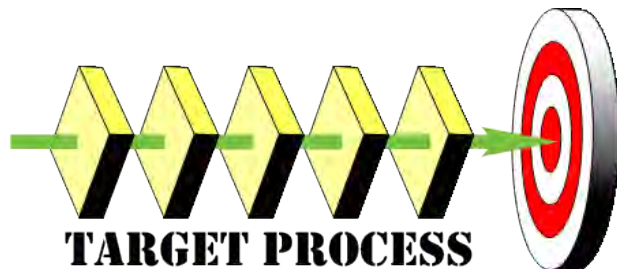




TARGET Overview



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.



**TARDEC Gated Evaluation Track
for Technology Development**

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
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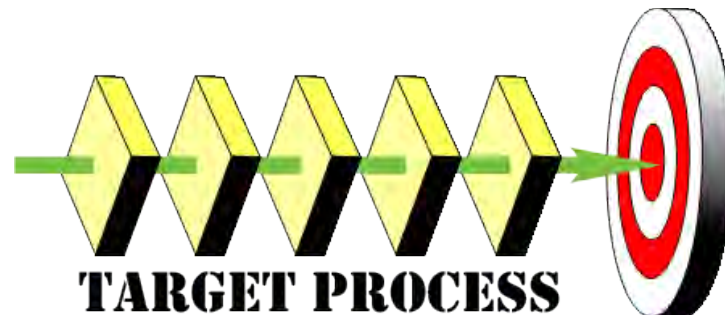
TARGET Mission/Vision

- **Mission**

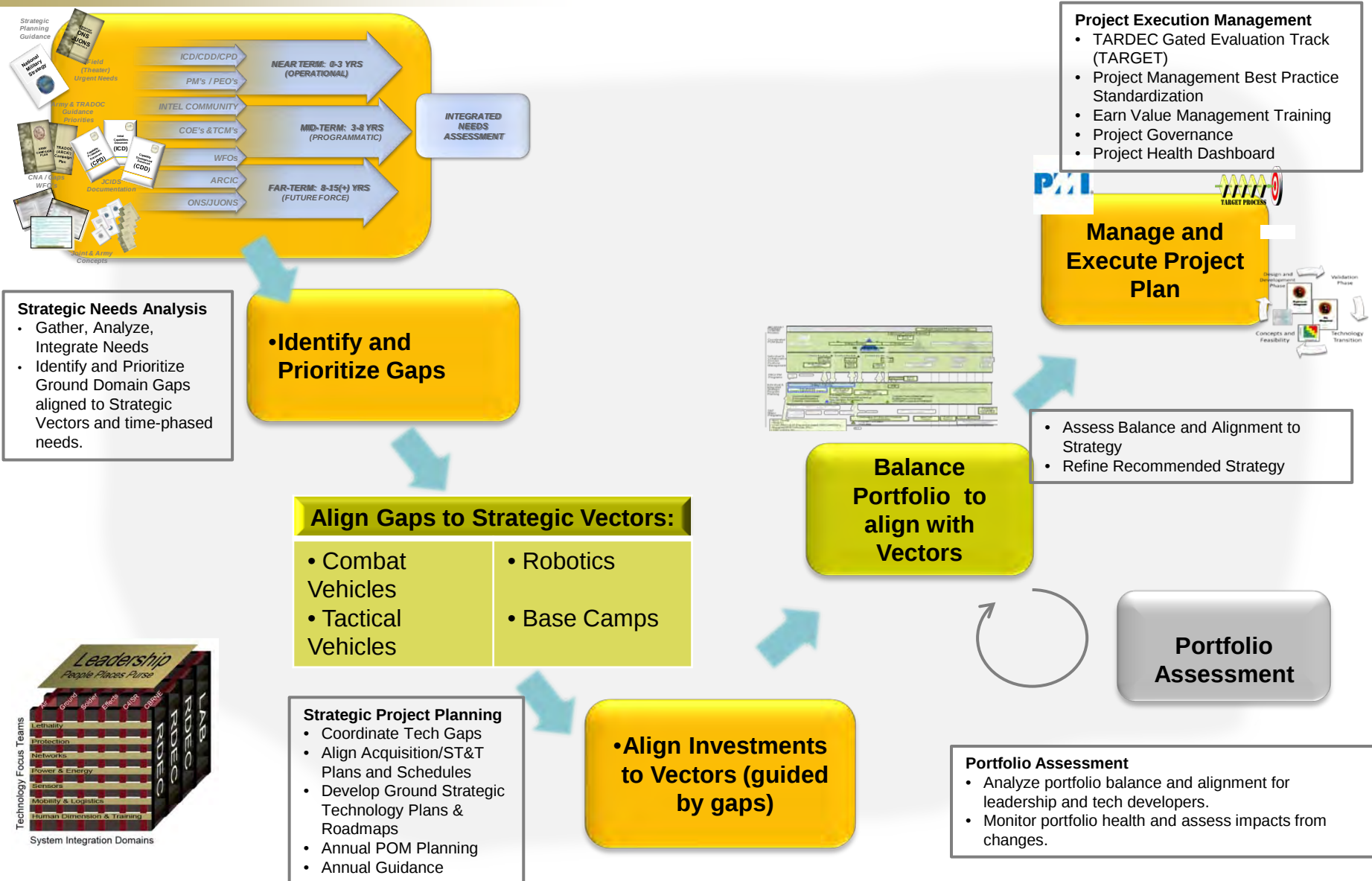
- Design, implement and sustain an product development system for science and technology development at TARDEC that integrates proven methodologies including project management, systems engineering, design for six sigma applications and tools.

- **Vision**

- Enact a robust, systematic and culturally embedded data driven decision methodology for TARDEC technology development by 2012.



Ground Domain Planning Process



TARGET

Regulations/Requirements

Commercial Best Practices

- US Government Accountability Office; Best Practices: Stronger Practices Needed to Improve DoD Technology Transition Processes, dtd September 2006
- 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 Intro 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

TARGET Construct

- TARGET is built upon benchmarks that were “*value-mined*”...

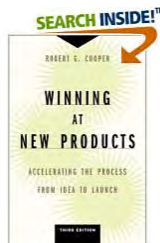


- Interviewed over 60 3M associates regarding NPI/NTI
- Analyzed 3M deployment failure modes
- Attended NPI training
- Attended OSD gate Review



- Leveraged ARDEC’s benchmarking of 8 private sector companies
 - Kodak, Cummins, Ford, 3M, Motorola, Boeing, MSA, Carrier
- Leveraged ARDEC’s lessons learned

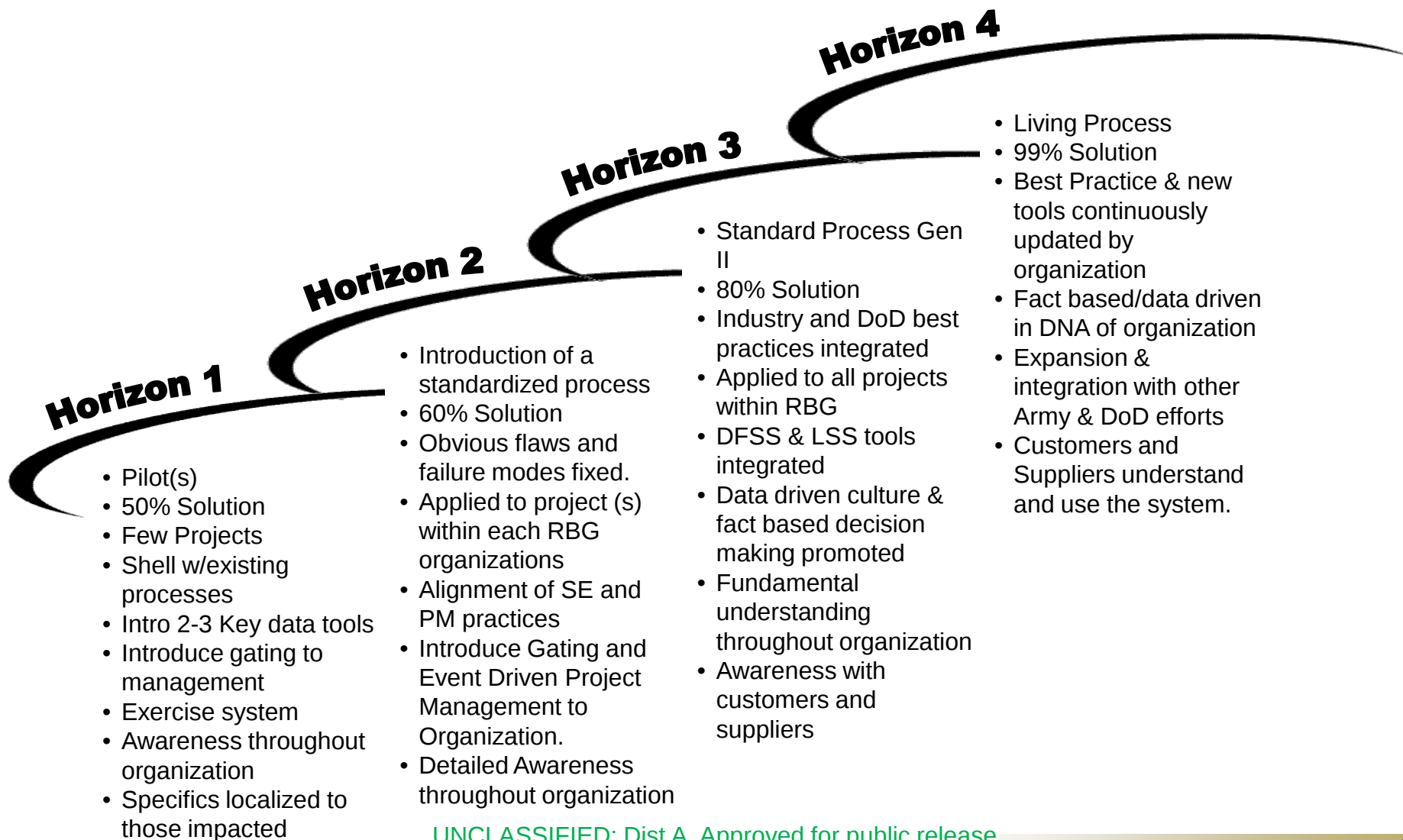
- Best practices from numerous product development principles



- NASA / DoD TRL models
- Latest version of the DoD 5000.2

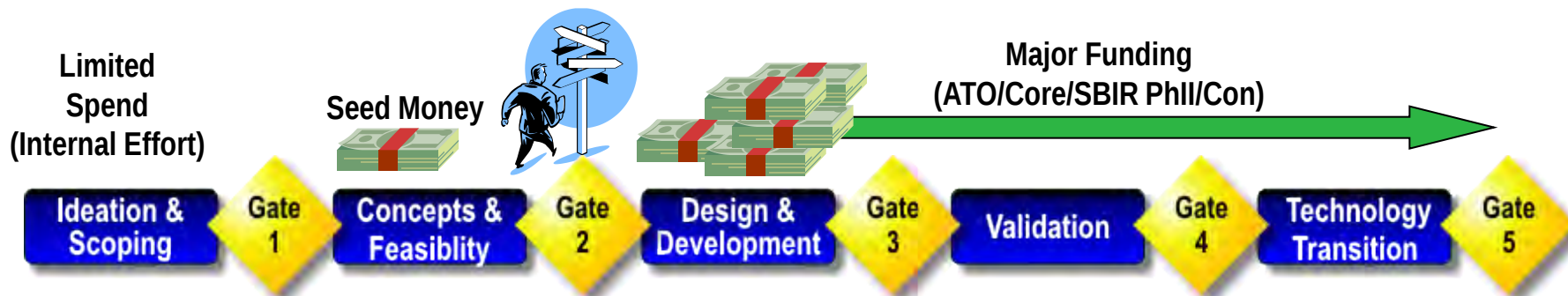
TARGET Maturity Model: Iterative Migration to Desired State

2010 2011 2012 2013



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

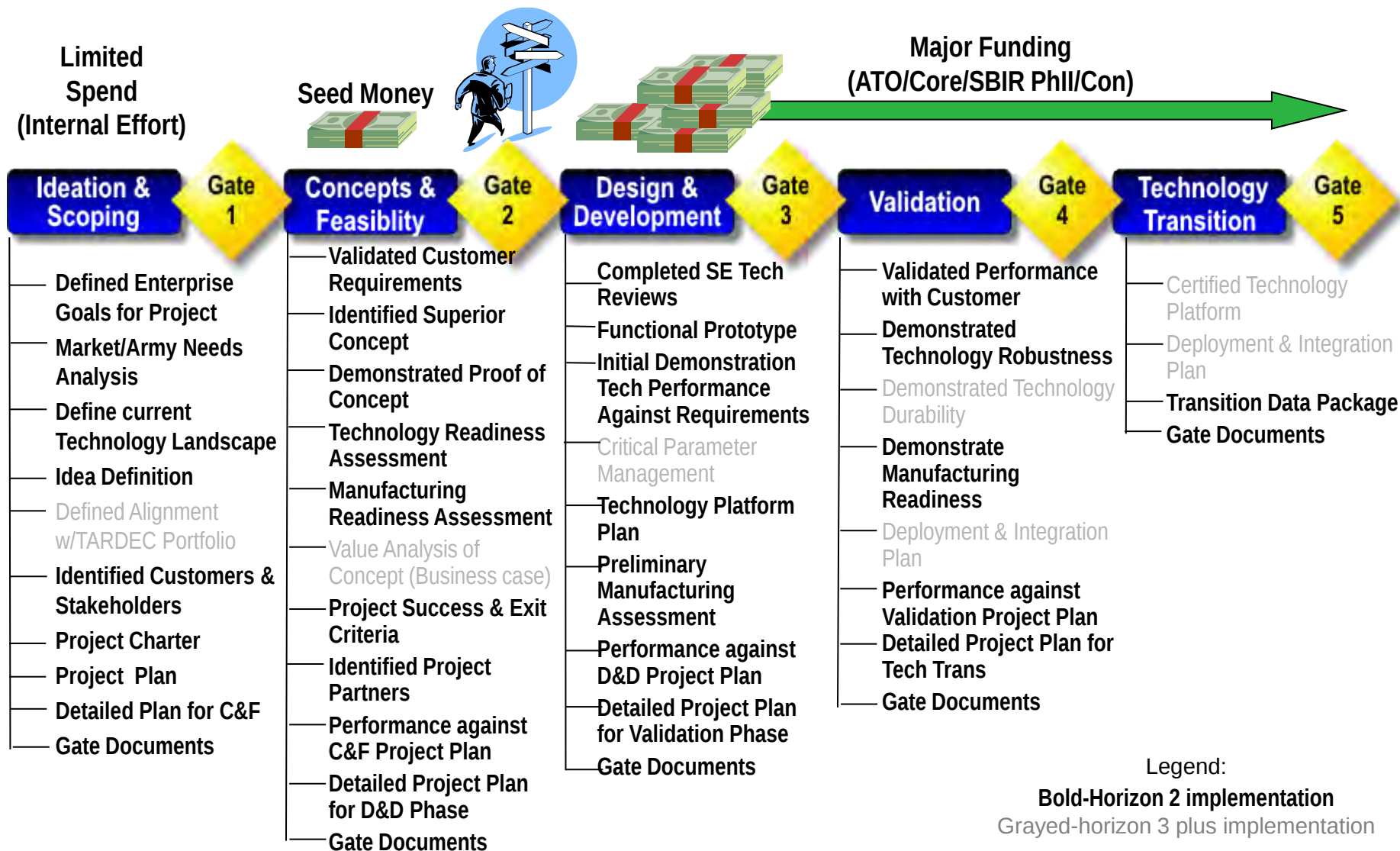
Stage 5

- High Level Objectives**
- Package the technology
 - Complete documentation of development.

DELIVERABLE:
Technology Support to Transition

TARGET Process

Select Funding Path



Phase Deliverables

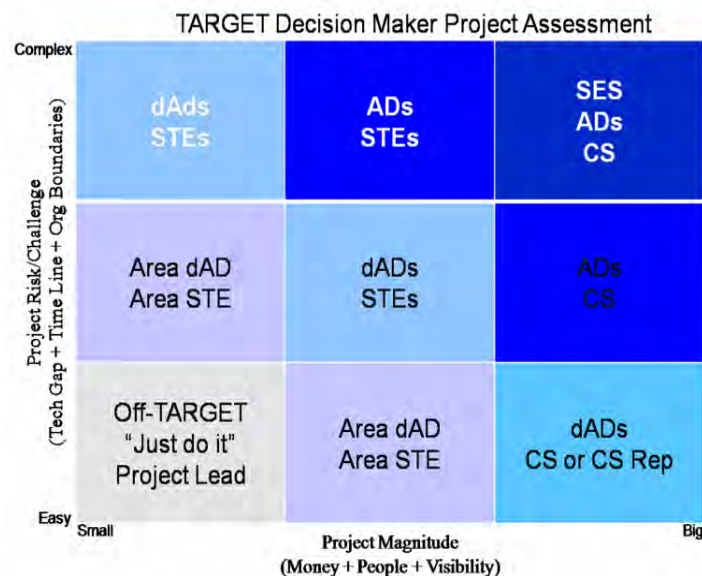
- Specific deliverables aligned to each phase activities designed to reduce programmatic risk
- Identify the right amount of data at the right time to facilitate problem identification and solution
- Recommended activities by commercial best practices and GAO
- Windchill should be used to store and document 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

Gates

- 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?



Project: L2 Snow Removal System

Gate 1 (I&S→C&F) - Gate Decision Review Score Card

Gate Decision Authority Name: *Joe Gatekeeper*

Gate Pass Rating (R-G-B-I-K): *R*

Phase Deliverable	Project Health Recommendation		GDA Scoring Performance against "Go" criteria (1-5)		GDA Action Tasks
	Gate Risk (R-Y-G)	Data Integrity (1-5)	Gate Risk (R-Y-G)	Gate Risk (R-Y-G)	
Defined Enterprise Goals for Project		4	5	G	
		3	4	Y	
Technology Analysis		5		G	
Idea Definition		2			
Identified Customers & Stakeholders		1		R	
Project Charter					
Gate Plan					
Performance against I&S Scope					
Detailed plan for CAF					
Initiation & Closing Gate Documents					
GDA Overall Score:					

Gate Documents

- ☒ Draft overall project plan
- ☒ Detailed Project Plan for Concepts & Feasibility
- ☒ Program Charter
- ☒ Project Proposal Submission Package (Marketing chart & 8 question chart)
- ☒ Project Recommendation
- ☒ Gate Decision Authority Score Card

Project Metrics:

Project Slip Rate	
Cost	
R-Spend	

As the gates go, so goes the process – R. Cooper

Ideation & Scoping Phase



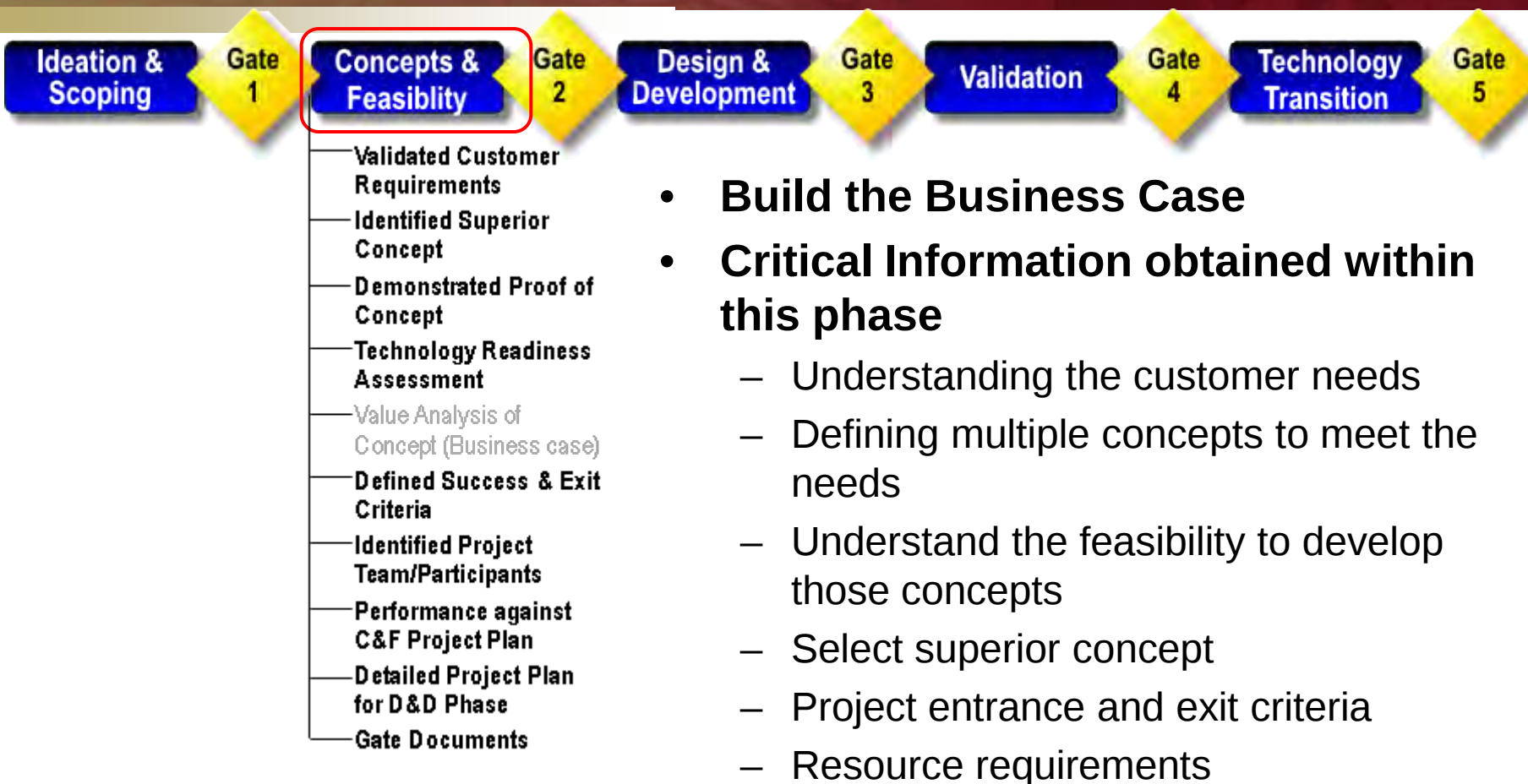
- **Defined to be the Up Front homework phase**
- **Critical Information obtained within this phase**
 - Project alignment with TARDEC core competencies (Strategic Alignment)
 - Identification of potential customer and stakeholders
 - Technology Landscape (State of Art)
 - Identify high level scope and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

- Defined Enterprise Goals for Project
- Market/Army Needs Analysis
- Technology Analysis
- Idea Definition
- Defined Alignment w/TARDEC Portfolio
- Identified Customers & Stakeholders
- Project Charter
- Gate Plan
- Performance against I&S Scope
- Detailed Plan for C&F
- Gate Documents

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/Ideation_%26_Scoping

Concept & Feasibility Phase



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



- System Engineering Technical Reviews
- Functional Prototype
- Demonstrated Performance Against Requirements
- Critical Parameter Management Plan
- Technology Platform Plan
- Preliminary Manufacturing Assessment
- Performance against D&D Project Plan
- Detailed Project Plan for Validation Phase
- Gate Documents

- **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



- 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

- **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.

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

- Certified Technology Platform
- Deployment & Integration Plan
- Transition Data Package
- Gate Documents

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.