



ACHIEVING SUSTAINABLE ENTERPRISE TRANSFORMATION

CM2 CERTIFICATIONS

CLEAR | CONCISE | VALID

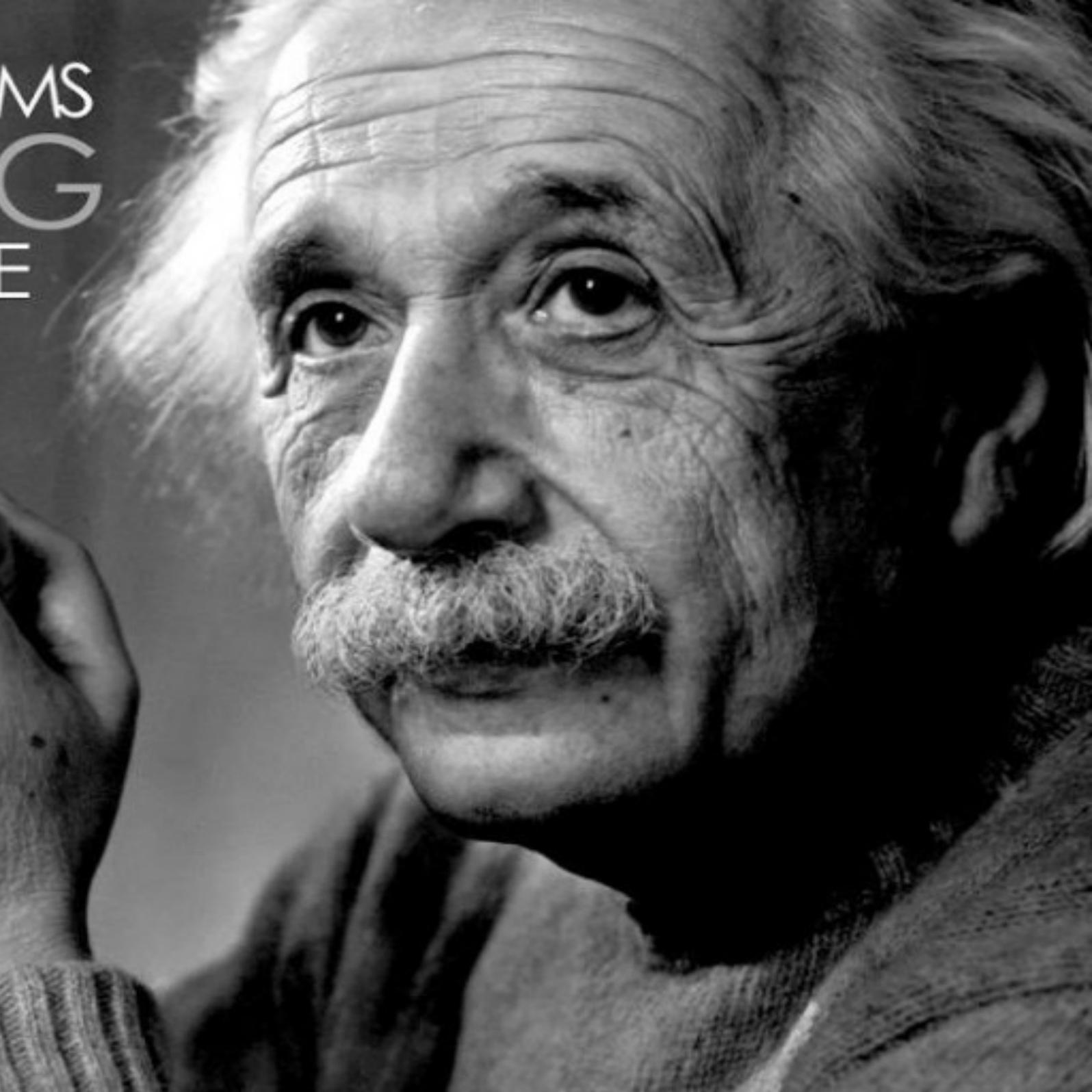


WE CANNOT SOLVE OUR PROBLEMS
WITH THE SAME THINKING
WE USED WHEN WE
CREATED THEM

-Albert Einstein



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G
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WHAT IS CM2?

CM2 is the global enterprise standard for change and configuration Management. CM2 provides a comprehensive methodology for managing the configuration (hierarchical set of information) of a product, system, and/or service throughout its life.

As product complexity increases and organizations become more reliant on their supply chains, managing the change process and communicating change status across many groups inside the organization and into the supply chain is an increasing challenge. Ineffective or poorly managed change processes can leave organizations struggling to improve quality, reduce time-to-market and manage costs.

With CM2, change and configuration management extends beyond design information to include all requirements for the enterprise, plus your product, service, and solution deliverables throughout your business lifecycle phases.



A woman with glasses and a dark sleeveless top is presenting to an audience in a meeting room. She is standing in front of a whiteboard and gesturing with her right hand. The audience is seen from behind, with several people in the foreground. The room has a brick wall and a computer monitor is visible on the right.

CM2

Enterprise Infrastructure



BENEFITS

The Value:

- Continuing Education Units are offered through our partnership with Purdue University.
- Increased efficiency with a defined configuration process that provides control and improves visibility with dynamic traceability.
- Cost reduction by having detailed knowledge of all the elements of the configuration which allows for rework to be avoided.
- Your business will have greater agility while shifting from a corrective action mindset to one that thrives on continual improvement.
- Efficient and effective operating standards and procedures that transform the legacy business models of the past.
- Closed-Loop change management that reduces the risk, improves communication, and shifts the focus from engineering to the enterprise.
- A future where your organization offers the largest portfolio, fastest delivery time, and greatest customer experience.

VOICE OF OUR CUSTOMERS

EDWARDS LIFESCIENCES

CM2 allows the enterprise to reduce rework and release capacity for continued innovation. In addition, CM2 is the needed framework to standardize and align our processes. IpX provides the methods for organizational alignment.

GULFSTREAM

Successful implementation of the IpX CM2 Baseline and Closed-Loop change process is prerequisite to achieve the end-to-end configuration traceability driven by the needs of the model based design and the digitalization of the enterprise.

ASML

The CM2 Closed-Loop change process has many interactions with the processes from all the sectors involved in the change. The CM2 workflow process drives the progress of the change while the sector processes drive the content of the change.

AGCO

CM2 ensures the digital thread and twin are clear, concise, and valid.

NORTHROP GRUMMAN

Complex missions require partnerships to reduce risk and help ensure success. Delivering robust Enterprise-level Integrated Process Excellence (IPE) is a complex mission. Organizations typically partner together to increase the likelihood of each achieving their mission and to amplify their reach. Partnering strategies as well as recent Northrop Grumman Innovation System successes enabled by partnering shall be shared.

IpX Training has provided a common foundation and language for NGIS alignment.

NAMMO TALLEY

Don't reinvent the wheel! The tools for a gated process already exist with CM2. Use them!

CUMMINS

Implementation of the CM2 Baseline and Closed-Loop process is the foundation for the control and delivery of product information in a consistent manner that will allow for the incorporation of Industry 4.0 principles across all business groups.

3M | AGCO | Airbus | Amazon | Apple |
ARAS | ASML | Baxter | BMC | Boeing |
Bose | Boston Scientific | Caterpillar |
Cummins | Edwards Lifesciences | Ford |
GE | GM | Gulfstream | IBM | IMMI | J&J
| NASA | NATO | Navy | Nike | Nokia |
Northrop Grumman | Oracle | Philips |
Pratt & Whitney | Rolls-Royce | Sandia
National Laboratories | Sprint | St. Jude |
SubZero | TCS | Whirlpool | Woodward |

IpX proudly
serves over 1800
worldwide customers
representing multiple
industries.

All striving for
enterprise excellence
and sustainable digital
transformation.

When companies realize the value of elevating configuration management out from the shadow of engineering, they begin to see the real benefit of connected systems that are promised by technology but never achieved by technology alone.

IPE/CM2 CONGRESS

INSPIRE | CONNECT | MENTOR | SUPPORT

CM2-Professionally certified leaders from Aviation, Automotive, Healthcare, Energy, Consumer Products, Medical Devices, and Technology have come together to create a cross functional industry forum to benchmark best practices and provide a resource to the IpX community.

Mission Statement

To advance and promote the successful implementation of Integrated Process Excellence (IPE) and CM2 throughout all industries worldwide.

2019 Members

Martijn Dullaart - ASML

Paul Nelson - Northrop Grumman

Mike McKinney - Sub-Zero

Crystal Reed - Navy

Scott Wilks - Aptiv

Duke Joy - Boeing

Catie Jelinski - Molnlycke Health Care

Max Gravel - Gulfstream

Gary D'Souza - AGCO

Rachel Holyoak - Northrop Grumman

Chrissy Sigrist - Bose

Steve Watts - Airbus

Wouter Mollers - ASML

Robert LaFond - SubCom

Chris Saldanha - GoGo

Andrew Johansing - Duke Energy

Jane Cavicchi - Bose

Duke Joy - Boeing

Michael Borowski - Cummins

Krupal Patel - Omron Microscan

Greg Russ - Cummins

Amy Mueller - Purdue

Chrystie Spaulding - GE Aviation

Bill Woodaman - Cimarron Inc.

Scott Wertel - Nammo Talley

Baris Kocabasoglu - FNSS

Eddie Kolesar - IpX

Todd Egan - IpX

Joseph Anderson - IpX

Ray Wozny - IpX

NETWORK WITH THE GLOBAL IPE/CM2 CONGRESS

INSPIRE. CONNECT. MENTOR. SUPPORT.



MARTIJN DULLAART
ASML (Chair)



EDDIE KOLESAR
IpX



MIKE MCKINNEY
Sub-Zero/Wolf (Secretary)



CRYSTAL REED
Navy



PAUL NELSON
Northrop Grumman



AMY MUELLER
Purdue University



SCOTT WILKS
Aptiv



DUKE JOY
Boeing



CATIE JELINSKI
Mölnlycke Health Care



MAX GRAVEL
Gulfstream



GARY D'SOUZA
AGCO



CHRISTIE SPAULDING
GE Aviation



RACHEL HOLYOAK
Northrop Grumman



CHRISTINA SIGRIST
BOSE



STEVE WATTS
Airbus



SCOTT WERTEL
Nammo Talley



WOUTER MOLLERS
ASML



BILL WOODAMAN
Cimarron Inc.



ROBERT LAFOND
SubCom



CHRIS SALDANHA
GoGo



ANDREW JOHANSING
Duke Energy



JANE CAVICCHI
BOSE



MICHAEL BOROWSKI
Cummins



KRUPAL PATEL
Omron Microscan



GREG RUSS
Cummins



BARIS KOCABAŞOĞLU
FNSS



TODD EGAN
IpX



WORKFORCE EXCELLENCE



ENTERPRISE TRANSFORMATION STARTS WITH YOUR PEOPLE

To ensure sustainable digital transformation leading organizations must create conditions for continual excellence of personnel and improvement of professional skills of employees. They must deploy methods for modernization of production and the transition to the most advanced principles of work organization. Industry leaders will dedicate resources to the formation of support for the manufactured products throughout entire life cycle, development of the modern industrial culture and procurement of high and stable quality of their products

Course CM2-01

Foundation of Operational Excellence

Your journey for reshaping legacy business processes and systems starts here.



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CM2-01

This course presents a structured and effective methodology for documenting, validating, releasing, and changing requirements. In addition to provides methods for reducing intervention resource costs. It addresses the process enhancements that an organization must make in order to accommodate change and keep all requirements clear, concise, and valid.

Course CM2-02

Requirements and the CM2 Baseline

Increasing the performance of your organization with requirements that are clear, concise, and valid



ipx

Institute for Process Excellence

CM2-02

This course focuses on the foundational elements of requirements management including the structuring and ownership of all product, solution, and business requirements. It will detail the first steps in the creation of the Digital Thread...the concept and development phases of any project.

CM2 COURSES

Course CM2-03

Fundamentals of Change Management

Moving from the antiquated and siloed to the enterprise environment



IpX

Institute for Process Excellence

CM2-03

This course also addresses the cultural changes that must be understood and implemented to facilitate the needed improvements in the change process. The end goal is to always present the organization with requirements that are clear, concise and valid. That can only be achieved by a fast and efficient process that accommodates change.

Course CM2-04

The CM2 Change Process

Harmonization of your business and digital enterprise

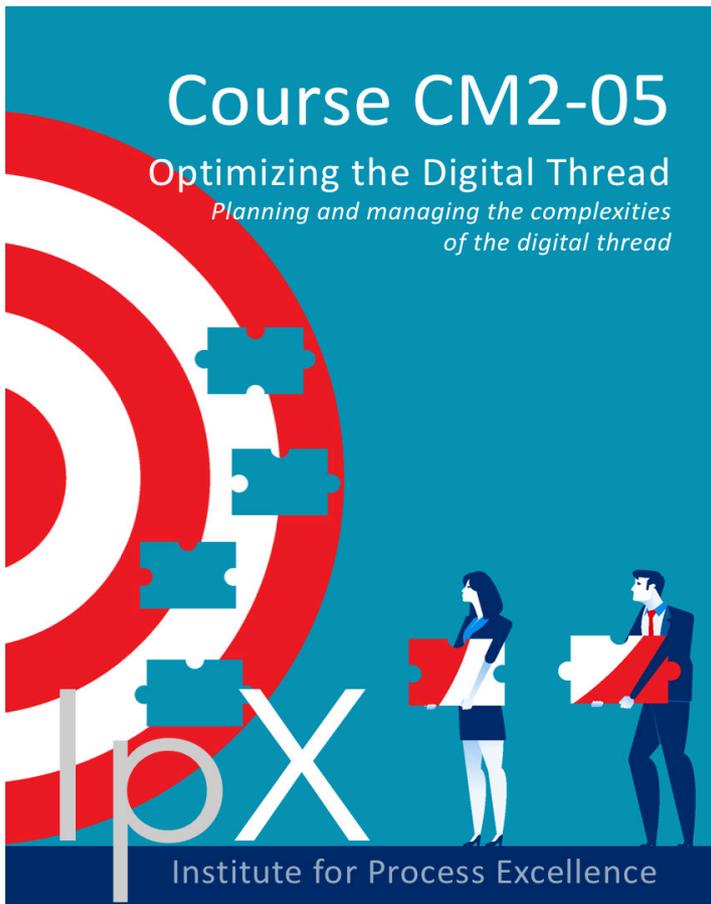


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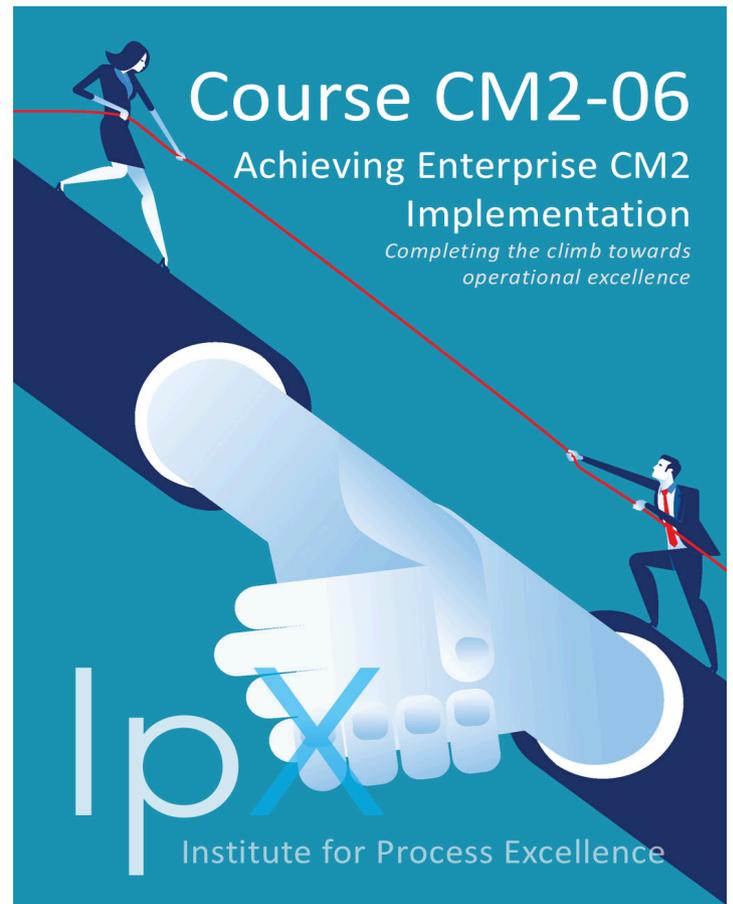
CM2-04

This course will address the importance of Enterprise Configuration Management and introduce the roles, responsibilities and workflows required for a world-class organization to efficiently manage change. Thereby ensuring that the digital thread remains intact throughout the entire lifecycle of the product/solution, and that the digital twin is accurate.



CM2-05

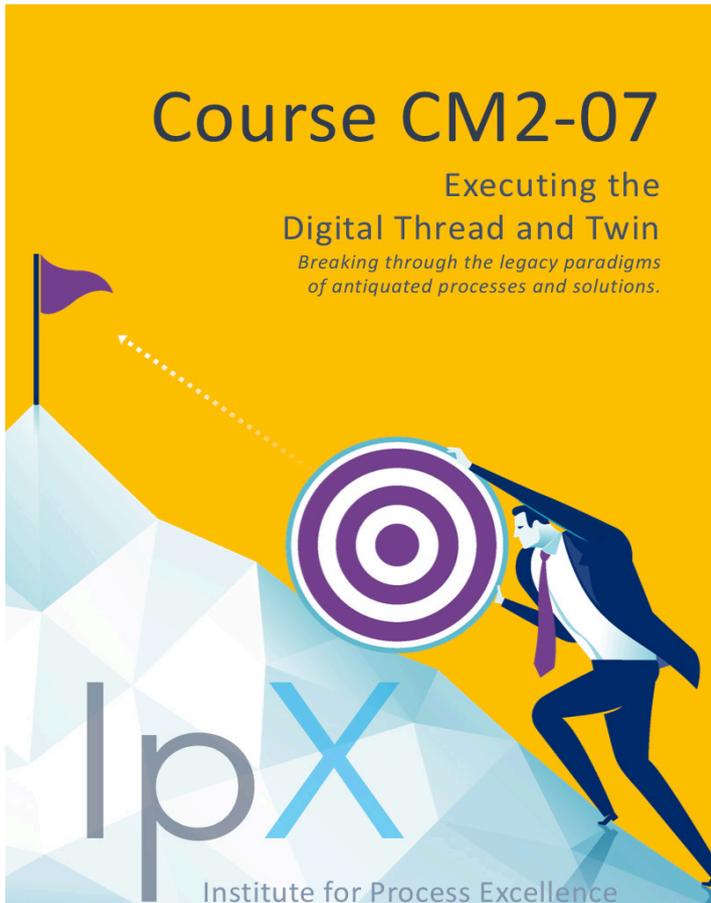
This course introduces critical additions to the process flows and roles previously defined in the Enterprise Configuration Management process. These additions are critical to the management of the Digital Thread and visibility of the Digital Twin in the operation and maintenance lifecycle phase.



CM2-06

This course provides the path to achieving Enterprise Configuration Management (ECM), the enabling process needed to improve an organization's tools and other core business processes. It includes a step-by-step simulation for establishing the proper foundation to successfully implement any identified tool or process improvement opportunity.

CM2 COURSES



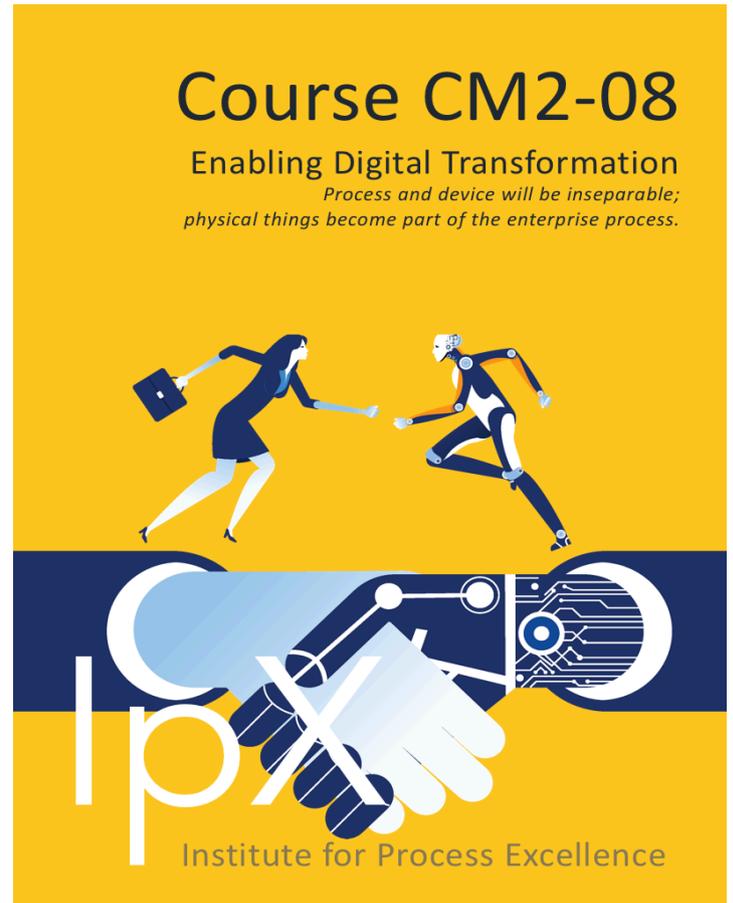
The cover for Course CM2-07 features a yellow background. At the top, the text reads 'Course CM2-07' in a large, dark font, followed by 'Executing the Digital Thread and Twin' in a smaller font, and a subtitle 'Breaking through the legacy paradigms of antiquated processes and solutions.' in an italicized font. The central illustration shows a man in a dark suit and red tie running up a blue, geometric mountain. He is holding a large purple and white target. A dotted line with an arrow points from the target to a purple flag on a pole at the peak of the mountain. In the bottom left corner, the 'Ipx' logo is displayed in a stylized font, with 'I' and 'p' in grey and 'x' in blue. Below the logo, the text 'Institute for Process Excellence' is written in a small, grey font.

Course CM2-07
Executing the Digital Thread and Twin
Breaking through the legacy paradigms of antiquated processes and solutions.

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CM2-07

This course introduces a 2-phase approach to be used for creating the foundation to enhance the efficiency of each core business process. It will identify the key elements that must be in place reaffirm that the proper approach is to define the process first, then select the enabling tool.



The cover for Course CM2-08 features a yellow background. At the top, the text reads 'Course CM2-08' in a large, dark font, followed by 'Enabling Digital Transformation' in a smaller font, and a subtitle 'Process and device will be inseparable; physical things become part of the enterprise process.' in an italicized font. The central illustration shows a woman in a black business suit running towards the right, carrying a black briefcase. She is shaking hands with a robot character that has a white head and torso and blue and black limbs. Below this scene, a large graphic shows a blue hand shaking a white hand, with a circuit board pattern on the right side of the white hand. In the bottom left corner, the 'Ipx' logo is displayed in a stylized font, with 'I' and 'p' in white and 'x' in blue. Below the logo, the text 'Institute for Process Excellence' is written in a small, grey font.

Course CM2-08
Enabling Digital Transformation
Process and device will be inseparable; physical things become part of the enterprise process.

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CM2-08

This course will describe how planning bills and order bills are created and maintained within the PLM, ERP, ALM, and CLM tools. It will describe how to use work authorizations to close the loop on order bills and ensure that the correct documents are utilized. It will describe the CM2 approach for managing and leveraging metadata and how to optimize reuse.

Course CM2-09

Application Workshops for Achieving Enterprise Excellence

*Tangible business and digital transformation
starts today*



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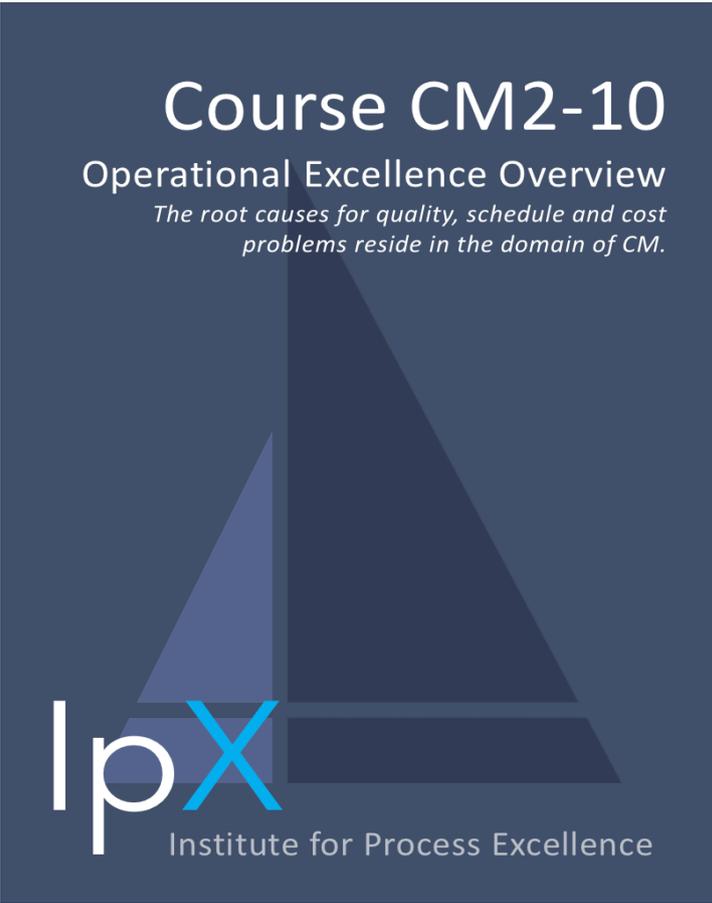
CM2-09

This hands-on course focuses on shifting the paradigms that are most important and also the most challenging to those implementing CM2. Course participants will perform a variety of roles and, by the end of the third day, they will have performed all facets of the CM2 process.

Course CM2-10

Operational Excellence Overview

*The root causes for quality, schedule and cost
problems reside in the domain of CM.*

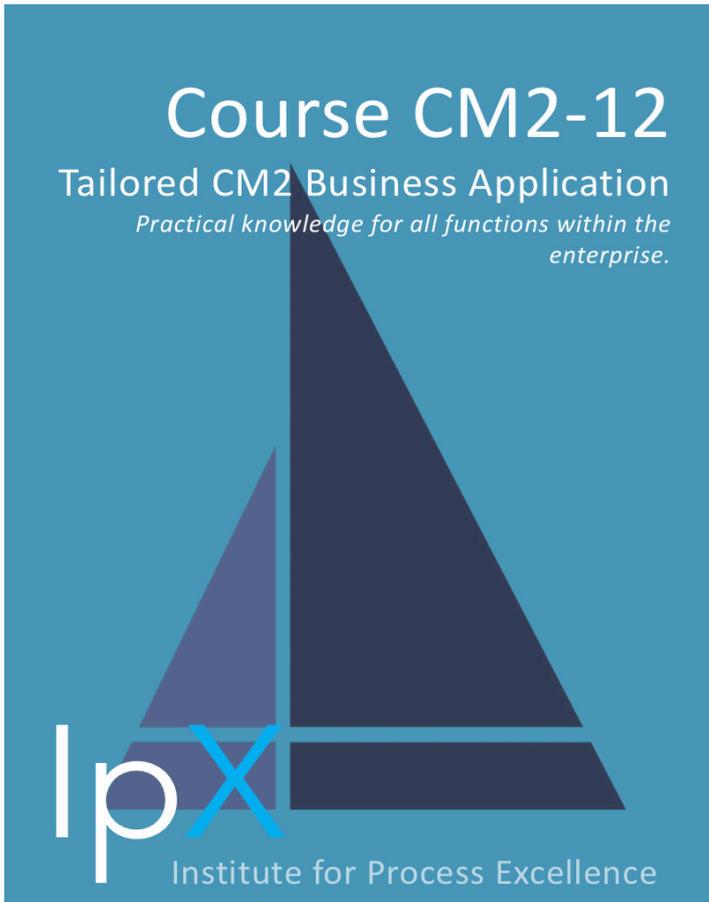


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CM2-10

This awareness course will show how application of the CM2 principles can eliminate quality, schedule and cost problems and how to transition from the corrective action mode to the continual improvement mode.

CM2 COURSES

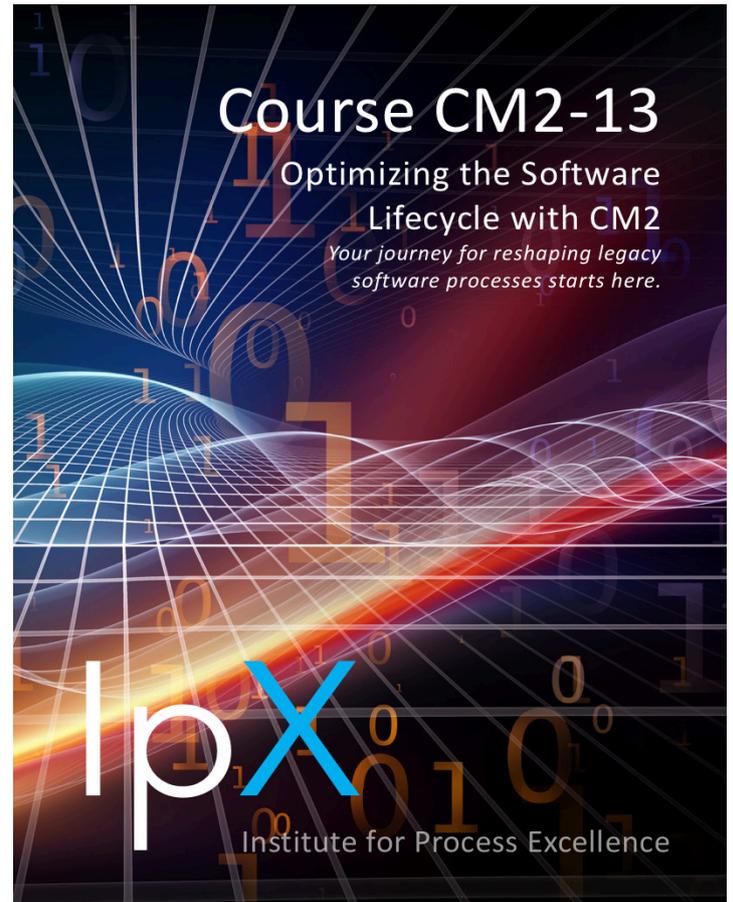
The cover for Course CM2-12 features a solid blue background. On the right side, there is a large, dark blue triangle pointing upwards. In the bottom left corner, the IpX logo is displayed, with 'Ip' in white and 'X' in blue. Below the logo, the text 'Institute for Process Excellence' is written in white.

Course CM2-12
Tailored CM2 Business Application
Practical knowledge for all functions within the enterprise.

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CM2-12

The content of this course includes key elements, principles and building blocks of the CM2 Model which are extracted from courses CM2-01 through CM2-04. Although normally taught by IpX, this course may also be taught by a host instructor.

The cover for Course CM2-13 has a dark background with a futuristic, digital aesthetic. It features glowing blue and orange lines, a grid pattern, and various binary digits (0s and 1s) scattered throughout. The IpX logo is prominently displayed in the lower center, with 'Ip' in white and 'X' in blue. Below the logo, the text 'Institute for Process Excellence' is written in white.

Course CM2-13
Optimizing the Software Lifecycle with CM2
Your journey for reshaping legacy software processes starts here.

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CM2-13

This course describes how the CM2 model for configuration management (CM) can be applied to software. The challenge boils down to what an organization believes. Organizations either expect software code to come out right the first time, or they do not. Its process will be designed accordingly.

Course CM2-15

Operational Excellence Bootcamp

*Reshaping Legacy Processes and Systems through
Business and Digital Transformation*



CM2-15

This course is for executives and upper-level managers. It provides an in-depth review of the IPE/CM2 model for process improvement and enables each attendee to gain a better understanding of the strengths and weaknesses of their own processes.

Course CM2-16

Refresher Seminar for CM2 Grads

*Improvements to the CM2 model and
implementation techniques*



CM2-16

Improvements to the CM2 model and implementation techniques have been continual. This update and refresher seminar serves to bring our CM2 grads up-to-date with the latest enhancements and re-energize their crusade to improve their business processes.

EMPOWERING YOUR TRANSFORMATION

Based on the CM2 enterprise operating model and modern digital platforms, there will no longer be a difference between information and material because products will be dynamically linked to their application and supporting information.

- Efficient and effective business processes supported by modern digital platforms that allow organizations to move across industry will eliminate the legacy silo centric business models.
- Process and device will be inseparable; physical things become part of the enterprise process.
- Functional competencies must come together in order to recognize the full potential and opportunity of Industry 4.0.





LOCATIONS AND OPTIONS

Our global instructors enrich our mission with decades of real-world experience in both the public and private sectors.

We offer three options for taking our courses:

1. Attend courses at a public site, and join in cross industry discussions and benchmarking.
2. Take the courses online, and get instant exposure to industry best practices.
3. Have the courses brought on-site with tailored discussions on issues facing your company.



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