JPEO-CBD

Joint Program Manager
Individual Protection
Nuclear, Biological, Chemical Defense
Overarching Model

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PURPOSE

Mission

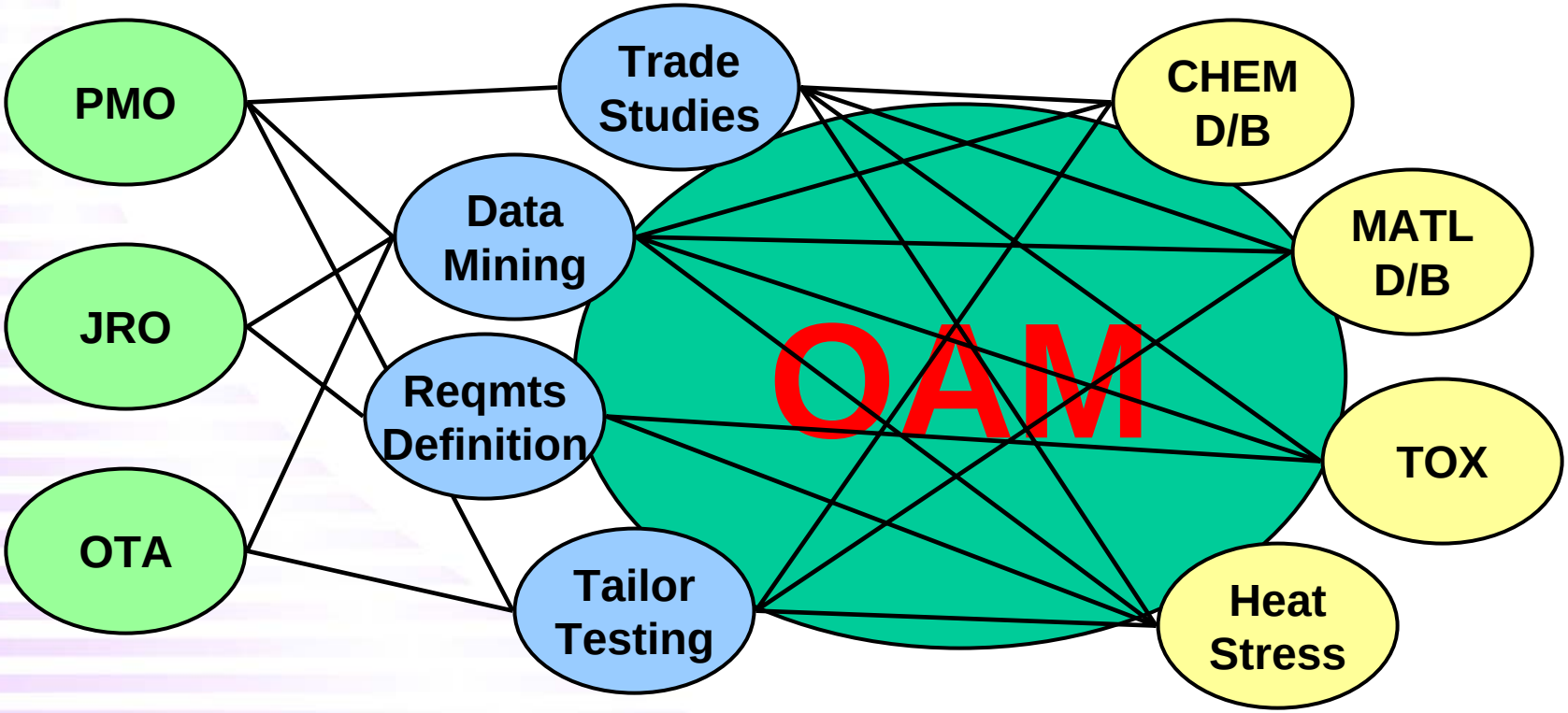
- To Develop A Functional And Useful Overarching Model (OAM) And Toolkit To Support Requirements Development, Testing, And Fielding Of Chemical, Biological, Radiological, Nuclear (CBRN) Individual Protective Equipment (IPE)

Stakeholders

- Joint Requirements Office (JRO)
- Program Office
- Testing Agency (OTA)
- Test Location (DPG, ECBC, NATICK, Commercial)

WHAT CAPABILITIES ARE IN AN OAM?

- Different Needs For Different Stakeholders
- Common Data Sets Supports Different And Multiple Needs



REQUIREMENTS DETERMINATION

JRO

- Identification Of Areas Of Over/Under Protection
- Realistic Requirements Determination And Validation
- Evolve Requirements As Absolute Toxicological Effects Are Integrated
- Evaluate Performance As Additional Threat Protection is Introduced TIC/TIM, etc.
- Fielding Dates, Quantities, Distribution Alternatives

REQUIREMENTS DETERMINATION

Program Office

- Are Requirements Attainable?
- Are Requirements Affordable?
- What Are Cost/Schedule/Performance Attributes To Requirements?
- Are There Life Cycle Implications To Design Elements?
- Are There Life Cycle Impacts Due To ECPs or Changes?
- What Is The Most Cost Effective Change Implementation Sequence?
- What Materials Have Been Previously Proven?
  - Against What Threats?

REQUIREMENTS DETERMINATION

- Testing Agency (OTA)
  - What Tests Must Be Done To Demonstrate Effectiveness?
  - What Procedures Are Documented?
  - Are All Planned Tests Fully Defined?
  - Does The Infrastructure Support The Test Needs?

REQUIREMENTS DETERMINATION

- Test Location (DPG, ECBC, NSC, Commercial)
  - What Assets Are Needed?
  - Are All Assets Needed Available?
  - Are Equipments Within Calibration?
  - Are Equipments Operational?
  - Are Procedures Fully Defined?
  - Scheduling
  - Manpower
  - Automated Data Collection
  - Meteorological Conditions

IPE DEVELOPMENT

Program Office

- Ability To Conduct Trade Studies (Performance vs. Cost)
- Risk Management
- Cost Benefit Analysis
- Early Material Evaluation
- Comparison Of Data To Absolute Toxicological Effects
- Balance CBRN Protection With Heat Stress And Other Physiological Issues

IPE DEVELOPMENT

Program Office

- Manufacturing Processes Consistent With Requirements And Production Rates
- Prototyping
  - Ability To Model Garment In Three Dimensions
  - Sizing/Fitting Against Standard Human Forms
- Material And Design Selection
  - Evaluate Impact Of Material Characteristics On Garment Comfort, Durability, Protection
- Evaluate Impact Of Ancillary Equipment

IPE DEVELOPMENT

Test Agency

- Expand IPE Testing Scope Without Incurring Excessive Costs Or Logistical Burden
- Integrate Data Across All Testing Phases
- Provide A Basis For Assessment Of Operational Effectiveness
- Interact With Testing Process To Identify Data Gaps And Required Re-Testing or Additional Tests
- Testing Regimen Tailored To Extent Of Unknowns And Divergence From Normal

DATA MINING

- Correlation Of Data To Real World Results
- Intelligent Prediction And Selection Criteria
  - Materials Selection Consistent With Threat
- Basic Data Repository
  - Data Repository For All Data Associated With CBRN IPE
  - Intelligent Search Engine For Data Mining (Knowledge Management)

DATA MINING

Chemical And Material Databases

- Data Repository For All Existing Chemical and Material Test Data Sets
- Chemical D/B
  - Physical Properties
  - Toxicological Effects On Humans
  - Interaction With Atmospheric Conditions
- Material D/B
  - Historical Test Results For Various Materials Used In IPE Systems
  - Physical Properties
  - Hazard Analysis

DATA MINING (cont.)

- **Test Traceability Matrix**
  - Data Repository For Existing Test Data Sets Mapped To Standard Operating Procedures (SOPs), Test Plans, Test Methodologies, Industry Standards
- **Lot Variability And Shelf Life Analysis**
  - Data Repository For All Production Lot Testing (PLT) For Variability Analysis And Prediction
  - Shelf Life Analysis And Confidence Based On Surveillance Testing Data Sets
- **Simulant Vs. Agent Comparative Data**
  - Data Repository And Analysis Of Simulant Versus Agent Comparisons
  - Intelligent Selection Of Simulant For Specific Test Purposes

TECHNICAL APPROACH

Technical Approach

- Modular Structural Approach
- Use An Open Architecture To The Maximum Extent Possible
- Detailed Examination Of Data Requirements And Data Throughput
- Reuse Or Revise Existing Databases

STRATEGY

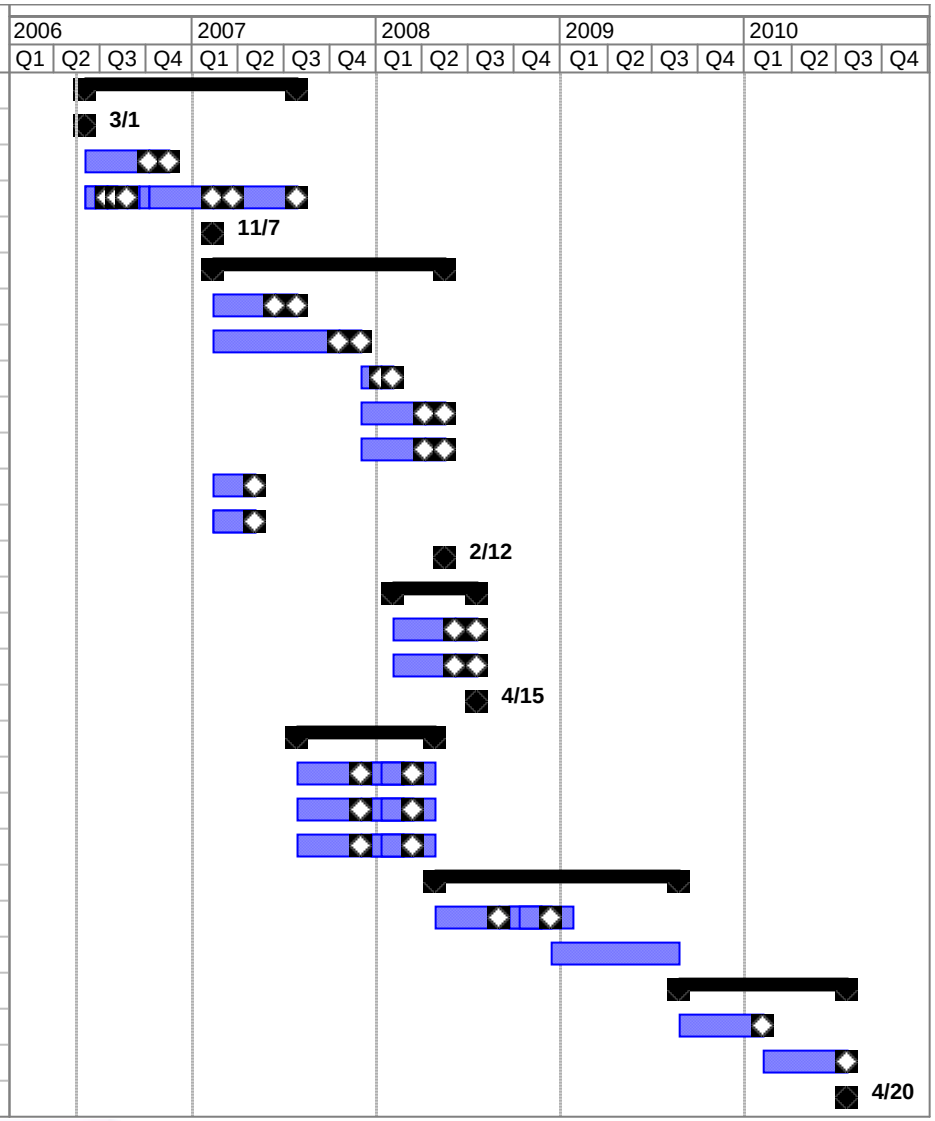
- **FY 06 Effort**
  - Survey Current Models/Databases (e.g., Body Region Hazard Analysis (BRHA), Agent Simulant Knowledgebase)
  - Survey DPG/ECBC/NSC Historical Results
  - Determine Gaps In Data And Models And Upgrade
  - Certify Model (With Limitations)
  - Determine Preliminary Architecture
- **FY 07 And Beyond**
  - Finalize Architecture
  - Determine Implementation Sequence And Dependencies
  - Implement Strategy

Verification, Validation & Accreditation (VV&A)

- The OAM/Toolkit Will Adhere To Established VV&A Procedures
- Some Models And Simulations Will Be Accredited
- Data Certification Will Be Conducted

Notional Schedule

ID	WBS	Task Name
1	1	**Program Management I**
2	1.1	**Form IPT**
3	1.2	**Charter IPT**
9	1.3	**Business Plan**
27	2	**MS A**
28	3	**Program Management II**
29	3.1	**Schedule**
34	3.2	**Modeling and Simulation Strategy**
39	3.3	**Test Strategy**
44	3.4	**Risk Management**
49	3.5	**Safety**
54	3.6	**LCCE**
57	3.7	**Logistics**
62	4	**MS B**
63	5	**Program Management III**
64	5.1	**Test Plan**
69	5.2	**VV&A Plan**
74	6	**MS C**
75	7	**Model Compontent Development**
76	7.1	**Transport Module**
84	7.2	**Toxicological Module**
92	7.3	**Threat Module**
100	8	**Systems Integration**
101	8.1	**Module Integration**
109	8.2	**Integration Testing**
111	9	**VV&A**
112	9.1	**VV&A**
115	9.2	**Accreditation**
118	10	**IPR**



THE IP OAM

THE END!