Achieving Project Management Excellence Using Practical Desktop Applications

North Alabama PMI Chapter
Professional Development Symposium

October 15, 2004

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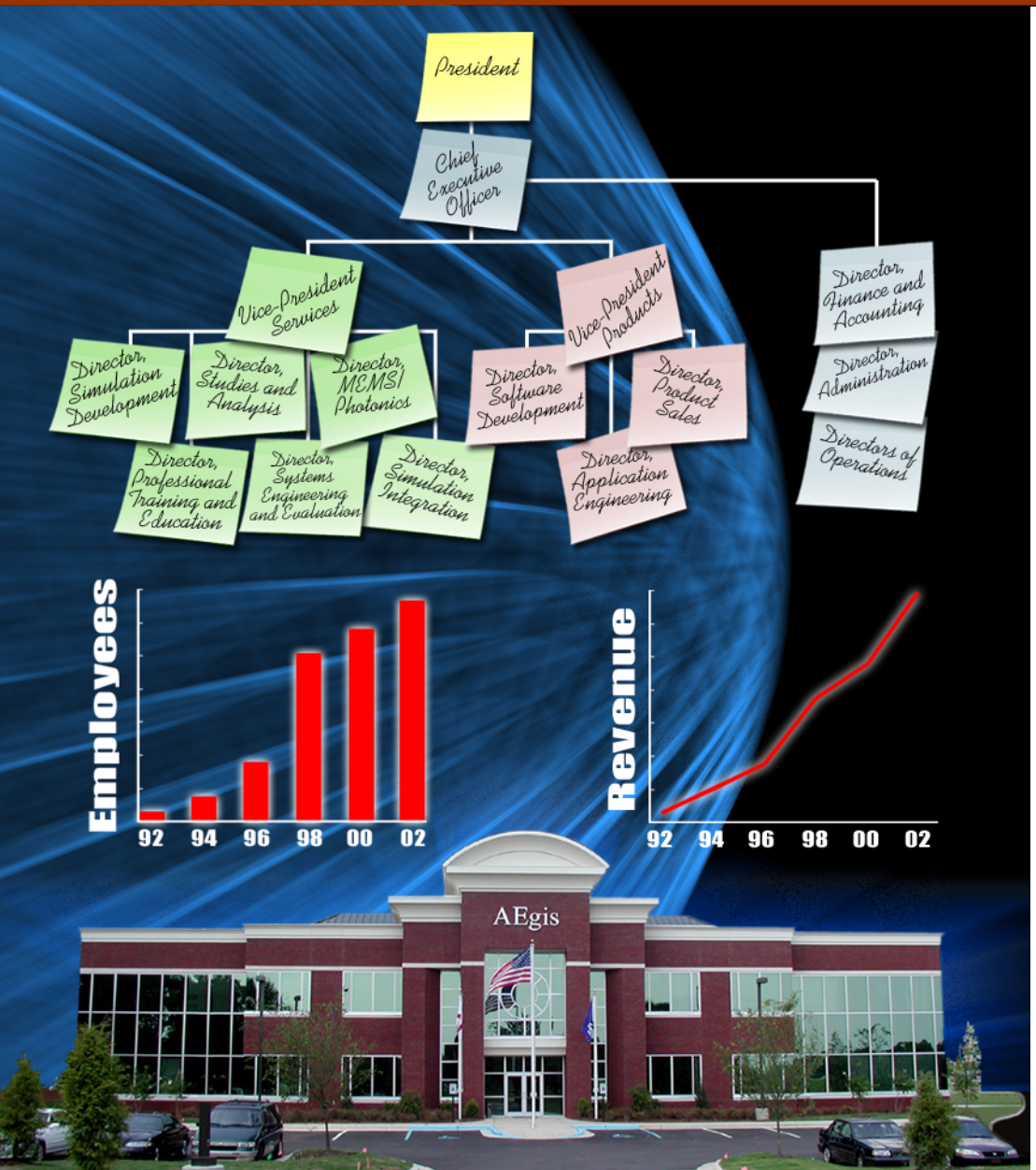
AEgis TECHNOLOGIES

Agenda

- Corporate Introduction
- Abstract
- PM Challenges
- PM COTS Software
- AEgis PM Lifecycle
- Application of MS Office Products
- Management Effectiveness
- Summary
- Author

Corporate Introduction



AEgis Technologies is a small business established in 1988 to provide world-class modeling and simulation technical services, products, and professional training.

Corporate Headquarters are located in Huntsville, Alabama, with additional offices in six U.S. cities and Canada.

AEgis Technologies has been recognized three times on INC Magazine's "INC 500" list of the fastest growing privately held companies in America.

AEgis was recently named to the *Military Training Technology* Top 100 List of companies that have made significant contributions to the military training industry.

Over the past 14 years, the AEgis employee population has grown by an average of 20% per year to our current employment of 150+ professionals.

Revenues have steadily increased to the current $28 million in sales.

Corporate Introduction
- Office Locations -

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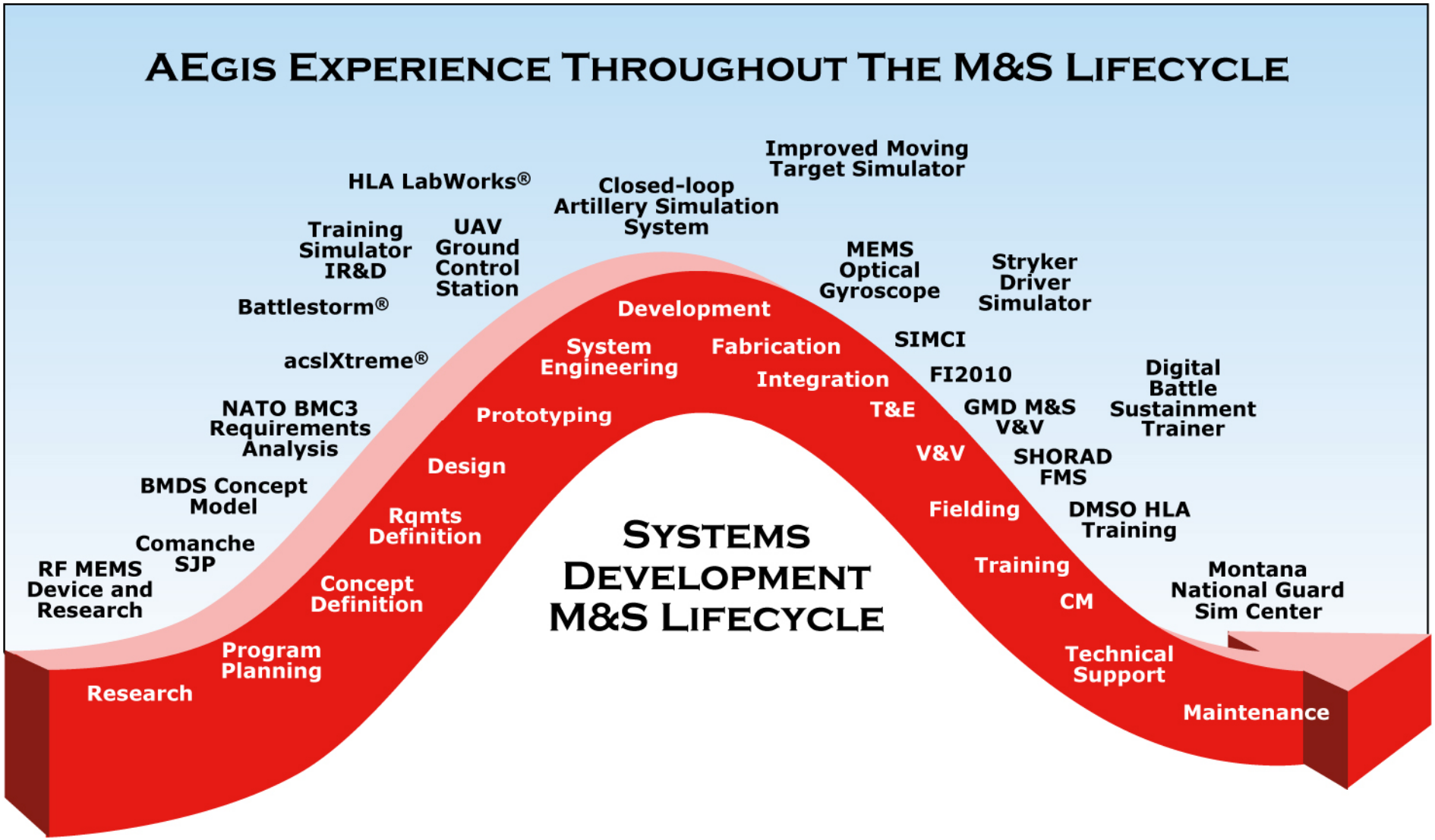
Corporate Introduction
- Expertise in the M&S Lifecycle -

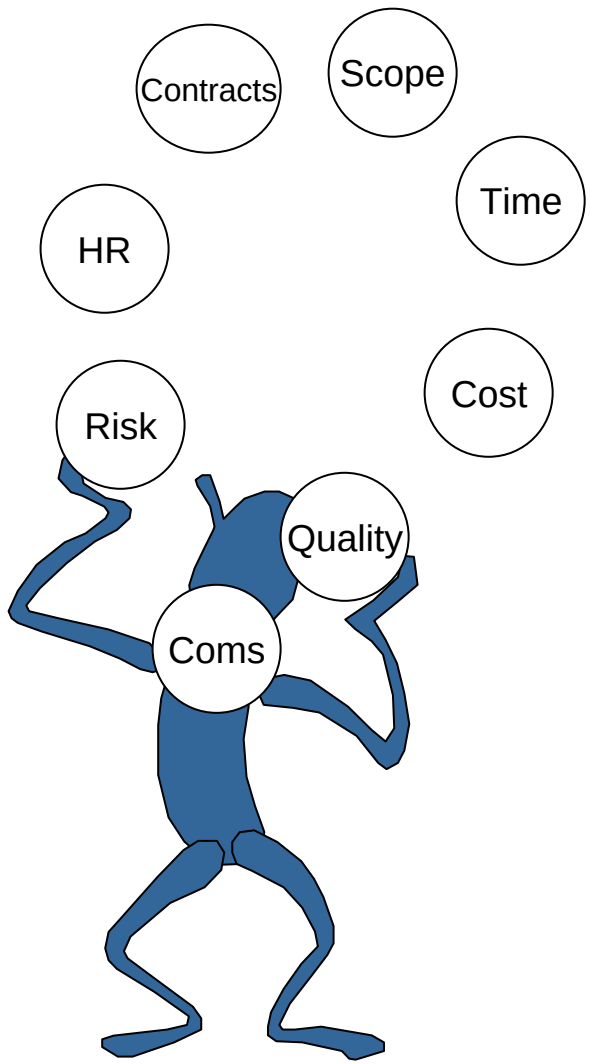


Presentation Abstract

From back of the envelope calculations to fully automated project management dashboard software applications, project management practices vary across companies and industries. For companies, especially small businesses, that can't afford a fully automated project management system, **are there reliable management practices that can be complimented with practical desktop software applications?** Can they in turn be used to provide systematic project management in order to improve the company's overall performance? Yes! The Project Management Institute (PMI) has provided reliable management practices that have been documented in the Project Management Body of Knowledge (PMBOK). **The practical implementation of these practices using common Microsoft Office applications will be the focus of this presentation.** AEgis Technologies has successfully implemented this approach within its corporate enterprise management operations to provide a **common project management practice regardless of contract type or value.** AEgis' process and practice to project management will be presented in a practical manner for application to your projects within your organization. **Management of the triple constraint, risks, action items, configuration management, and earned values analysis can all be planned, tracked, and forecasted using simple desktop applications and the PMBOK.** Management from the strategic plan to final project closeout, an affordable, practical, reliable management practice can be implemented within your company.

PM Challenges

- Scheduling – task estimation
- Budgeting – cost estimation and burn rate
- Scope – requirements creep
- Resources – load leveling
- Risk – assess and mitigate
- Communication – distributed project teams



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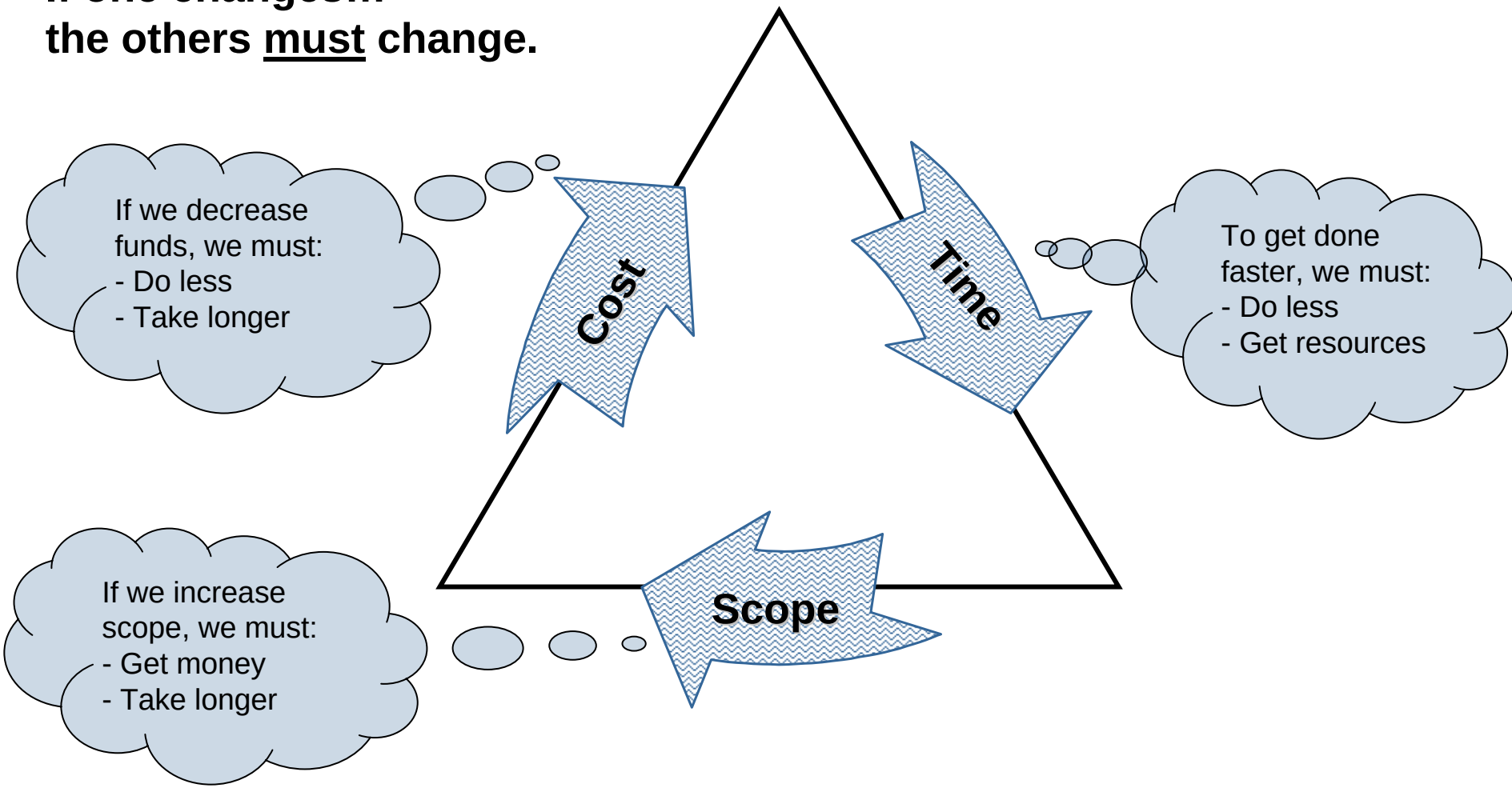
PM Challenges
- Triple Constraint -

If one changes…
the others must change.



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PM Challenges
- Information Access -

- Access to the **right information** in the **right amount of time**
  - In time to make adjustments and react
  - In time to apply additional resources
  - In time to “crash” the schedule to not impact the critical path
  - In time to implement risk mitigation strategy
  - In time to manage customer expectations
  - ……..

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PM COTS Software
- Information Access -

- As a result of the criticality of information access needed to effectively manage a project, software applications have been developed to provide almost instant access to the information.
- Enterprise management solutions have provided the underlying infrastructure to give PM's access to the information.
- But, what is the COST?

PM COTS Software
- COTS Vendors -

- Primavera Systems Inc (www.primavera.com)
- Hyperion Solutions Corp (www.hyperion.com)
- PRICE Systems (www.pricesystems.com)
- Niku Corp (www.niku.com)
- PeopleSoft (www.peoplesoft.com)
- PlanView (www.planview.com)
- Dekker Ltd. (www.dekkerltd.com)
- Rational Concepts (www.rationalconcepts.com)

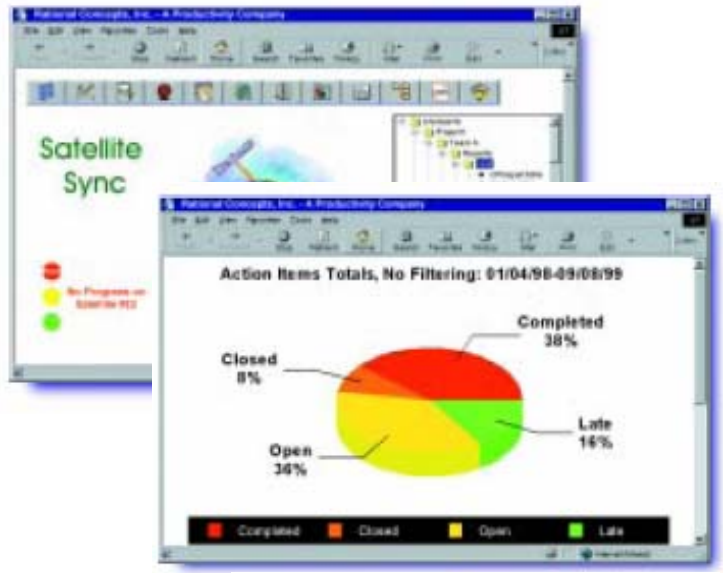
COSTS - $5K – $100K and up

Source: PM Network, June 2004, pg 35

PM COTS Software
- Product Analysis -

Cost / Benefit Analysis

- How fast do I need the information?
- How do I need to communicate the information?
- What can I afford for SW automation?
- What will it cost without SW automation?
- How will it impact other areas in my company?
- What is the learning curve?
- What else is there?

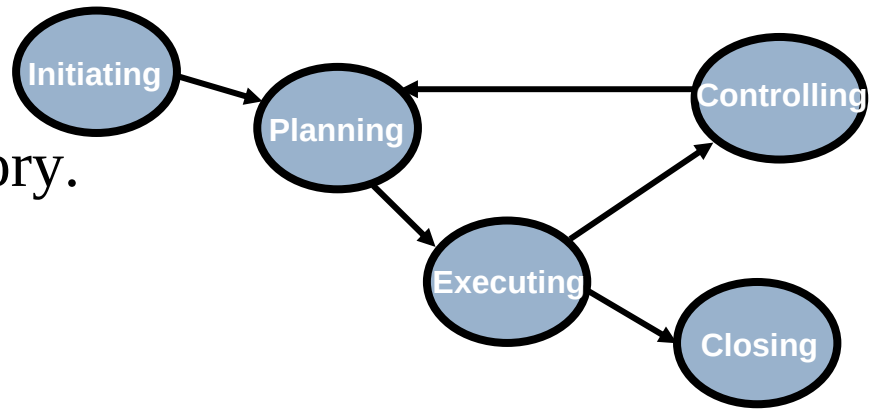


Sample COTS screens – no product endorsement implied

AEgis PM Lifecycle

PMI States:

- Project Management is a discipline.
- The PM Process has 5 Phases
  - Initiate, Plan, Execute, Control, Close
- PM has 9 Knowledge Areas
- All knowledge areas are managed throughout the 5 phases
- There are basic, common, techniques applied to manage each knowledge area.
- Corporations will define their own specific procedures, using this theory.



AEgis PM Lifecycle

Business Opportunity Identification and Review Phase
•Select Projects

Bid / No Bid

Proposal Development Phase
•Pink Team
•Red Team

Bid / No Bid

Customer Contract Award

Initiation Phase

AEgis PM Policy

Project Preparation

•Proposal Review
•Contract Review
•Project Repository

Develop Project Charter
•Project Overview
•Project Scope
•Project Resources
•Team Structure
•Data Sheet

Completion Criteria

Planning Phase

Develop Project Plan

•Scope Mgmt
•Integration Mgmt
•Schedule Mgmt
•Cost Mgmt
•Communications Mgmt
•Risk Mgmt
•Procurement Mgmt
•Quality Mgmt
•Team Mgmt

Establish Project Team

Completion Criteria

Execution Phase

Phase Start
• Orient Team
• Team Review
• Kick-off Meeting

Monitor & Control Project
• Scope
• Schedule
• Cost
• Quality
• Change Mgmt
• Execute Com. Plan
• Manage Project Team
• Monitor Risks
• Control Risks

Completion Criteria

Close-out Phase

Admin Closure
•Archive Doc.
•Lessons Learned
•Team Performance Survey
•Close-out Report

Financial Closure
•Project Account

Contract Closure
•Customer sign-off
•Customer Survey

Completion Criteria

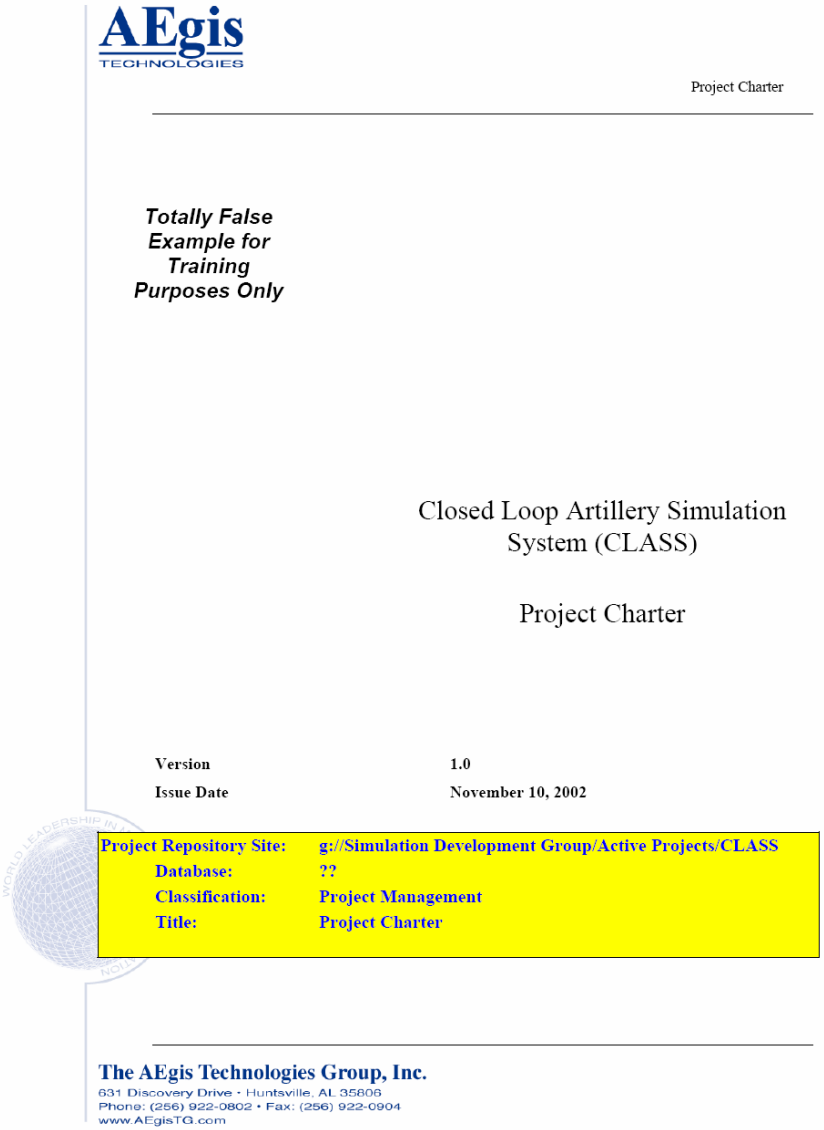
Complete

Project Charter | Project Plan | Execution Notebook | Close-out Report

Lifecycle Documents

MS Office Products
- Scope -

- **Scope** – Document in Project Charter for communication among stakeholders
  - Description of work to be performed
  - Identification of work **NOT** to be performed
  - Identification of critical success factors
  - Identification of major project milestones



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Project Charter

Totally False Example for Training Purposes Only

Closed Loop Artillery Simulation System (CLASS)

Project Charter

Version	1.0
Issue Date	November 10, 2002

Project Repository Site:	g://Simulation Development Group/Active Projects/CLASS
Database:	??
Classification:	Project Management
Title:	Project Charter

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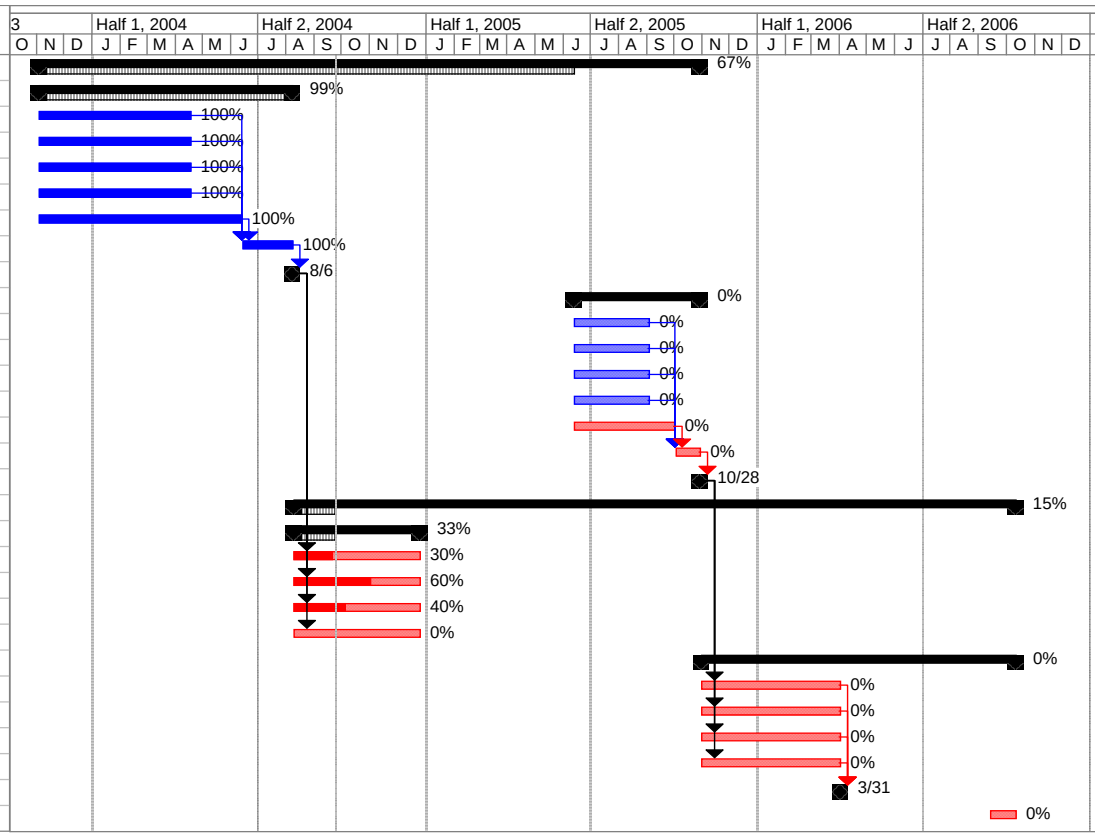
MS Office Products
- Schedule -

- MS Project Schedule
  - Track task duration/ % complete
  - Track resources and load leveling
  - Track critical path for schedule risk

ID	Task Name
282	**CLASS Design**
283	**Preliminary Design**
284	Complete MCS Preliminary Design
285	Complete FOT Preliminary Design
286	Complete FDC Preliminary Design
287	Complete HIF Preliminary Design
288	Complete Simulation System Preliminary Design
289	Conduct Preliminary Design Review
290	Preliminary Design Complete
291	**Detailed Design**
292	Complete MCS Detailed Design
293	Complete FOT Detailed Design
294	Complete FDC Detailed Design
295	Complete HIF Detailed Design
296	Complete Simulation System Detailed Design
297	Conduct Critical Design Review
298	Detailed Design Complete
299	**CLASS Development**
300	**CLASS Prototype Development**
301	Develop MCS Prototype
302	Develop FOT Prototype
303	Develop FDC Prototype
304	Develop HIF Prototype
305	**CLASS Final System Development**
306	Develop Final MCS
307	Develop Final FOT
308	Develop Final FDC
309	Develop Final HIF
310	Development Complete
311	Deliver Final Units



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MS Office Products
- Cost Tracking -

- MS Excel for **Cost Tracking**
  - Actual vs. budgeted expenditures
  - Actual Cost per WBS
  - Financial forecasting using burn rate and EAC

	Nov-05	Dec-05	Jan-06	Feb-06
Labor - OnSite	$ 100,000.00	$ 84,000.00	$ 96,000.00	$ 97,000.00
Labor overhead	$ 65,000.00	$ 54,600.00	$ 62,400.00	$ 63,050.00
Labor - Off Site	$ -	$ -	$ -	$ -
Labor overhead	$ -	$ -	$ -	$ -
Labor G&A	$ 12,000.00	$ 10,080.00	$ 11,520.00	$ 11,640.00
Labor G&A on Labor overhead	$ 7,800.00	$ 6,552.00	$ 7,488.00	$ 7,566.00
Labor Total	$ 184,800.00	$ 155,232.00	$ 177,408.00	$ 179,256.00
Labor with fee	**$ 203,280.00**	**$ 170,755.20**	**$ 195,148.80**	**$ 197,181.60**
Travel	$ 500.00	$ 2,250.00	$ -	$ 1,800.00
Travel G&A	$ 60.00	$ 270.00	$ -	$ 216.00
Travel total	$ 560.00	$ 2,520.00	$ -	$ 2,016.00
Travel with fee	**$ 588.00**	**$ 2,646.00**	**$ -**	**$ 2,116.80**
Material	$ 100,000.00	$ 475,000.00	$ 50,000.00	$ 20,000.00
Mat. Handling	$ 3,000.00	$ 14,250.00	$ 1,500.00	$ 600.00
G&A on mat handeling	$ 360.00	$ 1,710.00	$ 180.00	$ 72.00
Total Material	$ 103,360.00	$ 490,960.00	$ 51,680.00	$ 20,672.00
Material with Fee	**$ 106,460.80**	**$ 505,688.80**	**$ 53,230.40**	**$ 21,292.16**
Total Overhead Onsite	$ 65,000.00	$ 54,600.00	$ 62,400.00	$ 63,050.00
Total Overhead Off Site	$ -	$ -	$ -	$ -
Total G&A	$ 20,220.00	$ 18,612.00	$ 19,188.00	$ 19,494.00
Total Mat. Handling	$ 3,000.00	$ 14,250.00	$ 1,500.00	$ 600.00
Total Revenue	**$ 288,720.00**	**$ 648,712.00**	**$ 229,088.00**	**$ 201,944.00**
Total fee	$ 21,608.80	$ 30,378.00	$ 19,291.20	$ 18,646.56
Revenue with fee	$ 310,328.80	$ 679,090.00	$ 248,379.20	$ 220,590.56
Total with fee	**$ 310,328.80**	**$ 679,090.00**	**$ 248,379.20**	**$ 220,590.56**

Numbers are fictitious – for illustrative purpose only

MS Office Products
- Earned Value -

- **Earned Value –** Use MS Excel
  - Record WBS % complete in financial workbook to compute all EV metrics

EVA VARIABLES	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06
Budget at Completion (BAC)	$ 1,858,000.00	$ 1,858,000.00	$ 1,858,000.00	$ 1,858,000.00	$ 1,858,000.00
Planned Value (PV)	$ 339,600.00	$ 679,200.00	$ 1,018,800.00	$ 1,358,400.00	$ 1,698,000.00
Actual Cost (AC)	$ 310,328.80	$ 989,418.80	$ 1,237,798.00	$ 1,458,388.56	$ 1,458,388.56
Scheduled % Complete	20%	34%	55%	75%	
CURRENT PROJECT PERFORMANCE					
Earned Value (EV)	$ 371,600.00	$ 631,720.00	$ 1,021,900.00	$ 1,393,500.00	$ -
Schedule Variance (SV)	32,000.00	(47,480.00)	3,100.00	35,100.00	
Cost Variance (CV)	61,271.20	(357,698.80)	(215,898.00)	(64,888.56)	
Schedule Performance Index (SPI)	1.09	0.93	1.00	1.03	
Cost Perfomance Index (CPI)	1.20	0.64	0.83	0.96	
ESTIMATES TO COMPLETION					
Estimate at Completion (EAC)	$ 1,551,644.00	$ 2,910,055.29	$ 2,250,541.82	$ 1,944,518.08	
Estimate to Complete (ETC)	$ 1,241,315.20	$ 1,920,636.49	$ 1,012,743.82	$ 486,129.52	
Variance at Completion (VAC)	306,356.00	(1,052,055.29)	(392,541.82)	(86,518.08)	

SPI/CPI

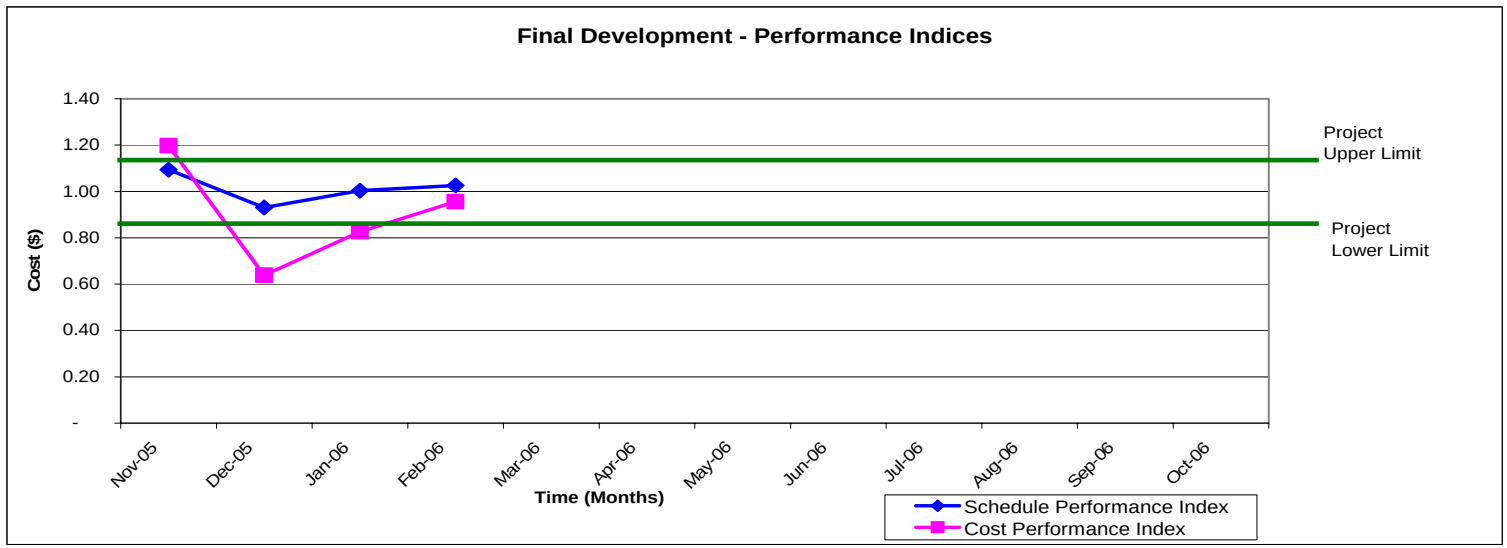
>1 => good

<1 => bad

Example

Ahead of schedule

Over budget



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MS Office Products
- Risk Tracking -

- **Risk Tracking –** MS Excel
  - Risk identification and tracking system in integrated project workbook
  - Risk actions: avoid, transfer, mitigate, accept

Risk ID	Date Opened	Risk Category	Risk Statement	Probability	Severity	Overall Risk Factor	Risk Index	Assigned To	Action Plan Due Date
R-001	10-Nov-02	Technical	There is a risk that the number and types of users available to join the user review group will not be sufficient to provide a representative cross section of users to comment on the full range of CLASS functionality.	2	2	4	Med	Sim Sys Lead	Dec 15,2002
R-002	10-Nov-02	Technical	In order to complete integration and test within the defined schedule, additional personnel are likely to be required.	3	3	9	High	Sim Sys Lead	Dec 15,2002
R-003	12-Nov-02	Cost	The level of effort likely required for integration and test, will increase the cost of that work element beyond the current estimate.	3	3	9	High	Sim Sys Lead	Dec 15,2002
R-004	12-Nov-02	Schedule	New Software must be acquired for MCS Development. The currently available software lacks some scenario control features desirable to the project, but waiting for the next release will delay the development of the MCS Prototype.	3	3	9	High	MCS Lead	Dec 15,2002
R-005	20-Nov-02	Schedule	Access to Existing Data Terminals (FOO, FDC) may not be available in the time period required for Preliminary Design inputs.	2	2	4	Med	FDC Lead	Dec 15,2002

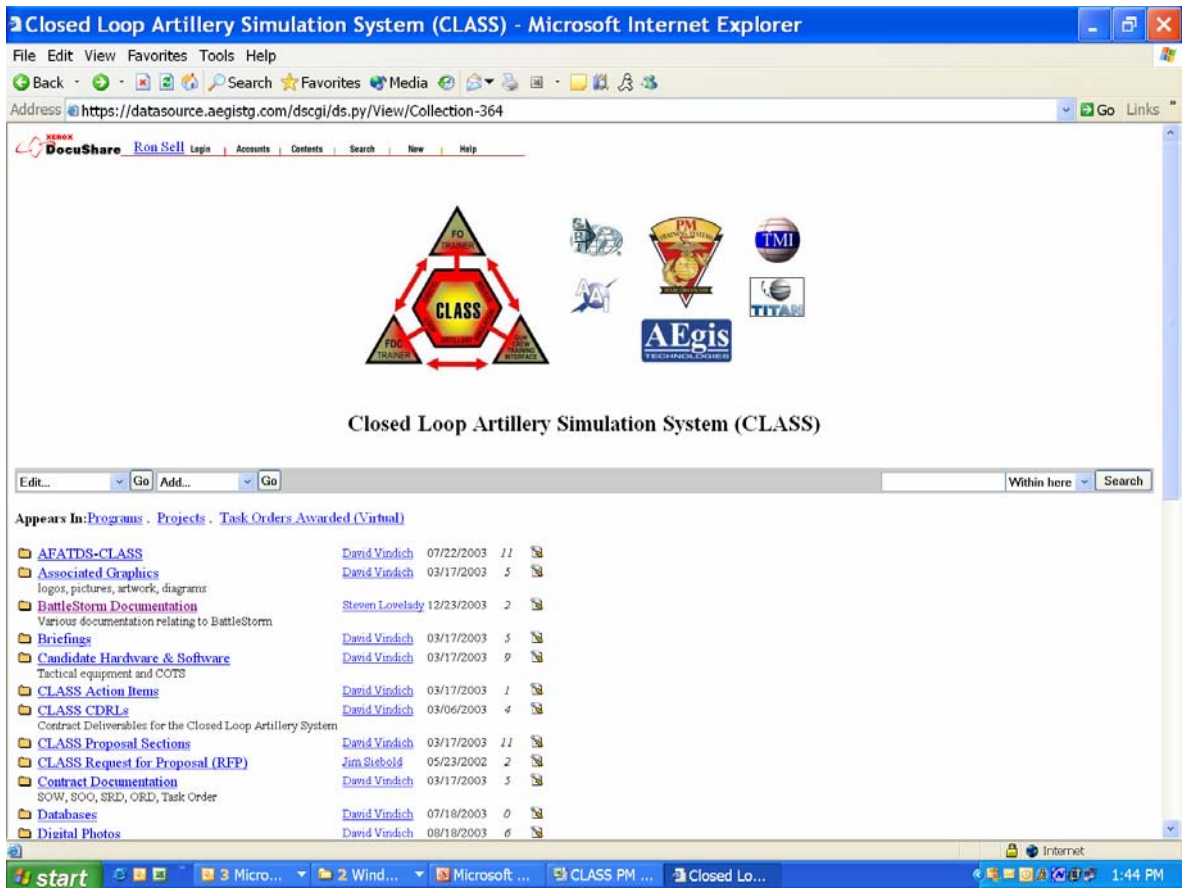
MS Office Products
- Action Items -

- **Action Items** – MS Excel (simple) MS Access (detailed)
  - Integrated project workbook to hyperlink meeting minutes, to action items, to risks, and assigned resources.

Action Item	Prime	Status	Date Opened	Target completion	Completed	Action Item and Update Description
A-20021120-01	PM	Open	11/20/2002	12/20/2002		Update Risk Database with Risks Identified in Start Up Meeting
A-20021120-02	PM	Open	11/20/2002	12/20/2002		Initiate Kick Off Meeting with Client User Group Team
A-20021120-03	PM	Open	11/20/2002	12/20/2002		Baseline Project Schedule

MS Office Products
- Configuration Mgmt. -

- Configuration Management – DocuShare web collaboration tool
  - Easy access to project documentation
  - Password protected for employees, contractor, and customer
  - Maintains CM and version control
  - Easy access to project documentation



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Management Effectiveness
- Communication -

- The key to effective management is effective communication
  - Standardized & consistent documentation and reporting practices lead to effective communication
  - Project Managers understand what is expected and can be held accountable
  - Utilization of common SW tools keeps learning curve to a minimum
  - Higher level management metric collection is simplified with standard PM process and reporting
  - Lessons learned must be captured and recorded in order to provide corporate value after the project is closed

Management Effectiveness
- Team Work -

- Effective Management takes **team work**
  - Project integration is the key knowledge area
  - Management to employee
  - Employee to management
  - Project to supporting department (HR, IT, F&A)
  - Company to customer, customer to company
  - Team integration is the PM's responsibility and must be worked daily.

AEgis TECHNOLOGIES

Summary

- SW tools are critical in successfully managing the abundance of information in a project.
- Specialized PM tools are available, but may be costly to implement in small companies or on small projects.
- MS Office suite can be effective in management.
- Effective communication is the key to success.
- Standardized information collection and reporting are critical to effective communication.
- The PM must be a team Leader and foster the communication channels necessary to achieve project success.

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Author Biography

Mr. Sell is the Director of Simulation Development Technologies at AEgis where he is responsible for coordinating business development and management activities for the company in this technical area. Currently, Mr. Sell directs approximately ten programs that range in contract value from $70K to $16M. Mr. Sell has also been the acting Director of AEgis' Canadian subsidiary, AEgis Simulation, and was responsible for the oversight of international business development and project management. In addition to his corporate management and business development activities, Mr. Sell is responsible for the management of simulator development production and fabrication capability. AEgis has designed and fabricated numerous systems ranging in fidelity from desktop training systems to three axis motion training systems. Mr. Sell has served as a Senior Manger on the following prime contracts – PEO STRI Virtual - Closed Loop Artillery Simulation System (CLASS) and Improved Moving Target Simulator (IMTS), PEO STRI Constructive – Digital Battlestaff Sustainment Trainer (DBST), and Dept. National Defense Canada – Synthetic Environment Coordination Office (SECO). Mr. Sell received his Project Management Professional (PMP) and Certified Modeling and Simulation Professional (CMSP) certifications in 2003. Mr. Sell received a MSEE degree in 1993, with emphasis in electric power systems, and a BSEE degree in 1991 from Auburn University. Mr. Sell has 13+ years' experience in simulation development, simulation systems integration, software development, and system architecture design in the technical areas of HLA, modeling and simulation, and project management.