TARGET Overview

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

TARDEC Gated Evaluation Track for Technology Development
**Report Documentation Page**

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1. REPORT DATE  
14 JAN 2011

2. REPORT TYPE  
Briefing Charts

3. DATES COVERED  
14-01-2011 to 14-01-2011

4. TITLE AND SUBTITLE  
TARDEC GATED EVALUATION TRACK FOR TECHNOLOGY DEVELOPMENT

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

6. AUTHOR(S)  
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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)  
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8. PERFORMING ORGANIZATION REPORT NUMBER  
#21452

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)  
U.S. Army TARDEC, 6501 E.11 Mile Rd, Warren, MI, 48397-5000

10. SPONSOR/MONITOR’S ACRONYM(S)  
TARDEC

11. SPONSOR/MONITOR’S REPORT NUMBER(S)  
#21452

12. DISTRIBUTION/AVAILABILITY STATEMENT  
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT  
NA

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:  
   a. REPORT  
   unclassified  
   b. ABSTRACT  
   unclassified  
   c. THIS PAGE  
   unclassified

17. LIMITATION OF ABSTRACT  
   Same as Report (SAR)

18. NUMBER OF PAGES  
   16

19a. NAME OF RESPONSIBLE PERSON

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Standard Form 298 (Rev. 8-98)  
Prescribed by ANSI Std Z39-18
TARGET Mission/Vision

• **Mission**
  – Design, implement and sustain an product development system for science and technology development at TARDEC that integrates proven methodologies including project management, systems engineering, design for six sigma applications and tools.

• **Vision**
  – Enact a robust, systematic and culturally embedded data driven decision methodology for TARDEC technology development by 2012.
Ground Domain Planning Process

- **Identify and Prioritize Gaps**
  - Align Gaps to Strategic Vectors:
    - Combat Vehicles
    - Tactical Vehicles
    - Robotics
    - Base Camps

- **Align Investments to Vectors (guided by gaps)**

- **Balance Portfolio to align with Vectors**

- **Portfolio Assessment**
  - Analyze portfolio balance and alignment for leadership and tech developers.
  - Monitor portfolio health and assess impacts from changes.

- **Project Execution Management**
  - TARDEC Gated Evaluation Track (TARGET)
  - Project Management Best Practice Standardization
  - Earn Value Management Training
  - Project Governance
  - Project Health Dashboard

- **Manage and Execute Project Plan**
  - Assess Balance and Alignment to Strategy
  - Refine Recommended Strategy

- **Portfolio Assessment**

- **Strategic Needs Analysis**
  - Gather, Analyze, Integrate Needs
  - Identify and Prioritize Ground Domain Gaps aligned to Strategic Vectors and time-phased needs.

- **Strategic Project Planning**
  - Coordinate Tech Gaps
  - Align Acquisition/ST&TS Plans and Schedules
  - Develop Ground Strategic Technology Plans & Roadmaps
  - Annual POM Planning
  - Annual Guidance

- **NEAR TERM: 0-3 YRS (OPERATIONAL)**
- **FAR-TERM: 5-15(+) YRS (FUTURE FORCE)**
- **MID-TERM: 3-8 YRS (PROGRAMMATIC)**

- **ICD/CDD/CPD, PM’s/PEO’s, INTEL COMMUNITY, COE's & TCM’s, WFO, ARIC, ONS/JUONS, Joint & Army Concepts, Army & TRADOC Guidance, JCIDS, Documentation, Initial Capabilities Document (ICD)**

- **INTEGRATED NEEDS ASSESSMENT**

- **Leadership Focus Teams**

- **System Integration Domains**

- **Technology Focus Teams**
TARGET
Regulations/Requirements

Commercial Best Practices

- Best Practice Management & SE Practices in the Pre-Acquisition Phase for federal Intelligence and defense agency; Project Management Journal dtd March 2008
- Product Leadership for the Lean Enterprise; Michael Kennedy
- Product Leadership; Robert Cooper
- Winning at New Products; Robert Cooper
- 3M Design for Six Sigma Training NPI/NTI

MIL-STD/HDBK

- IMP/IMS Preparation and Use Guide, dtd 21 Oct 05 V0.9
- MIL-STD 499B System Engineering
- PEO Command Control & Communications Tactical, Practical guide for leveraging Science & Technology; “Relevant R&D” vs “Science Projects”, dtd Feb 2008

 DAU Documentation

Guidebooks/Policy
- Defense Acquisition guidebook
- CLE031 RDECOM SE Policy
- Program Managers e-tool kit

Continuous Learning Modules
- CLL015 Business Case Analysis
- CLB016 Intro to EVM
- CLE045 Into to DoD S&T Management
- CLE028 Market Research for Technical Personnel
- CLM017 Risk Management
- CLE021 Technical Readiness Assessment
- CLM 013 Work Breakdown Structure
- CLE003 Technical Reviews
- CLE026 Trade Studies

TARDEC Documents

ATO-22-3-001 ATO SEP Instructions, dtd 10Dec 08
- Draft ATO Managers Handbook, dtd 26 July 09
- ATO LSS Process Map
- SBIR LSS Process Map

UNCLASSIFIED: Dist A. Approved for public release
TARGET Construct

- TARGET is built upon benchmarks that were “value-mined”…
  - Interviewed over 60 3M associates regarding NPI/NTI
  - Analyzed 3M deployment failure modes
  - Attended NPI training
  - Attended OSD gate Review
  - Leveraged ARDEC’s benchmarking of 8 private sector companies
    - Kodak, Cummins, Ford, 3M, Motorola, Boeing, MSA, Carrier
  - Leveraged ARDEC’s lessons learned

- Best practices from numerous product development principles

- NASA / DoD TRL models

- Latest version of the DoD 5000.2
TARGET Maturity Model: Iterative Migration to Desired State

**Horizon 1**
- Pilot(s)
- 50% Solution
- Few Projects
- Shell w/existing processes
- Intro 2-3 Key data tools
- Introduce gating to management
- Exercise system
- Awareness throughout organization
- Specifics localized to those impacted

**Horizon 2**
- Introduction of a standardized process
- 60% Solution
- Obvious flaws and failure modes fixed.
- Applied to project(s) within each RBG organizations
- Alignment of SE and PM practices
- Introduce Gating and Event Driven Project Management to Organization.
- Detailed Awareness throughout organization

**Horizon 3**
- Standard Process Gen II
- 80% Solution
- Industry and DoD best practices integrated
- Applied to all projects within RBG
- DFSS & LSS tools integrated
- Data driven culture & fact based decision making promoted
- Fundamental understanding throughout organization
- Awareness with customers and suppliers

**Horizon 4**
- Living Process
- 99% Solution
- Best Practice & new tools continuously updated by organization
- Fact based/data driven in DNA of organization
- Expansion & integration with other Army & DoD efforts
- Customers and Suppliers understand and use the system.
TARGET
Science & Technology Gated System

Select Funding Path

Stage 1
High Level Objectives
• Alignment of Project with the big ARMY & TARDEC needs and strategy.
• Understand the current technology landscape-current DoD Projects executing similar mission.

DELIVERABLE:
PROJECT CHARTER

Stage 2
High Level Objectives
• Establish Requirements Baseline
• Identify Superior Concept and demonstrate technical feasibility
• Complete TRA/MRA, establish project partners and determine in-house versus contracted Activities

DELIVERABLE:
PROJECT PLAN
Requirements Baseline

Stage 3
High Level Objectives
• Develop a functional prototype that meets project performance objectives.
• Complete Manufacturing Assessment/Technology sensitivity assessment

DELIVERABLE:
Prototype Manufacturing Req

Stage 4
High Level Objectives
• Validate performance against customer requirements.
• Define the operating range and the interface for technology technology.

DELIVERABLE:
Validated Prototype Operations Report

Stage 5
High Level Objectives
• Package the technology
• Complete documentation of development.

DELIVERABLE:
Technology Support to Transition

Limited Spend (Internal Effort)
Seed Money
Major Funding (ATO/Core/SBIR PhII/Con)

Ideation & Scoping
Gate 1
Concepts & Feasibility
Gate 2
Design & Development
Gate 3
Validation
Gate 4
Technology Transition
Gate 5
TARGET Process

Select Funding Path

**Limited Spend** (Internal Effort)
- Defined Enterprise Goals for Project
- Market/Army Needs Analysis
- Define current Technology Landscape
- Idea Definition
- Defined Alignment w/TARDEC Portfolio
- Identified Customers & Stakeholders
- Project Charter
- Project Plan
- Detailed Plan for C&F
- Gate Documents

Seed Money
- Validated Customer Requirements
- Identified Superior Concept
- Demonstrated Proof of Concept
- Technology Readiness Assessment
- Manufacturing Readiness Assessment
- Value Analysis of Concept (Business case)
- Project Success & Exit Criteria
- Identified Project Partners
- Performance against C&F Project Plan
- Detailed Project Plan for C&F Phase
- Gate Documents

Major Funding (ATO/Core/SBIR PhII/Con)
- Validated Performance with Customer
- Demonstrated Technology Robustness
- Demonstrated Technology Durability
- Demonstrate Manufacturing Readiness
- Deployment & Integration Plan
- Performance against Validation Project Plan
- Detailed Project Plan for Tech Trans
- Gate Documents

Legend:
- Bold-Horizon 2 implementation
- Grayed-horizon 3 plus implementation


Version 3.0, 12 Oct 2010
Phase Deliverables

• Specific deliverables aligned to each phase activities designed to reduce programmatic risk

• Identify the right amount of data at the right time to facilitate problem identification and solution

• Recommended activities by commercial best practices and GAO

• Windchill should be used to store and document activities/tools used to fulfill the deliverables

• Templates will be designed to provide best-practice information and expectations for each deliverable
Gate Documentation

- Formalized documents required to be completed and submitted prior to Gate Decision Review
- RDECOM/Systems Engineering required documentation of product development
- Somewhat standard across development system-continuously updating critical information within each phase
- Two Critical Gate Documentations to the project manager
  - Resource requirements for next phase
  - Team Recommended -Gate Decision Authority Score Card
- Data driven documentation based out of the phase deliverables
• Key decision points
  - Is the program healthy, valuable, & have a path forward?
  - Are adjustments needed?
  - Is this program still a top priority?

• Decisions driven by data

• Cross functional review committee – reviewers are responsible, accountable, or supply resources

• Three Areas of focus
  - Project Quality Control
  - Problem Prevention
  - Project Fate Decision

• Outputs
  - Approval status & priority status
  - Work plan for next phase
    • Bounding box for team
    • Resource commitment
    • Timeline to next gate

• Decision process requires two parts:
  • Is the program healthy, valuable, & have a path forward?
  • If yes, what is its priority within the portfolio?

As the gates go, so goes the process – R. Cooper
Ideation & Scoping Phase

• Defined to be the Up Front homework phase
• Critical Information obtained within this phase
  - Project alignment with TARDEC core competencies (Strategic Alignment)
  - Identification of potential customer and stakeholders
  - Technology Landscape (State of Art)
  - Identify high level scope and resource requirements
  - Define Project Magnitude and Project Risks/Challenges
  - Charter

NOTE: The defined tasks are identified to be current best practices and may not be all encompassing; additional tasks may be required to resolve the intent of the deliverable and should be documented for others.

Concept & Feasibility Phase

- **Build the Business Case**
- **Critical Information obtained within this phase**
  - Understanding the customer needs
  - Defining multiple concepts to meet the needs
  - Understand the feasibility to develop those concepts
  - Select superior concept
  - Project entrance and exit criteria
  - Resource requirements

NOTE: The defined tasks are identified to be current best practices and may not be all encompassing; additional tasks may be required to resolve the intent of the deliverable and should be documented for others.

Design & Development Phase

- Defined to be the development of the functional prototype
- Critical Information obtained within this phase
  - Critical parameters that control the ability to meet objectives
  - Manage critical parameters
  - Development of functional prototype
  - Robust design applications
  - Manufacturability assessment

NOTE: The defined tasks are identified to be current best practices and may not be all encompassing; additional tasks may be required to resolve the intent of the deliverable and should be documented for others.

Validation Phase

- Defined to be the validation phase
- Critical Information obtained within this phase
  - Project deliverable alignment with program objectives
  - Documentation of Technology Readiness Level 6
  - Operating parameters of technology
  - Technology interface
  - Technology deployment

NOTE: The defined tasks are identified to be current best practices and may not be all encompassing; additional tasks may be required to resolve the intent of the deliverable and should be documented for others.

https://www.kc.army.mil/wiki/TARGET_Phases/Validation
Technology Transitions

- Defined to be the hand-off phase
- Critical Information obtained within this phase
  - Transition Data Package
  - Technology form, fit and function
  - Technology documentation

NOTE: The defined tasks are identified to be current best practices and may not be all encompassing; additional tasks may be required to resolve the intent of the deliverable and should be documented for others.