CMMI AIM: Artificial Intelligence Maturity

Executive Summary

Published April 2026

CMMI AIM

CMMI® Institute

Executive Message

CMMI AIM: Governing AI at Scale

CMMI Artificial Intelligence Maturity (AIM) provides a governance grade framework for ensuring AI delivers business value without increasing organizational risk.

CMMI AIM enables leadership to assess, benchmark, and improve AI maturity and performance outcomes using a proven, outcome-based model already trusted worldwide.

What AIM Solves for the Board

- **Risk:** Addresses security, data protection, ethics, and regulatory exposure
- **Performance:** Links AI use directly to measurable business outcomes
- **Consistency:** Replaces fragmented AI practices with a unified model
- **Trust:** Enables transparency and accountability in AI decision making

Scope and Oversight

- Applies to AI development, acquisition, integration, and usage
- Covers all enterprise functions, not just IT or data science
- Introduces a new AI maturity benchmark without disrupting existing CMMI appraisals

Assurance Mechanisms

- Structured AI maturity appraisals
- Certified training and appraisal pathways
- Crosswalks to ISO AI related standards for audit readiness

Strategic Outcome

CMMI AIM positions the organization to scale AI responsibly, protect stakeholder trust, and remain resilient amid accelerating regulatory and market expectations for AI governance.

Training and Certification Pathways

To support adoption, CMMI AIM includes structured training and certification pathways aligned with the existing CMMI certification pathway approaches. Key offerings include:

- **Building Artificial Intelligence Maturity (BAIM):** A hybrid course combining precourse elearning with instructor-led training, focused on AI concepts, data quality, responsible and ethical AI, regulations, and managing AI initiatives.
- **Appraising Artificial Intelligence Maturity (AAIM):** An advanced course for certified CMMI Lead Appraisers, covering AI appraisal scoping, appraisal planning, performance analysis, and sustaining AI-driven improvement.

Existing certification holders are not immediately impacted unless they choose to extend into CMMI AIM. Over time, AIM will become increasingly integral as AI continues to become more embedded across the CMMI Model.

"As the world navigates an AI tsunami, CMMI AIM serves as a vital framework that enables organizations to rigorously benchmark their AI practices against a robust set of proven directional guidelines—driving value creation and strengthening client confidence."

—Dr. Sankaran Venkataramani, KPMG, CHMLA, CMMI Instructor, CMMI AI WG Member, CMMI AIM Pilot Participant

Executive Summary

CMMI AIM: Contextual Guidance

The CMMI AIM initiative extends the globally recognized CMMI Performance Solutions model to address the rapidly growing use of Artificial Intelligence in organizational systems, services, and products.

CMMI AIM is fundamentally focused on **achieving and confirming organizational AI maturity and performance outcomes**, ensuring that AI-enabled initiatives are implemented in a **consistent, measurable, transparent, responsible, and ethical** manner.

Purpose and Foundation

CMMI AIM builds on CMMI's proven, outcome-based approach to performance improvement, which has long supported organizations across product engineering, service delivery, security, safety, data management, supply chain, and workforce management. AIM introduces **AI-specific contextual guidance and best practices** that enable organizations to identify gaps, assess risks, and manage AI performance across the lifecycle. The CMMI Model emphasizes that AI adoption should be **purpose-driven**, aligned to defined objectives and outcomes, and supported by strong governance, infrastructure, data quality, skilled personnel, and clear success metrics.

IBM Consulting is the founding sponsor of the **CMMI AI Working Group**. The AIM content was developed by a globally representative body of more than 25 industry experts including IBM Consulting. The working group included executives, practitioners, instructors, lead appraisers, and Subject Matter Experts from a wide range of industries and geographic locations. Their charter focused on researching and curating industry best practices related to AI, machine learning, automation, ethics, DevSecOps, testing, threat analysis, advanced manufacturing, and translating those practices into actionable CMMI model content.

"I view CMMI AIM as a foundation for modern, AI-enabled IT delivery. Our continued investments in AI, including CMMI AIM, empower us to help clients accelerate innovation, drive industry eminence and enhance execution capabilities, unlocking new avenues for growth."

—Aman K Singhal, Partner, IBM Consulting

Value Proposition

CMMI AIM provides organizations with a **trusted, structured, and globally recognized approach** to building and appraising AI capability and maturity. By embedding AI considerations across all Practice Areas and domains, AIM enables organizations to manage AI risks, realize performance benefits, support regulatory and ethical obligations, and build deeper trust with customers and stakeholders. The result is a practical, scalable pathway for sustainable AI-enabled performance improvement.

Scope and Scale of AIM Content

CMMI AIM represents a significant expansion of the CMMI Model. All **31 Practice Areas** now include AI-related content, with **nearly 50% of practices** containing AI context specific additions, developed through extensive expert and community review including participation from approximately **100 companies**. This has enabled the inclusion of the right level of breadth and depth within the CMMI Model.

AI Context and Usage Scenarios

CMMI AIM recognizes that AI can be used in multiple ways and introduces clear **AI usage scenarios** to help organizations determine applicability. These range from **human-augmented AI**, where people may use AI to assist with decision-making, to **autonomous augmentation**, where AI may perform activities with human oversight, and finally to **fully autonomous AI**, where the system performs activities independently. AIM applies to organizations **building AI solutions** and those **acquiring, integrating, or using AI** within systems and services.

"Our appraisal participants stated that the CMMI AIM content is so comprehensive that it will enable much deeper trust with their customers, and directly and positively impact both top and bottom lines for organizations."

—CMMI AIM Pilot Representative

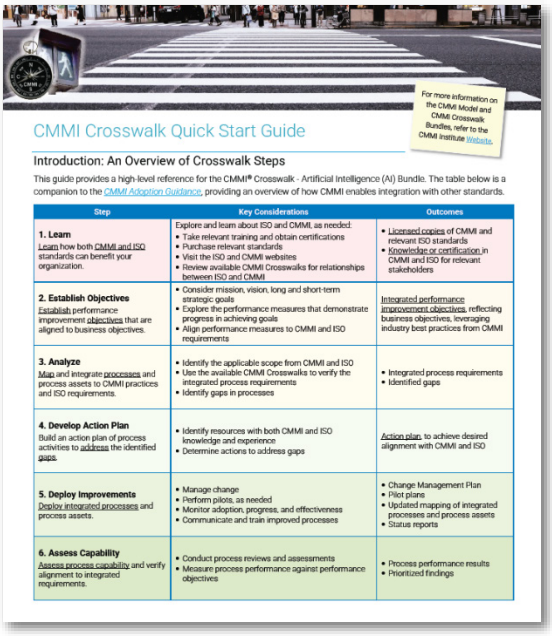
Appraisals and Benchmarking

CMMI AIM introduces a **new benchmark view** and does not alter existing CMMI appraisals. However, appraising AI maturity introduces unique planning and scoping considerations that are addressed through specialized training. AIM appraisals enable organizations to assess AI maturity across domains, analyze AI performance, and characterize practices using established CMMI appraisal methods tailored for AI contexts.

CMMI AIM Assets and Crosswalks

CMMI AIM is supported by a comprehensive set of **model assets**, including the updated CMMI Model, training materials, appraisal guides, exam policies, and practitioner and lead appraiser certifications. In addition, a new suite of **CMMI Crosswalks** maps CMMI practices to multiple ISO AI-related standards (including ISO 23053, ISO 23894, ISO 31000, and ISO 42001). These crosswalks enable unified compliance, reduce duplication, support gap analysis, and provide bidirectional traceability across frameworks.

CMMI Crosswalk Quick Start Guide



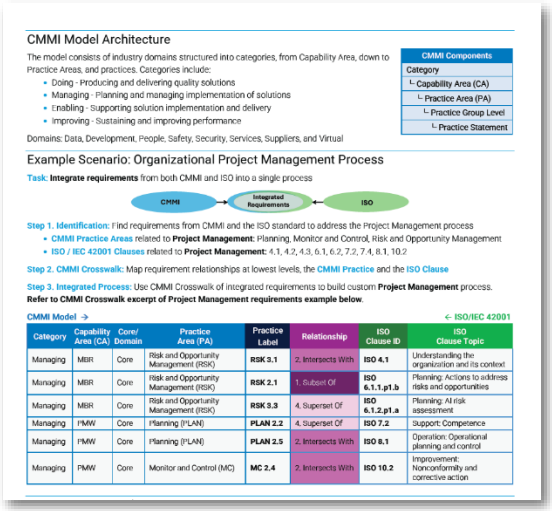
CMMI Crosswalk Quick Start Guide

For more information on the CMMI Model and CMMI Crosswalk Bundles, refer to the CMMI Institute Website.

Introduction: An Overview of Crosswalk Steps

This guide provides a high-level reference for the CMMI® Crosswalk - Artificial Intelligence (AI) Bundle. The table below is a companion to the CMMI Adoption Guidance, providing an overview of how CMMI enables integration with other standards.

Step	Key Considerations	Outcomes
1. Learn Learn how both CMMI and ISO standards can benefit your organization.	Explore and learn about ISO and CMMI, as needed: • Take relevant training and obtain certifications • Purchase relevant standards • Visit the ISO and CMMI websites • Review available CMMI Crosswalks for relationships between ISO and CMMI	• Licensed copies of CMMI and relevant ISO standards • Knowledge or certification in CMMI and ISO for relevant stakeholders
2. Establish Objectives Establish performance improvement objectives that are aligned to business objectives.	• Consider mission, vision, long and short-term strategic goals • Explore the performance measures that demonstrate progress in achieving goals • Align performance measures to CMMI and ISO requirements	Integrated performance improvement objectives, reflecting business objectives, leveraging industry best practices from CMMI
3. Analyze Map and integrate processes and process assets to CMMI practices and ISO requirements.	• Identify the applicable scope from CMMI and ISO • Use the available CMMI Crosswalks to verify the integrated process requirements • Identify gaps in processes	• Integrated process requirements • Identified gaps
4. Develop Action Plan Build an action plan of process activities to address the identified gaps.	• Identify resources with both CMMI and ISO knowledge and experience • Determine actions to address gaps	Action plan, to achieve desired alignment with CMMI and ISO
5. Deploy Improvements Deploy integrated processes and process assets.	• Manage change • Perform pilots, as needed • Monitor adoption, progress, and effectiveness • Communicate and train improved processes	• Change Management Plan • Pilot plans • Updated mapping of integrated processes and process assets • Status reports
6. Assess Capability Assess process capability and verify alignment to integrated requirements.	• Conduct process reviews and assessments • Measure process performance against performance objectives	• Process performance results • Prioritized findings



CMMI Model Architecture

The model consists of industry domains structured into categories, from Capability Area, down to Practice Areas, and practices. Categories include:

- Doing - Producing and delivering quality solutions
- Managing - Planning and managing implementation of solutions
- Enabling - Supporting solution implementation and delivery
- Improving - Sustaining and improving performance

Domains: Data, Development, People, Safety, Security, Services, Suppliers, and Virtual

CMMI Components: Category → Capability Area (CA) → Practice Area (PA) → Practice Group Level → Practice Statement

Example Scenario: Organizational Project Management Process

Task: **Integrate requirements** from both CMMI and ISO into a single process

CMMI → Integrated Requirements ← ISO

Step 1. Identification: Find requirements from CMMI and the ISO standard to address the Project Management process
- CMMI Practice Areas related to **Project Management**: Planning, Monitor and Control, Risk and Opportunity Management
- ISO / IEC 42001 Clauses related to **Project Management**: 4.1, 4.2, 4.3, 6.1, 6.2, 7.2, 7.4, 8.1, 10.2

Step 2. CMMI Crosswalk: Map requirement relationships at lowest levels, the CMMI Practice and the ISO Clause

Step 3. Integrated Process: Use CMMI Crosswalk of integrated requirements to build custom **Project Management** process.
Refer to CMMI Crosswalk excerpt of Project Management requirements example below.

CMMI Model → ← ISO/IEC 42001

Category	Capability Area (CA)	Core/ Domain	Practice Area (PA)	Practice Label	Relationship	ISO Clause ID	ISO Clause Topic
Managing	MBR	Core	Risk and Opportunity Management (RSK)	RSK 3.1	2. Intersects With	ISO 4.1	Understanding the organization and its context
Managing	MBR	Core	Risk and Opportunity Management (RSK)	RSK 2.1	1. Subset Of	ISO 6.1.1.p1.b	Planning: Actions to address risks and opportunities
Managing	MBR	Core	Risk and Opportunity Management (RSK)	RSK 3.3	4. Superset Of	ISO 6.1.2.p1.a	Planning: AI risk assessment
Managing	PMW	Core	Planning (PLAN)	PLAN 2.2	4. Superset Of	ISO 7.2	Support: Competence
Managing	PMW	Core	Planning (PLAN)	PLAN 2.5	2. Intersects With	ISO 8.1	Operation: Operational planning and control
Managing	PMW	Core	Monitor and Control (MC)	MC 2.4	2. Intersects With	ISO 10.2	Improvement: Nonconformity and corrective action

AIM View Domains

CMMI AIM introduces an AIM View that spans eight integrated domains: Data, Development, People, Safety, Security, Services, Suppliers, and Virtual.

CMMI AIM Enables Cross Domain AI Amplification: Across diverse scenarios involving solution development or service delivery, an organization's ability to execute faster, better, and cheaper remains a decisive differentiator, especially as AI becomes deeply embedded in operational and strategic workflows.

CMMI AIM provides a structured approach for organizations to strengthen essential AI related guardrails and competencies. It enables the development of robust capabilities in areas such as data governance, threat and risk management, ethical and regulatory compliance, accountability, transparency, fairness, and explainability. Together, these help organizations responsibly design, deploy, and scale AI systems with confidence.

These domains collectively ensure that AI initiatives address not only technical development and integration, but also critical enablers such as workforce readiness, data governance, security, regulatory compliance, and ethical considerations. The table below illustrates the eight CMMI domains through the lens of **CMMI AIM**.

Domain	CMMI AIM Domain Lens
Data	Enabling the organization to establish a robust data management infrastructure and governance, spanning data lineage through data quality, to drive reliable AI outcomes and solutions.
Development	A *primary* domain focused on ensuring the design, development, and use of high-quality AI solutions aligned with customer needs and expectations. This includes building AI solutions for client communities and leveraging AI-augmented solutions.
People	Focused on the talent management lifecycle, from development through retention, preparing and enabling the workforce to embrace AI through alignment to organizational business objectives in the context of AI democratization.
Safety	Focused on ensuring solution-level and societal safety in AI interventions, thereby mitigating the severity and likelihood of AI-related harm.
Security	Focused on building and enabling the secure use of AI platforms and tools to enhance stakeholder confidence.
Services	A *primary* domain focused on delivering superior service quality to customers within AI-as-a-Service (AIaaS) business models and through the integration of AI across existing and new service delivery ecosystems.
Suppliers	Focused on building an effective and efficient AI partnership ecosystem to deliver consistent value to end users.
Virtual	Focused on enabling effective virtual collaboration through robust infrastructure to deliver cohesive outcomes across AI solution development and usage.

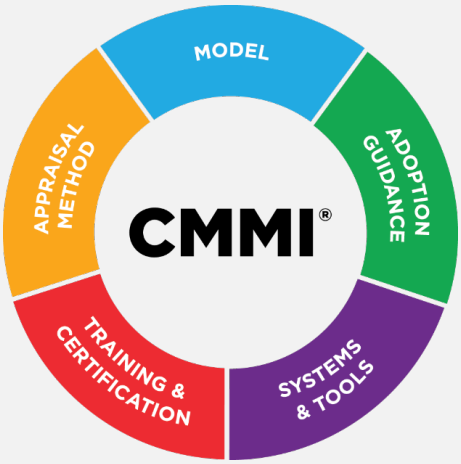
Learn More

Unleash Potential: CMMI Performance Solutions

CMMI Performance Solutions helps organizations quickly understand their current level of capability and performance in the context of their own business objectives and compared to similar organizations.

CMMI's performance improvement model has helped thousands of globally recognized companies—including many Fortune 500 organizations. CMMI Performance Solutions has been designed as an integrated product suite to address all the components of the CMMI ecosystem.

The CMMI Performance Solutions Ecosystem provides an integrated product suite consisting of five components, that when used together provide a clear and proven path to achieving your business objectives.



- **Training and Certification:** Training has modular components with virtual and in-person models. Provides performance-focused content and exercises. More learner-focused and learning objective oriented.
- **Appraisal Method:** The appraisal method helps to increase reliability while reducing overall cost and disruption to the organization appraised. Standard Performance Report template integrated into the appraisal method.
- **Model:** Clear pathway to performance improvement. Simplified for accelerated adoption. Built-in value statements for Practice Areas and practices to target performance improvement.
- **Adoption Guidance:** Easy onboarding for new adopters to get started with CMMI.
- **Systems and Tools:** Provides interactive user experience with model, appraisal method, and performance reporting resources.

About CMMI Institute

CMMI® Institute is trusted by thousands of high-performing companies worldwide to deliver guidance to build and sustain processes that drive business value and innovation. CMMI (Capability Maturity Model Integration) is a globally recognized performance improvement framework that helps organizations elevate and benchmark their capabilities to deliver high-quality products and services. Backed by decades of proven results, CMMI empowers organizations across industries to achieve measurable outcomes in quality, productivity, and efficiency. Designed with an open architecture, CMMI adapts to emerging challenges and industry-specific needs—enabling the development of tailored extensions like the Medical Device Discovery Appraisal Program (MDDAP), which supports FDA's Case for Quality initiative. To learn more about CMMI, visit CMMIinstitute.com.