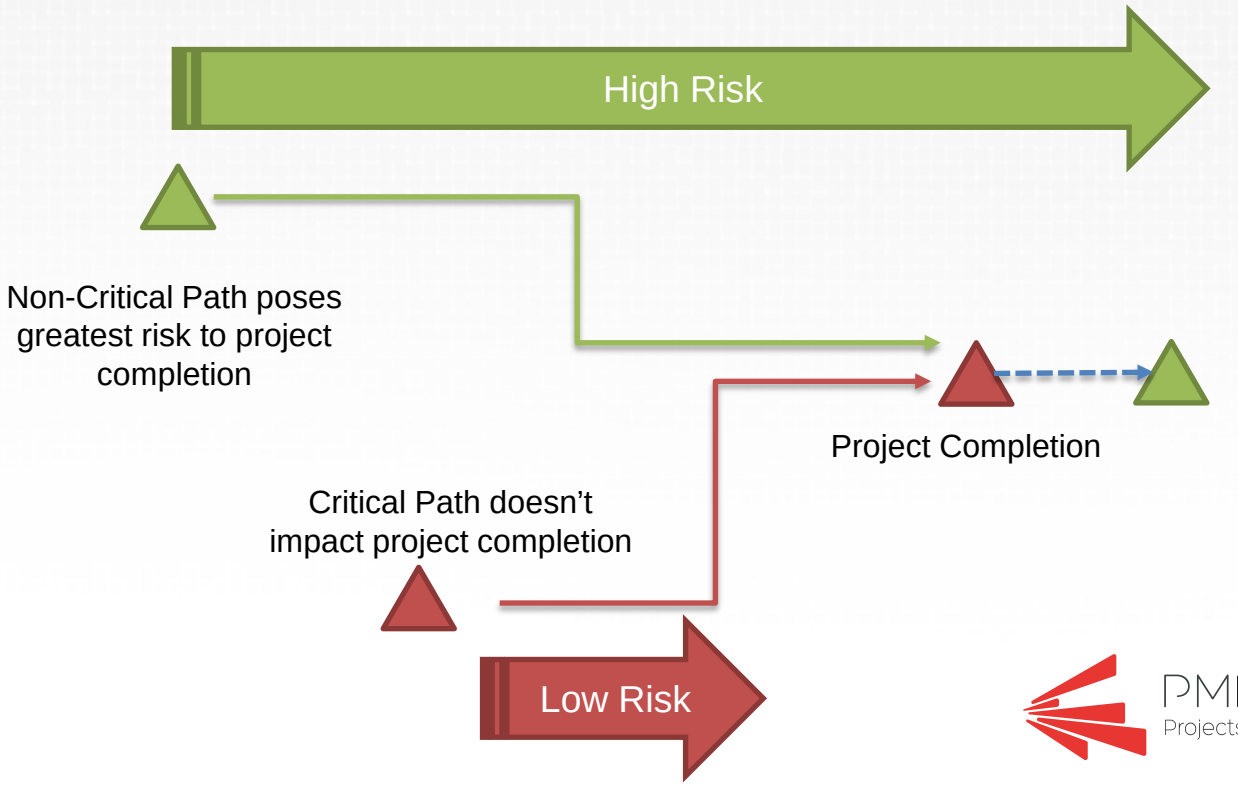
Why Bother with Risk Analysis?

- Brings realism & confidence to your forecast
- Reveals hidden critical paths
- Establishes appropriate contingency
- Generates team buy-in to the schedule



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How Does Risk Analysis Work?

- Based on CPM (scheduling!)
  - Accounts for variability in the forecast
  - Schedule uncertainty
  - Risk events
  - Cost-impact of time…
- Monte Carlo simulation
  - Brute force approach
  - Highly prone to logic

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Acumen Risk™

- Cost/schedule analysis
- Aimed at team members
- Integrated risk register
- Uncertainty Factor™
- Uses native schedule
- Intuitive reporting
- Risk-adjusted schedules

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Building a Risk Model

Risk Load Critical Path

- Pros
  - Focuses the team in a workshop
  - Based on actual schedule
- Cons
  - Assumes known critical path
  - Risk events make this approach flawed
  - Dangerous approach to risk modeling
  - Doesn't give true picture of risk

Create a Summary Schedule

- Pros
  - Excellent means by which to facilitate a workshop
  - Easy to risk load/build risk model
- Cons
  - Lose the logic integrity/calendars/detail of a schedule
  - Separate model to maintain to that of schedule

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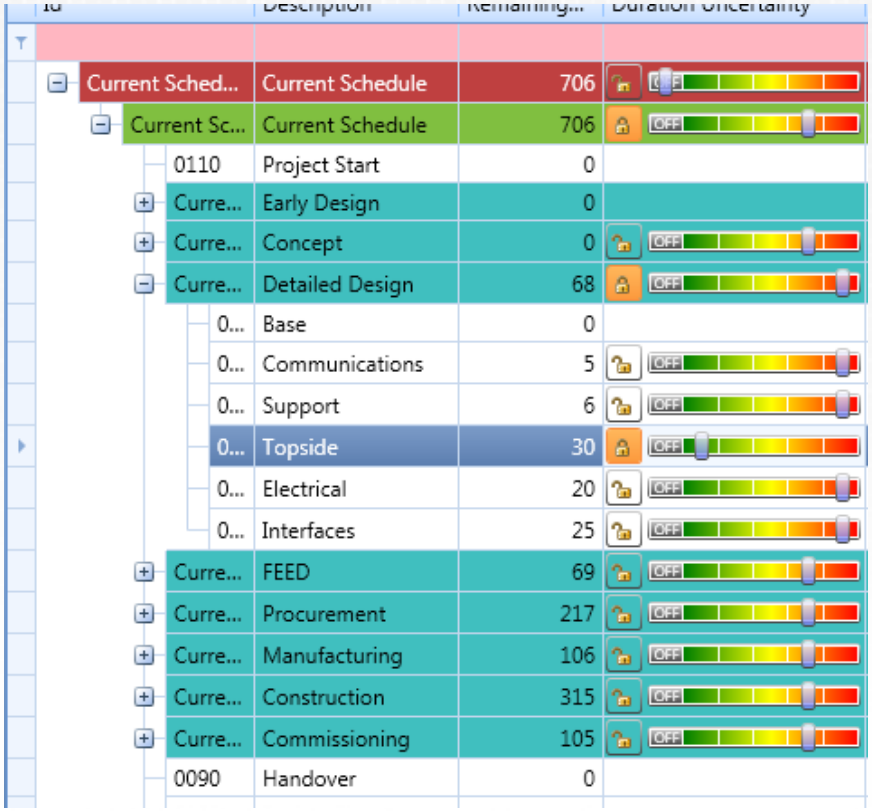
A More Effective Approach

Uncertainty Factor

- Top down approach
- Retains integrity of schedule
- Ensures total categorization
- Very fast approach
- Removes complexity
- Eliminates crazy rankings

Graphical Sliders



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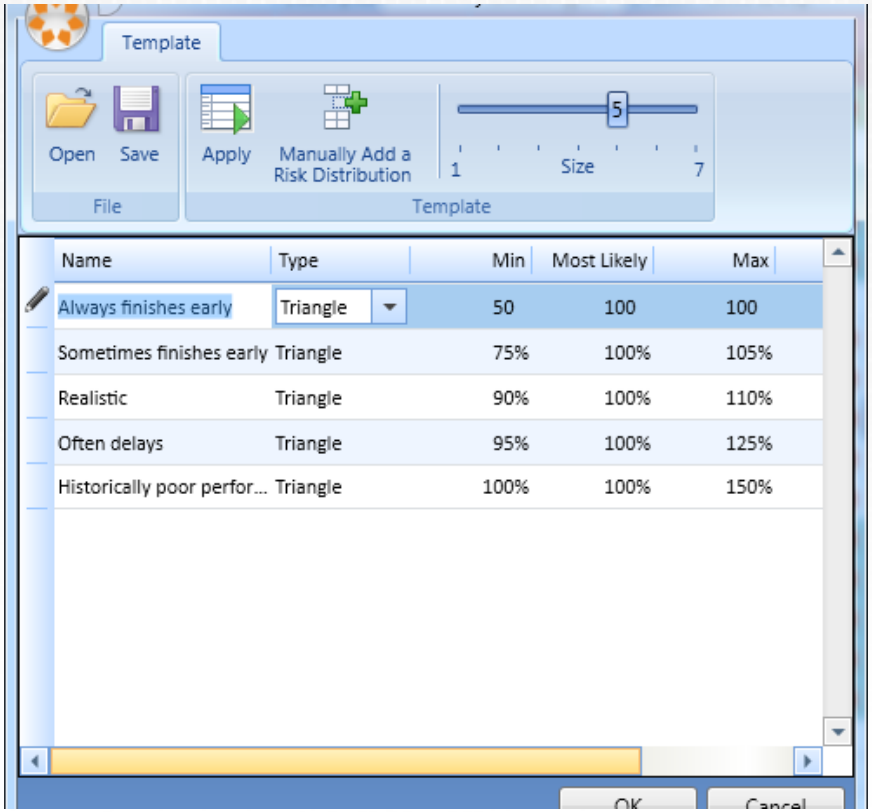
Capturing Uncertainty

Background

- Uncertainty
  - variability regarding durations/costs
- Is the duration realistic?
  - Scope definition
  - Complexity of work
  - Past performance
  - Just plain wrong!
- Not dates!
  - Dates are the results of durations & logic
- Old school approach
  - Min, most likely, max & distribution type

Uncertainty Factor™



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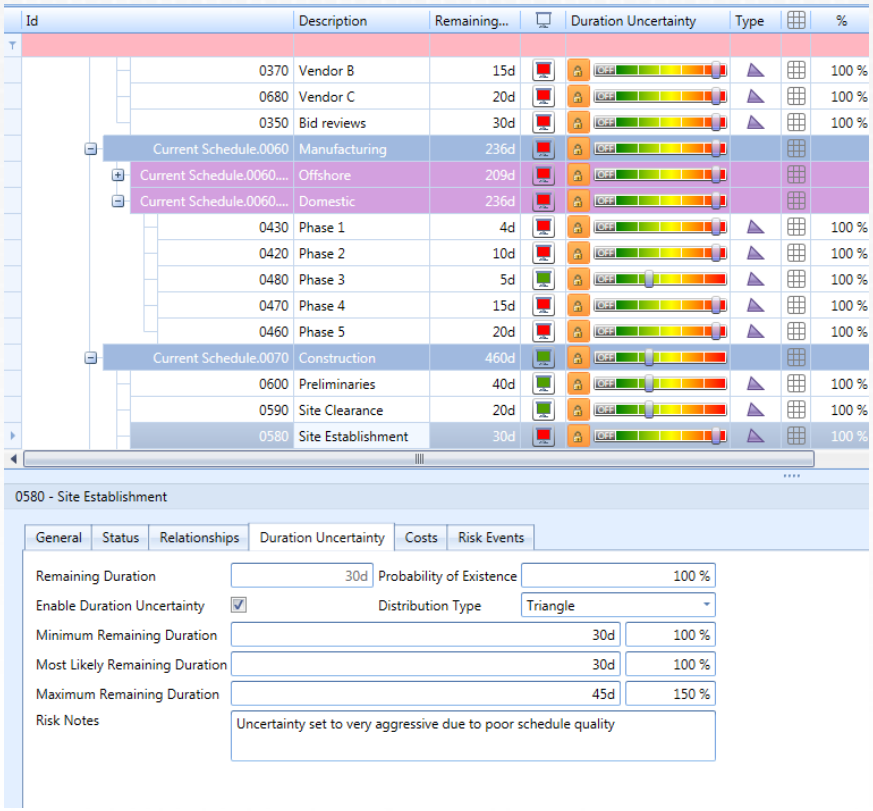
demo

Risk Adviser

Introduction

- Assigning uncertainties is inherently difficult
- Solved complexity with uncertainty sliders
- Still lacks guidance
- Advice based on
  - Schedule quality
  - Historical performance
  - User field

Example



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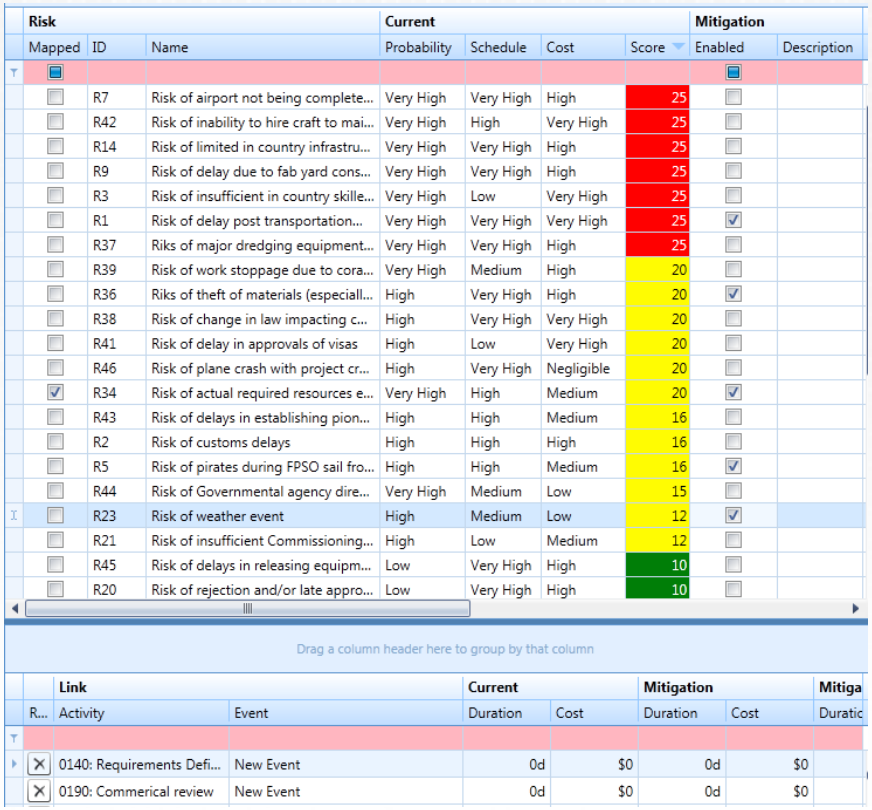
Capturing Risk Events – Risk Register

Risk Events

- Discrete event
- 2 key attributes
  - Probability
  - Impact(s)
- Threats & opportunities
- Multiple states
  - Current
  - Mitigated
- Weather modeling

Project Risk Register



Risk			Current				Mitigation	
Mapped	ID	Name	Probability	Schedule	Cost	Score	Enabled	Description
☐	R7	Risk of airport not being complete...	Very High	Very High	High	25	☐	
☐	R42	Risk of inability to hire craft to mai...	Very High	High	Very High	25	☐	
☐	R14	Risk of limited in country infrastru...	Very High	Very High	High	25	☐	
☐	R9	Risk of delay due to fab yard cons...	Very High	Very High	High	25	☐	
☐	R3	Risk of insufficient in country skille...	Very High	Low	Very High	25	☐	
☐	R1	Risk of delay post transportation...	Very High	Very High	Very High	25	☑	
☐	R37	Riks of major dredging equipment...	Very High	Very High	High	25	☐	
☐	R39	Risk of work stoppage due to cora...	Very High	Medium	High	20	☐	
☐	R36	Riks of theft of materials (especiall...	High	Very High	High	20	☑	
☐	R38	Risk of change in law impacting c...	High	Very High	Very High	20	☐	
☐	R41	Risk of delay in approvals of visas	High	Low	Very High	20	☐	
☐	R46	Risk of plane crash with project cr...	High	Very High	Negligible	20	☐	
☑	R34	Risk of actual required resources e...	Very High	High	Medium	20	☑	
☐	R43	Risk of delays in establishing pion...	High	High	Medium	16	☐	
☐	R2	Risk of customs delays	High	High	High	16	☐	
☐	R5	Risk of pirates during FPSO sail fro...	High	High	Medium	16	☑	
☐	R44	Risk of Governmental agency dire...	Very High	Medium	Low	15	☐	
☐	R23	Risk of weather event	High	Medium	Low	12	☑	
☐	R21	Risk of insufficient Commissioning...	High	Low	Medium	12	☐	
☐	R45	Risk of delays in releasing equipm...	Low	Very High	High	10	☐	
☐	R20	Risk of rejection and/or late appro...	Low	Very High	High	10	☐	

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Link			Current		Mitigation		Mitiga
R...	Activity	Event	Duration	Cost	Duration	Cost	Duratic
☒	0140: Requirements Defi...	New Event	0d	$0	0d	$0	
☒	0190: Commerical review	New Event	0d	$0	0d	$0	

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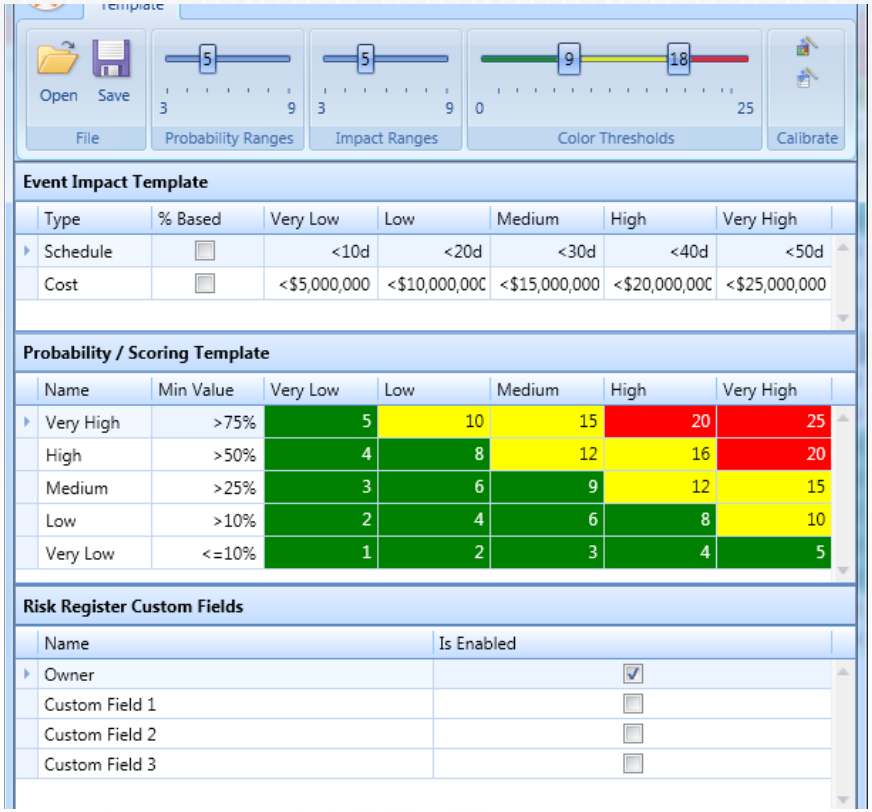
Risk Register Calibration

One Size Doesn't't Fit All

- Number of categories
  - 5X5 is standard
- Define probability scale
  - Don't adopt HSE scale
- Calibrate impacts
  - Relative or absolute?
- Determine thresholds
  - Risk score is irrelevant…

Risk Register Calibration



Event Impact Template

Type	% Based	Very Low	Low	Medium	High	Very High
Schedule	☐	<10d	<20d	<30d	<40d	<50d
Cost	☐	<$5,000,000	<$10,000,000	<$15,000,000	<$20,000,000	<$25,000,000

Probability / Scoring Template

Name	Min Value	Very Low	Low	Medium	High	Very High
Very High	>75%	5	10	15	20	25
High	>50%	4	8	12	16	20
Medium	>25%	3	6	9	12	15
Low	>10%	2	4	6	8	10
Very Low	<=10%	1	2	3	4	5

Risk Register Custom Fields

Name	Is Enabled
Owner	☑
Custom Field 1	☐
Custom Field 2	☐
Custom Field 3	☐

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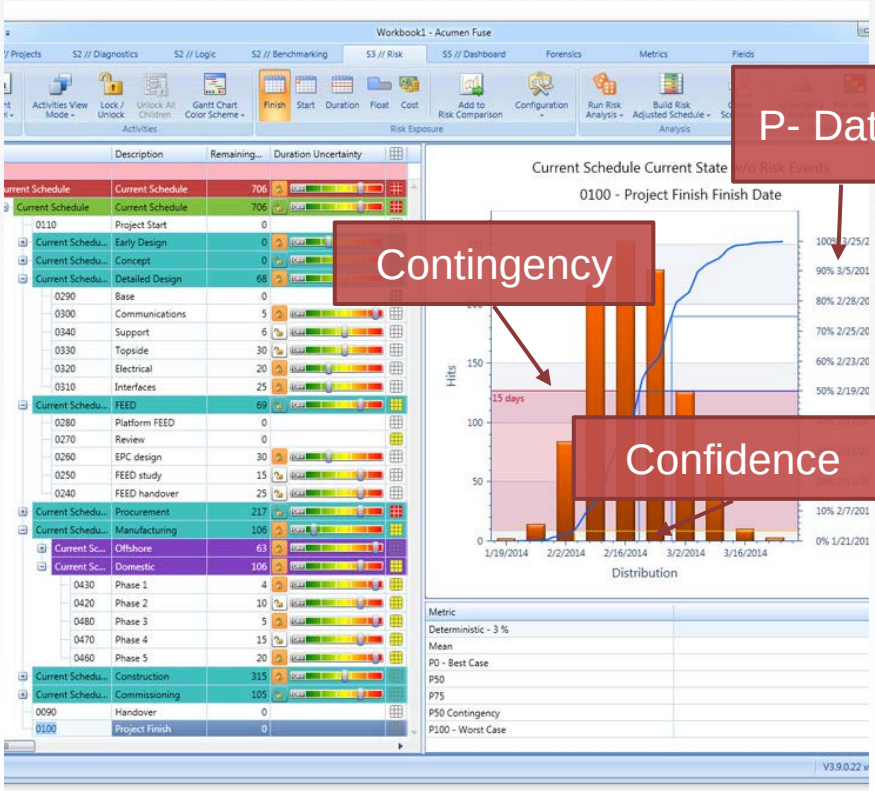
Reporting - Risk Exposure

Histogram

- P-Dates
  - "I'm 50% confident I will finish on…"
- Contingency
  - "How much more/less time do I need to finish by…?"
- Confidence Level
  - "What chance do I have of hitting my finish date?"
- Risk Range Factor™
  - Much better means of determining risk exposure



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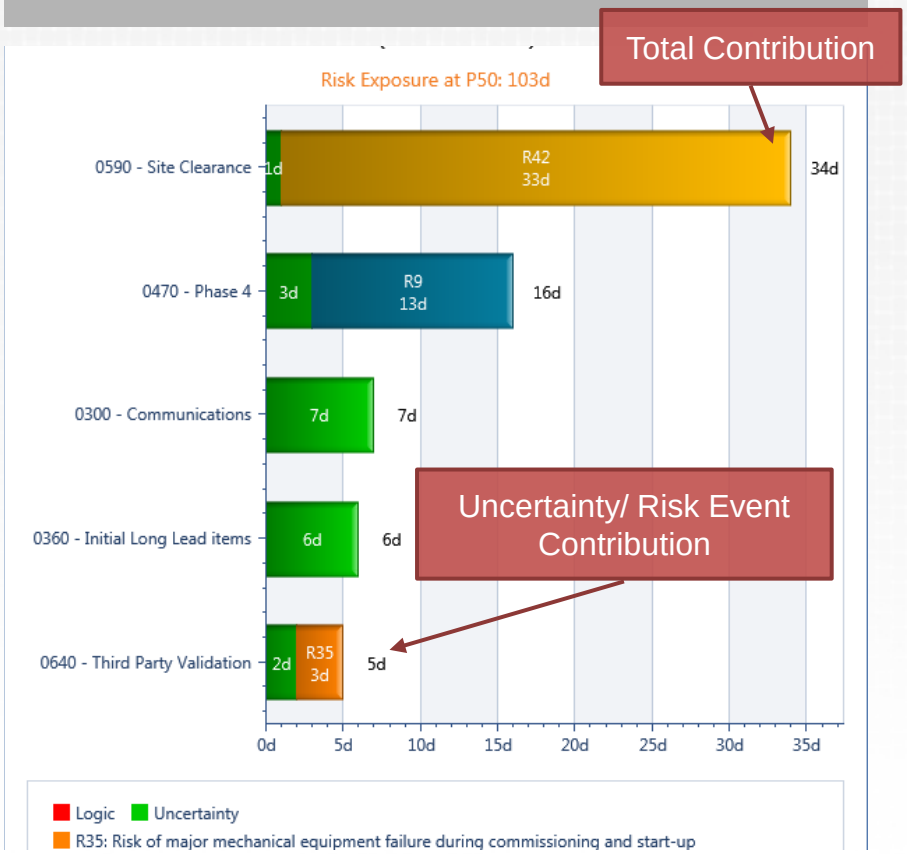
Reporting - Risk Drivers

Tornados

- Risk Drivers
  - High-risk activities
  - Most impactful events
- Traditional Reporting
- % based

$$R = 1 - \frac{6 \cdot \sum d^2}{n(n^2 - 1)}$$

- Risk Contribution Factor™
  - True measure of impact
  - Differentiates uncertainty/risk



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Reporting – Critical Paths

Critical Path Identification

- True insight into risk exposure
- How many times does a path become critical?
- Indication of fluidity of schedule

Critical Paths

- Demo

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Q & A

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