

# Integrating Schedule and Risk - A Powerful Management Combination

Creating an Integrated Master Schedule (IMS) is a critical step in planning a successful program. Equally as important is determining the program risks. Integrating the two together, however, is a step that is frequently not accomplished – Why? Because until now, it was a labor-intensive process to link and maintain multiple schedule and risk databases, and the tools did not exist to help efficiently accomplish this task.

## IMS and Risk...Interrelated and Integrated

*The process of creating and managing an integrated schedule and risk process is really two tasks integrated into one....*

## The Integrated Master Schedule (IMS)

The IMS is the single integrated schedule addressing the entire program executability. Particularly when tied to the EVMS analyses, the IMS becomes an invaluable management tool.

ID	Outline	Activities	Days	Start	End	2000											
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
274	5.3	A/C #1 ground tests completed	117 days	2/25/00	8/9/00	[Gantt Chart]											
275	5.3.1	A/C #1 Received	1 day	3/22/00	3/22/00	[Gantt Chart]											
276	5.3.2	A/C #1 modification completed	117 days	2/25/00	8/9/00	[Gantt Chart]											
277	5.3.2.1	A/C #1 Prep Complete	7 days	3/23/00	3/29/00	[Gantt Chart]											
278	5.3.2.1.1	A/C #1 baseline defined	5 days	3/23/00	3/29/00	[Gantt Chart]											
279	5.3.2.1.2	Perform A/C #1 mod preparation completed	1 day	3/31/00	3/31/00	[Gantt Chart]											
280	5.3.2.2	A-Ki install procedures completed	45 days	2/25/00	4/27/00	[Gantt Chart]											
281	5.3.2.3	A/C #1 Gp A installed	70 days	4/28/00	8/7/00	[Gantt Chart]											
282	5.3.2.4	A/C #1 Gp B installed	5 days	6/26/00	6/30/00	[Gantt Chart]											
283	5.3.2.5	A/C #1 T2 (test instrumentation) package install	41 days	6/13/00	8/9/00	[Gantt Chart]											
284	5.3.2.5.1	Instrumentation requirements finalized	5 days	6/13/00	6/19/00	[Gantt Chart]											
285	5.3.2.5.2	A/C #1 T2 integration design (aic and pallet) fin	2 days	6/20/00	6/21/00	[Gantt Chart]											
286	5.3.2.5.3	A/C #1 T2 modification completed	2 days	8/9/00	8/9/00	[Gantt Chart]											
287	5.4	Ground Test Readiness Review Conducted	1 day	8/10/00	8/10/00	[Gantt Chart]											

## Microsoft Project™ enables a disciplined approach to Integrated Master Schedule development

Properly done, the IMS becomes the key management vehicle for providing insight into virtually all areas of the program:

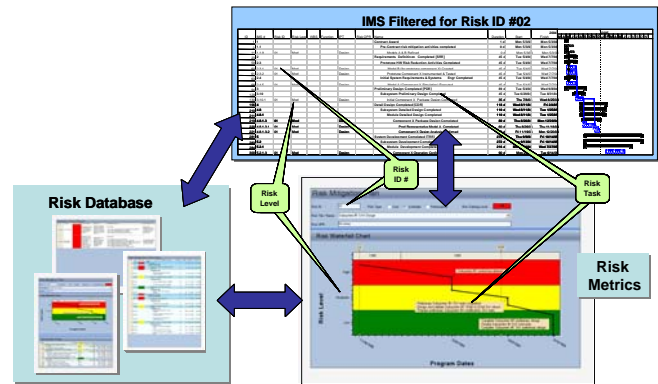
- Facilitates effective program communication through a common database for both Government and Contractor
- Outlines specific accomplishments and success criteria at each program milestone
- Establishes traceability and ensures integration between the program WBS, Statement of Work, and Technical Specifications
- Enhances cost & schedule integrity by enabling verifiable progress measurement (traceable to EVMS)

*In addition, the IMS can be the key enabler to a really integrated view of program risk management.*

## Integrated Risk Management

Risk avoidance is naïve—risk management is reality! Program risks must be identified upfront and included in a thorough risk management plan, which tracks to the IMS. Software tools now exist, which provide an efficient and real-time link between the risk planning/mitigation/monitoring process and the IMS. Using these tools, risk mitigation task tracking remains automatically

correlated to the IMS and virtually eliminates the traditionally labor intensive effort to build waterfall charts.

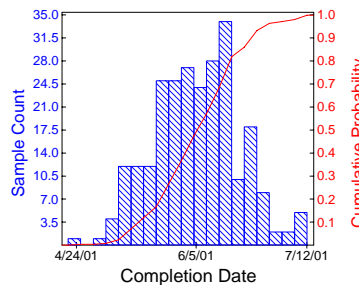


## Software tools link Risk Planning and the IMS

Using schedule risk assessment tools such as Risk+™ is an excellent technique to quantify the impacts of risk. Used in conjunction with critical path analysis, significantly enhanced total program insight is achieved.

Date: 1/27/99 3:38:13 AM  
 Number of Samples: 250  
 Unique ID: 4983  
 Name: Production go-ahead meeting conducted

Completion Std Deviation: 10.1d  
 95% Confidence Interval: 1.2d  
 Each bar represents 3d.



Completion Probability Table

Prob	Date	Prob	Date
0.05	5/10/01	0.55	6/7/01
0.10	5/16/01	0.60	6/11/01
0.15	5/18/01	0.65	6/11/01
0.20	5/22/01	0.70	6/13/01
0.25	5/24/01	0.75	6/14/01
0.30	5/25/01	0.80	6/15/01
0.35	5/30/01	0.85	6/19/01
0.40	5/31/01	0.90	6/22/01
0.45	6/4/01	0.95	6/27/01
0.50	6/5/01	1.00	7/12/01

## Risk+™ is an excellent tool to evaluate schedule risk

This tool offers the ability to manage risk during schedule development and quantify results. Risk parameters for each task may be entered, evaluated, re-examined, and restructured as a result of on-going risk assessments during program development.

## About The Author...

Bill Buzzell is a Senior Associate with Dayton Aerospace, Inc. He has an engineering and program management background with over 34 years experience in government and industry

Contact Bill Buzzell at:  
[bill.buzzell@daytonaero.com](mailto:bill.buzzell@daytonaero.com)  
 (937) 426-4300