Integrated Program Management

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Learning Objectives

- Understand “one” Definition of Integrated Program Management
- Discuss application of IPM to several scenarios
- Understand possible areas where EVM and reality might need to be discussed

Agenda

- Integrated Program Management Defined
- Integrated Program Management Examples
  - Tri-Tac Multiplexer Van
  - Integrated Computer System
  - Cost as an Independent Variable Trade Study
- Summary
- Questions
- Handouts

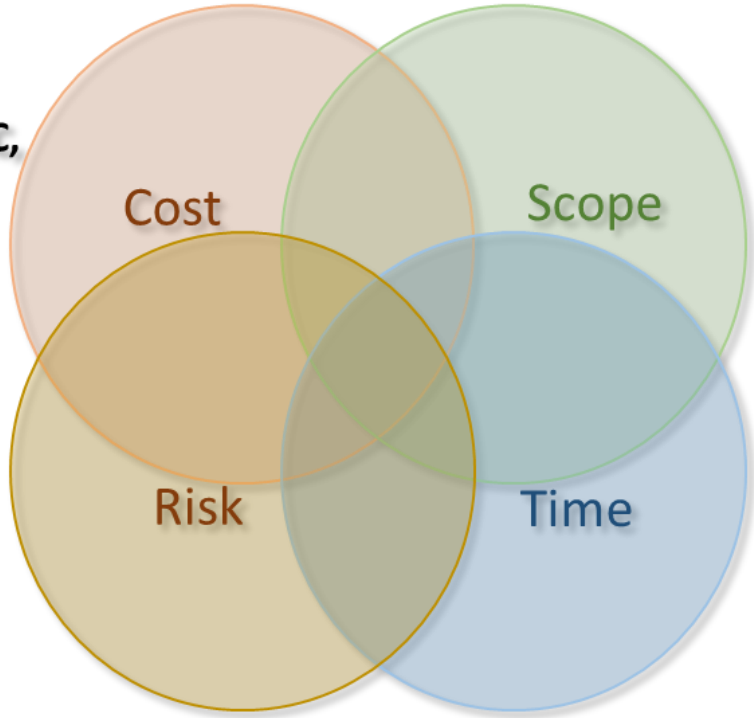
Integrated Project Management

- IPM – Defined
  - Integrated Program Management (IPM) is a disciplined approach for boosting project and program performance. IPM integrates all stakeholder perspectives into a joint execution plan **providing cross functional situational awareness of a project's health and status**.
- Key Characteristics
  - Integrated Program Management is an environment of collaboration.
  - Tailorable to the specific needs of the project.
  - Applies to all phases of a program and all types of work scope.
  - Structured project communications plan clearly understood by all stakeholders.
  - Integration and tailoring of Industry and company standards, processes, and procedures.

Integrated Program Management

Quality | Security | Safety | Federal Regulations | Organizational

BCWS, EAC, BAC, ETC, CPI, SPI, TCPI



Design maturity, TPM Status, technical baseline status, integrations status, requirement decomposition status, etc

Programmatic and Technical Risks, Execution Risk (statistical), Monte Carlo Simulations

Critical Path, Schedule Risk Assessment, ECD, Earned Schedule, Planned vice Actual starts and completes.

Financial | Business | Ethics | Human Resources | Customer

Must address all stakeholders in a balanced fashion.

IPM Activities

- Understand the work
- Plan the work
  - Resource the work
  - Schedule the work
- Monitor and control the work – Decision Making
- Update the plan as necessary
  - Forecast vs baseline changes.

- Things to reflect on as we go through the scenarios
  - If it is legal it is OK
  - Program manager has responsibility for program execution and authority to make “bad” decisions.
  - EVM plan is model of the execution plan.

Mux Van Program

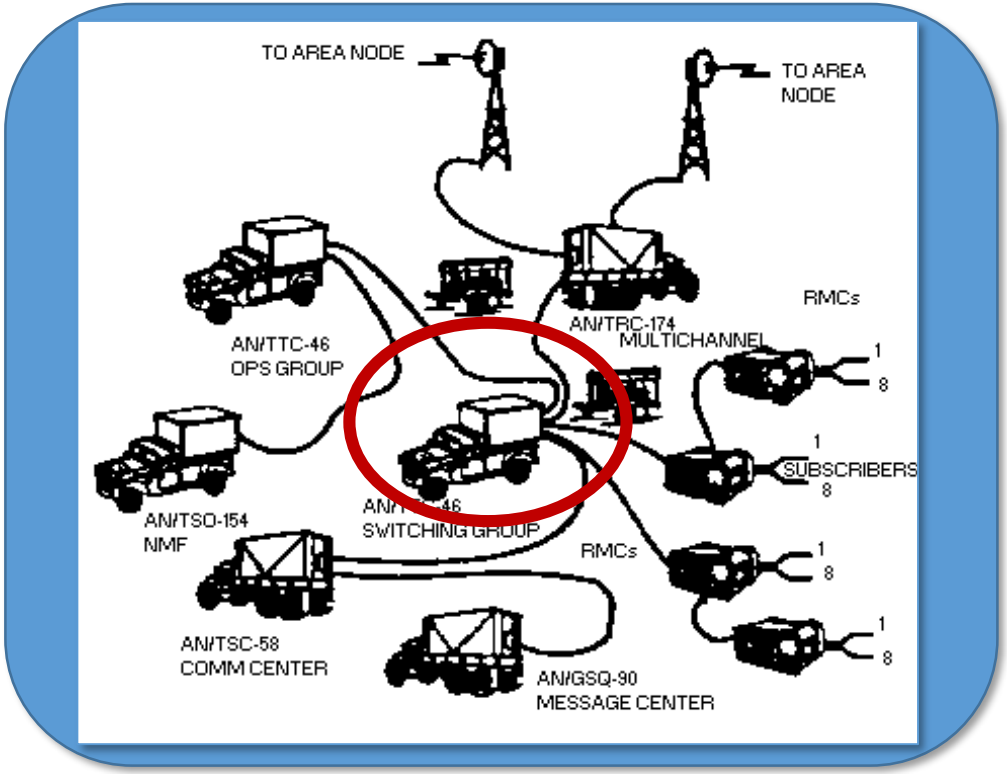
Program Description

- Integrate and provide flexible inter-connectivity options for a collection of “off-the-shelf” digital communications equipment.
- Government Depot is integrator
- 4 year schedule, dependencies on equipment that was being developed in parallel
- Tri Service Program (Army, Air Force, Marines). Equip Joint Tactical communications nodes.
- Deliveries: 30 Vehicles; Avg Unit Cost: $500K

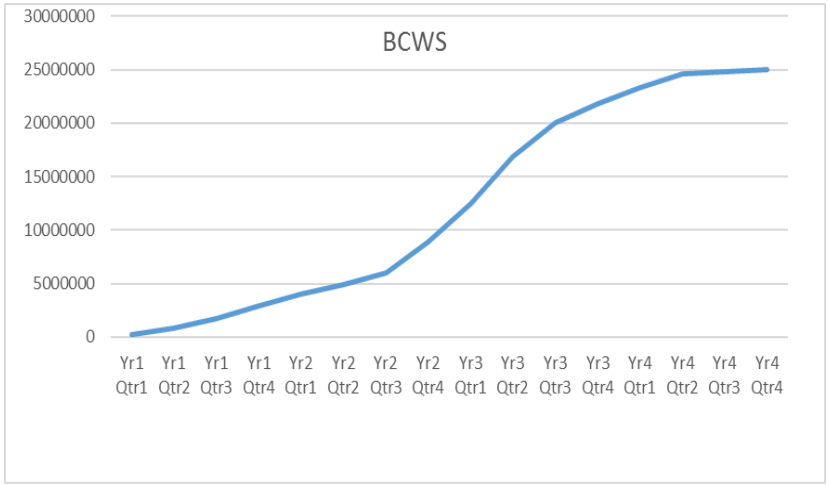
BACKGROUND:

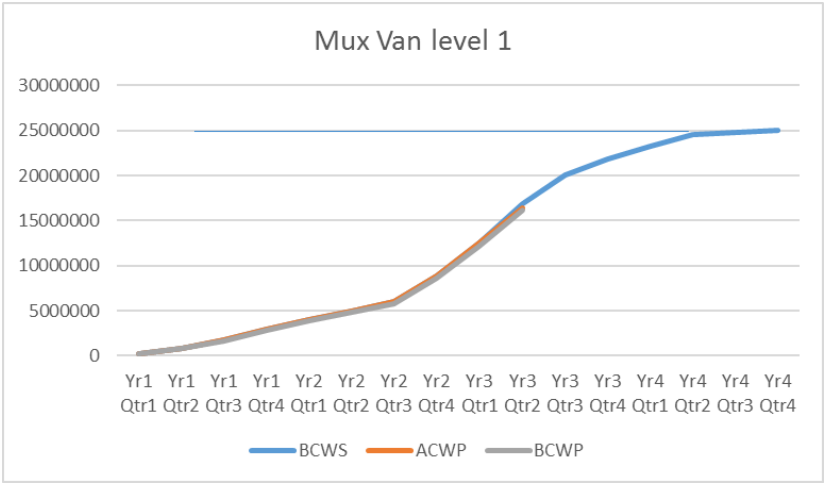
- Air Force Program Office supported by MITRE. Responsible to design interconnectivity
- Full Statement of Work and data items
- Army depot was developing similar shelter to support Army only nodes

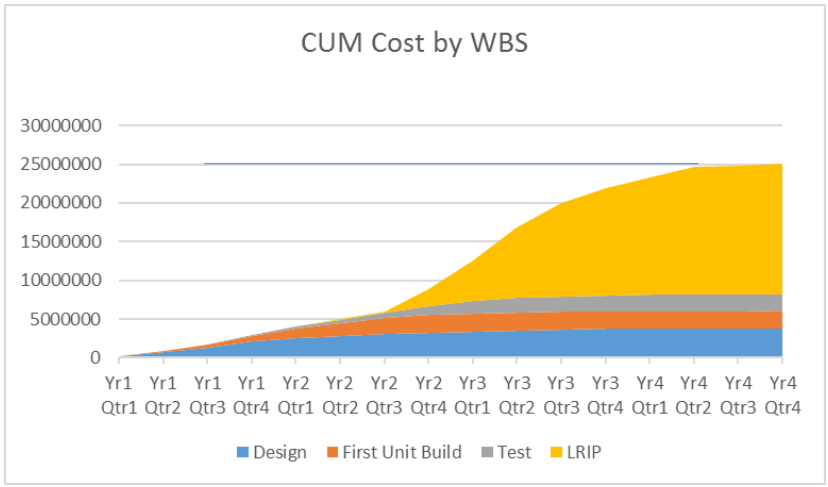
ASSUMPTION: Configuration and interconnectivity differences between Joint and Army system were significant enough to warrant separate procurement.

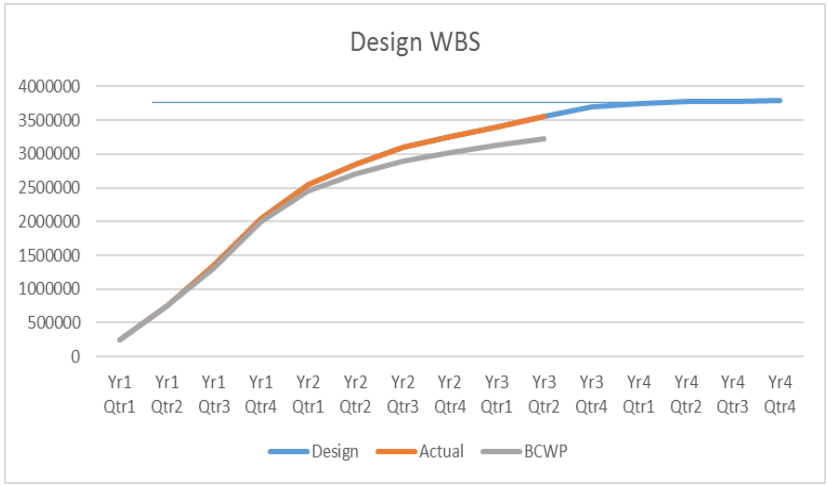


Mux Van Status









Assessment

- Project Progress
  - Design behind schedule
  - Projected to impact end item deliveries by 6 months
  - Cost not an issue yet since design team size remained constant
  - Most material procured is applicable independent of internal design
    - Shelters, environmental control units, 19 inch rack structures, etc
- Army similar project was close to a prototype
  - Quick assessment indicated that it would meet over 90% of the interconnectivity requirements.
- Air Force Program Director
  - Decided to use Army internal design for joint vehicle
  - First prototypes met the original schedule
- Affect on Plan
  - Only the results of the design changed
  - Build sequence and process was the same in either case
  - Minor adjustments in the EV Plan required.

Integrated Computer System

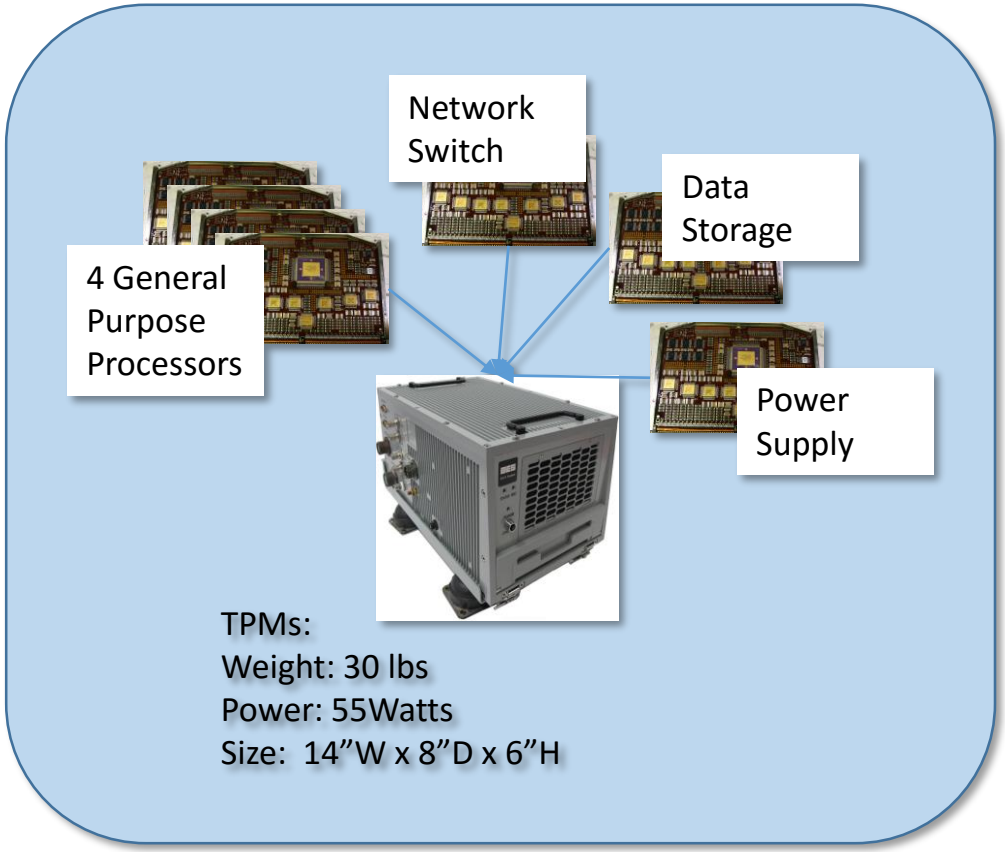
Program Description

- Design, build, and test an integrated computer for C4ISR networking, sensor, and display processing for tactical ground vehicles.
- 2 Year Program, $30M
- Sub-contractor to a Prime contractor
- Common computer across three different platforms. Tank, Personnel Carrier, Truck
- Size, power, weight critical TPMs
- Deliveries: 25 vehicles, $100K target unit price
- Full Thermal and Vibration Testing

BACKGROUND:

- Army program, technology spin off to current vehicles.
- Thermal and noise considerations were the biggest concern. Since the computer was going to be located in the crew cabin(s).
- Processing, storage, and networking requirements were significant
- Very Aggressive schedule. Required to support initial vehicle integration testing.

ASSUMPTION: A single computer configuration will meet the needs of all three vehicles.



Integrated Computer System – Mgt Approach

- Product oriented WBS and IPT Structure
  - (Chassis, Computer, Network and Data storage, Software)
  - PM, Systems Engineering, Integration and Test teams.
- EV data highlighted problem areas, root cause and plans of action discussed in weekly meeting
  - Monthly reports generated to customer
  - Customer part of the weekly meetings
  - Weekly cadence to status EVM, update the schedule, and re-adjust as required.
- One of the key focuses was to review IPT hand-offs.
- Decisions were made jointly for any adjustments required
- End Result:
  - Delivered on time.
  - *Functionality of the system was sufficient for initial vehicle integration, field retrofits performed to address deviations.
  - *Customer also approved a few permanent requirement waivers, and progress was taken against updated requirements

Trade Study Scenario

- Cost as an Independent Variable
  - Continuous trades through the system design process to evaluate and recommend reductions in unit cost.
  - CAIV recommendations had to be run through the architecture group for evaluation against requirements.
  - If system architect approved then PM would decide to implement update to design due to other factors impacted (logistics, SW, EVM, Risk, MR, etc)

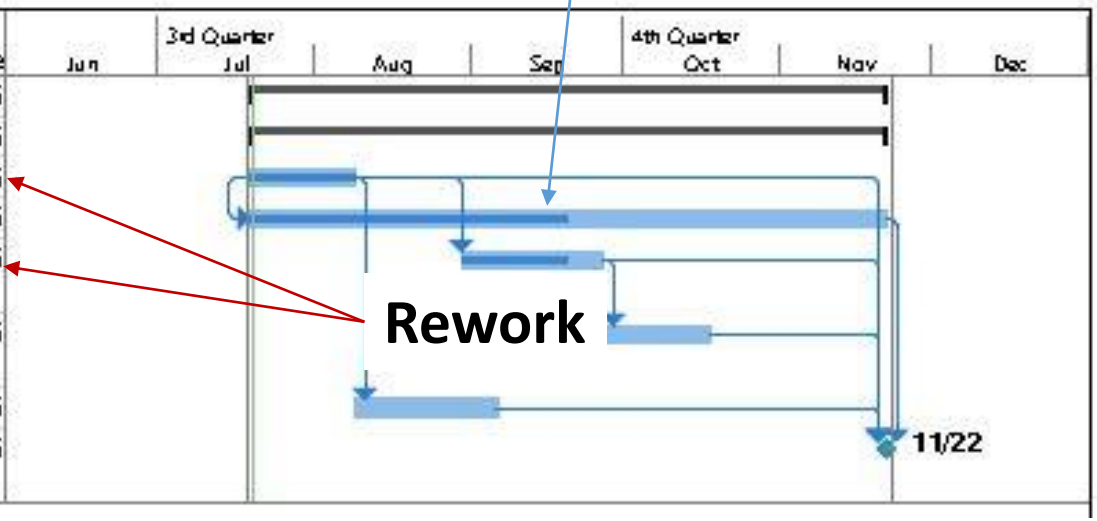
Trades Study In EVM

- Trade Studies can be addressed in a variety of ways wrt EVM
  - LOE
  - List of specific trades to be done, discrete
  - Definition of done is in terms of a decision that must be made.
- CAIV Impact
  - After system architecture was defined, CAIV team recommended a change that would cause a ripple effect if implemented
  - How should EVM model this activity

Trade Study Discussion

CAIV Trade Team Recommends Architecture change

ID	Task Mode	Task Name	% Complete
1		Sample Project	47%
2		Systems Engineering	47%
3		Complete Trade Studies	100%
4		Completed CAIV Trade Studies	50%
5		Document System Design (DoDAF)	75%
6		Completed Operational Analysis	0%
7		Complete RAM-T Analysis	0%
8		System Engineering for Event 1 Complete	0%



Complete Trade Study (WP) – Request MR and put into plan to re-run trades?
Document System Design (DoDAF) (WP) – Can team decide to absorb work without MR?

Summary

- Integrated Program Management applies to all projects / programs
  - No project / program is identical
  - Flexibility in program management principles required to allow for any possible nuance
- Program Performance Monitoring
  - Focus is on does the PM team understand actual status.
  - If so how do you “legitimately” update the EVM model to reflect reality.
  - There are many ways to skin a cat. Regulations should not dictate only one.

Handouts

Rules of Thumb to Reduce Baseline Changes

- Understand the work
  - From the user/customer perspective
  - Avoid documenting customer requirements in terms of implementation.
    - What functionality is required
    - What behavior is expected
- Plan / Schedule the work
  - Detail plan only what is within the window of visibility
  - Process level plan beyond the window of visibility
  - Allow flexibility to detail plan the next phase without a major re-structure
- Resource the Work
  - Track staffing religiously both current and required and proactively manage issues.
  - Establish close relationship with people or organizations who control the resource allocations
- Monitor and control the work – Decision Making
  - Recognize that variances are expected and use them inform project decision making
  - Prioritize and risk assess current variances and address the most critical items first one at a time.
- Update the plan as necessary
  - Focus on updating the forecast as opposed to performing a baseline change.

EVM Vs IPM for Different Project Types

EVM Principles	Traditional Development	SW Development Agile	Low Rate Production	Services
Decomposition of work into product oriented manageable pieces.	EVM	EVM/IPM	EVM/IPM	IPM
Assignment of resources against that work.	EVM	EVM	EVM/IPM	IPM
Assigning value to work to be accomplished.	EVM	EVM/IPM	EVM/IPM	IPM
Time phasing of the work	EVM	EVM/IPM	EVM/IPM	IPM
Tracking performance against technical objective criteria to claim value.	EVM	EVM	EVM/IPM	IPM
Compare claimed value, actual costs, and planned value to support daily decision making.	EVM	EVM	EVM/IPM	IPM
Updating forecasts and technical plan as the team learns from history.	EVM	EVM/IPM	EVM/IPM	IPM

EVM/IPM – EVM applies but flexibility of EVMSIG must be considered

EVM – EVM applies with no caveats

IPM – Work scope does not warrant EVM but must still be well managed.

Enlightened Integrated Program Management, LLC

Capabilities Statement

Overview: Enlightened IPM, founded in 2015, is a consulting firm offering program management and engineering services to federal and contractor organizations for the successful execution of complex projects and programs. Enlightened IPM leverages over 30 years of program management and systems engineering experience at all levels of the defense acquisition business to include 7 years as a senior executive developing acquisition and program management policy and training.

Products and Services:

- Program Management Program Planning and Execution Consulting
- Systems Engineering Process and Performance Consulting
- Business Development Consulting
- Government Regulation and Compliance Consulting
- Integrated Program Management Training

Specific Disciplines:

- Earned Value Management / Earned Value Management Systems
- Agile – Earned Value Management Integration
- Requirements Management
- Risk Management
- Cost, Schedule, Technical Trade Studies

Differentiators

- Over 30 years of program management and systems engineering experience in the federal acquisition market.
- 18 years of Government experience, 11 years in Government program offices, and 7 years as a Senior Executive acquisition policy maker
- 16 years' experience working for a defense contractor as a systems engineer, chief engineer, and senior program manager.
- Relationships and experience across the Federal Government to include Army, Air Force, Navy, NASA, FAA, DHS, DOE, and VA

NAICS Codes:

541611 (Administrative Management and General Consulting Services)
541613 (Marketing Consulting Services)
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"Services for Successful Program Management"

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