

Session T6

Improving the Reliability and Achievability of the Project Plan

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// Deltek Acumen Licensees



Agenda

Acumen Market and Version 5 Features

Technip Case Study

Demo, if time allows

// DNA of Project-Led Organizations

Our Target Audience

- ❑ Two key factors
 - “Doing right projects...”
 - “Doing projects right...”

- ❑ Acumen has focused on enabling projects to better plan and hence execute CAPEX spend

- ❑ Prevent unforeseen contingency drawdown.

Portfolio Management

- Business intelligence

Project Controls

- CAPEX spend

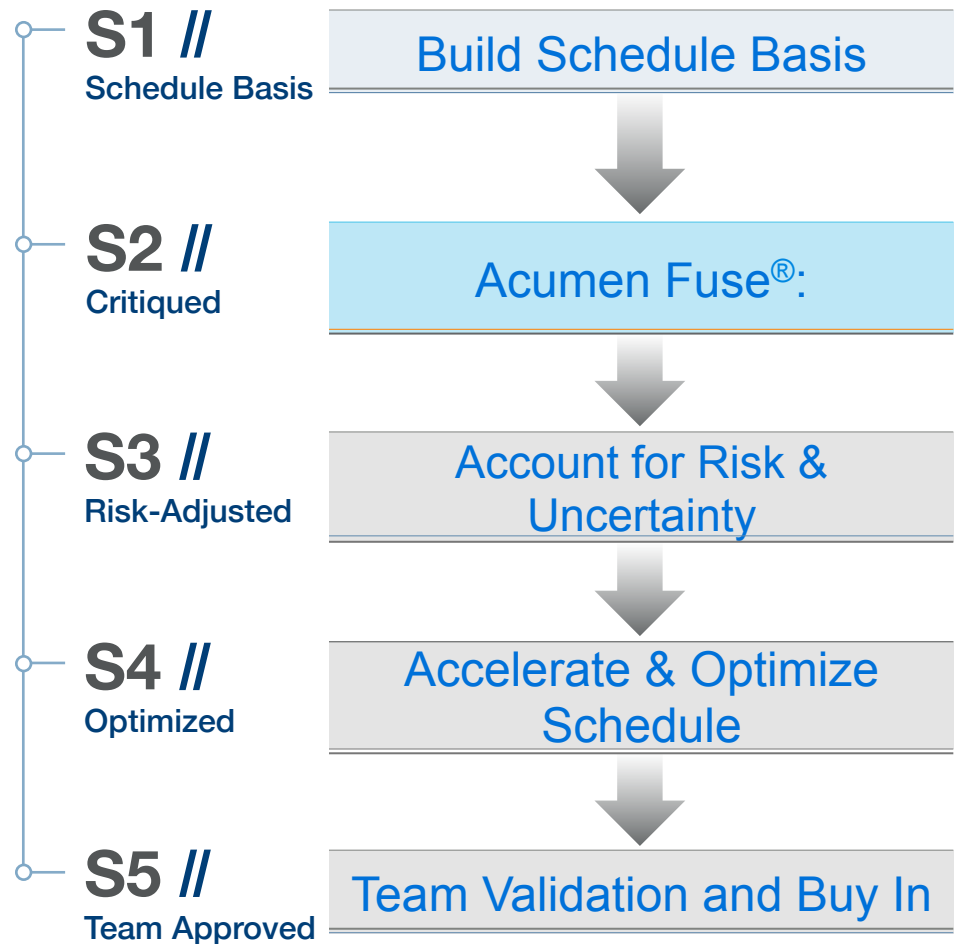
Operations

- Revenue generation!

// Acumen Fuse®

Initial Product

- Launched
 - 1 January 2010
- Focus
 - Project diagnostics
- Objective
 - Structural integrity



// Acumen Fuse[®] Analyses

Industry Adoption

... and counting



Schedule Index™ Calculator ?
and File Converter

Sample the power of Fuse diagnostics below.
Or click here for full Fuse capabilities.

Click to add file **Analyze Project**

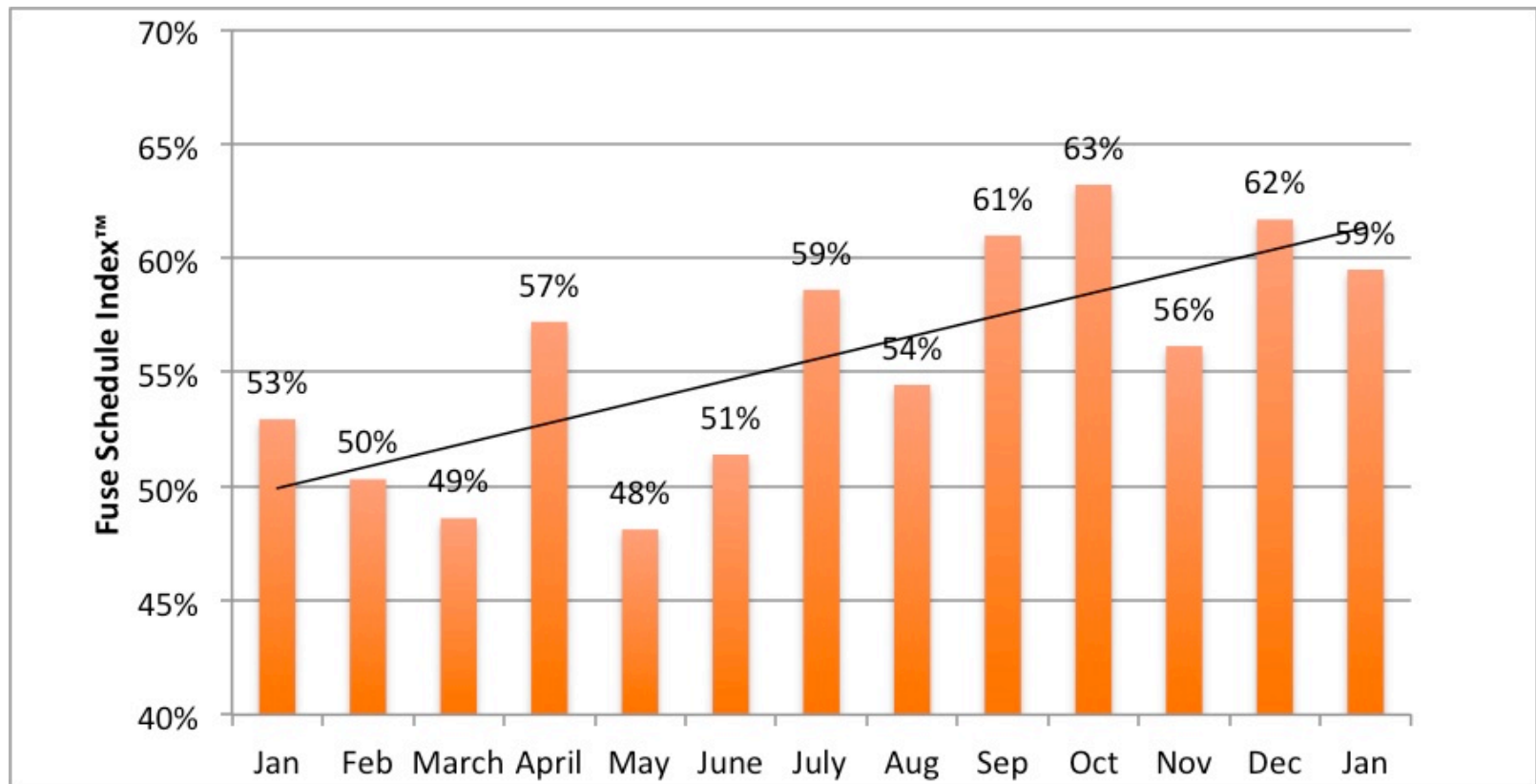
Fuse Index Score	Percentile Ranking	Success Probability

// Convert to UN/CEFACT XML ▶
// View your summary report ▶

// We're Making a Difference

Fuse Schedule Index™

Average gone from 50's to low 60's



Acumen Fuse[®]

Project Diagnostics

// Acumen 5.0

Headline Features



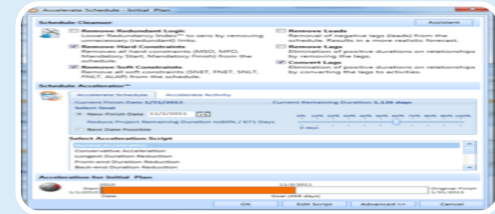
Fuse

- Diagnostics
- Forensics



Risk

- Simulation
- Risk register



360

- Acceleration
- Remediation

Scheduling

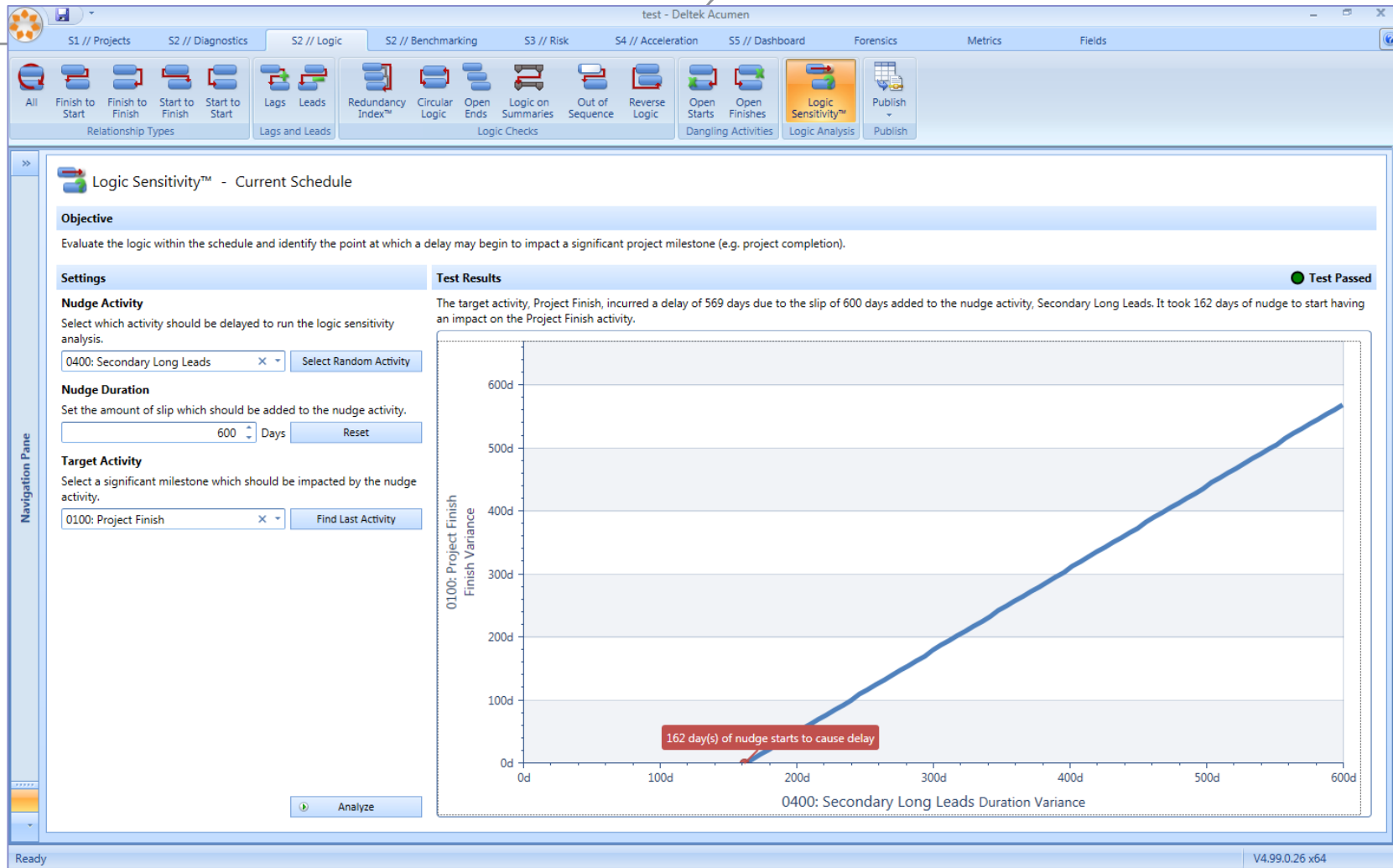
Scheduling

SmartGantt™

SmartGantt™

Duration
Realism

// Logic Sensitivity Delay Analysis

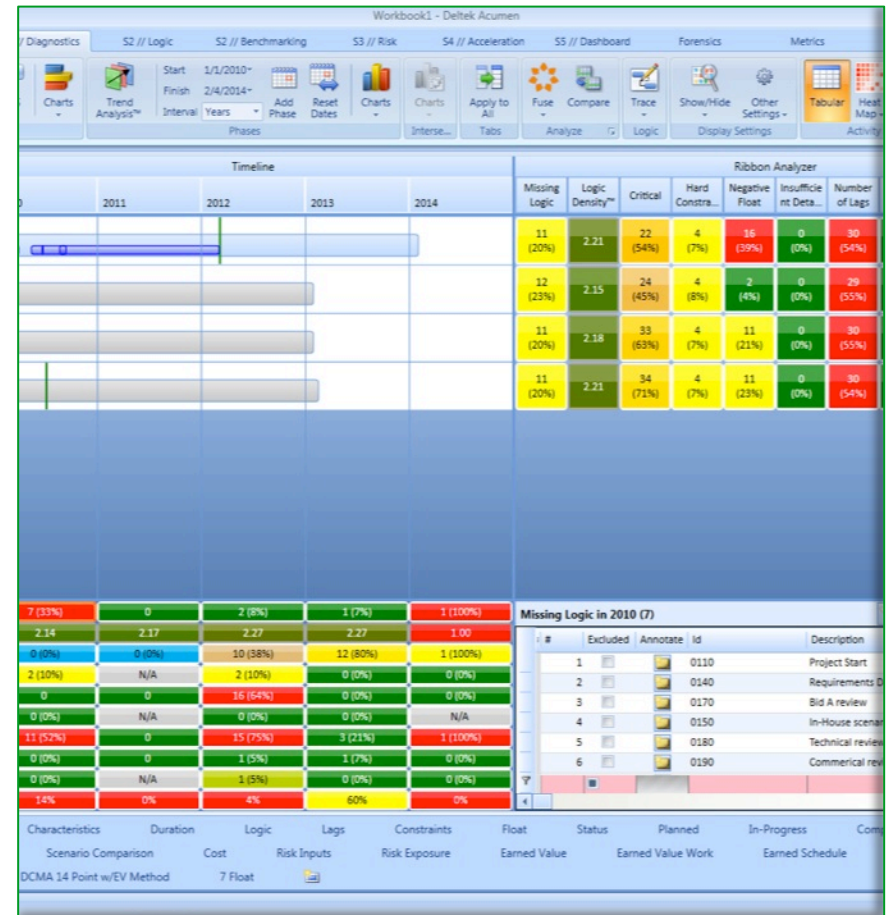


True insight into 'pressure points' in your schedule

// 3D-Schedule Analysis

Trend Analysis

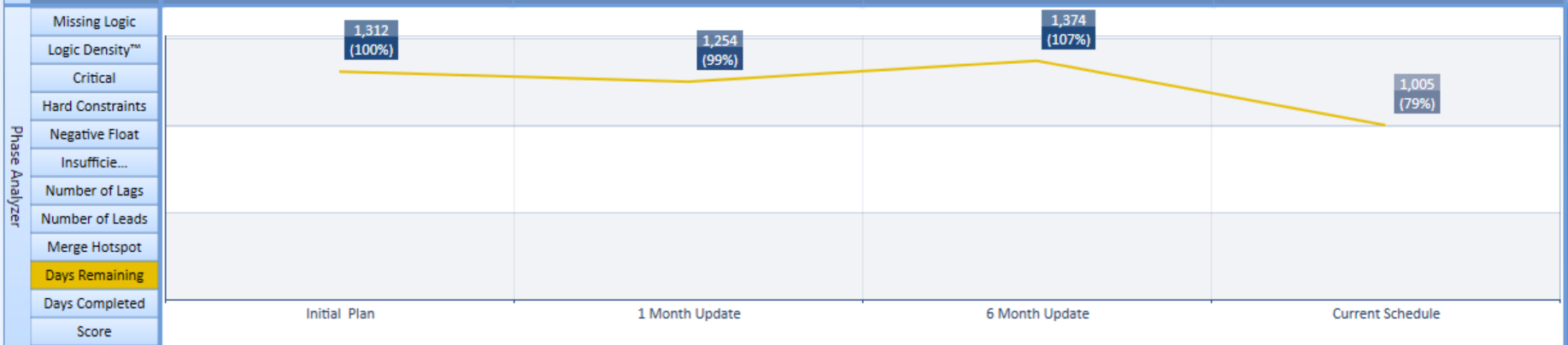
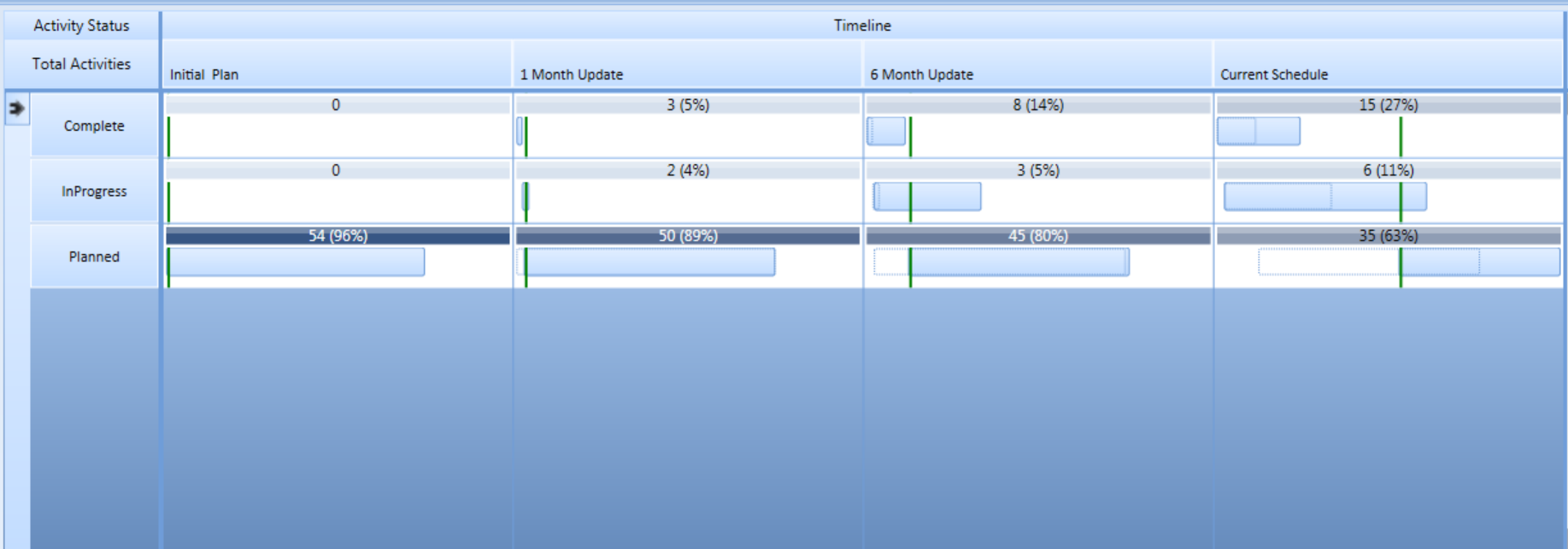
- ❑ Horizontal ribbons
- ❑ Excellent for drill down
- ❑ Single project trending
- ❑ Not designed to visualize trending between updates...



Navigation tabs: S1 // Projects, S2 // Diagnostics, S2 // Logic, S2 // Benchmarking, S3 // Risk, S4 // Acceleration, S5 // Dashboard, Forensics, Metrics, Fields

Ribbons: Projects, Fields, Resources, WBS, Charts, Trend Analysis™, Phases, Intersections, Tabs, Analyze, Logic, Display Settings, Activity Browser Modes, Publish

Metrics



Schedule Quality x Characteristics Duration Logic Lags Constraints Float Status Planned In-Progress Completed

Baseline Compliance Scenario Comparison Cost Risk Inputs Risk Exposure Earned Value Earned Value Work Earned Schedule Work / Resources

DCMA 14 Point DCMA 14 Point w/EV Method 7 Float

// S1 Scheduling

- ❑ Not re-inventing CPM
- ❑ Scheduling/analysis synergy
- ❑ Providing one-stop shop
 - Analysis
 - Schedule manipulation

Activity
Information

Logic

Risk Inputs

WBS

New
Activities

New
Projects

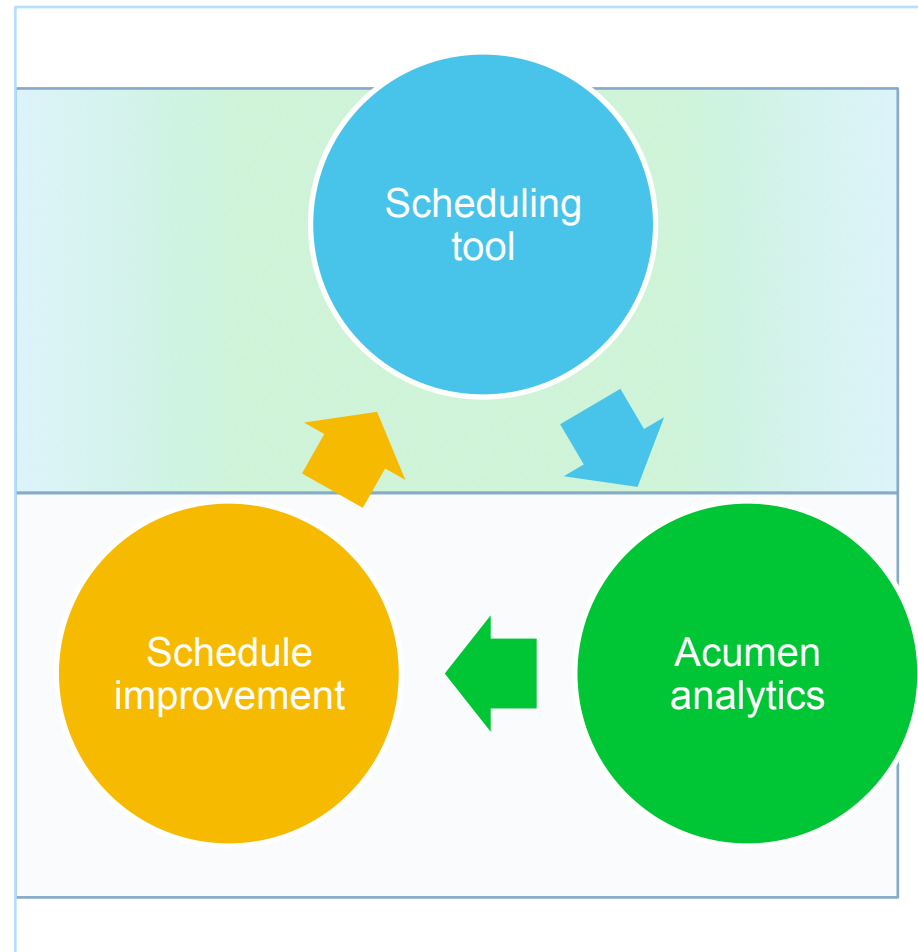
CPM Scheduling Tool!

// Benefit of Having S1 in Acumen

Closing the Loop

- ❑ Diagnose shortcomings and improve schedule realism
 - Fuse cleansed
 - 360 accelerated
 - Risk-adjusted (E.G. P75)
 - Re-calibrated
 - User-updated

- ❑ Reduces cycles



Activities - Workbook1

Filters

Timeline	Id	Description	Start	Finish	Remaining...	Calibration	Gantt Chart
	Workbook1	Workbook1	1/1/2010	2/4/2014	706d		2010 2011 2012 2013 2014
	Current Schedule	Current Schedule	1/1/2010	2/4/2014	504d		
	Current Schedule	Current Schedule	1/1/2010	2/4/2014	504d		
	0110	Project Start	1/1/2010	1/1/2010	0d		
	Current Schedule.0...	Early Design	6/14/2010	9/28/2010	0d		
	Current Schedule.0...	Concept	1/1/2010	3/1/2012	0d		
	0140	Requirements Defi...	1/1/2010	1/14/2010	0d		
	0130	Competitive Analysis	1/15/2010	1/21/2010	0d		
	Current Schedule.0...	Alternate scenario...	1/22/2010	6/7/2010	0d		
	0190	Commerical review	6/17/2010	6/20/2010	0d		
	0180	Technical review	5/10/2010	3/1/2012	0d		
	Current Schedule.0...	Detailed Design	11/9/2010	5/7/2012	48d		
	0290	Base	11/9/2010	12/6/2010	0d		
	0300	Communications	3/1/2012	3/7/2012	5d		
	0340	Support	12/14/2010	3/8/2012	6d		
	0330	Topside	3/15/2012	4/24/2012	30d		
	0320	Electrical	11/22/2010	4/30/2012	20d		
	0310	Interfaces	12/28/2010	5/7/2012	25d		
	Current Schedule.0...	FEED	11/12/2010	5/8/2012	48d		
	Current Schedule.0...	Procurement	2/1/2010	10/4/2012	155d		

0190 - Commerical review

- General
- Status
- Relationships
- Duration Uncertainty
- Costs
- Risk Events

Duration

Remaining:

Remaining (Elapsed):

Total Float:

Free Float:

Status

Status:

Start: Finish:

Early Start: Early Finish:

Late Start: Late Finish:

Actual Start: Actual Finish:

Suspend: Resume:

Constraints

Primary:

Primary Date:

Secondary:

Secondary Date:

// SmartGantt™

Less Effort, More Insight

Traditional Gantt Chart

- Huge amounts of data
- Excessive scrolling
- Manual color coding
- Tedious filter creation

SmartGantt

- Analysis consumption
- Automatic Analysis Filters
 - Metrics
 - Forensics
 - Risk exposure
- Predictive Visualization

Acumen Risk™

Breaking the Mold

// Acumen Risk™

Integrated Cost/Schedule Analysis

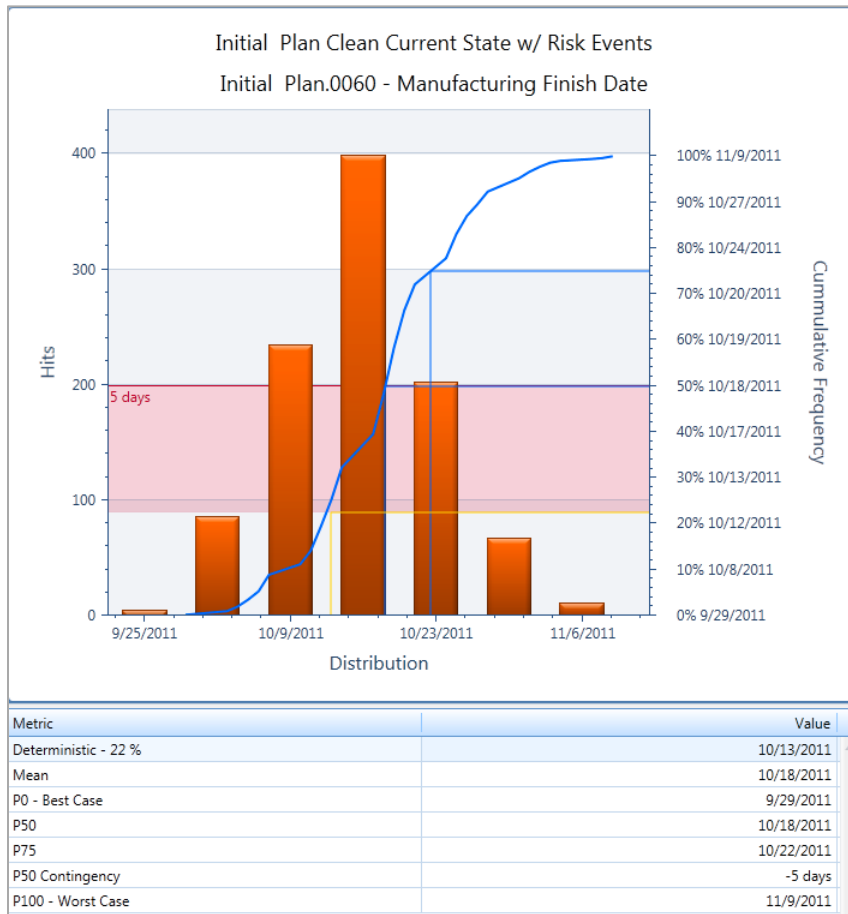
- Integrated risk register
- Very fast analysis
- Uncertainty Factor™
- Uses native schedule
- Intuitive reporting



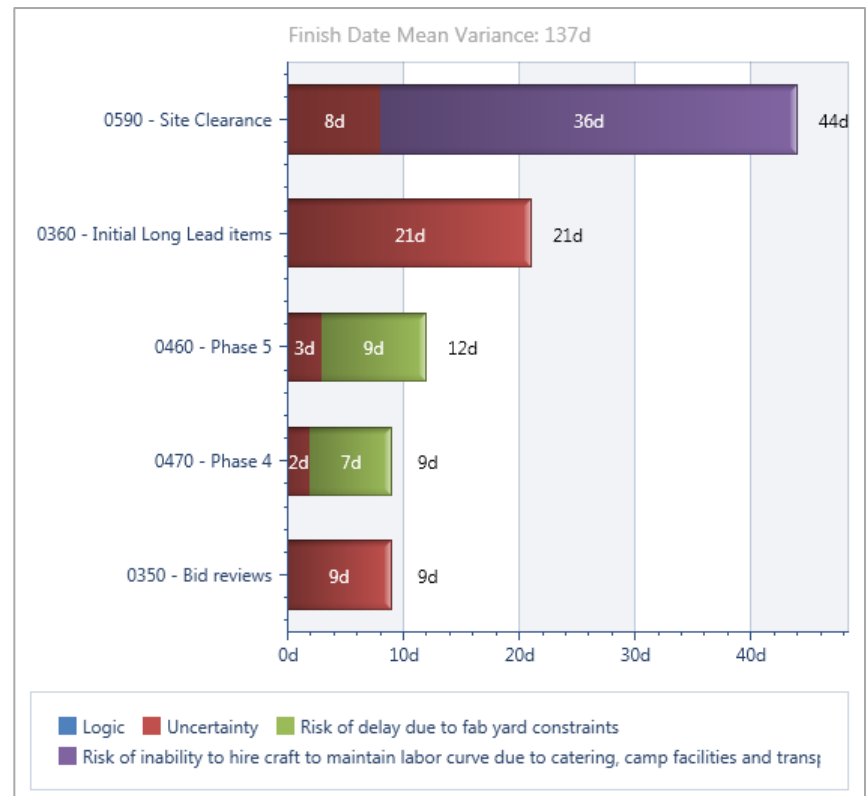
Designed for collaborative project risk workshops

// Risk Reporting Done Properly

Risk Exposure

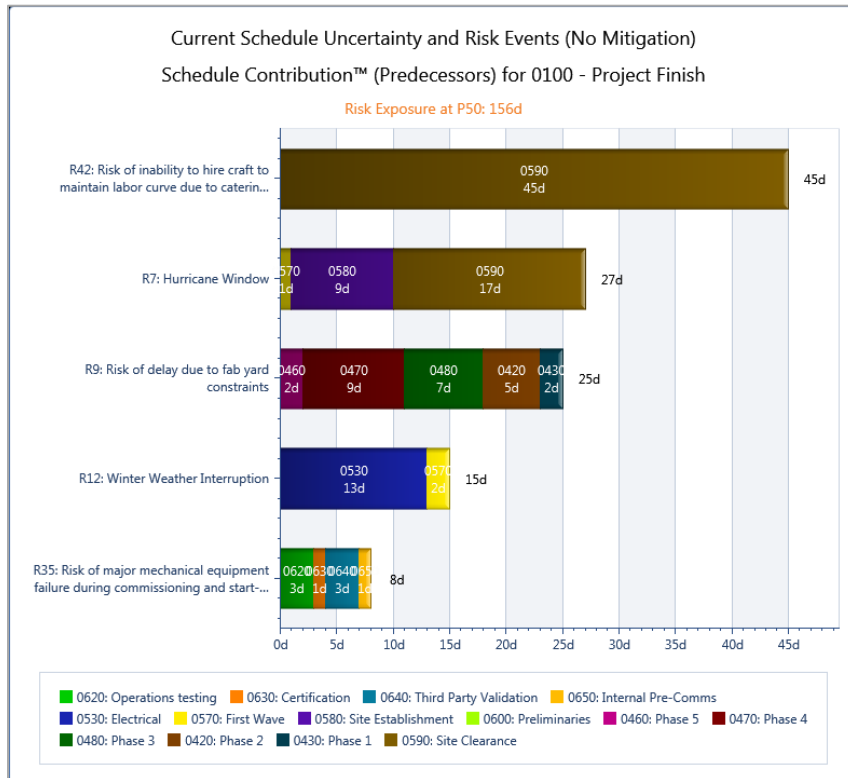


Risk Contribution Factor™

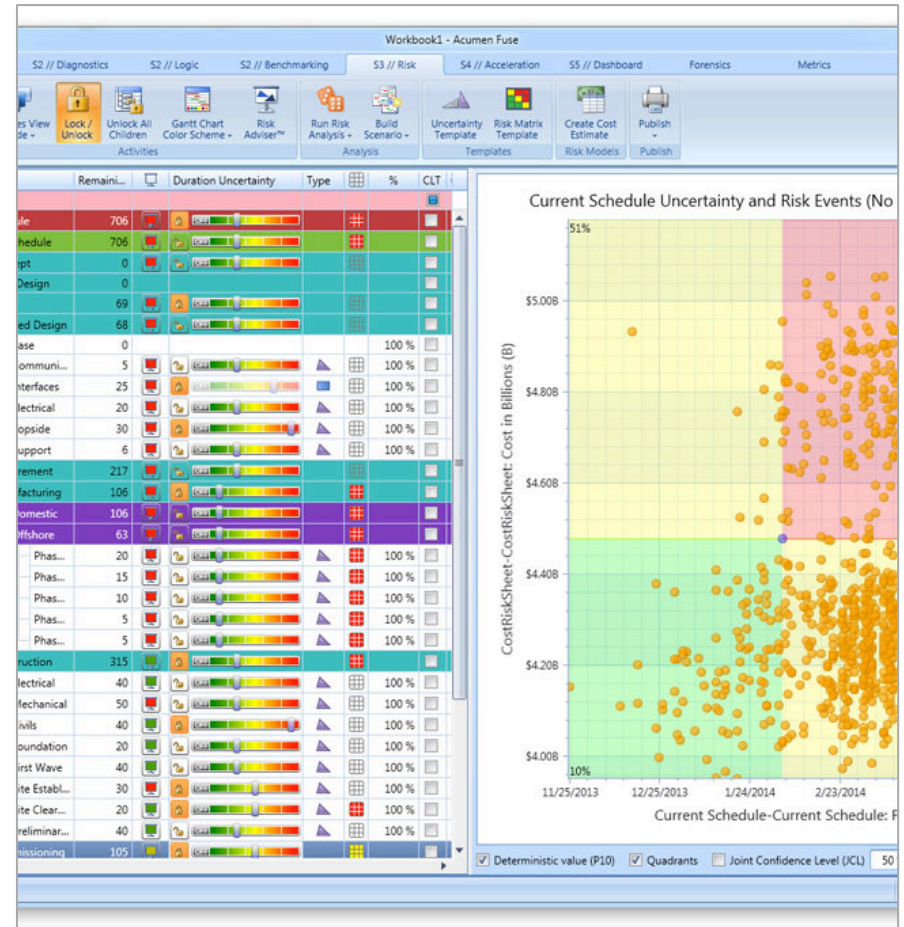


// Other Reports

Risk-Based Tornadoes



Scatter Chart (JCL)



// Risk Adviser™

Artificial Intelligence

- ❑ Assigning uncertainties is inherently difficult
- ❑ Solved complexity with uncertainty sliders
- ❑ Advice based on
 - Schedule quality
 - Historical performance
 - Value of user defined field

	Description	Remaining...		Duration Uncertainty	Type
	0370 Vendor B	15d			
	0680 Vendor C	20d			
	0350 Bid reviews	30d			
	Current Schedule.0060 Manufacturing	236d			
+	Current Schedule.0060... Offshore	209d			
-	Current Schedule.0060... Domestic	236d			
	0430 Phase 1	4d			
	0420 Phase 2	10d			
	0480 Phase 3	5d			
	0470 Phase 4	15d			
	0460 Phase 5	20d			
	Current Schedule.0070 Construction	460d			
	0600 Preliminaries	40d			
	0590 Site Clearance	20d			
	0580 Site Establishment	30d			

Establishment

Status Relationships Duration Uncertainty Costs Risk Events

Duration Probability of Existence

Duration Uncertainty Distribution Type

Remaining Duration

Remaining Duration

Remaining Duration

Uncertainty set to very aggressive due to poor schedule quality

// SmartGantt™

Intelligent Risk Reporting

- Show risk dates
- Compare risk & deterministic schedules
- Show hot spots
- Show true drivers vs perceived risk



Acumen 360™

// Acumen 360™

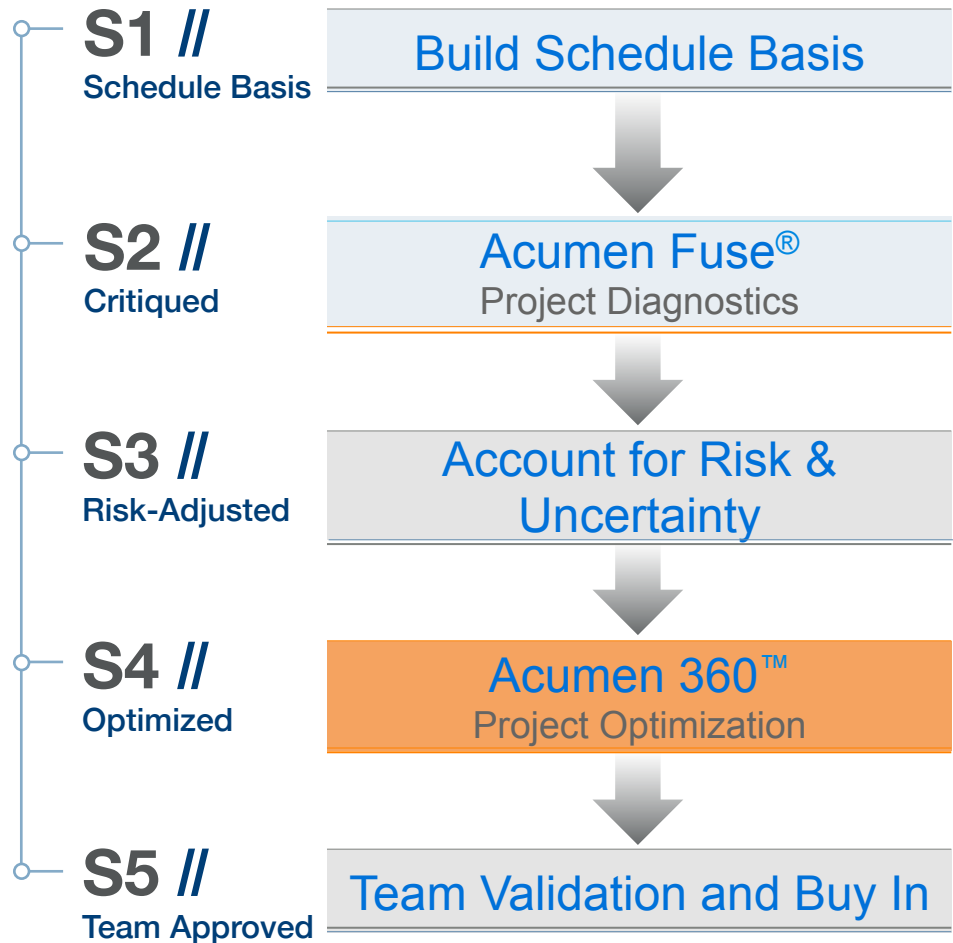
Acceleration & Remediation

☐ Launched

- October 2011

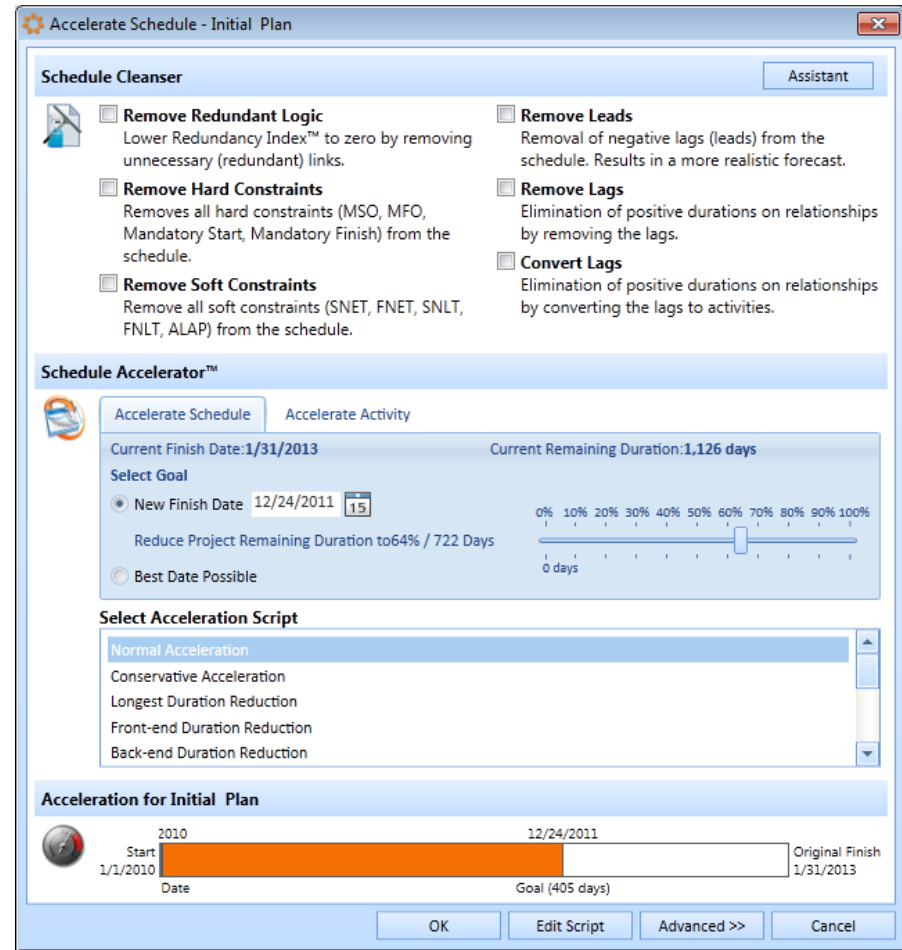
☐ Focus

- Acceleration
- Decision Support



// Acumen 360™

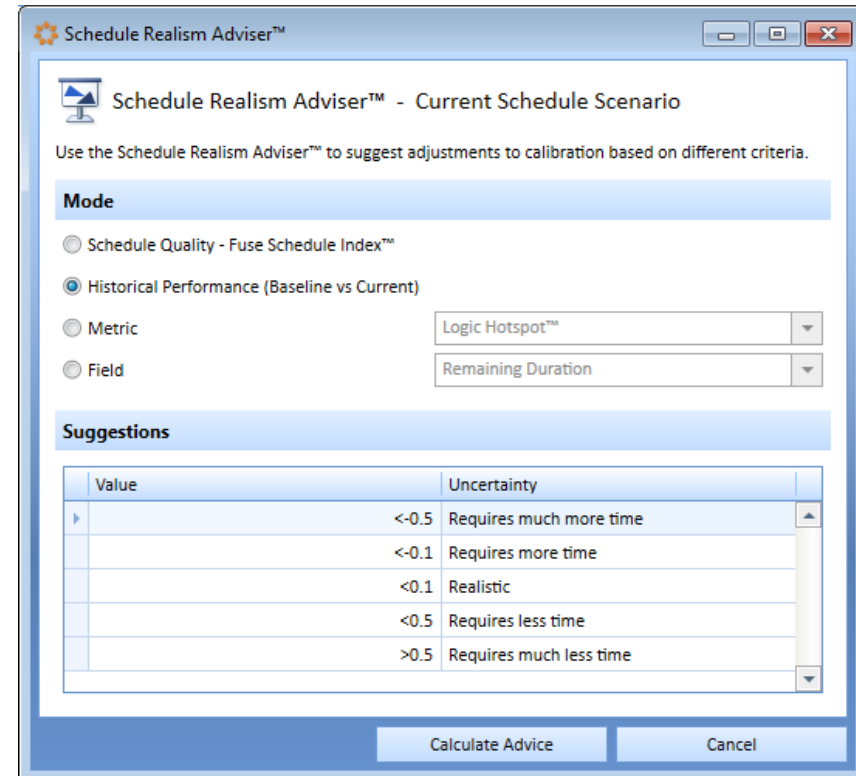
- In the US, one in four Fuse users
- Schedule recovery
- Three modes
 - Automatic: critical path
 - Targeted: user criteria
 - Interactive
 - Real-time analysis
 - Instant schedule changes
 - Deceleration too!



// Schedule Realism Advisor™

Automatic Schedule Calibration

- Fuse ensures structural integrity but doesn't address realism
- Realism Advisor takes into account
 - Schedule quality
 - Historical performance
 - Metric e.g. cost overrun
 - Field e.g. risk exposure



Duration realism

Structural integrity

Scope firmness

Activities - Current Schedule Scenario

Project Information

Filters

Timeline	Id	Description	Start	Finish	Remaining...	Calibration	Gantt Chart
		Current... Current Schedule	1/1/2010	1/31/2014	501d		
	0110	Project Start	1/1/2010	1/1/2010	0d		
	Current...	Early Design	6/14/2010	9/28/2010	0d		
	Current...	Concept	1/1/2010	3/1/2012	0d		
	Current...	Detailed Design	11/9/2010	5/10/2012	50d		
	Current...	FEED	11/12/2010	5/31/2012	66d		
	Current...	Procurement	2/1/2010	9/26/2012	149d		
	0380	Vendor A	6/6/2011	7/6/2011	25d		
	0400	Secondary Long Le...	3/1/2012	5/17/2012	60d		
	0360	Initial Long Lead it...	3/1/2012	6/26/2012	90d		
	0370	Vendor B	7/3/2012	7/23/2012	15d		
	0680	Vendor C	7/23/2012	8/17/2012	20d		
	0390	Long Lead	2/1/2010	9/3/2012	142d		
	0350	Bid reviews	8/17/2012	9/26/2012	30d		
	Current...	Manufacturing	10/1/2012	1/22/2013	233d		
	Current...	Construction	1/22/2013	12/2/2013	457d		
	0600	Preliminaries	1/22/2013	3/14/2013	40d		
	0590	Site Clearance	3/14/2013	4/10/2013	20d		
	0580	Site Establishment	4/10/2013	5/20/2013	30d		
	0570	First Wave	5/20/2013	7/10/2013	40d		
	0560	Foundation	7/10/2013	8/6/2013	20d		
	0530	Electrical	7/10/2013	9/2/2013	40d		
	0550	Civils	8/6/2013	9/26/2013	40d		
	0540	Mechanical	9/26/2013	12/2/2013	50d		
	Current...	Commissioning	9/2/2013	12/13/2013	467d		
	0090	Handover	12/24/2013	12/24/2013	0d		
	0100	Project Finish	1/31/2014	1/31/2014	0d		

Navigation Pane

Technip Case Study

Technip Subsea Case Study using Acumen



11-Sept-13

Presenters: Cesar Ramos & Pat Smith

Presenters

■ Cesar Ramos

- Technip's North American Subject Matter Expert for Planning/Scheduling & Earned Value. He has a dual role as the Technip North American Onshore Business Unit Leader. Has experience in Offshore & Subsea as well.

■ Pat Smith

- Technip's North American P6 Administrator. Also has a dual role as the Technip North American Subsea Business Unit Leader. Has Onshore & Offshore experience as well.

Technip at a Glance

Technip is a world leader in project management, engineering and construction for the energy industry.

From the deepest Subsea oil & gas developments to the largest and most complex Offshore and Onshore infrastructures, our 38,000 people are constantly offering the best solutions and most innovative technologies to meet the world's energy challenges.

Present in 48 countries, Technip has state-of-the-art industrial assets on all continents and operates a fleet of specialized vessels for pipeline installation and subsea construction.

Technip shares are listed on the NYSE Euronext Paris exchange and traded in the USA on the OTCQX marketplace (OTCQX: TKPPY).

Quick Facts

- Technip is active in three business segments: [Subsea](#), [Offshore](#) and [Onshore](#)
- 38,000 people in [48 countries](#)
- [Industrial assets](#) on five continents
- A [fleet](#) of 28 vessels in operation and 8 more under construction
- 2012 operating income from recurring activities: €821.7 million
- [2012 revenues](#) of more than €8.2 billion
- Technip is listed on Euronext Paris (EURONEXT: FR0000131708)

Technip Worldwide

Main Locations in the World



- Operating centers
- Manufacturing plants (flexible pipelines)
- Manufacturing plants (umbilicals)
- Construction yard
- Services bases
- Spoolbases

Technip & Acumen History

- Technip started using Acumen Fuse in 2009.
- Acumen was officially incorporated into Technip North America's Schedule Review Procedure in 2010.
- Technip Schedule Review Procedure consists of the following:
 - Compliance with Technip standards of EPC schedule development
 - Compliance with PMBOK & AACE.
 - Technip follows Acumen Metrics [250] which include; PMI, AACE, DCMA, & others
- Technip has acquired the full Acumen Suite which has Acumen Risk.
- After a Technip/Acumen presentation in a conference in Brazil 2013, Technip Corporation has acquired over 25+ Acumen Licenses Globally.



Technip Subsea EPCI Schedule Analysis

Acumen Analysis on 11-Oct-12
Started at 4:15pm and lasting a total of
2hrs 20min



Recognizing the Need for Analysis

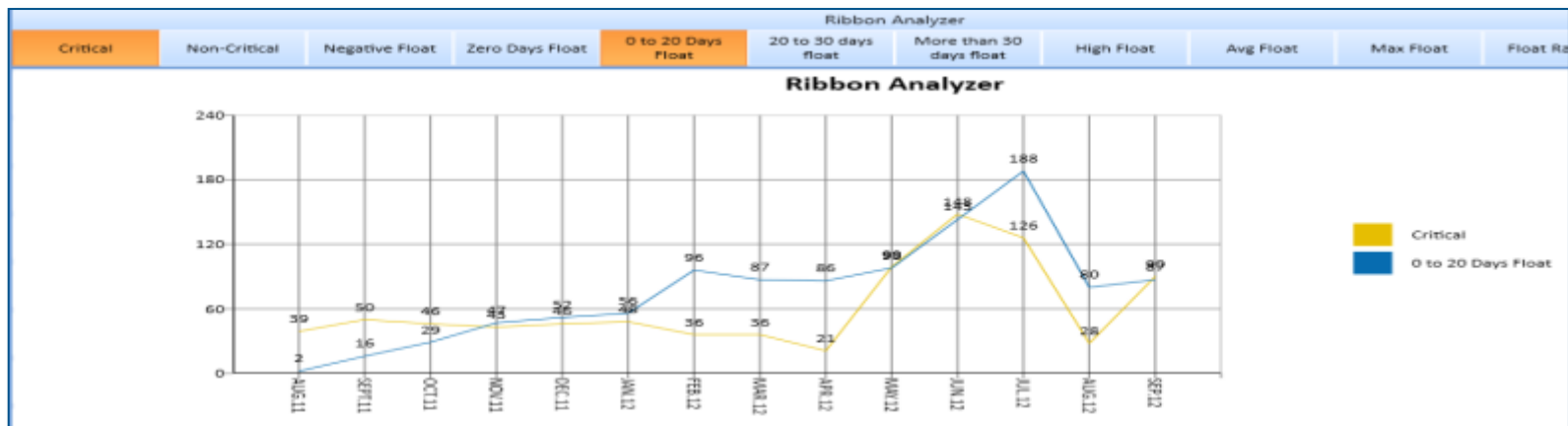
A full Subsea EPCI contract was awarded. As the project progressed, delays started occurring to the project which delayed Engineering Deliverables & began to impact Offshore Mobilization Date & Critical Equipment Delivery.

- Engineering Delays required forensic analysis of all possible impacts to these delays.
- Initial analysis provided belief that the client had impact to these delays.
- Upon further research the evidence was clear.
- **In order to support a change order, to prove the impact, the business unit required supporting details and analysis.**
- The initial attempt was to review the depletion of float, that was caused by the client.

Analyzing with Acumen

Once the need was recognized, a small peer group to explore the limitations of Acumen. Gathering all files, the business unit had to compare all project files to see how we could prove this.

- Acumen Phase Analyzer does not produce overlapping graphs over a timeline. This was confirmed by Acumen.
- Acumen recommendation was to export to Excel for further graph modifications
- The planner had saved all monthly updates as baselines. So as it was suggested that we take every baseline and compare as snapshots.
- With this we were able to emulate the graph functions out of Acumen as a timeline.
- See example below Float Ribbon Analyzer [count per time]



Implementing the Concept of Analysis

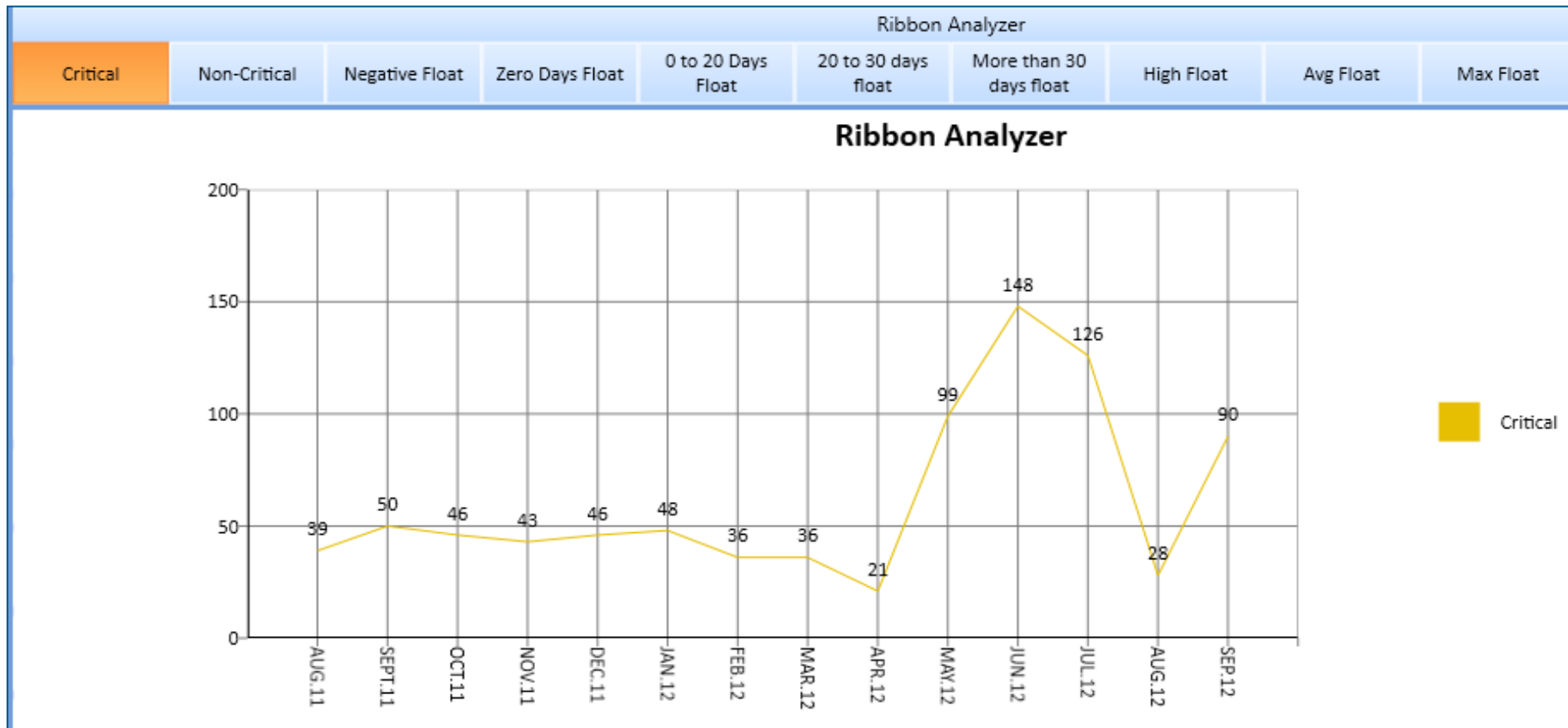
Each snapshot represented an updated cycle.

- In order to emulate this function we had to do the following:
 - Imported 14 XER files to Acumen, one for each month
 - XER name is then the time stamp
 - Then produced a comparison of multi files named as months.
 - Acumen gives a timescaled graph

Critical Float [count of activities]

Our immediate place to compare was the Float depletion & behavior.

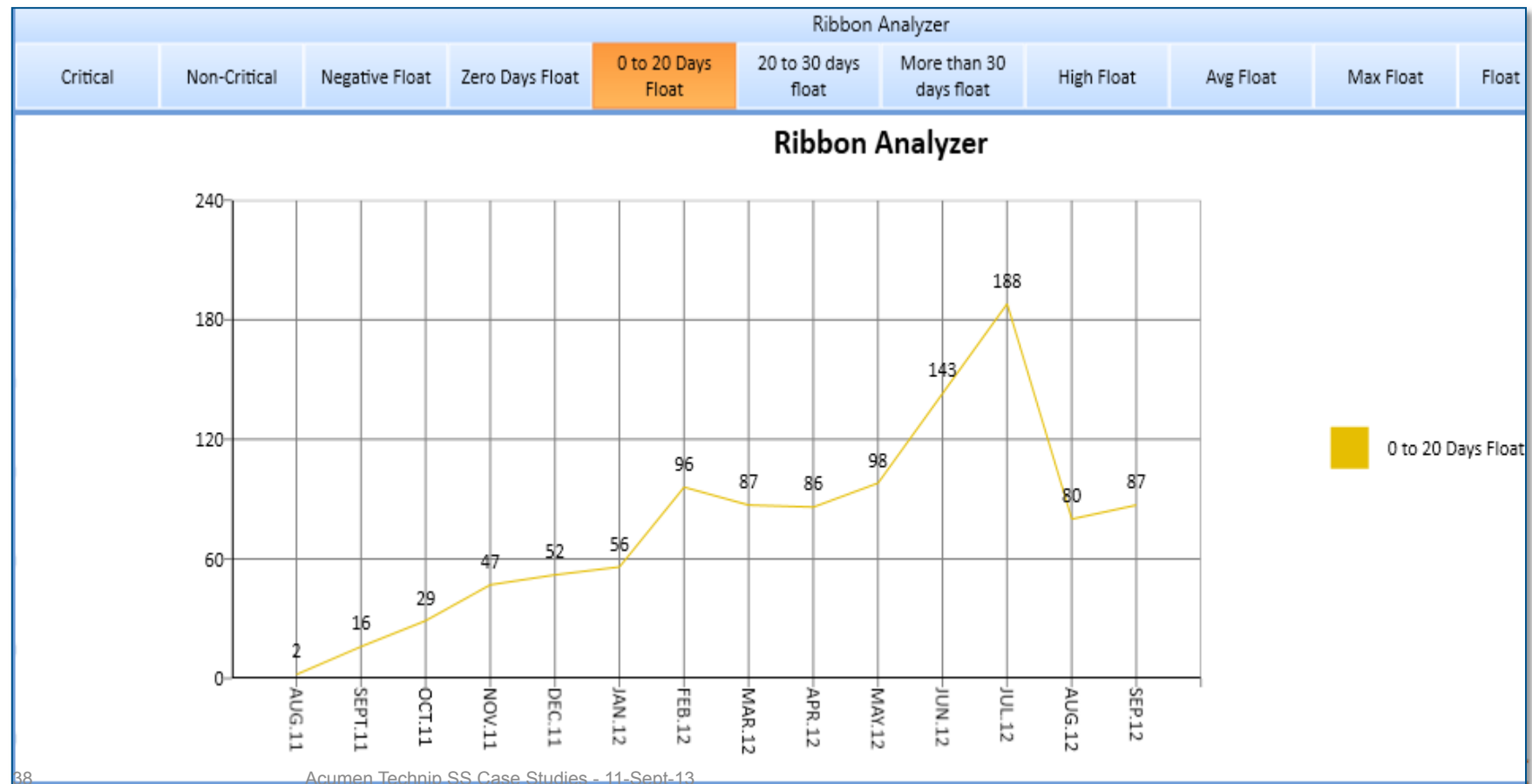
- As you can see in the example, there was a substantial jump in critical float count.
- Gave cause for further investigation



0 to 20 Days Float [count of activities]

Our next place to compare was further Float depletion & behavior.

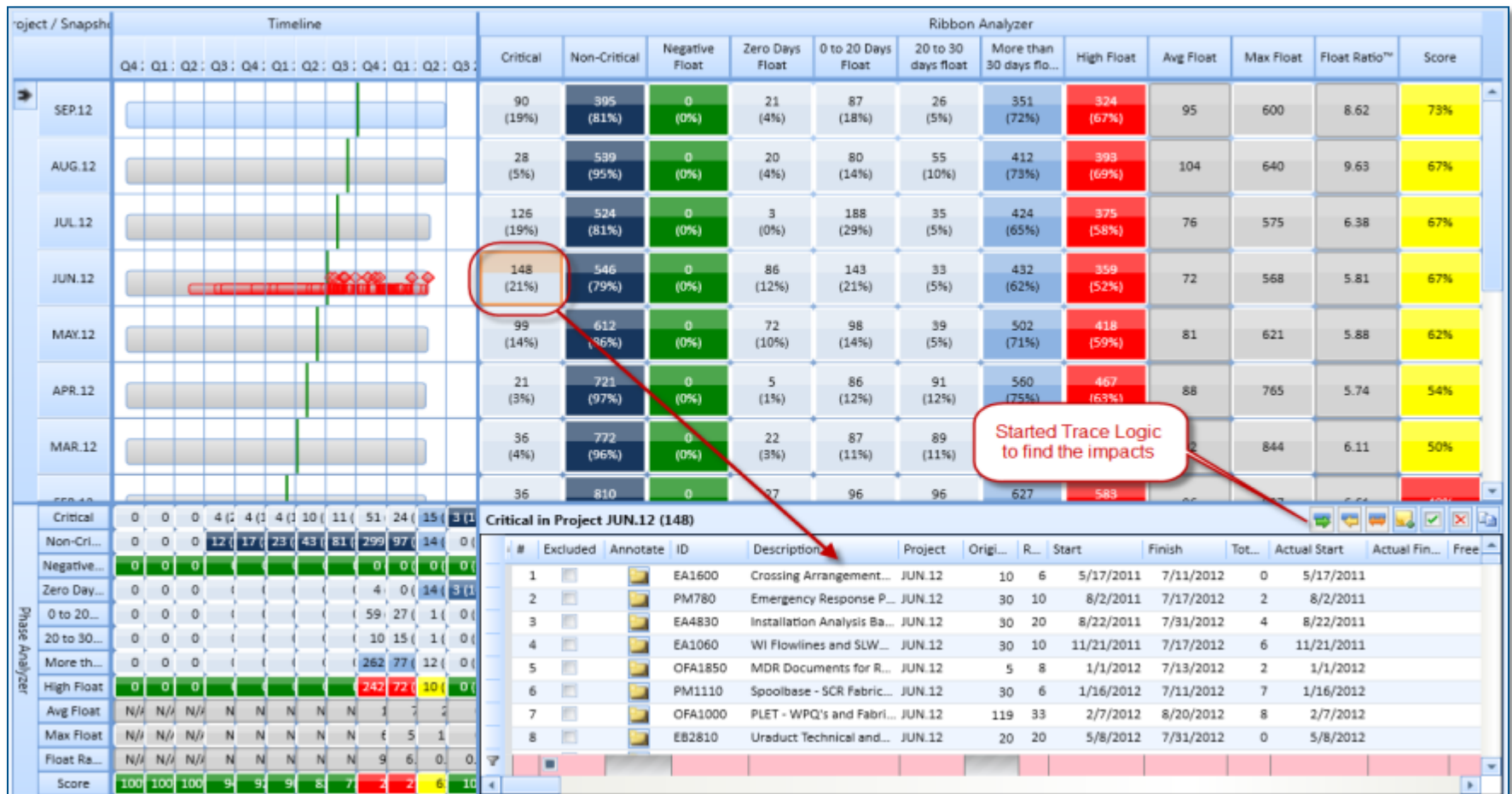
- 0 to 20 Days Float [count of activities] pulled up anomalies.



Ribbon & Trace Logic

Ribbon & Trace Logic allowed us to dissect indicators.

- Tracing the peak critical, then started looking at the IFC drawings.



Trace Logic Backwards Analysis

Trace Logic allowed us to dissect indicators.

- Here is where the indicator of Client Review cycles extended beyond contractual agreements.

Tracing Backwards: Installation Analysis Basis of Design - IFC (9)

Annotate	ID	Description	Project	Original D...	Re...	Start	Finish	Total Float	Actual Duration	Actual Start	Actual Finish	Fr
	A1230	Contract Award	JUN.12		0	0	11/8/2010	11/8/2010	0	0	11/8/2010	11/8/2010
	A1020	Deliverable Kickoff	JUN.12		0	0	1/1/2011	1/1/2011	0	0	1/1/2011	1/1/2011
	A1210	Project Team Kickoff	JUN.12		0	0	1/10/2011	1/10/2011	0	0	1/10/2011	1/10/2011
	EA4570	Mobilize Engineering Team	JUN.12		5	0	1/10/2011	1/14/2011	0	5	1/10/2011	1/14/2011
	EA4580	Assign Roles and Responsibilities	JUN.12		5	0	1/14/2011	1/20/2011	0	5	1/14/2011	1/20/2011
	EA4590	Begin Engineering Package Process	JUN.12		30	0	1/24/2011	3/3/2011	0	29	1/24/2011	3/3/2011
	EA4810	Installation Analysis Basis of Design - IFR	JUN.12		40	0	2/7/2011	3/24/2011	0	33	2/7/2011	3/24/2011
	EA4820	Installation Analysis Basis of Design - Client Review...	JUN.12		10	0	3/24/2011	8/19/2011	0	104	3/24/2011	8/19/2011
	EA4830	Installation Analysis Basis of Design - IFC	JUN.12		30	20	8/22/2011	7/31/2012	4	219	8/22/2011	

Client Review cycles contractually were 10 days but seen here took almost 5 months. As further researched almost all review cycles took beyond the contractual time.

Trace Logic Export to Excel

Trace Logic export to Excel allows for further analysis.

- Using Excel with combinations of Filters, Sorts, & Conditional Formatting allows us to find exact details.

Acumen Fuse® Analyst Report													
Subsea Schedule Analysis 11-Oct-12_3.19pm - 19696 Activities													
Float													
Created on:: 9/11/2013													
Created by:: cesramos													
SEP.12: Detailed View													
Critical													
Number of critical activities.													
Excluded	ID	Description	Original Duration	Start	Finish	Total Float	Finish Variance	Actual Duration	Duration Variance	Baseline Start	Baseline Finish	Actual Start	Actual Finish
FALSE	EA44	Anode Installation Procedure and ITP - Client Review / Approval	10.00	5/18/2012	10/11/2012	6	-100	91.00	-81.00	6/19/2012	7/3/2012	5/18/2012	
FALSE	EA42	Initiation Pile Installation Procedure - Client Review / Approval	10.00	6/18/2012	10/11/2012	10	-72	71.00	-61.00	7/17/2012	7/31/2012	6/18/2012	
FALSE	EA56	Sleepers Loadout Procedure- Client Review / Approval	10.00	10/4/2012	10/17/2012	6	0	0.00	10.00	10/4/2012	10/17/2012		
Non-Critical													
Number of non-critical activities.													
Excluded	ID	Description	Original Dur	Start	Finish	Total Float		Actual Duration	Duration Variance	Baseline Sta	Baseline Fir	Actual Sta	Actual Fini
FALSE	EA48	Production and WI Flowlines Normal Lay Installation Analysis	10.00	9/7/2011	10/11/2012	174	-387	269.00	-259.00	9/7/2011	9/20/2011	9/7/2011	
FALSE	EA44	Concrete Mattress Installation Procedure - Client Review / Approval	10.00	10/21/2011	10/11/2012	169	-342	236.00	-226.00	10/21/2011	11/4/2011	#####	
FALSE	EB10	ON1, ON2 Umbilicals Installation Analysis Report - Client Review / Approval	10.00	3/28/2012	10/11/2012	109	-182	128.00	-118.00	4/2/2012	4/12/2012	3/28/2012	
FALSE	PM1	COMPANY Items Handover Procedure - Client Review / Approval	10.00	4/4/2012	10/19/2012	169	-171	123.00	-113.00	4/17/2012	5/1/2012	4/4/2012	
FALSE	PM1	Logistics Plan for Offshore Operations - Client Review / Approval	10.00	5/15/2012	10/19/2012	169	-154	94.00	-84.00	5/7/2012	5/18/2012	5/15/2012	
FALSE	EA42	SLWR VIV Strakes Installation Procedure - Client Review / Approval	10.00	5/15/2012	10/11/2012	174	-121	94.00	-84.00	5/30/2012	6/12/2012	5/15/2012	
FALSE	EA43	Buoyancy Module Installation Procedure and ITP - Client Review / Approval	10.00	5/18/2012	10/11/2012	169	-121	91.00	-81.00	5/30/2012	6/12/2012	5/18/2012	
FALSE	EA47	SLWR VIV Fairings Installation Procedure - Client Review / Approval	10.00	5/23/2012	10/11/2012	169	-128	88.00	-78.00	5/21/2012	6/5/2012	5/23/2012	
FALSE	EB21	PIPE LAY VESSEL Umbilical Loadout and Transpooling Procedure	10.00	5/24/2012	10/11/2012	164	-141	87.00	-77.00	5/10/2012	5/23/2012	5/24/2012	
FALSE	EA43	Sleeper Installation Procedure - Client Review / Approval	10.00	5/30/2012	10/4/2012	10	-114	84.00	-74.00	5/30/2012	6/12/2012	5/30/2012	
FALSE	EB17	Flexible Jumpers Anodes Fabrication ITP - Client Review / Approval	10.00	7/10/2012	10/11/2012	39	-35	58.00	-48.00	8/22/2012	9/6/2012	7/10/2012	
FALSE	EB20	Umbilical Reel Loadout Procedure and ITP - Client Review / Approval	10.00	7/11/2012	10/11/2012	164	-48	57.00	-47.00	8/13/2012	8/24/2012	7/11/2012	
FALSE	EA41	Flowline and SLWR Installation Procedure and Work Plan	10.00	7/16/2012	10/11/2012	169	-76	53.00	-43.00	7/16/2012	7/27/2012	7/16/2012	
FALSE	EA58	WI & Production SLWRs Transfer Procedure to FPSO - Client Review / Approval	10.00	7/16/2012	10/11/2012	164	-76	53.00	-43.00	7/16/2012	7/27/2012	7/16/2012	
FALSE	EA59	WI & Production SLWRs Transfer Procedure to FPSO - Client Review / Approval	10.00	7/16/2012	10/11/2012	164	-76	53.00	-43.00	7/16/2012	7/27/2012	7/16/2012	
FALSE	EA62	WI SLWR Transfer Analysis Report - IFC	5.00	7/17/2012	10/5/2012	184	-72	52.00	-47.00	7/18/2012	7/25/2012	7/17/2012	
FALSE	EA41	Flowline and SLWR Installation Ctgy Procedure - Client Review / Approval	10.00	7/19/2012	10/11/2012	164	-76	50.00	-40.00	7/16/2012	7/27/2012	7/19/2012	
FALSE	PM1	Assemble As-Built TOC - IFR	5.00	7/23/2012	10/19/2012	139	-72	49.00	-44.00	8/1/2012	8/8/2012	7/23/2012	
FALSE	EB15	Flexible Jumper SIT Procedure - IFC	5.00	8/2/2012	10/15/2012	158	-62	40.00	-35.00	8/8/2012	8/14/2012	8/2/2012	
FALSE	OFB1	Flexible Jumper Bend Restrictors - Fabrication	44.00	8/6/2012	10/10/2012	20	-5	39.00	5.00	8/6/2012	10/5/2012	8/6/2012	

TECHNIP SUBSEA EPCI EARNED VALUE WORK ANALYSIS

Phase II of Analysis

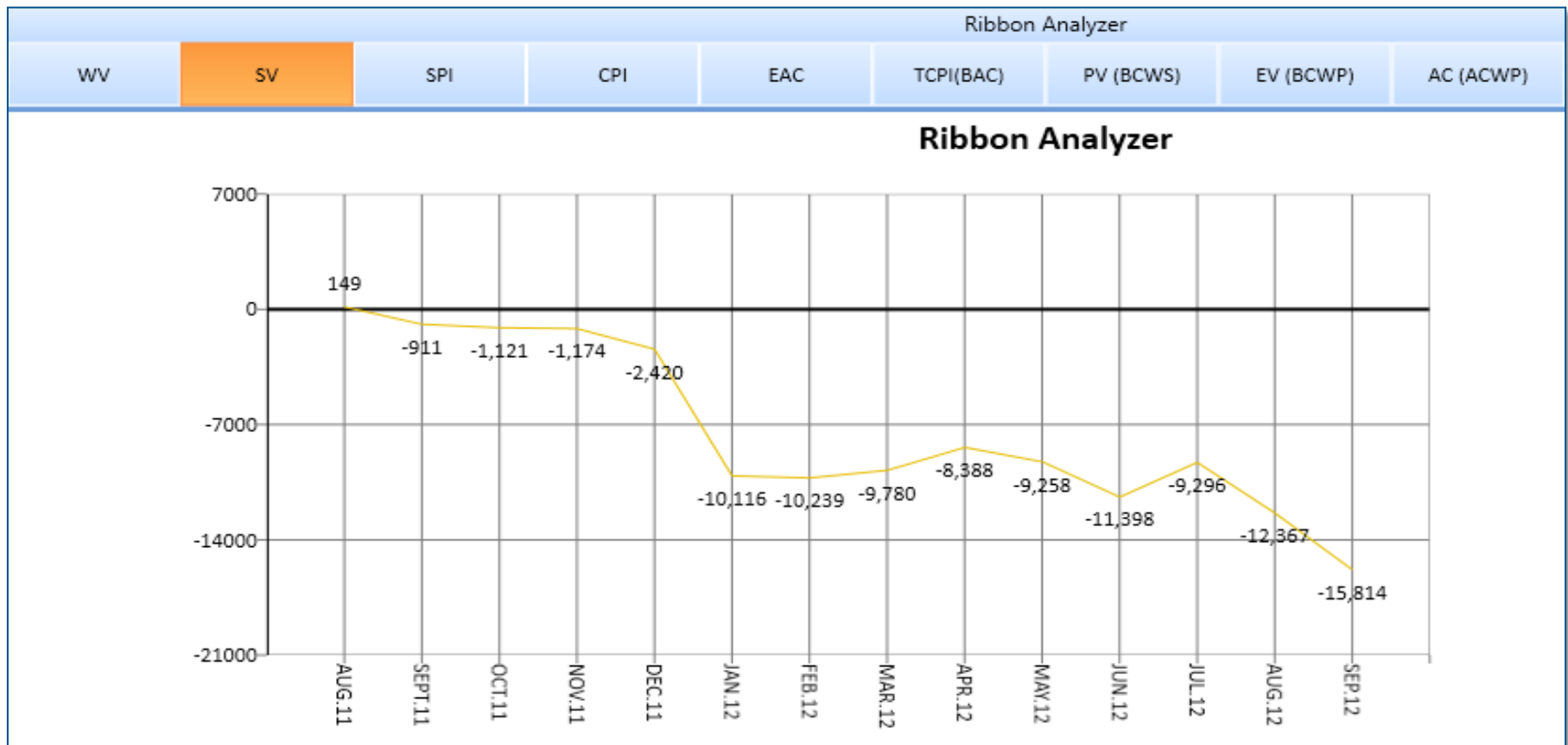
Utilizing the graphical impacts in Acumen we were able to begin researching detail impacts.



Earned Value Work Schedule Variance [EV-PV]

Schedule Variance provides a comparison of “where we planned to be” vs “where we really are”.

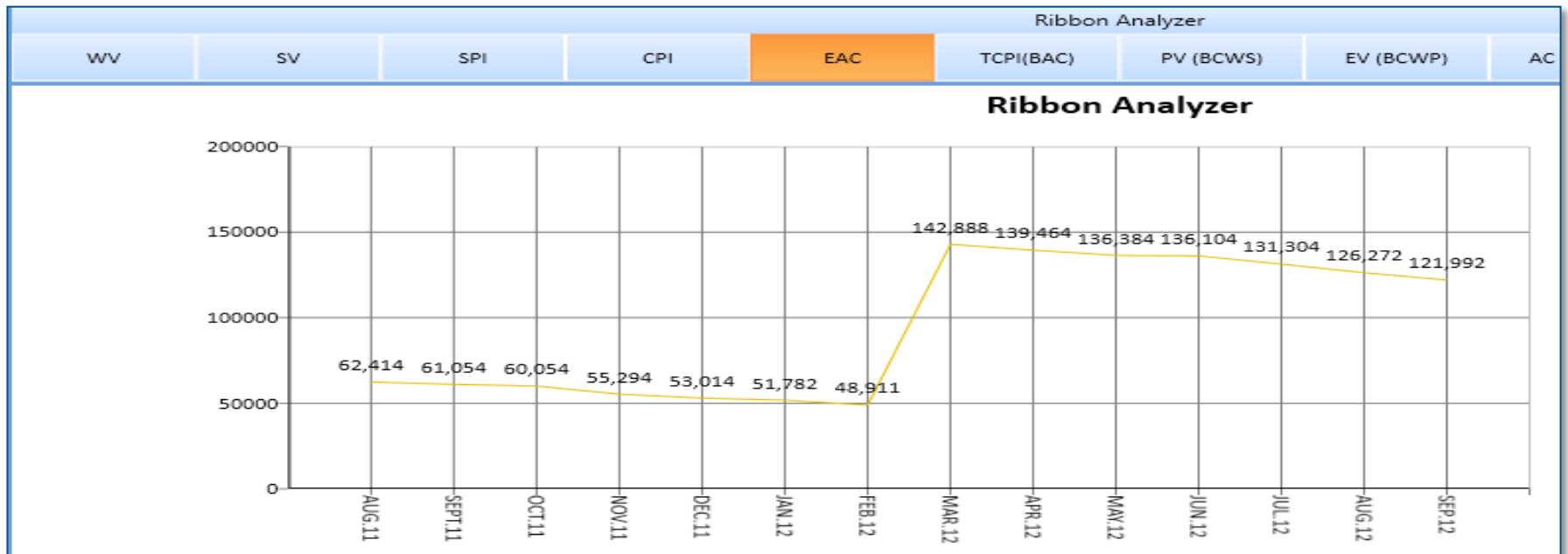
- Schedule Variance is using P6 values and is calculated as Earned minus Planned.
- This variance shows a disparity of slipping on planned dates and is used to calculate a recovery index.



Earned Value Work Estimate at Complete [EAC]

Estimate at Completion provides necessary forecasting.

- Estimate at Completion has 5 different calculations. However the most common is using the “Remaining to Earn + Actual Costs”. Acumen brings in the P6 calculation of EAC.
- Since the project is still in progression and has almost halfway remaining to complete, it is important to use current performance to provide a valid means of forecasting.
- This EAC can be used to forecast cost impacts where engineering delays, manufacturer delays due to held up specs & data sheets as well as the impact of delaying the Pipe Lay Vessel and what that equates to dollars.



Conclusion

As the results of the Float Analysis, Trace Logic Analysis, & Earned Value Work, we were able to determine a cost impact to these delays.

These cost impacts to support the change order was submitted up to contracts management for approval & submit to the client.

The analysis proven to be extremely useful & favorable.

The results still pending & confidential.

Demonstration and Questions