



PMA-233

PFPS / TAMPS Improvements

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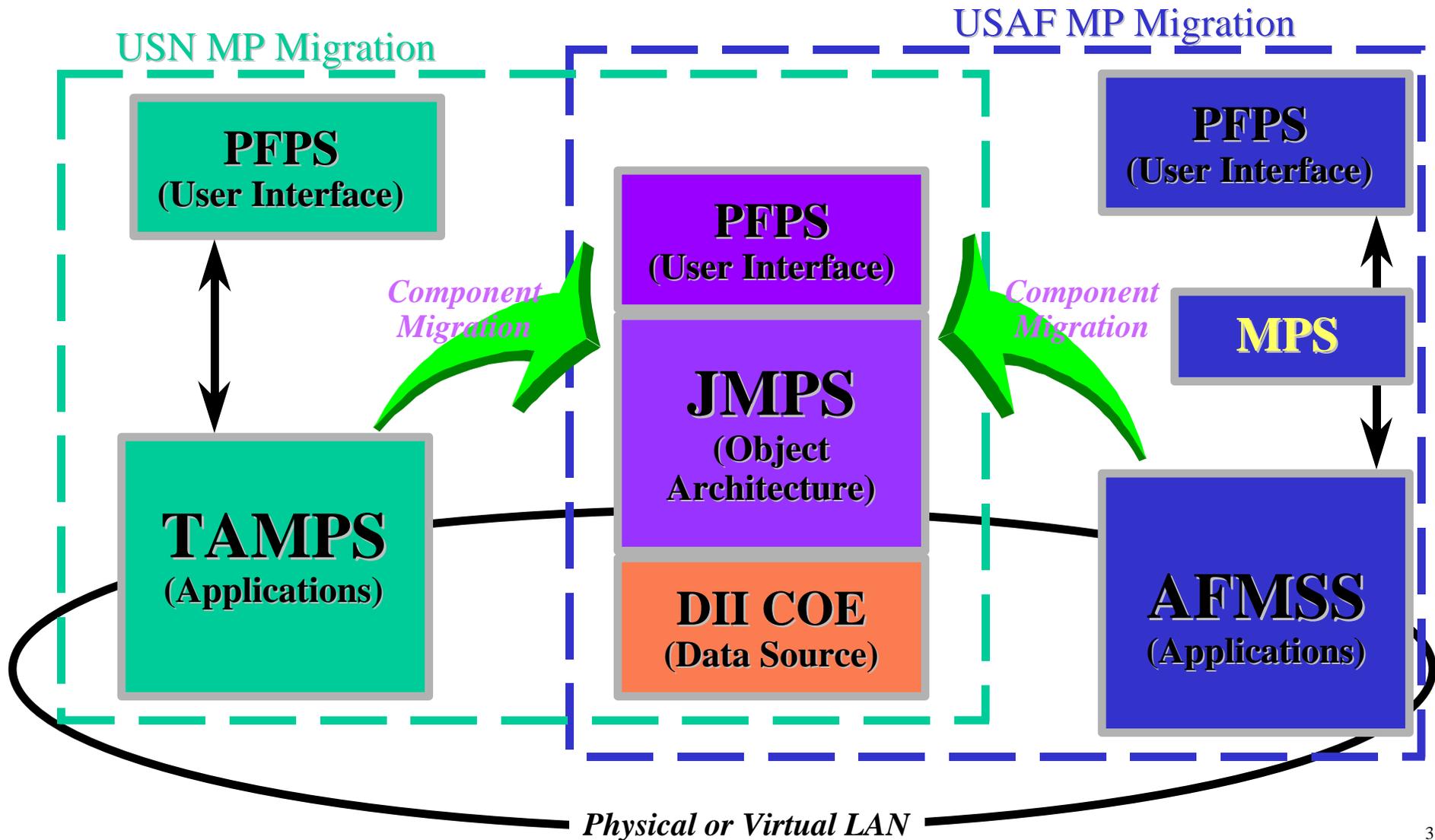
Introduction

Mission Planning

- Purpose
 - Report status of PMA233 response to
 - NSAWC request for PFPS as mission planner
 - F18 OAG recommendation of PFPS for weapons data loading
 - Solicit continued input from fleet during concept definition and development



Roadmap to JMPS





Strengths

Mission Planning

PFPS

- Intuitive HMI
- Accurate fuels
- Fleet preferred planner
 - Flexible output
 - Integral to JMPS
- PC H/W, MS Windows

TAMPS

- MPM connectivity
- Weapons data loading
- GPS crypto certified
- Access to threats / imagery
- Efficient database operation
 - Good Unix H/W



ROE on Risk Estimates

Mission Planning

- Includes inputs from MPMs and contractors
- Schedule Risk
 - Issue a fleet product in same time as TAMPS 6.2.1
- Benefit
 - Value to fleet users
 - Higher is better
- Technical Risk
 - Research not complete



Options

Mission Planning

Mission Planning

- MPM connect
- Weapons
- Threat feed
- Imagery

1

PFPS

3A

• S/W Connection

- Routes
- Points
- Charts
- Printers
- Data Loads

3

S/W Connections

3B

• Element Level Planner

Flight Planning

- Certified fuels
- Intuitive HMI
- Flexible output

2

TAMPS



#1: Concept for Mission Planning in PFPS

Mission Planning

- CV configuration
 - Maintain unix server for data access
 - Populate ready rooms with PFPS installed on PC
- Non-CV configuration
 - Utilize PFPS and its upgrades on stand alone PC



#1: Challenges of Mission Planning in PFPS

Mission Planning

- MPM specific aircraft and weapon functionality
 - Transfer of functionality to PFPS
 - Creation of mission/weapon data loads on PFPS
 - Requires rework of current TAMPS data loading process
 - Researching if violates GPS crypto security certification
- Threat feed
 - Requires build of MIDB connection to PFPS



#1: Challenges of Mission Planning in PFPS (cont.)

Mission Planning

- National and tactical imagery
 - Requires build of JSIPS connection to PFPS
 - SLAM ER ATA depends heavily on imagery
- Planned PFPS tools and potential add on
 - Bullseye editor (v3.01)
 - CAS component output (v3.01)
 - Route conflict identifier (v3.1)
 - Vertical profiler

Schedule Risk

HIGH ■

Benefit

HIGH ■

Technical Risk

HIGH ■



#2: Improved Flight Planning in TAMPS 6.2.1

Mission Planning

- Same H/W concept as TAMPS 6.2
- PMA233 committed to improved HMI in TAMPS 6.2.1
- Corrections and additions will not provide either PFPS flexibility or “look and feel”
- Corrections and additions will provide flight planning foundation to do mission planning



#2: *Challenges for Improved Flight Planning in TAMPS*

Mission Planning

- Certified fuels
 - Flight Performance Modules in work for PFPS are adaptable to TAMPS
 - MPM and NATOPS dependencies exist
- Intuitive HMI
 - Creating “forgiving” S/W would require significant additional level effort
- Flexible Output
 - High priority SOI does exist in TAMPS 6.2.1

Schedule Risk

MED 

Technical Promise

MED 

Technical Risk

HIGH 



#3: *Concept for Software Connections*

Mission Planning

- (#3A) S/W connection of PFPS (PC) to TAMPS (Unix)
 - Several methodologies available
 - Keep separate HW suites and make connections via LAN
 - Port either application in the other operating environment
 - Make connections in resident operating environment
 - Both programs retain goods ... and others
 - Access to each program takes advantage of strengths
 - H/W issue of carrying both Unix and PC needs research
- (#3B) Further develop third party software application
 - Demonstrated Monday
 - Run on PC with PFPS and TAMPS 6.2.1 connection



Challenges for Software Connections (#3A)

Mission Planning

- Connect TAMPS 6.2.1 to PFPS 3.1 (plus add ons)
- Transfer of critical mission planning elements
 - Routes / Points
 - One way floppy disk transfer exists in TAMPS 6.2
 - Would expand TAMPS 6.2 transfer to 2-way over MPLAN
 - Transferring all data elements is significant schedule risk
 - Cross access to separate chart tools
 - Outputs
 - Goal to access multiple printers and data loaders via network
- Provides access to strengths of both applications

Schedule Risk

MED 

Benefit

 MED-HIGH 

Technical Risk

 MED-HIGH 



Challenges for Software Connections (#3B)

Mission Planning

- SPAWAR's Element Level Planner (ELP)
 - Developed in concert with NSAWC / MAWTS
 - JAVA/Object Oriented = Flexible and Robust
- Risks
 - Uses its own HMI
 - Demonstrator level of development
 - Some “never been done before” technical aspects

Schedule Risk

HIGH ■

Benefit

HIGH ■

Technical Risk

HIGH ■



Summary of Options

Mission Planning

#1: Mission Planning into PFPS

<u>Schedule Risk</u> HIGH 	<u>Benefit</u> HIGH 	<u>Technical Risk</u> HIGH 
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#2: Flight Planning into TAMPS

<u>Schedule Risk</u> MED 	<u>Benefit</u> MED 	<u>Technical Risk</u> HIGH 
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#3A: Transfer critical data

<u>Schedule Risk</u> MED 	<u>Benefit</u>  MED-HIGH 	<u>Technical Risk</u>  MED-HIGH 
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#3B: Data Manager

<u>Schedule Risk</u> HIGH 	<u>Benefit</u> HIGH 	<u>Technical Risk</u> HIGH 
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TAMPS 6.2.1 SOIs Impact

Mission Planning

- **MIDB 2.X**
- **Five Meter CIB**
- **MPLAN Improvements**
- **JTIM to MPM Improvements**
- **AN/ARC-210 Binary Fill**
- **F-14 JTIDS**
- **E-2C MIST Interface**
- **Common Mission Transfer Interface**
- **DCHUM**
- **JTIM Integration**
- **Generic Printer**
- **Remote Access to TAMPS**
- **AN/ARC-210 STRs**
- **“A” List STRs**
- **JSIPS Improvements**
- **6.2 Fixes**



TAMPS 6.2.1 MPM Efforts

Mission Planning

- JTIM to MPM Interface (SLAM ER ATA)
- AN/ARC-210 STRs
- F-14 JTIDS Interface
- E-2C MIST Connection
- COMPASS Update Audio Tools
- MIDS/JNL STRs



Others

Mission Planning

PFPS

- Uncertified security
- Not yet networked
- No MPM connectivity
- No threat or imagery
- Multi-user database operation

TAMPS

- Unforgiving, tedious HMI
 - Erroneous fuels
- TAMPS 6.1/6.1.1 OT report
- Incorrect RTM calculations
- Inflexible output



#3A: *Concept for Software Connections*

Mission Planning

- (#3A) Put PFPS into TAMPS Unix environment
 - Single desktop operation on Ultra H/W suite
 - Takes advantage of H/W investment and reduces risk to MPMs maintaining connectivity
 - Could have S/W applications apart or develop connections
 - Connectivity is level of effort / schedule issue
- (#3A) Put TAMPS into PFPS PC environment
 - Single desktop operation on PCs
 - PCs are IT21 H/W and anticipated environment of JMPS
 - Could have S/W applications apart or develop connections
 - Connectivity is level of effort / schedule issue
 - Up front S/W cost would be recouped in H/W savings
 - Requires significant commitment from and coordination with MPMs



Technical Challenges for Software Connections (#3C)

Mission Planning

- Commercial products available today
 - TAMPS in Windows works in future JMPS system
 - Lowers JMPS risk
 - PFPS in UNIX is current operating environment
 - Lowers risk of maintaining MPM connections
- Issues
 - Connectivity and security in Windows
 - Investment in UNIX vs future in PCs

Schedule Risk

LOW ■

Benefit

■ MED-HIGH ■

Technical Risk

■ LOW-MED ■



Status

Mission Planning

- Background
 - Fleet messages report high PFPS usage
 - F18 OAG supports PFPS weapons data loading
 - ESC (reporting to N62 and N88)
 - NSAWC requested dedicating all mission planning assets to development of PFPS post TAMPS 6.2K
- PMA233 committed to field PFPS functionality
 - Action to date
 - PFPS CDs issued
 - PFPS integral part of JMPS roadmap
 - Researching mission planning functionality in PFPS