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Complementary or Competing?

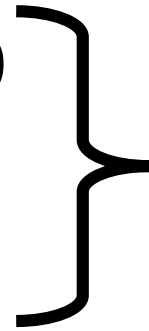## Achieving Synergy With

OPM3®, CMMI®, and ISO 9001-2000

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″ About Harris RF Communications

″ ISO 9001-2000

″ CMMI®

″ OPM3®

Origin

Applicability

Architecture

Assessment Methods
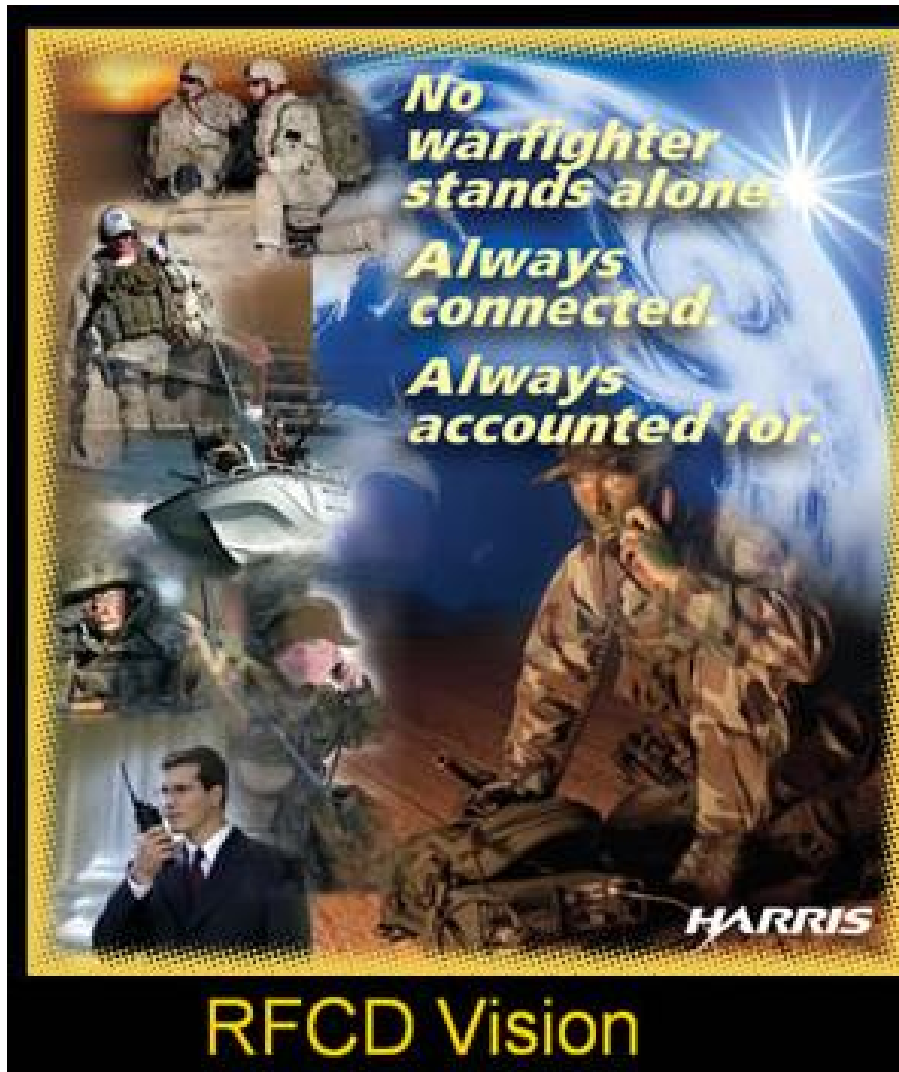
Improvement Methods

″ Process Standards Comparisons

″ Synergy Concepts and Techniques

″ Benefits of Multi-Model Approaches

″ Closing Thoughts

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...cations Division

HARRIS

No warfighter stands alone.
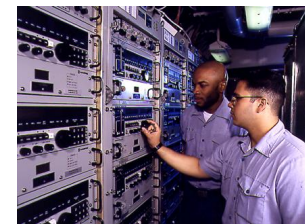
Always connected.

Always accounted for.

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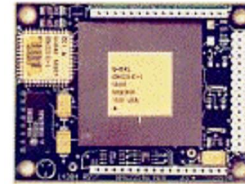**RFCD Vision**

RFCD Mission

We are the best-in-class, global supplier of communications-based products and systems for military customers. Backed by superior customer support, our reliable, fully-integrated, secure wireless solutions help our customers achieve network integrity, pervasive connectivity and information dominance in their theater of operations.

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tfolio

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″ Commercial Approach

″ High Product Mix

″ Low to High Volume

″ Build to Forecast

″ Industrial & Military Specifications
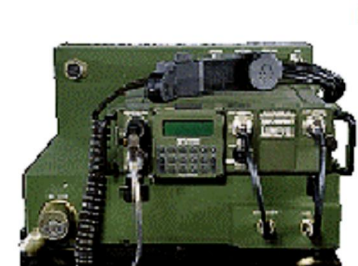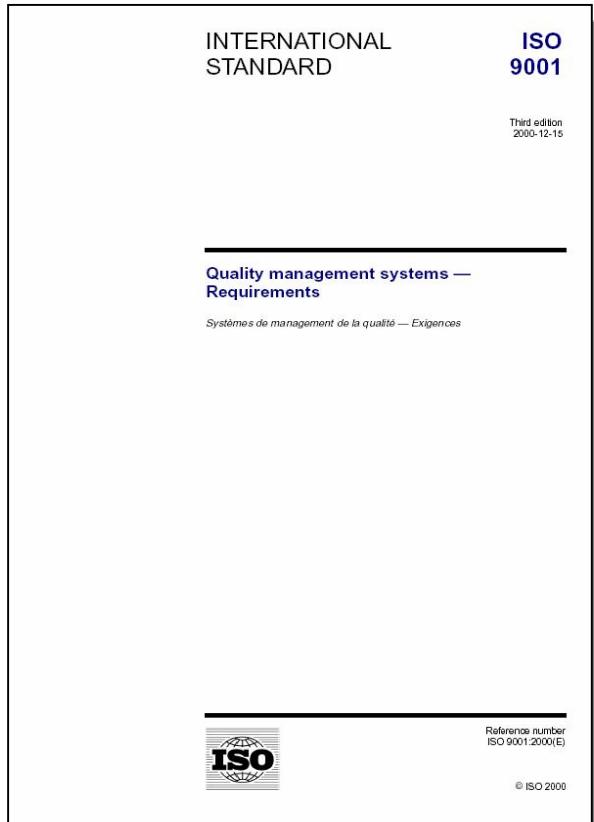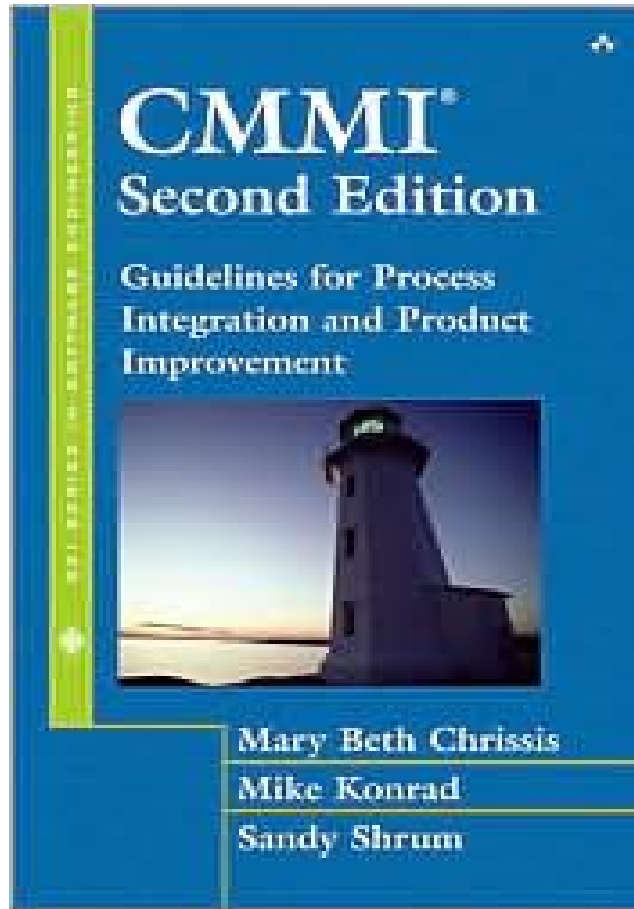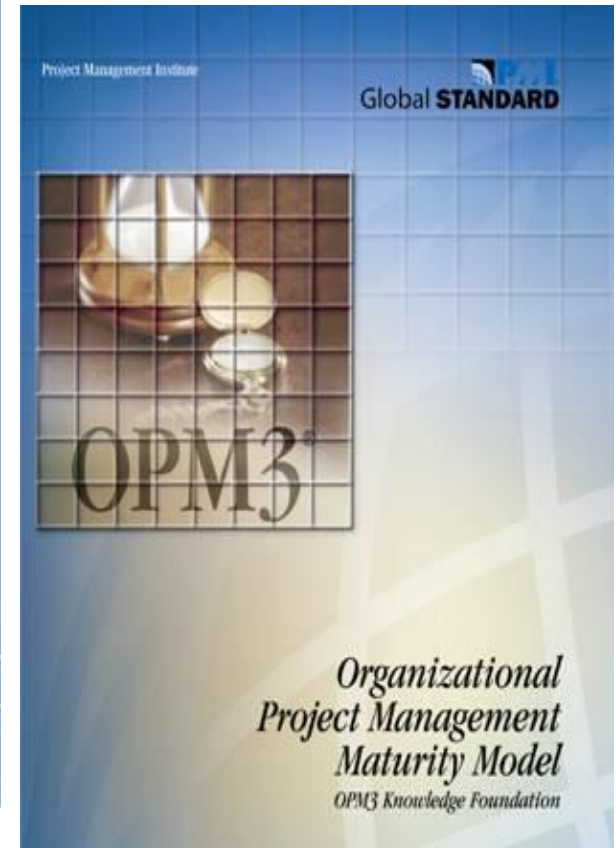
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Origins

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2003

2006

2007

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s. Models

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″ About Harris RF Communications

″ **ISO 9001-2000**

″ **CMMI®**

″ **OPM3®**

Origin

Applicability

Architecture

Assessment Methods

Improvement Methods

″ Process Standards Comparisons

″ Synergy Concepts and Techniques

″ Benefits of Multi-Model Approaches

″ Closing Thoughts

6

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INTERNATIONAL STANDARD

ISO 9001

Third edition
2000-12-15

Quality management systems —
Requirements

Systèmes de management de la qualité — Exigences

Reference number
ISO 9001:2000(E)

© ISO 2000
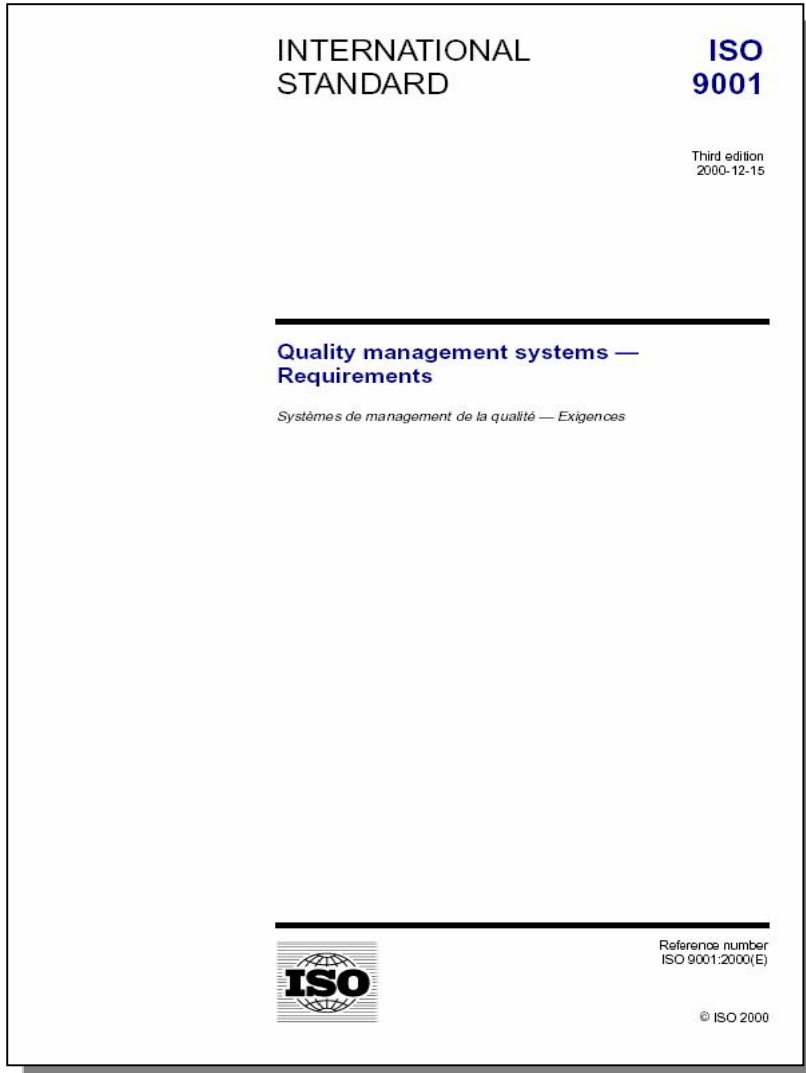
˝ A Generic Systems Process Standard

˝ Based on 279 % Shall+ Statements
- Not all Absolute

˝ Shall Statements Grouped into Sections

˝ Includes Electronic and Hardcopy Formats

˝ Application Includes‚õ
- Any Type of Organization
- Global
- Multiple Industries

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Model

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CONTINUAL IMPROVEMENT OF THE QUALITY MANAGEMENT SYSTEM

Customers

Customers

Management Responsibility

Clause 5

Resource Management

Clause 6

Clause 8

Measurement, Analysis and Improvement

Satisfaction

Clause 7

Service/Product Realization

Service Product

Requirements

Input

Output

activities

information flow

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...ation

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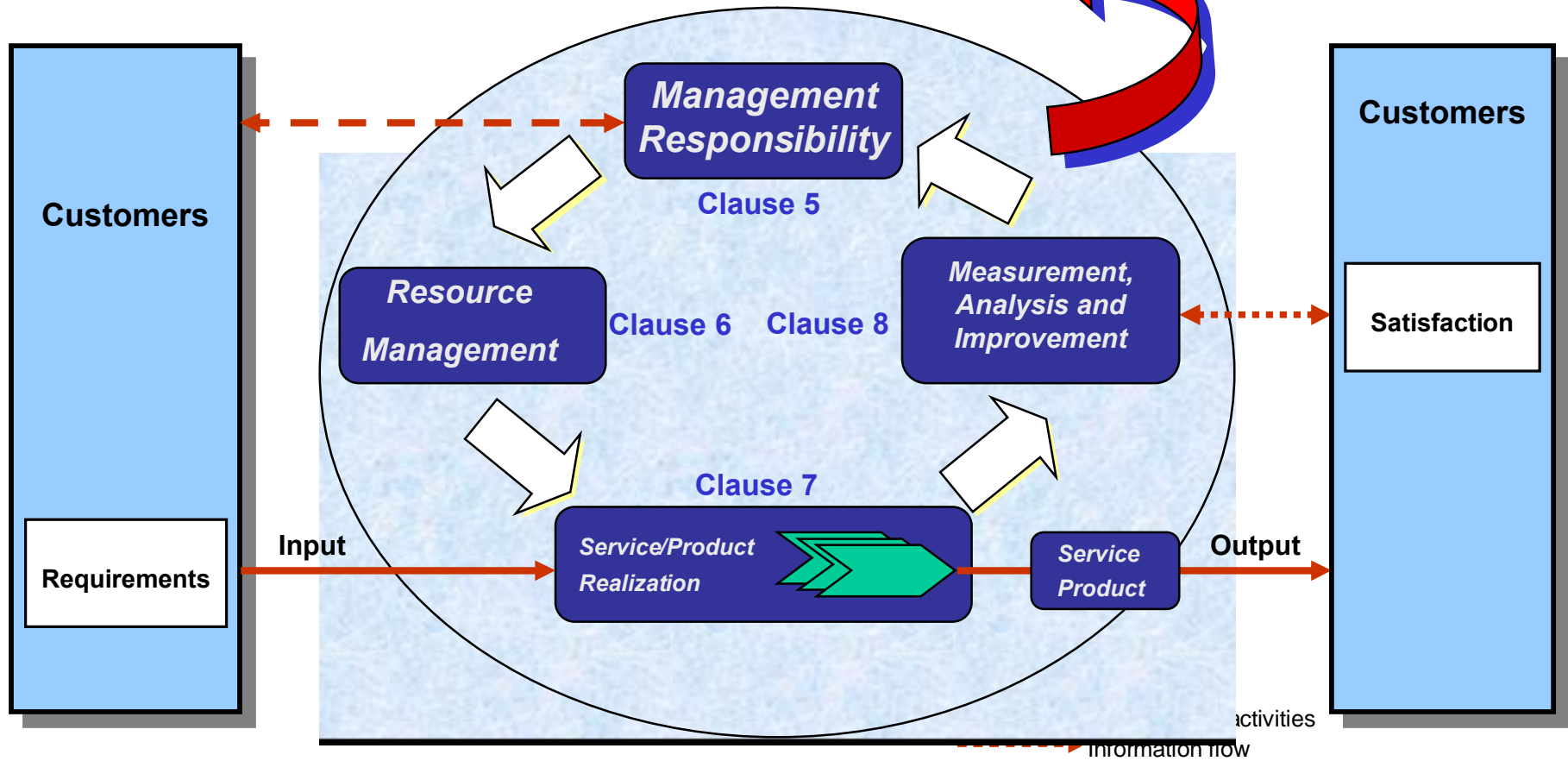
" Certification is known in some countries as registration.

" An independent, external body audits the organization's management system and verifies that it conforms to requirements specified in the standard (ISO 9001-2000).

Initial	**Transition**

- Optional
  pre-assessment
	- On going
	  surveillance

- Registration
  assessment
	- Upgrading the
	  existing registration

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al Improvement

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" **Continual Improvement is both a 9001-2000 Quality Management Principle and a Requirement**

- . Continually Improve Effectiveness of the System
- . Corrective Action
- . Preventive Action

" **ISO 9004-2000 Guidelines Recommended Methods**

- . Financial Measurement
- . Measurement of Process Performance throughout the Organization
- . External Measurement, such as Benchmarking and Third-party Evaluation
- . Assessment of the Perceptions of Customers and Other Interested Parties of Performance of Products Provided
- . Measurement of Other Success Factors Identified by Management.
- . Assessment of the Satisfaction of Customers, People in the Organization and Other Interested Parties

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Model

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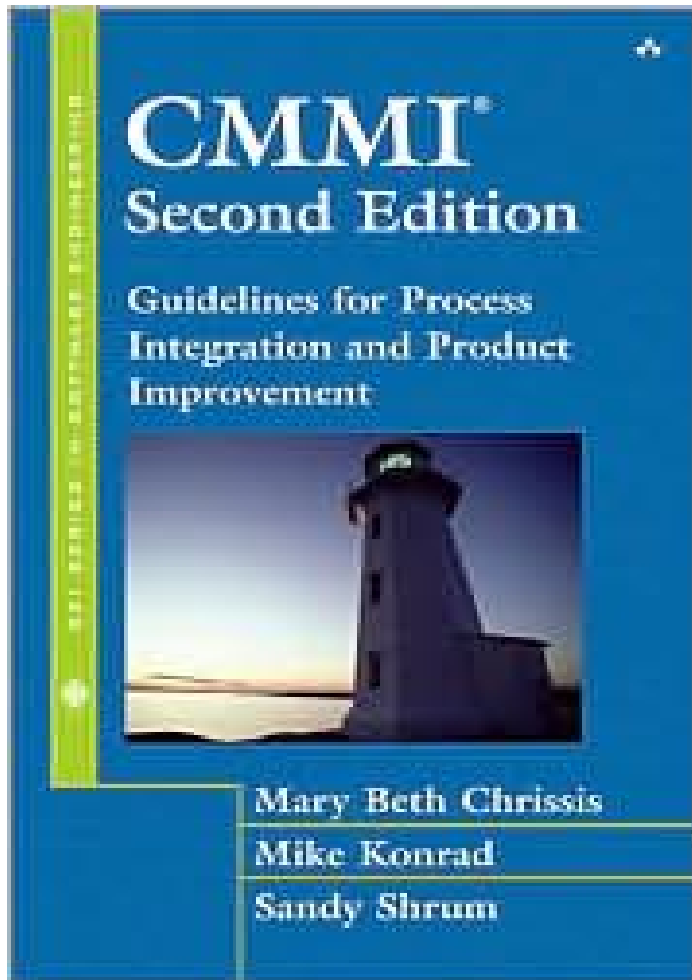
″ A Model-Based Process Standard

″ Consists of Generic and Specific Practices (437)

″ Practices Grouped into Process Areas

″ Includes Electronic and Hardcopy Formats

″ Application Includes,õ

. Product Development or Service
. Global
. Multiple Industries

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...ss Areas

Maturity Levels	Process Areas (PA)
(2 PAs) *Continuous Process Improvement* — **Optimizing (5)**	Organizational Innovation and Deployment (OID) Causal Analysis and Resolution (CAR)
(2 PAs) *Quantitative Management* — **Quantitatively Managed (4)**	Organizational Process Performance (OPP) Quantitative Project Management (QPM)
(11 PAs) *Process Standardization* — **Defined (3)**	Requirements Development (RD) Technical Solution (TS) Product Integration (PI) Verification (VER) Validation (VAL) Organizational Process Focus (OPF) Organizational Process Definition (OPD) +IPPD Organization Training (OT) Integrated Project Management (IPM) +IPPD Risk Management(RSKM) Decision Analysis and Resolution (DAR)
(7 PAs) *Basic Project Management* — **Managed (2)**	Requirements Management (REQM) Project Planning (PP) Project Monitoring and Control (PMC) Supplier Agreement Management (SAM) Measurement and Analysis (M&A) Process and Product Quality Assurance (PPQA) Configuration Management (CM)
Initial (1)	Ad hoc, chaotic processes

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ng – Goals & Practices

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SG 1 Establish Estimates

SP 1.1	Estimate the Scope of the Project
SP 1.2	Establish Estimates of Work Product and Task Attributes
SP 1.3	Define Project Life Cycle
SP 1.4	Determine Estimates of Effort and Cost

SG 2 Develop a Project Plan

SP 2.1	Establish the Budget and Schedule
SP 2.2	Identify Project Risks
SP 2.3	Plan for Data Management
SP 2.4	Plan for Project Resources
SP 2.5	Plan for Needed Knowledge and Skills
SP 2.6	Plan Stakeholder Involvement
SP 2.7	Establish the Project Plan

SG 3 Obtain Commitment to the Plan

SP 3.1	Review Plans that Affect the Project
SP 3.2	Reconcile Work and Resource Levels
SP 3.3	Obtain Plan Commitment

Ordering

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Requirement	SCAMPI A	SCAMPI B	SCAMPI C
Types of Objective Evidence Gathered	Documents and Interviews	Documents and Interviews	Documents or Interviews
Ratings Generated	Goal Ratings Required	No Ratings Allowed	No Ratings Allowed
Organizational Unit Coverage	Required	Not Required	Not Required
Minimum Team Size	4	2	1
Appraisal Team Leader Requirements	SCAMPI A Lead Appraiser	SCAMPI B and C Team Leader	SCAMPI B and C Team Leader

SCAMPI = Standard CMMI® Appraisal Method for Process Improvement

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Improvement

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- Continual improvement is the focus of CMMI®.

    - CMMI® is a "roadmap" for improvement through its maturity levels.

    - All process areas have improvement practices.

    - Improvement approach is gradual.

- CMMI® provides improvement guidelines for first time adopters and organizations transitioning from other process standards.

- CMMI® based appraisals are used to guide process improvement.

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e Standard

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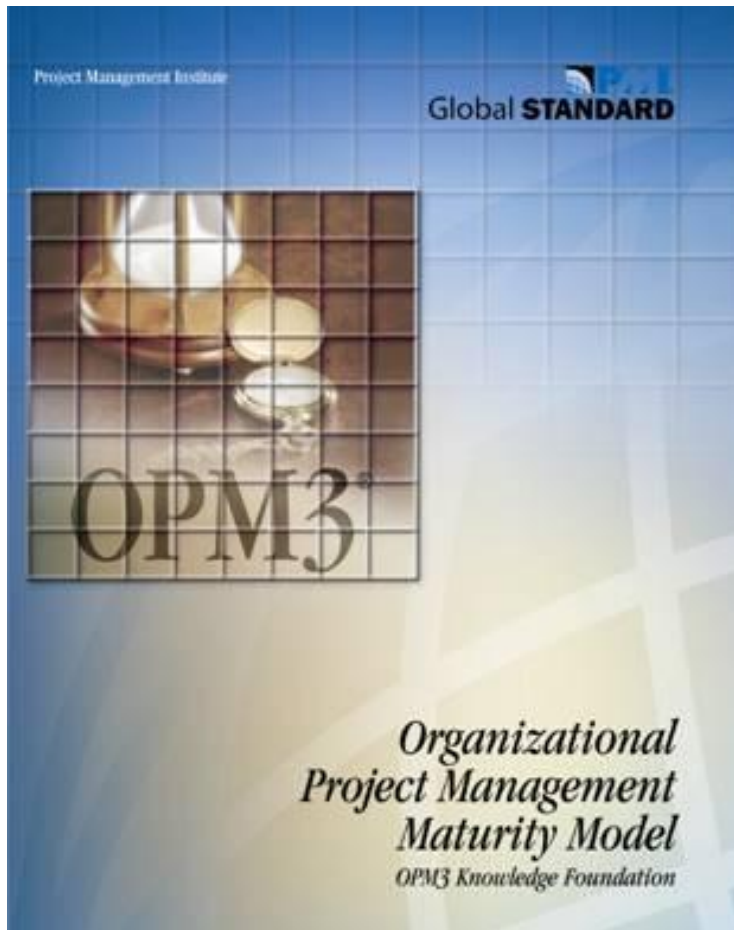
˝ A Model-Based Process Standard

˝ Based on 586 Best Practices

˝ Best Practices are Broken Down into a Series of Capabilities (or Steps)

˝ Available CD-ROM and On-Line

˝ Application Includes,õ

. Any Type of Organization
. Global
. Almost any Industry

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locking Elements

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Organizational Project Management, its maturity, relative Best Practices, and how to use OPM3®

Knowledge

Improvement

Development of an improvement plan

Sequence of developing Capabilities aggregating to Best Practices

Assessment

Comparison of current maturity state with the model

Includes methods for evaluating Best Practices and Capabilities

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e Structure

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Best Practice 1010
Project Initiation Process Standards are Established

Best Practice

Capability ← → **Outcome** ← → **KPI**

Capability 1010.020
The Organization assembles, develops, purchases or otherwise acquires a Project initiation process.
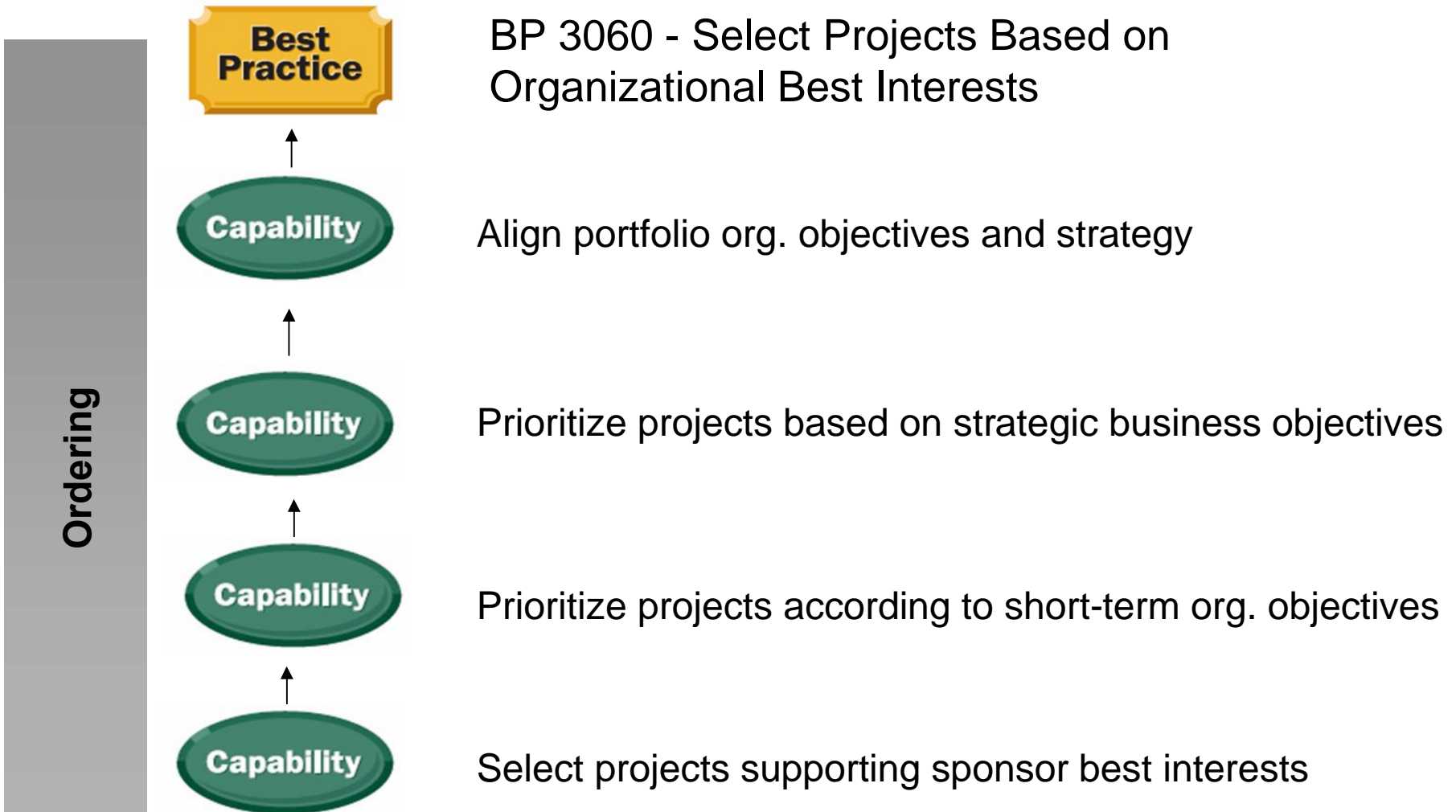
Outcome 1010.020.10
Project Initiation Process is documented and communicated to all necessary stakeholders

Key Performance Indicator
A Documented Project Initiation Process Exists

18

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Ordering

Best Practice

BP 3060 - Select Projects Based on Organizational Best Interests

Capability

Align portfolio org. objectives and strategy

Capability

Prioritize projects based on strategic business objectives

Capability

Prioritize projects according to short-term org. objectives

Capability

Select projects supporting sponsor best interests

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" …groupings to provide structure and a framework for the OPM3® Model so that the relationship between Best Practices and Capabilities could be better understood."

OPM3® Knowledge Foundation

Domains:	Portfolio, Program or Project (PPP)
Improvement Stages:	Standardize, Measure, Control or Continuously Improve (SMCI)
Project Management Processes:	Initiate, Plan, Execute, Control, and Close

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Step 1. Prepare for Assessment
Know the model.

Step 2. Perform Assessment
Use Self and Comprehensive
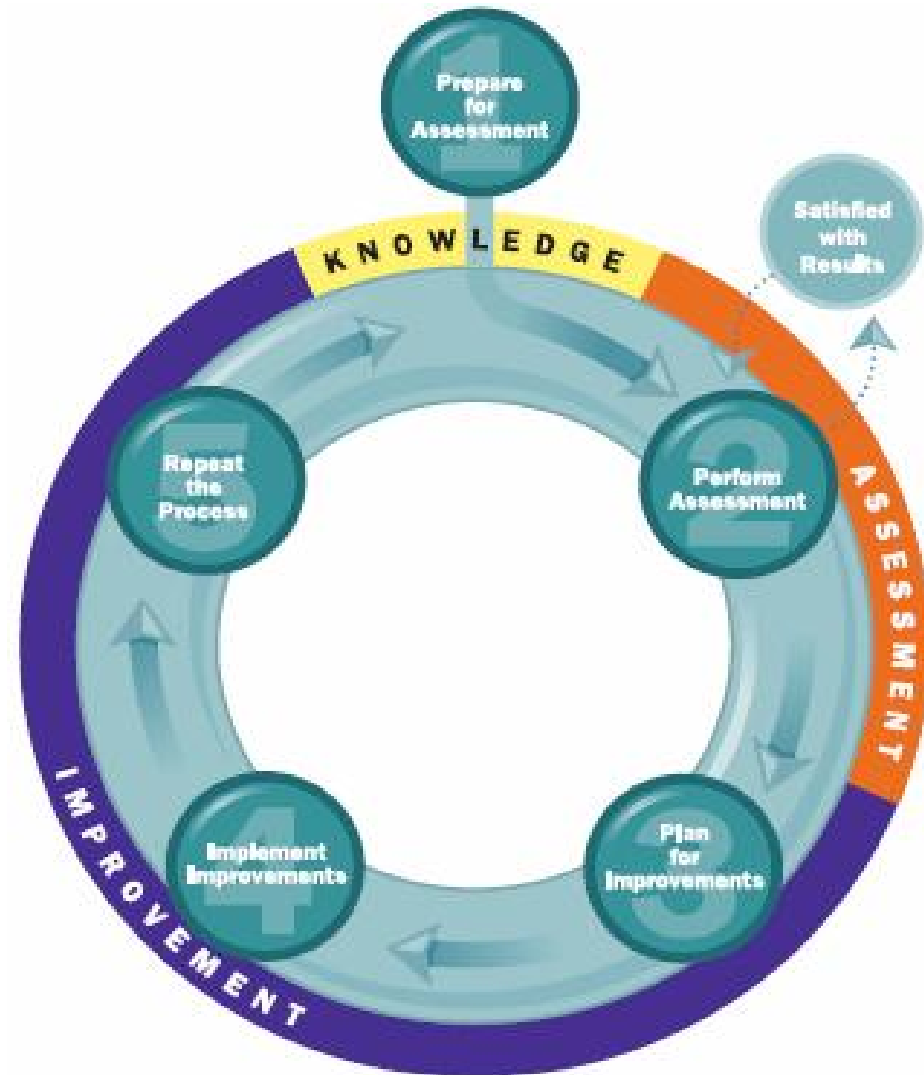Assessments initially.

Step 3. Plan for Improvements
Rank the improvement needs.

Step 4. Implement Improvements
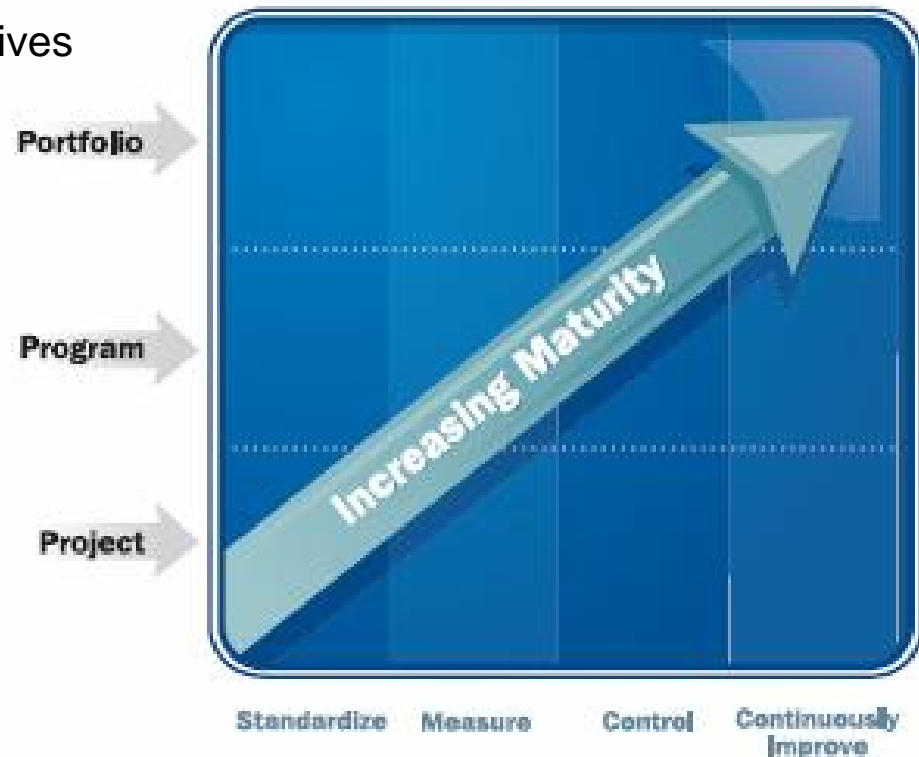Monitor and control change (s).

Step 5. Repeat the Process
Return to **Steps 1** or **3**.

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″ Organizational Project Management Maturity Increases along a Continuum

. OPM3® provides multiple perspectives for assessing maturity

1) Along the SMCI

2) Along the PPP

3) Progression of capabilities leading to best practices

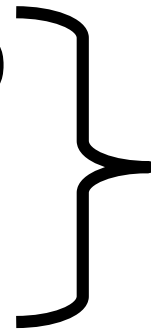4) Initiating, planning, executing, controlling and closing

Portfolio

Program

Project

Increasing Maturity

Standardize Measure Control Continuously Improve

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″ About Harris RF Communications

″ ISO 9001-2000

″ CMMI®

″ OPM3®

Origin

Applicability

Architecture

Assessment Methods

Improvement Methods

″ **Process Standards Comparisons**

″ Synergy Concepts and Techniques

″ Benefits of Multi-Model Approaches

″ Closing Thoughts

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ndard Comparisons

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|	OPM3® (PMI)	CMMI® (SEI)	ISO 9001-2000 (ISO)
Format	Model-Based	Model-Based	Standard
Appraisal Method	Assessment	Appraisal	Registration
Measurement	Maturity Continuum	Maturity/Capability Level	One Set of "Shall" Requirements
Implementation Guidance	Implementation Guidance	Institutionalization and Implementation Guidance	No Implementation Guidance
Application	Narrow (Project Management)	Narrow (Product Development)	Broad (Cross Functional)

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rovement Stages

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	OPM3® (PMI)	CMMI® (SEI)	ISO 9001-2000 (ISO)
Level 1	Standardize	Initial	ISO 9004-2000 High Level Guidelines for Process Improvement
Level 2	Measure	Managed	
Level 3	Control	Defined	
Level 4	Continuously Improve	Quantitatively Managed	
Level 5		Optimizing	
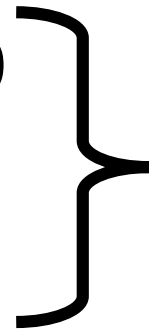
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″ About Harris RF Communications

″ ISO 9001-2000

″ CMMI®

″ OPM3®

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Improvement Methods

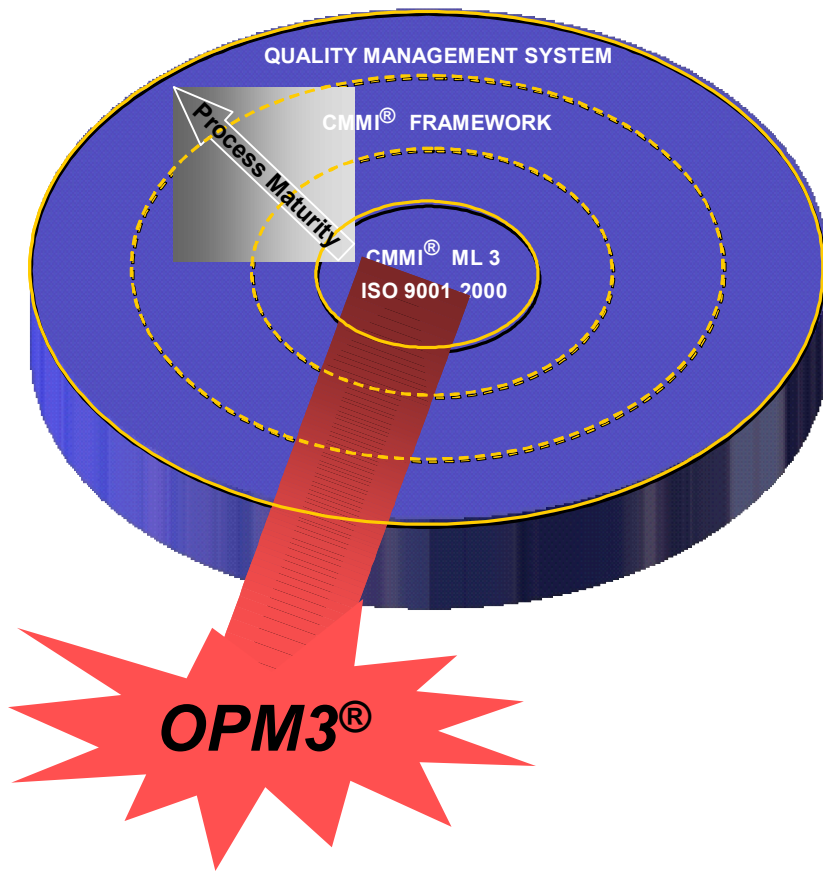″ Process Standards Comparisons

″ **Synergy Concepts and Techniques**

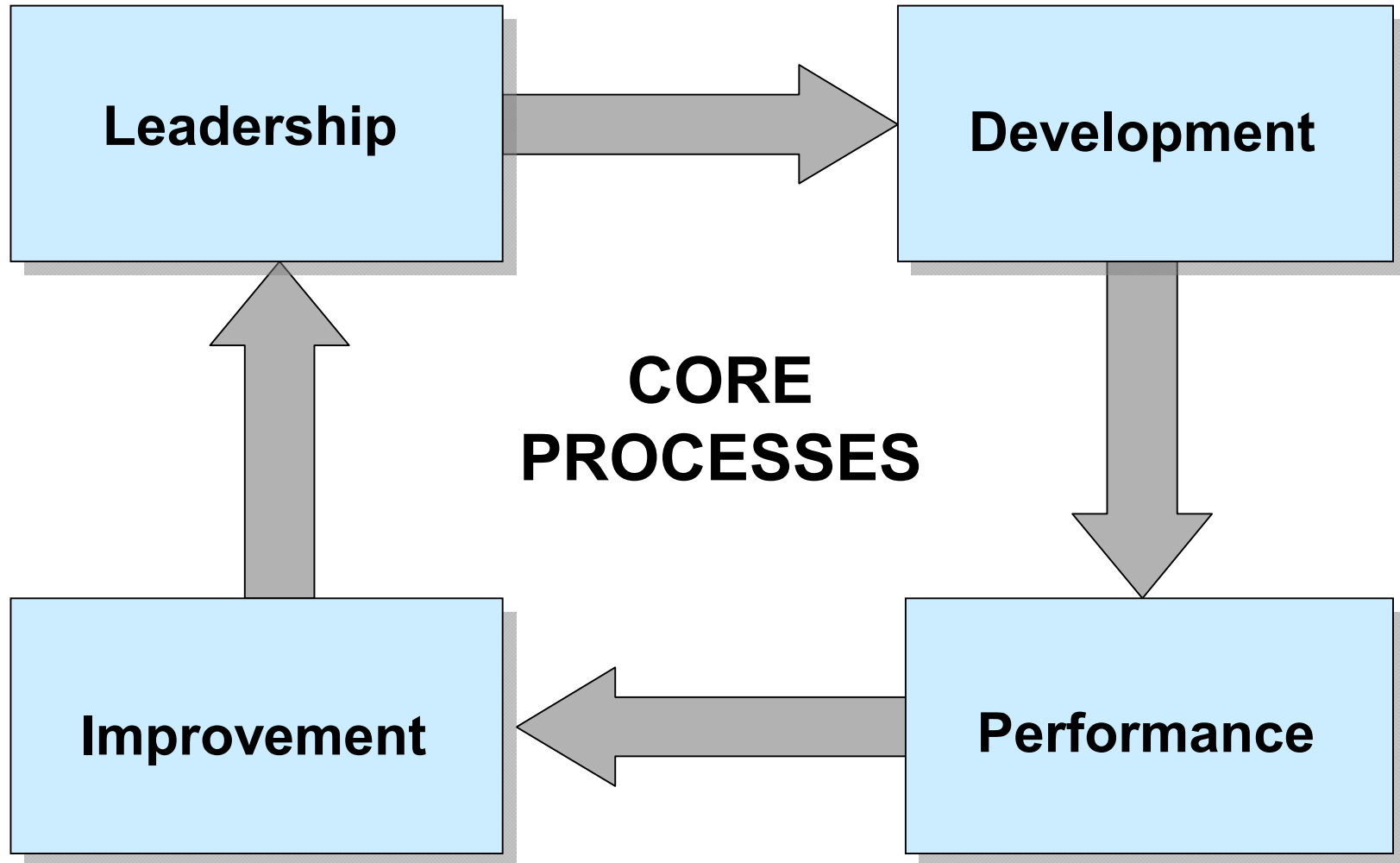″ Benefits of Multi-Model Approaches

″ Closing Thoughts

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Model Environment

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QUALITY MANAGEMENT SYSTEM

CMMI® FRAMEWORK

Process Maturity

CMMI® ML 3
ISO 9001-2000

OPM3®

˝ Core Organizational Process Requirements

. Built on ISO 9001-2000 and CMMI®

˝ Process Requirements are focus of change

˝ *Not the model*

˝ Audits, Appraisals, Lean, Six Sigma, etc., are improvement methods

. Unified Process Improvement Efforts

˝ All models support process improvement for groups and interfaces among groups

˝ All models have focus and non-focus areas

˝ All models have best practices

. Institutionalization / Standardization of Practices

˝ Strongest in CMMI® with Generic Practices

ML = Maturity Level
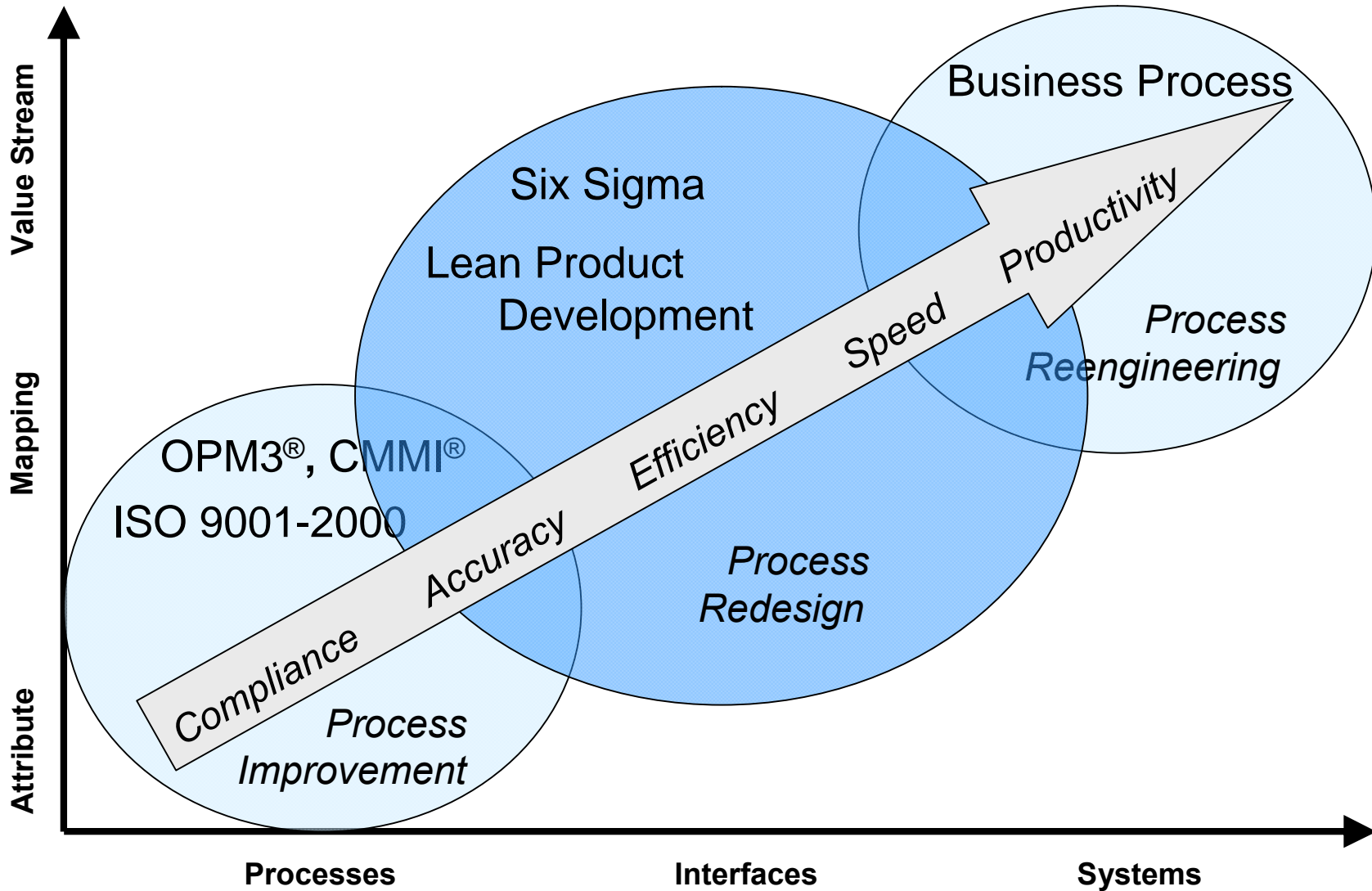
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```
  ┌─────────────────┐              ┌─────────────────┐
  │                 │  ─────────▶  │                 │
  │   Leadership    │              │   Development   │
  │                 │              │                 │
  └─────────────────┘              └─────────────────┘
         ▲                                  │
         │          CORE                    │
         │        PROCESSES                 ▼
  ┌─────────────────┐              ┌─────────────────┐
  │                 │  ◀─────────  │                 │
  │   Improvement   │              │   Performance   │
  │                 │              │                 │
  └─────────────────┘              └─────────────────┘
```

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Value Stream

Mapping

Attribute

Business Process

Six Sigma

Lean Product Development

Productivity

Speed

Efficiency

Process Reengineering

OPM3®, CMMI®

ISO 9001-2000

Accuracy

Compliance

Process Redesign

Process Improvement

Processes   **Interfaces**   **Systems**
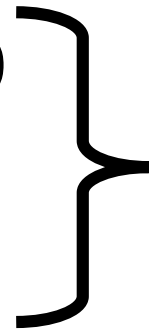
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˝ About Harris RF Communications

˝ ISO 9001-2000

˝ CMMI®

˝ OPM3®

Origin

Applicability

Architecture

Assessment Methods

Improvement Methods

˝ Process Standards Comparisons

˝ Synergy Concepts and Techniques

˝ **Benefits of Multi-Model Approaches**

˝ Closing Thoughts

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nd Benefits

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″ Planned Multi-Model Approaches Unifies and Disciplines Diverse Process Improvement Efforts

- Promotes and aligns Leadership understanding and commitment
- Avoids redundancies and overlaps in process improvement ($$$)
  - ″ Encourages coordination and resource optimization
- Helps to eliminate self-optimizing silos and process overlaps
  - ″ Encourages efficient subprocess ordering and interfaces
- One model enables another model
- Helps to capture the overall business process framework

″ Assessments Provide Answers to Organizational and Business Process Maturity

- Does the process contribute to value-added work flows?
- Does the process contribute to organizational/business objectives?

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ughts

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4 Pillars of Wisdom

☞ *"Don't pay for the same real estate twice."*

☞ *"Don't take down a fence until you know why it was put up."*

☞ *"….build it and he will come."*

☞ *"Change before you have to."*

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HARRIS

Mark Scott is the Senior Manager for Process, Productivity and Improvement at Harris Corporation's RF Communications Division, Rochester, N.Y. He has 10 years practical experience leading and assessing model-based process improvements for project/program management, engineering, quality assurance, and supply chain organizations. Scott currently leads RF Communications' CMMI® and OPM3® initiatives, and is responsible for integrating these process frameworks into the division's ISO 9001-2000 Quality Management System (QMS). Along with a Master Degree in Organizational Management, Scott is a PMI licensed OPM3® assessor, a Six Sigma Black Belt, and a Harris candidate for the Carnegie Mellon University, Software Engineering Institute, CMMI® lead appraiser program.

Email: Mark.Scott@harris.com

CERTIFIED OPM3®
PMI® ASSESSOR
Mark N. Scott

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