

**Cradle-to-Grave
Test and Evaluation
Approach
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Overview

- **Approach**
 - Revolutionary not Evolutionary
 - Early Involvement
 - Empowerment
- **Process Activities**
 - Training
 - Test Resources Support
 - JEAP Liaison
 - Validation
- **Test Activities**
 - Test Architecture
 - Next Generation Tools



Revolutionary vs Evolutionary

- JPMO-IP looking toward the future
- Engineering (S&T) working in unison with T&E to locate the next generation ensembles
 - Dedicated CAPO at DTRA
 - Thrust Manager assigned to and working in the JPM-IP Office
 - Technology Transition Agreements
- New Technologies
 - Academia
 - Industry
 - Government



Early Involvement

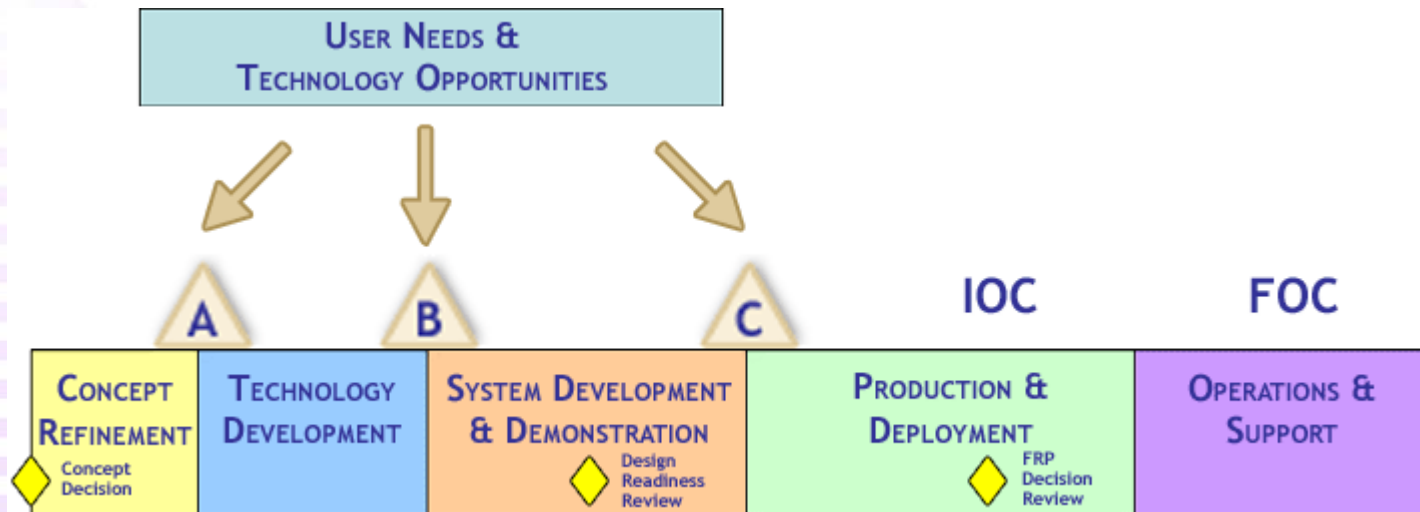
- **Requirements**
 - **Must involve all stakeholders; Joint Requirements Office, Combat Developers, OTA'S, Material Developers, DOT&E (if applicable)**
 - **Must be Testable, Measurable, Achievable, Meet the needs of the Warfighter**

 - **Common Mistakes**
 - **Tie new technology to old**
 - **Don't take advantage of emerging technology because it does not match existing OMS/MP and COE**

 - **Examples**
 - **JSMLT: System failed all 3 KPPs but identified 95.5% of faulty Masks in the field**
 - **JB2GU: 480 hour wear requirement**

Early Involvement

- **T&E Strategy**
 - Develop T&E Strategy during Concept Refinement phase
 - Establish T&E WIPT as soon as material need is identified (before acquisition activities begin.)
 - Manage T&E Process “end to end” ensuring test, methodology, and M&S efforts fully assess the system.



Empowerment

What happens without empowerment?....Nothing

- “With regard to T&E issue resolution, each CBDP system T&E WIPT will resolve as many issues and concerns as possible at the working level and expeditiously escalate those needing resolution at a higher level.” CBDP T&E Executive
- IPTs must consist of empowered members; common stumbling blocks include:
 - Representatives not empowered to speak for parent organization
 - Terms of agreements changed afterward
 - No timely follow-up on actions so no resolution before next IPT meeting

JPM-IP T&E Training

GOAL = Prepare JPM-IP Test Engineers to Become Leaders in the T&E Community

- **DAU provides Targeted Training, Consulting, Mentoring**
 - **MCOTEA, OSD and JPEO-CBD Participation**
 - **Instructors benefit from student feedback and from observing project team meetings**
 - **Training briefs and reference materials archived on IDE**
- **Participation in OTA training**
 - **Gain understanding of each OTA's perspective and operating procedures**
- **AWCF certification and continuous learning emphasized**

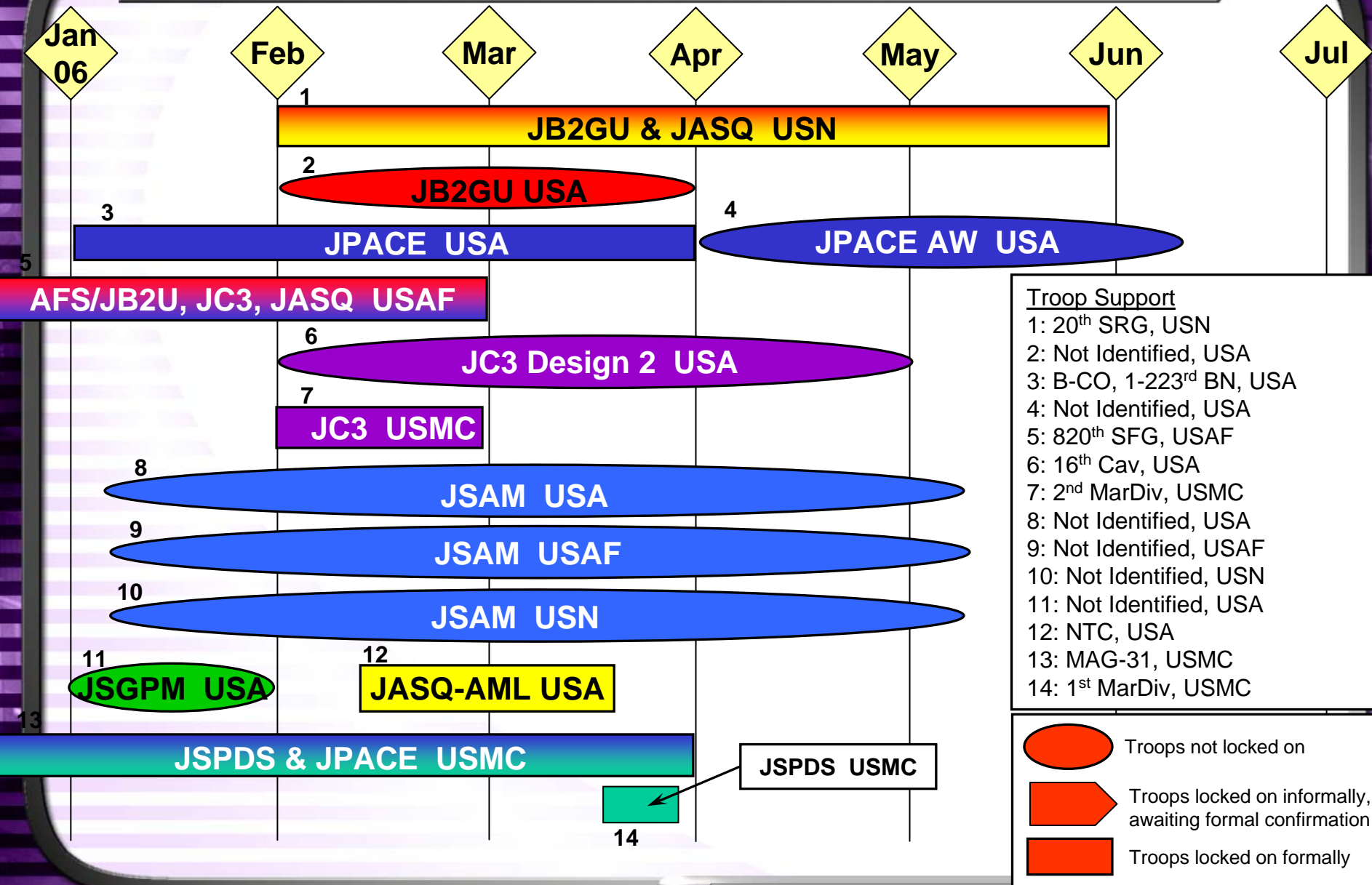
Cross-functional Training

- **Current Developmental Assignments**
 - ECBC Intern
 - Scientist exchange with DPG
 - Test Engineer exchange with AEC
- **Goals**
 - Provide unique OJT for recent hires at ECBC
 - Gain understanding of other T&E roles in acquisition process
 - Foster better working relationships

Test Resources Support

- **Obtain test participants, equipment, ammo, ranges and all services necessary to support testing**
- **Work within Service processes for obtaining troop support**
- **Assist Services in identifying potential units for support**
- **Seek alternative sources for test participants when necessary**
 - **Coast Guard**
 - **Schoolhouses**
 - **Training Centers**
 - **Combine programs when possible to maximize benefit of support**
 - **JPACE, IFS, JB2GU**
 - **JASQ Unique, JSPDS**
- **Be prepared for changes and have back-ups identified**
 - **High optempo with OIF, OEF and relief efforts**

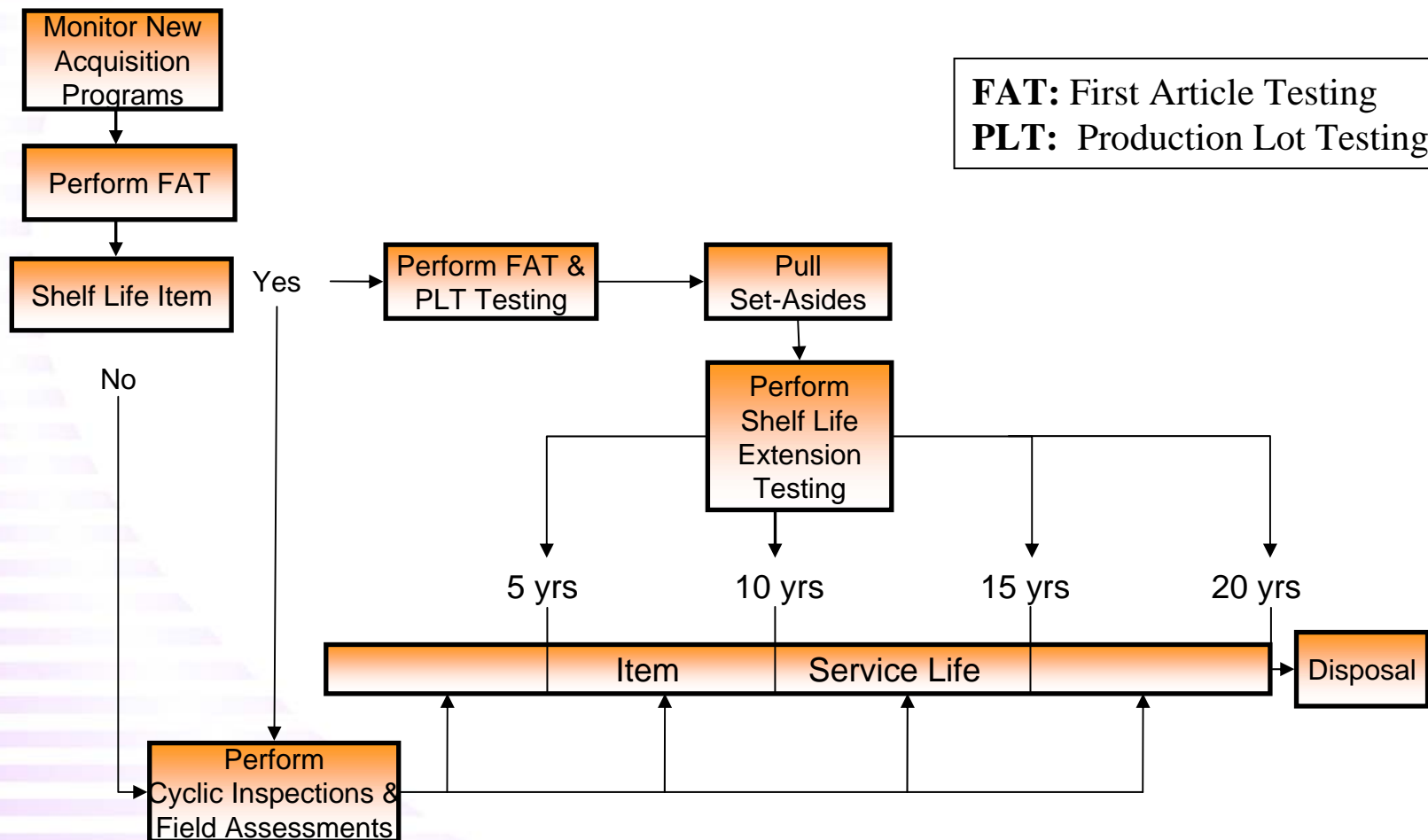
Overarching Test Strategy



JEAP Liaison

- **Transition of Acquisition Efforts**
 - **Work closely with Joint Equipment Assessment Program (JEAP) organization, labs, logistics community**
 - **Production Lot Testing**
 - **Traceability**
 - **Acquisition – Coordinate surveillance requirements**
 - **Surveillance – Cradle to Grave accountability**
 - **Involve DPG exchange scientist**
 - **Requirements/Logistics coordination**
 - **Incorporating logistics traceability during the Combat Developers documentation process**

Surveillance Process "Cradle to Grave"



FAT: First Article Testing
PLT: Production Lot Testing

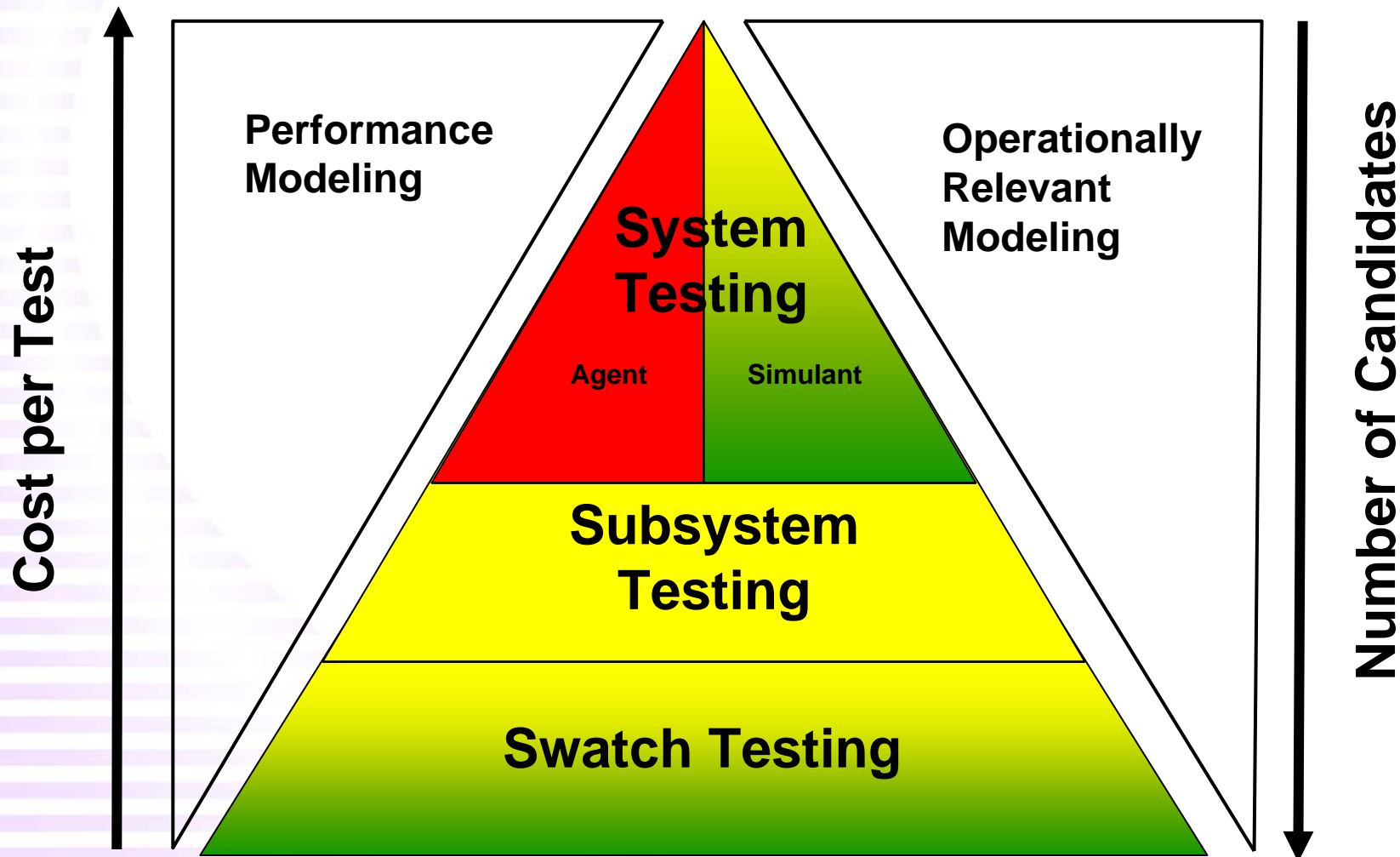
Periods vary depending on the equipment type and assigned Shelf Life Code

Test Method Validation

- Objective
 - Valid data to make sound milestone decisions
 - Intralab and Interlab Validation
- Structure
 - Chair Test Director JPM-IP
 - WGTMVC, OTMVC
 - Full community and SME involvement
- Examples
 - MIST
 - SMARTMAN
 - PATIC



Test Architecture



Next Generation Tools

- **Overarching Model**
- **CBART**
- **Improved Aerosol**
- **PETS**
- **Real-time sampler for MIST**
- **NTA Chamber**

Backups

Acronym List

AEC – Army Evaluation Center
AWCF – Acquisition Workforce Career Field
CAPO – Capability Area Program Officer
CBART – Chemical Biological Agent Resistant Test
CBDP – Chemical and Biological Defense Program
COE – Concept of Employment
DAU – Defense Acquisition University
DOT&E – Director, Operational Test and Evaluation
DPG – Dugway Proving Ground
DTRA – Defense Threat Reduction Agency
ECBC – Edgewood Chemical Biological Center
FAT – First Article Test
IDE – Integrated Data Environment
IFS – Integrated Footwear Solution
IPT – Integrated Process Team
JASQ – JSLIST Alternate Source Qualification
JB2GU – JSLIST Block 2 Glove Upgrade
JEAP – Joint Equipment Assessment Program
JPACE – Joint Protective Air Crew Ensemble
JPEO-CBD – Joint Program Executive Office for Chemical and Biological Defense
JPMO-IP – Joint Program Management Office for Individual Protection
JSLIST – Joint Service Lightweight Integrated Suit Technology
JSMLT – Joint Service Mask Leakage Tester
JSPDS – Joint Service Personnel Decon System
M&S – Modeling and Simulation

Acronym List (cont)

MIST – Man In Simulant Test
MCOTEA – Marine Corps Operational Test and Evaluation Agency
OEF – Operation Enduring Freedom
OIF – Operation Iraqi Freedom
OJT – On the Job Training
OMS/MP – Operational Mode Summary/Mission Profile
OSD – Office of the Secretary of Defense
OTA – Operational Test Agency
OTMVC – Overarching Test Methods Validation Committee
PATIC – Protection Against Toxic Industrial Chemicals
PETS – Protective Ensemble Test System
PLT – Production Lot Test
S&T – Science and Technology
SMARTMAN – Simulant Agent Resistant Test Mannequin
SME – Subject Matter Expert
T&E – Test and Evaluation
TTA – Technology Transition Agreement
WGTMVC – Working Group Test Methods Validation Committee
WIPT – Working Level IPT