Enhancing Delivery Schedule Awareness

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Agenda

- ***About the Presenter***
- ***Introduction and Background***
- ***Conceptual Principle***
- ***How the Tool is Used***
- ***Tool's Features and Reports***
- ***What's Next?***

About the Presenter – Salvatore R Bruno

Salvatore Bruno has more than 30 years experience in systems development, consulting and leadership of enterprise technology solutions for the defense contracting, telecommunications, and consulting industries. He is a leading authority on the creation and use of metrics. He has developed more than 300 unique metric measurements as well as the processes to automate data entry and extraction activities. Mr. Bruno has also created innovative measurement programs, such as the Scalometer and Statoport, and invented new measurement concepts like QPI (Quality Performance Index).

As the Engineering Process and Measurement Group Lead for Lockheed Martin's Labs and Technical Services (L&TS), he is responsible for overseeing process measurement and improvement to enhance program management throughout the organization. Prior to L&TS, Mr. Bruno supported 100+ programs with measurement practices and procedures and process improvements for the Information Systems and Global Solutions - Defense Organization.

Before Lockheed Martin, Mr. Bruno was a software engineer at Lawrence Livermore National Laboratory, a project manager at Pacific Bell, and held various management positions at technology consulting companies such as Embarcadero Systems Corporation, InfoGain, and Idapta. He has an M.S. in Systems Management from University of Denver as well as a B.S. in Mathematics and Computer Science from California State University, Hayward.

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About the Presenter – Salvatore R Bruno

Artifacts and References

Metrics Maturity Stoplight Chart

Metrics Assessment Summary

Information Need	Metric Count	Identification	Prioritization	Standardization	Implementation	Optimization	% Complete
Risk	4	3	0	0	0	0	15.0%
Product Growth	12	9	9	9	9	6	70.0%
Process Compliance	3	2	0	0	0	0	13.3%
Cost	15	0	0	0	0	0	0.0%
Schedule	26	1	0	0	0	0	0.8%
Process Efficiency / Effectiveness	26	1	0	0	0	0	0.8%
Product Stability	9	0	0	0	0	0	0.0%
System Performance	29	29	29	29	29	23	95.9%
Product Quality	28	4	4	4	4	4	14.3%
Customer Satisfaction	10	1	0	0	0	0	2.0%
Total Metrics	162	50	42	42	42	33	
Percent Satisfied		30.9%	25.9%	25.9%	25.9%	20.4%	25.8%

Chart Legend

Metric Count	= A count of all known program indicators to be reported today or within the next 12 months.
Identification	= Program metric POCs accepts / acknowledges the indicators to be reported.
Prioritization	= Indicator supported by POC, has a defined life cycle range, and will be reported at a CPAR.
Standardization	= Indicator meets or exceeds the program standards/definitions and is documented in the QMP.
Implementation	= In operation/production and is tracked in the monthly program business rhythm.
Optimization	= Has Customer Satisfaction approval and/or meets/exceeds the process improvement guidelines.

Monthly Metrics Business Rhythm Stoplight Chart

CDRL A045 Metrics Summary Stoplight Chart - 67.8% Complete

Group Indicator Name	Data	Analysis	Verified	Remarks / Comments / Status
Cost and Schedule	2/13/2009	2/19/2009	2/19/2009	Not started
Requirements	2/9/2009	2/9/2009	2/19/2009	Segment done. Missing Common and External TCD metrics data and analysis.
Design	2/9/2009	2/19/2009	2/19/2009	Missing Network Design Metrics Data.
Test	2/9/2009	2/12/2009	2/19/2009	Data collected.
Productivity and Size	2/9/2009	2/9/2009	2/19/2009	Done
Quality	2/9/2009	2/11/2009	2/19/2009	Inspection metrics continue to lack
Hardware	No metrics at this time			
Technical Performance Measures	2/4/2009	2/9/2009	2/19/2009	Done
Critical Computer Resource	2/2/2009	2/9/2009	2/19/2009	Data and Analysis collected.
Training	2/2/2009	2/9/2009	2/19/2009	Data and Analysis collected.
Risk	2/2/2009	2/9/2009	2/19/2009	Done
Actual Percent Complete	78.3%	67.4%	53.8%	
Plan Percent Complete	90.3%	77.1%	0.0%	

Status Date 2-10-2009 as of 6:40:51 AM (PT)

Plan: 65.7%

Color Status Legend

- = Not started - No items delivered and Not past Due Date
- = All item delivered or started early delivery prior to scheduled Due Date
- = Not all items delivered and Due Date is today or Metric Coordinator intervened to collect dued items
- = Not all items delivered and past Due Date

QPI – Quality Performance Index

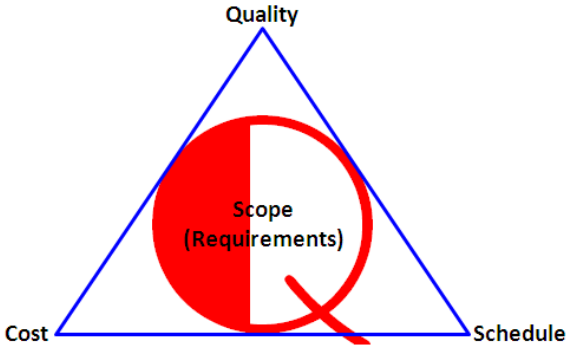
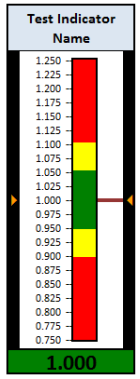


Figure 1 – The Iron Q Triangle

Statoport

Scalometer



Websites

Program Measurement Coordinators
https://eo-sharepoint-usonly-m.external.lmco.com/sites/P_M_C/SitePages/Home.aspx

OneSource Application
https://eo-sharepoint-usonly-m.external.lmco.com/sites/OneSource/SitePages/Home.aspx

Mindfray
http://www.mindfray.com/

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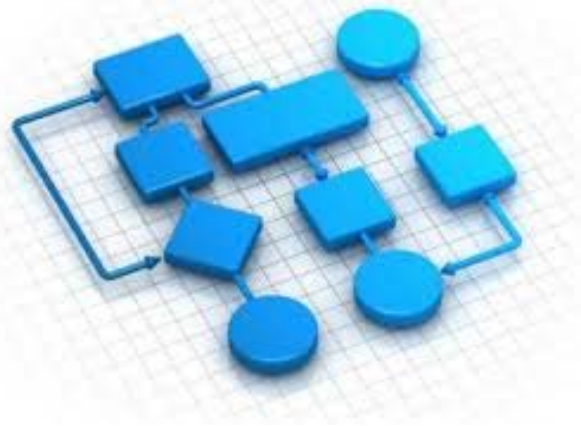
Introduction and Background

The ability to track and understand the progress and delivery of critical requirements packages, design documents, components, and work products as far in advance as possible is every Program Manager, Engineering Manager, Team Lead and Master Scheduler's dream. The secret to achieving this highly sought of capability is to provide team members a simple, easy to use, measurement status tool that program and project schedulers as well as leaders can compare the completed work against the baseline plan to approximate future event milestones dates.



The Delivery Schedule Indicator and Stoplight Chart Metric will be presented that demonstrates how team leads and team members work together to set-up and maintain this simple tool that can status a lower level of detail at a higher level of reporting as a forward looking key performance indicator to help leaders be more proactive than reactive in meeting and fulfilling customer deliverable deadlines.

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Introduction and Background

History:

- ***March 2011: Application started as a tool improve delivery of CDRLs (IS&GS – Defense)***

Program XYZ Manufacturing Delivery Schedule Stoplight Report

Status	Work Product	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Delta Days	Delta %
		Requirements		Development		Inspection		Board Approval		Delivery Date			
	WP01		01/31/11		04/11/11		06/10/11		07/30/11	08/18/11	08/19/11	-1	-0.50%
		Requirements		Development		Inspection		Board Approval		Delivery Date			
	WP02		02/13/11		04/20/11		06/14/11		07/28/11	08/12/11	08/12/11	0	0.00%
		Requirements		Development		Inspection		Board Approval		Delivery Date			
	WP03		05/25/11		06/29/11		08/01/11		08/23/11	08/31/11	09/02/11	-2	-2.00%
		Requirements		Development		Inspection		Board Approval		Delivery Date			
	WP04		06/21/11		07/23/11		08/17/11		09/01/11	09/08/11	09/09/11	-1	-1.25%
				Part Order Made		Installation		Integration Test		Delivery Date			
	WP05				05/15/11		06/29/11		07/04/11	07/28/11	07/29/11	-1	-1.33%
				Part Order Made		Installation		Integration Test		Delivery Date			
	WP06				04/22/11		06/05/11		06/09/11	07/01/11	07/01/11	0	0.00%
						Part Order Made		Integration Test		Delivery Date			
	WP07						04/30/11		06/09/11	06/29/11	06/29/11	0	0.00%
						Part Order Made		Integration Test		Delivery Date			
	WP08						04/02/11		05/10/11	05/26/11	05/27/11	-1	-1.82%
						Part Order Made		Integration Test		Delivery Date			
	WP09						04/05/11		05/05/11	05/19/11	05/20/11	-1	-2.22%
						Part Order Made		Integration Test		Delivery Date			
	WP10						04/03/11		05/03/11	05/12/11	05/13/11	-1	-2.50%
						Part Order Made		Integration Test		Delivery Date			
	WP11						04/01/11		04/26/11	05/05/11	05/06/11	-1	-2.86%
						Part Order Made		Integration Test		Delivery Date			
	WP12						04/03/11		04/25/11	05/03/11	05/03/11	0	0.00%
						Part Order Made		Integration Test		Delivery Date			
	WP13						04/07/11		04/25/11	05/02/11	05/02/11	0	0.00%
										Delivery Date			
										Delivery Date			

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Introduction and Background

History:

- ***December 2016: Application enhanced to monitor and track project/program deliverables. Improvements include:***
  - ✓ ***Tool Instructions (New)***
  - ✓ ***Tool Configuration / Set-Up screen (New)***
  - ✓ ***User Data Entry Screen (Enhanced)***
  - ✓ ***Stoplight Chart Reporting (New)***
  - ✓ ***Time Series Indicator (New)***
  - ✓ ***Increased usefulness, reliability, ease of use, and more***

Drivers:

- ***PSM Conference!***
- ***Organization Change – Seeking new or enhance measurement reporting indicators across more diverse and different simulation laboratories development and sustainment efforts.***

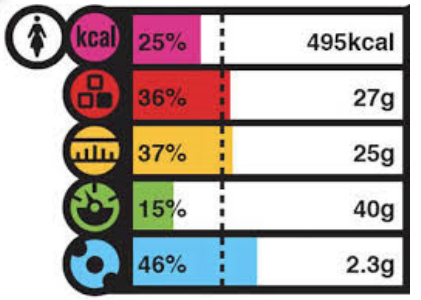
Enhancing Delivery Schedule Awareness

Conceptual Principle

- ***An independent and alternative perspective of project progress and accomplishments***
- ***Minimum effort to maintain – little or no added workload for team members to status activities***
- ***Integrates easily into existing delivery methodologies***

- ***No training necessary – simple to use***

- ***Instantaneous results – measurement status***



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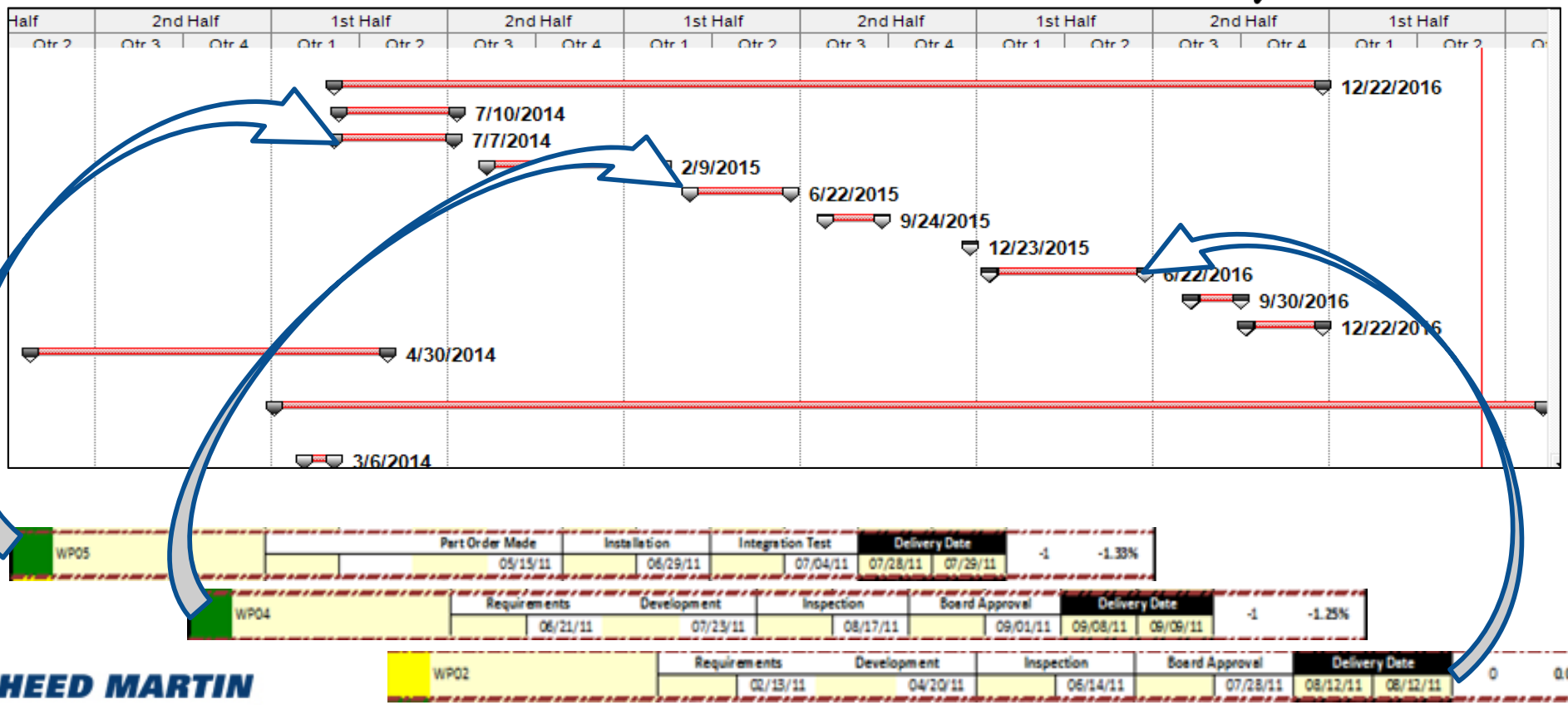
Enhancing Delivery Schedule Awareness

Conceptual Principle

- ***An independent and alternative perspective of project progress and accomplishments***



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Enhancing Delivery Schedule Awareness

Conceptual Principle

- ***Minimum effort to maintain – little or no added workload for team members to status activities***
  - ➢ ***Tracking entries are only:***
    - ✓ ***Completion Dates***
    - ✓ ***Days adjustment***

Program XYZ Manufacturing Widget Work Product Delivery Schedule Performance Progress

#	Status	Work Product	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	+/- Days	Anticipated	Actual	Planned	Delta Days	Delta %
1		WP01					Requirements 04/05/17	03/23/17	Board Approval	06/30/17	-12.000	Delivery Date 08/16/17		08/15/17	1.000	99.00%
2		WP02	Requirements	01/12/17	Development	03/23/17	Inspection	05/18/17	Board Approval	07/11/17		Delivery Date 08/15/17		08/15/17	0.000	100.00%
3		WP03	Requirements	04/12/18	Development	06/01/18	Inspection	07/19/18	Board Approval	08/20/18		Delivery Date 09/03/18		09/03/18	0.000	100.00%
4		WP04	Requirements	07/02/18	Development	07/24/18	Inspection	08/21/18	Board Approval	09/05/18		Delivery Date 09/12/18		09/12/18	0.000	100.00%
5		WP05			Part Order Made	04/11/19	Installation	06/14/19	Integration Test	06/21/19		Delivery Date	07/15/19	07/29/19	-10.000	113.33%
6		WP06			Part Order Made	03/28/18	Installation	05/30/18	Integration Test	06/05/18		Delivery Date 07/06/18		07/06/18	0.000	100.00%
7		WP07					Part Order Made	04/05/17	Integration Test	06/01/17		Delivery Date 06/29/17		06/29/17	0.000	100.00%
8		WP08					Part Order Made	03/09/18	Integration Test	05/02/18		Delivery Date 05/25/18		05/25/18	0.000	100.00%

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Conceptual Principle

- ***Integrates easily into existing delivery methodologies***
  - ***Stand-a-lone application/tool***
  - ***Can expedite creation of Project Schedule/Plan***
  - ***Tracks actual progress and deviation percentage***

Work Project Plan Events

– Provides key milestone (i.e. Checkpoint Event) for Project Plan
– Utilizes Reverse Engineering/End-to-Start Principle

#	Work Product	Milestone Names and Lead Times									
		Duration	Last Delivery Event	Lead Time	Prior Delivery Event	Lead Time	Prior Delivery Event	Lead Time	First Delivery Event	Lead Time
5	WP05	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		75	Integration Test	25	Installation	5	Part Order Made	45		
6	WP06	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		70	Integration Test	22	Installation	4	Part Order Made	44		

Data Entry

– Each work product is an independent critical path (future improvement area)
– Anticipate Delivery Date and Delta Days and Percentage are automatically calculated

Program XYZ Manufacturing Widget Work Product Delivery Schedule Performance Progress

#	Status	Work Product	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	+/- Days	Anticipated	Actual	Planned	Delta Days	Delta %
5		WP05			Part Order Made		Installation		Integration Test		Delivery Date				-10.000	113.33%
						04/11/19		06/14/19		06/21/19			07/15/19	07/29/19		
6		WP06			Part Order Made		Installation		Integration Test		Delivery Date				0.000	100.00%
						03/28/18		05/30/18		06/05/18		07/06/18		07/06/18		

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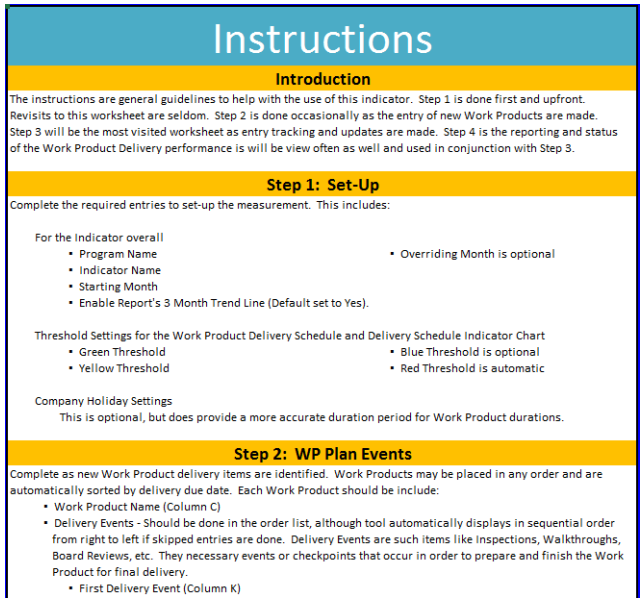
Enhancing Delivery Schedule Awareness

Conceptual Principle

- ***No training necessary – simple to use***
  - ***Excel application/tool – no training needed***
  - ***General tool instructions provided***
  - ***Data validation and worksheet protection insures added reliability and easy of use***



Instructions

Introduction

The instructions are general guidelines to help with the use of this indicator. Step 1 is done first and upfront. Revisits to this worksheet are seldom. Step 2 is done occasionally as the entry of new Work Products are made. Step 3 will be the most visited worksheet as entry tracking and updates are made. Step 4 is the reporting and status of the Work Product Delivery performance is will be view often as well and used in conjunction with Step 3.

Step 1: Set-Up

Complete the required entries to set-up the measurement. This includes:

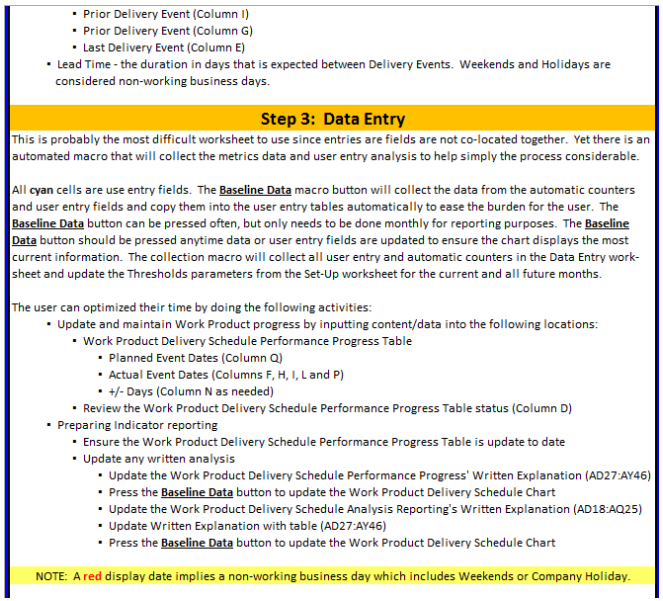
For the Indicator overall
- Program Name
- Indicator Name
- Starting Month
- Enable Report's 3 Month Trend Line (Default set to Yes).
- Overriding Month is optional

Threshold Settings for the Work Product Delivery Schedule and Delivery Schedule Indicator Chart
- Green Threshold
- Yellow Threshold
- Blue Threshold is optional
- Red Threshold is automatic

Company Holiday Settings
This is optional, but does provide a more accurate duration period for Work Product durations.

Step 2: WP Plan Events

Complete as new Work Product delivery items are identified. Work Products may be placed in any order and are automatically sorted by delivery due date. Each Work Product should be include:
- Work Product Name (Column C)
- Delivery Events - Should be done in the order list, although tool automatically displays in sequential order from right to left if skipped entries are done. Delivery Events are such items like Inspections, Walkthroughs, Board Reviews, etc. They necessary events or checkpoints that occur in order to prepare and finish the Work Product for final delivery.
  - First Delivery Event (Column K)
  - Prior Delivery Event (Column I)
  - Prior Delivery Event (Column G)
  - Last Delivery Event (Column E)
- Lead Time - the duration in days that is expected between Delivery Events. Weekends and Holidays are considered non-working business days.



Step 3: Data Entry

This is probably the most difficult worksheet to use since entries are fields are not co-located together. Yet there is an automated macro that will collect the metrics data and user entry analysis to help simply the process considerable.

All **cyan** cells are use entry fields. The **Baseline Data** macro button will collect the data from the automatic counters and user entry fields and copy them into the user entry tables automatically to ease the burden for the user. The **Baseline Data** button can be pressed often, but only needs to be done monthly for reporting purposes. The **Baseline Data** button should be pressed anytime data or user entry fields are updated to ensure the chart displays the most current information. The collection macro will collect all user entry and automatic counters in the Data Entry work-sheet and update the Thresholds parameters from the Set-Up worksheet for the current and all future months.

The user can optimized their time by doing the following activities:
- Update and maintain Work Product progress by inputting content/data into the following locations:
  - Work Product Delivery Schedule Performance Progress Table
    - Planned Event Dates (Column Q)
    - Actual Event Dates (Columns F, H, I, L and P)
    - +/- Days (Column N as needed)
  - Review the Work Product Delivery Schedule Performance Progress Table status (Column D)
- Preparing Indicator reporting
  - Ensure the Work Product Delivery Schedule Performance Progress Table is update to date
  - Update any written analysis
    - Update the Work Product Delivery Schedule Performance Progress' Written Explanation (AD27:AY46)
    - Press the **Baseline Data** button to update the Work Product Delivery Schedule Chart
    - Update the Work Product Delivery Schedule Analysis Reporting's Written Explanation (AD18:AQ25)
    - Update Written Explanation with table (AD27:AY46)
    - Press the **Baseline Data** button to update the Work Product Delivery Schedule Chart

NOTE: A red display date implies a non-working business day which includes Weekends or Company Holiday.

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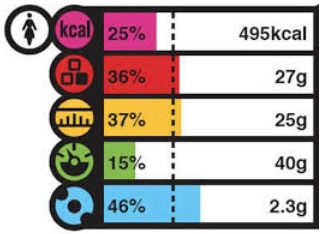
Enhancing Delivery Schedule Awareness

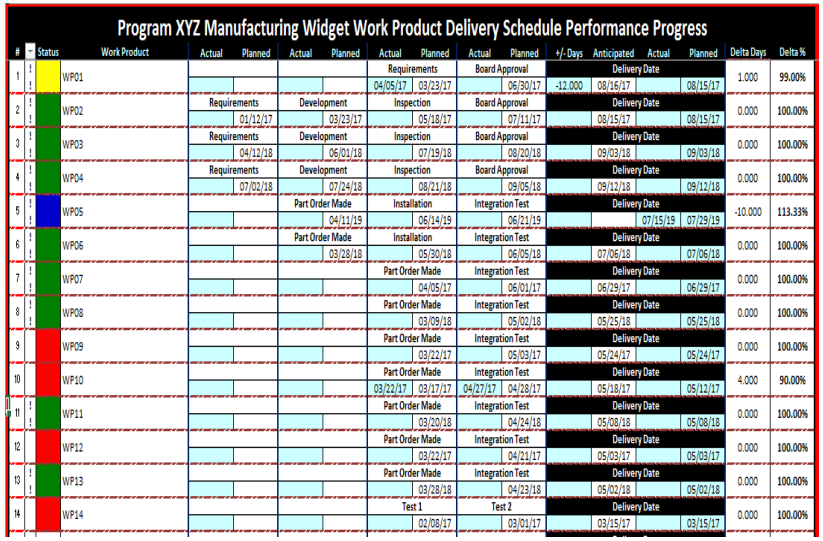
Conceptual Principle

- ***Instantaneous results – measurement status***



Data Entry Worksheet

–Provides automatic instant status of active work products to team members

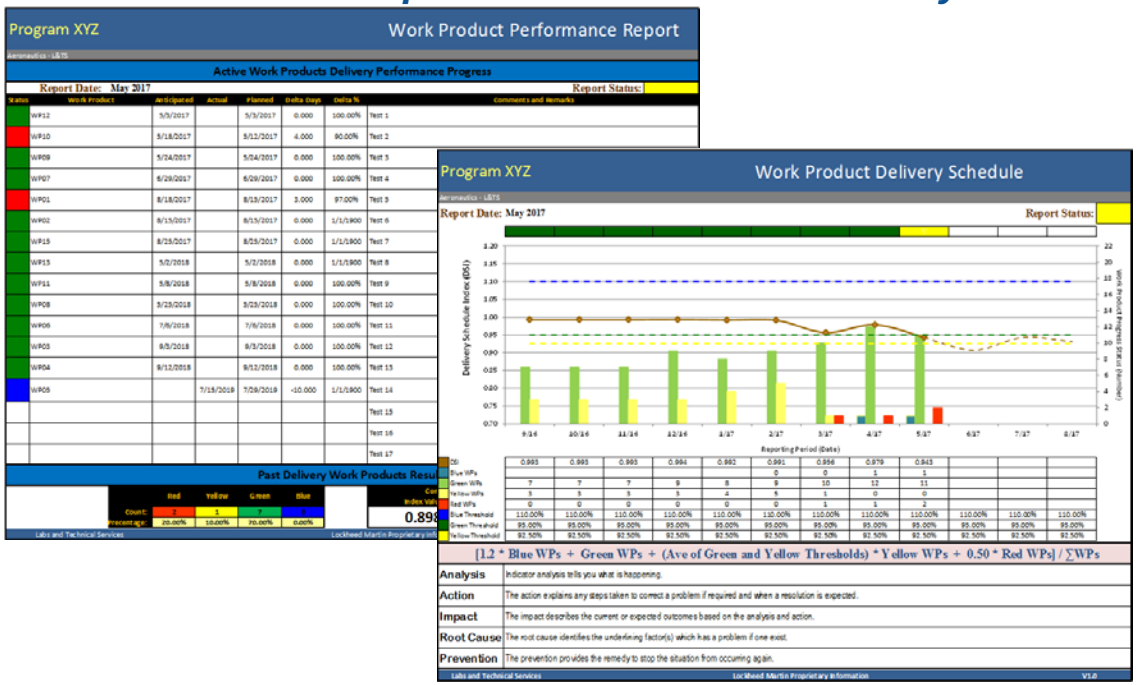


#	Status	Work Product	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	+/- Days	Anticipated	Actual	Planned	Delta Days	Delta %
1		WP01					Requirements		Board Approval			Delivery Date			1.000	99.00%
							04/05/17	03/23/17		06/30/17	-12.000	08/16/17		08/15/17		
2		WP02	Requirements		Development		Inspection		Board Approval			Delivery Date			0.000	100.00%
			01/12/17			03/23/17		05/18/17		07/11/17		08/15/17		08/15/17		
3		WP03	Requirements		Development		Inspection		Board Approval			Delivery Date			0.000	100.00%
				04/12/18		06/01/18		07/19/18		08/20/18		09/03/18		09/03/18		
4		WP04	Requirements		Development		Inspection		Board Approval			Delivery Date			0.000	100.00%
				07/02/18		07/24/18		08/21/18		09/05/18		09/12/18		09/12/18		
5		WP05			Part Order Made		Installation		Integration Test			Delivery Date			-10.000	113.33%
						04/11/19		06/14/19		06/21/19			07/15/19	07/29/19		
6		WP06			Part Order Made		Installation		Integration Test			Delivery Date			0.000	100.00%
						03/28/18		05/30/18		06/05/18		07/06/18		07/06/18		
7		WP07					Part Order Made		Integration Test			Delivery Date			0.000	100.00%
								04/05/17		06/01/17		06/29/17		06/29/17		
8		WP08					Part Order Made		Integration Test			Delivery Date			0.000	100.00%
								03/09/18		05/02/18		05/25/18		05/25/18		
9		WP09					Part Order Made		Integration Test			Delivery Date			0.000	100.00%
								03/22/17		05/03/17		05/24/17		05/24/17		
10		WP10					Part Order Made		Integration Test			Delivery Date			4.000	90.00%
							03/22/17	03/17/17	04/27/17	04/28/17		05/18/17		05/12/17		
11		WP11					Part Order Made		Integration Test			Delivery Date			0.000	100.00%
								03/20/18		04/24/18		05/08/18		05/08/18		
12		WP12					Part Order Made		Integration Test			Delivery Date			0.000	100.00%
								03/22/17		04/21/17		05/03/17		05/03/17		
13		WP13					Part Order Made		Integration Test			Delivery Date			0.000	100.00%
								03/28/18		04/23/18		05/02/18		05/02/18		
14		WP14					Test 1		Test 2			Delivery Date			0.000	100.00%
								02/08/17		03/01/17		03/15/17		03/15/17		

Reporting Worksheet

–Provides monthly progress status reports to Managers

–Macro button captures and baselines monthly data



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How the Tool is Used

- *Tool has a 4 step process of operation*
  - *Step 1: Set-up/configure the delivery schedule tool for use*
  - *Step 2: Identify work products and establish critical checkpoint events*
  - *Step 3: Data enter progress during the development*
  - *Step 4: Report measurement status to senior management*

Enhancing Delivery Schedule Awareness

How the Tool is Used

- ***Step 1: Set-up/configure the delivery schedule tool for use***
  - ***Indicator Settings***
    - *Program Name*
    - *Indicator Name*
    - *Trend Line Enable*
    - *Reporting Date (automatic with override for past report viewing)*
  - ***Threshold Settings***
    - *WP Delivery Stoplight Chart*
    - *Delivery Schedule Indicator*
  - ***Company Holidays***
    - *Improves the accuracy of work product duration and due dates. Weekends and dates listed in this section are none working days.*

Program Name:	Program XYZ	Reporting Month:	May 2017	NOTE: By default, the "Reporting Month" is the previous month for the current calendar month. The user my override the default.
Indicator Name:	Manufacturing Widget			
Starting Month:	December 2014	Override Reporting Month:		
Enable Report's 3 Month Trend Line to display:	Yes			

Threshold Settings

For Work Product Delivery Schedule

These thresholds establish the performance rating color code status reporting for each individual Work Product delivery item.

	Percent	Description	Possibe Error Message
Blue:	110.00%	Optional: Exceeding expectations - percentage value ahead of schedule. (Greater than this setting)	
Green:	100.00%	Required: Satisfying expectations - percentage ahead of or behind of schedule. > Yellow value	
Yellow:	99.00%	Required: Warning, lower range of satisfying expectations of being behind schedule delivery plan.	
Red:	< 99.00%	Automatic: Unacceptable, not satisfying expectations. Less than Yellow percentage value.	

For Delivery Schedule Indicator Chart

These thresholds establish the performance rating color code status reporting for each the all active Work Product delivery items.

	Percent	Description	Possibe Error Message
Blue:	110.00%	Optional: Sets upper green and lower blue boundaries. Exceptional satisfactory performance rating.	
Green:	95.00%	Required: Sets upper yellow and lower green boundaries. Satisfactory acceptable performance ratin	
Yellow:	92.50%	Required: Sets red and lower yellow boundaries. Lowest acceptable performance rating.	
Red:	< 92.50%	Automatic: This is set based on the Yellow Percent entry. The unacceptable performance range.	

Company Holiday Settings

Company Holiday Name		Date							
		2014	2015	2016	2017	2018	2019	2020	2021
Mandated Company Holidays	News Year Day	1/1/2014	1/1/2015	1/1/2016	1/2/2017	1/1/2018	1/1/2019		
	Memorial Day	5/26/2014	5/25/2015	5/30/2016	5/29/2017	5/28/2018	5/27/2019		
	Independence Day	7/4/2014		7/4/2016	7/4/2017	7/4/2018	7/4/2019		
	Labor Day	9/1/2014	9/7/2015	9/5/2016	9/4/2017	9/4/2018	9/3/2019		
	Thanksgiving Day	11/27/2014	11/26/2015	11/24/2016	11/23/2017	11/29/2018	11/22/2019		
	Day After Thanksgiving	11/28/2014	11/27/2015	11/25/2016	11/24/2017	11/30/2018	11/23/2019		
	Christmas Day	12/25/2014	12/25/2015		12/25/2017	12/25/2018			
Additional Company Holidays	Christmas Eve	12/24/2014	12/24/2015			12/24/2018			
	Shutdown Day 1	12/26/2014	12/28/2015	12/23/2016	12/26/2016	12/26/2018			
	Shutdown Day 2	12/29/2014	12/29/2015	12/27/2016	12/27/2017	12/27/2018			
	Shutdown Day 3	12/30/2014	12/30/2015	12/28/2016	12/28/2017	12/28/2018			
	Shutdown Day 4	12/31/2014	12/31/2015	12/29/2016	12/29/2017	12/31/2018			
	Shutdown Day 5			12/30/2016	7/3/2017				
	Shutdown Day 6			12/31/2016					

Set-Up Worksheet

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How the Tool is Used

- ***Step 2: Identify work products and establish critical checkpoint events***
  - ***Work Product Name***
    - *100 entries permitted*
  - ***Event Name***
    - *4 critical checkpoint entries allowed*
    - *Left (last event) to Right (first event)*
    - *Duration (in days) needed prior to reaching this event (how long or lead time)*
  - ***Tip or Suggestion***
    - *Should be done prior to or in conjunction with the creation of the Project Plan*

#	Work Product	Milestone Names and Lead Times							
		Duration	Last Delivery Event	Lead Time	Prior Delivery Event	Lead Time	Prior Delivery Event	Lead Time	First Delivery Event	Lead Time
1	WP01	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		100	Board Approval	30					Requirements	70
2	WP02	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		150	Board Approval	25	Inspection	35	Development	40	Requirements	50
3	WP03	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		100	Board Approval	10	Inspection	22	Development	33	Requirements	35
4	WP04	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		50	Board Approval	5	Inspection	10	Development	20	Requirements	15
5	WP05	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		75	Integration Test	25	Installation	5	Part Order Made	45		
6	WP06	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		70	Integration Test	22	Installation	4	Part Order Made	44		
7	WP07	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		60	Integration Test	20	Part Order Made	40				
8	WP08	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		55	Integration Test	17	Part Order Made	38				
9	WP09	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		45	Integration Test	15	Part Order Made	30				
10	WP10	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		40	Integration Test	10	Part Order Made	30				
11	WP11	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		35	Integration Test	10	Part Order Made	25				
12	WP12	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		30	Integration Test	8	Part Order Made	22				
13	WP13	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		25	Integration Test	7	Part Order Made	18				
14	WP14	Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
		25	Test 2	10			Test 1	15		
15		Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days
16		Days	Event Name	Days	Event Name	Days	Event Name	Days	Event Name	Days

WP Plan Events Worksheet

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How the Tool is Used

- ***Step 3: Data enter progress during the development***
  - ***Planned Date***
    - *Expected due/delivery date*
    - *Complete once prior step done*
  - ***+/- Days***
    - *Adjustment of advancements or delays of upcoming Event*
  - ***Actual***
    - *Left (first) to Right (last)*
    - *Enter date as they complete*
  - ***Auto Update***
    - *Anticipated Due Date*
    - *Planned Event Dates*
    - *Delta Days*
    - *Delta Percent*

Program XYZ Manufacturing Widget Work Product Delivery Schedule Performance Progress

#	Status	Work Product	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	+/- Days	Anticipated	Actual	Planned	Delta Days	Delta %
1		WP01					Requirements 04/05/17	03/23/17	Board Approval	06/30/17	-12.000	Delivery Date 08/16/17		08/15/17	1.000	99.00%
2		WP02	Requirements	01/12/17	Development	03/23/17	Inspection	05/18/17	Board Approval	07/11/17		Delivery Date 08/15/17		08/15/17	0.000	100.00%
3		WP03	Requirements	04/12/18	Development	06/01/18	Inspection	07/19/18	Board Approval	08/20/18		Delivery Date 09/03/18		09/03/18	0.000	100.00%
4		WP04	Requirements	07/02/18	Development	07/24/18	Inspection	08/21/18	Board Approval	09/05/18		Delivery Date 09/12/18		09/12/18	0.000	100.00%
5		WP05			Part Order Made	04/11/19	Installation	06/14/19	Integration Test	06/21/19		Delivery Date	07/15/19	07/29/19	-10.000	113.33%
6		WP06			Part Order Made	03/28/18	Installation	05/30/18	Integration Test	06/05/18		Delivery Date 07/06/18		07/06/18	0.000	100.00%
7		WP07					Part Order Made	04/05/17	Integration Test	06/01/17		Delivery Date 06/29/17		06/29/17	0.000	100.00%
8		WP08					Part Order Made	03/09/18	Integration Test	05/02/18		Delivery Date 05/25/18		05/25/18	0.000	100.00%
9		WP09					Part Order Made	03/22/17	Integration Test	05/03/17		Delivery Date 05/24/17		05/24/17	0.000	100.00%
10		WP10					Part Order Made 03/22/17	03/17/17	Integration Test 04/27/17	04/28/17		Delivery Date 05/18/17		05/12/17	4.000	90.00%
11		WP11					Part Order Made	03/20/18	Integration Test	04/24/18		Delivery Date 05/08/18		05/08/18	0.000	100.00%
12		WP12					Part Order Made	03/22/17	Integration Test	04/21/17		Delivery Date 05/03/17		05/03/17	0.000	100.00%
13		WP13					Part Order Made	03/28/18	Integration Test	04/23/18		Delivery Date 05/02/18		05/02/18	0.000	100.00%
14		WP14					Test 1	02/08/17	Test 2	03/01/17		Delivery Date 03/15/17		03/15/17	0.000	100.00%

Data Entry Worksheet

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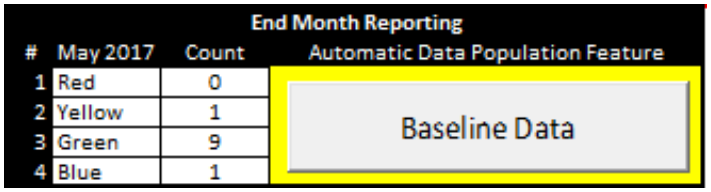
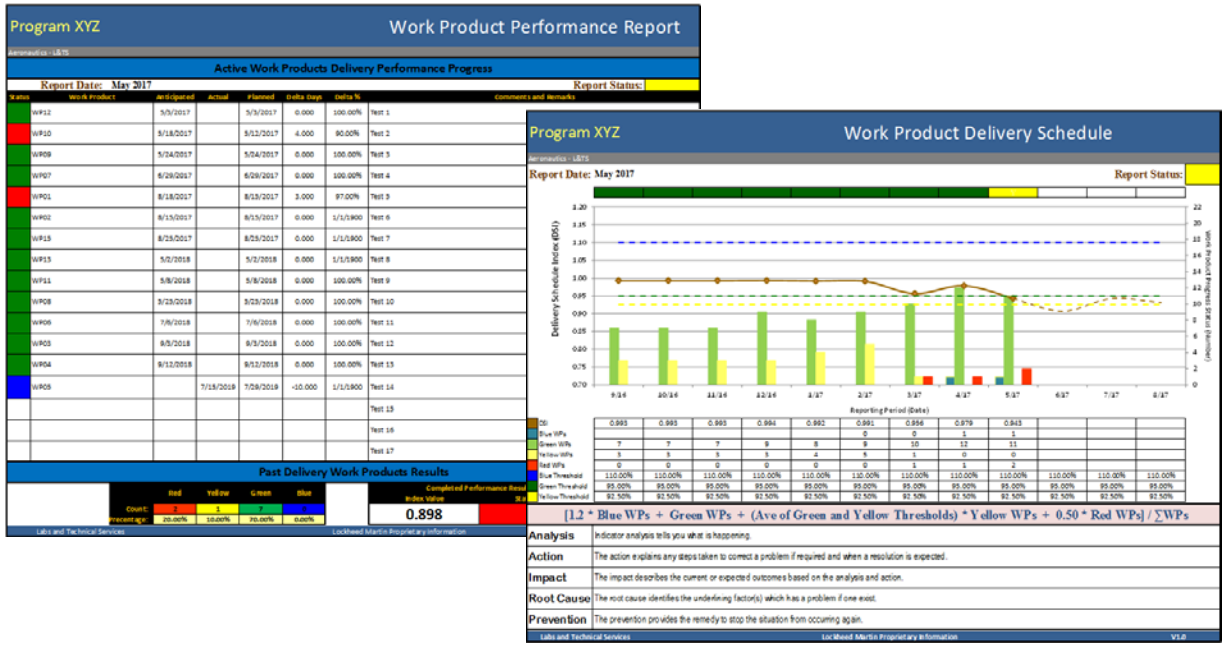
How the Tool is Used

- ***Step 4: Report measurement status to senior management***
  - ***Baseline Data***
    (Data Entry Worksheet)
    - *Macro Button*
    - *Collects data and analyst info*
  - ***Reports***
    - *WP Delivery Stoplight Chart*
    - *Delivery Schedule Indicator*
    - *Can capture report image and paste into a PowerPoint presentation file*



Data Entry Worksheet



Reporting Worksheet

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Tool's Features and Reports

- ***Set-Up Worksheet:***
  - ***Threshold Values – Ensures threshold percentages are reasonable and acceptable: Blue (optional) > green > yellow > red (automatic)***
- ***WP Plan Events Worksheet:***
  - ***Automatically sorts and allows for gaps in Event Names***
  - ***Leftmost is last event***
- ***Data Entry Worksheet:***
  - ***Weekends and identified company Holidays date entries are displayed red***
  - ***Anticipated Delivery Date is automatically calculated based on latest Event completion date and any days adjustment (+/- Days)***
  - ***Work Products are automatically sorted and place in order of final delivery date – early due dates first and latest due dates last***
  - ***Measurement data is automatically summarized for reporting purposes***
  - ***Measurement data and analysis explanations are automatically collected and baselined***
- ***Reporting Worksheet:***
  - ***Completely automatic***

Enhancing Delivery Schedule Awareness

What's Next?

- ***Complete field testing:***
  - ***6 Projects are currently experimenting with the tool***
  - ***Collect feedback, both good and bad to make tool better***
  - ***Determine effectiveness and usefulness***
- ***Incorporate more automatic features:***
  - ***WP Plan Events Worksheet – Days duration must be greater than zero (0)***
  - ***Instructions Worksheet – Add additional guidance and directions per findings and user feedback***

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