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AAA V / USMC PROGRAM SCHEDULE

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March 16, 1999
VIRTUAL INTEGRATION & ASSEMBLY

- SEEKS TO INTEGRATE LIFECYCLE DOCUMENTATION PROCESSES
  - Prototype Assembly Mfg Build, Tech Manuals
- PROVIDES COMMON WEB INTERFACE TO WIDE VARIETY OF DATA SOURCES
  - Useable By Mechanics, Mfg, and Logistics
- ENSURES EFFICIENT DEPLOYMENT OF MULTIPLE DOCUMENTATION SOURCES
  - Removes Reliance On Drawings
  - Simplifies Configuration Management
INTEGRATED PDRR/EMD/IETM PROCESS DEVELOPMENT

Standard Method - Independent Management

Assembly Drawings

Process Sheets

Interactive Electronic Technical Manual

Prototype

Manufacturing

Fielding

Standard “Stove Pipe” Approach To Development Generates Similar Redundant Documents To Support Weapon Station Life Cycle. Redundant CM, Development, And Inconsistent Data Often Results From This Approach.

March 16, 1999
Integrated Approach Reduces Redundant Documentation Efforts. This simplifies CM, Development, and greatly increases data consistency (e.g. improves quality) at a reduction of cost.
VI&A Tie-in to Production

Source Data

Computer Aided Design (CAD) Database

PDRR

VI&A

Assembly E-Process Sheets

P-Prototypes

- General sequence of assembly of components.
- Rough cut assembly instructions.
- Verify Accessibility.
- Refine BOM
- IETM Database Development.

Capture problems found in assembly - test to feed design changes.

EMD

Manufacturing E-Process Sheets

E-Prototypes

- Apply manufacturing engineering practices.
- Material fabrication techniques.
- Tool sets
- Refinements

Capture problems found in manufacturing - test to feed design changes.

Production

Production E-Process Sheets

Enhance Manufacturing Sheets with:
- Mass Production tool sets
- Shop Floor Layout
- Refinements

Capture problems found in production - test - field experience to feed design changes.
VIRTUAL INTEGRATION & ASSEMBLY

World Wide Web (Hyper-Link, Embedded Functions, Security)

Virtual Collocation
VTC, Whiteboard, App Sharing

Assembly Data/Notes

Simulation

Problem Reporting

Data Sources
Procure
Inventory
Models
CM
SEDS

Application(s)

Hardware

AAAV Build
LATP Fab
AAAV Test
AAAV DRPM
Virtual Integration & Assembly
Integrated Manufacturing Knowledge Base
Integrated Inventory Control
Mapping Manufacturing Tasks To BOM
Problem Reporting
Capturing Problem Knowledge In Real-Time At The Point Of Occurrence
E-Process Sheet
Detailed Assembly/Mfg Knowledge

Location Of Operation

Step By Step Instructions

Assembly BOM

VRML Of Step
Produceability Simulation
Assess Assembly/Mfg Before Build
Doubles As Mfg/IETM Training