NIMS Computer Aided Manufacturing (CAM) Credentials Webinar
May 12, 2020

The webinar will begin soon.

Only webinar hosts can speak, so you should not expect to hear others speaking.

Questions?

1. Open the Q&A button found at the bottom of the Zoom Meeting screen.
2. Type your question in the Q&A box that will pop up and click send.

All questions will be answered at the end of the presentation, but you can ask them as we go.

Use the Chat function for any technical issues with the webinar (sound, visuals).

This webinar will be recorded and distributed to registered participants.

New CAM Credentials

Informational Webinar

May 12, 2020

Goals For Webinar

- Review background and development of new CAM credentials
- Explain the features and use of Performance Measures
- Highlight training resources
- Q&A about content covered

Need for CAM Credentials?

▰ NIMS CAM credentials will allow schools and employers to customize their credentialing experience by using their own projects to validate performance while aligned to industry standards

▰ Manufacturing companies are expected to benefit greatly by having properly trained CAM programmers, designers, and engineers

▰ With more capable personnel, cycle times decline, material waste and machining errors decrease, and the quality of parts increase

▰ Goal of CAM credentials is to validate skills for programming, not machine operations

CAM Development Timeline

- CAM Standards released in partnership with Autodesk, Inc.
  - Developed over the course of a yearlong intensive nationwide validation process
  - More than 125 subject matter experts from companies who use a variety of CAM software
  - Standards define the competencies and skills expected by industry for entry-level CAM positions
- 2018 completed development and piloting of CAM Milling and CAM Turning Level 1
- 2019 NIMS launched CAM credentials
- 2020 NIMS to finalize CAM resources and practice test
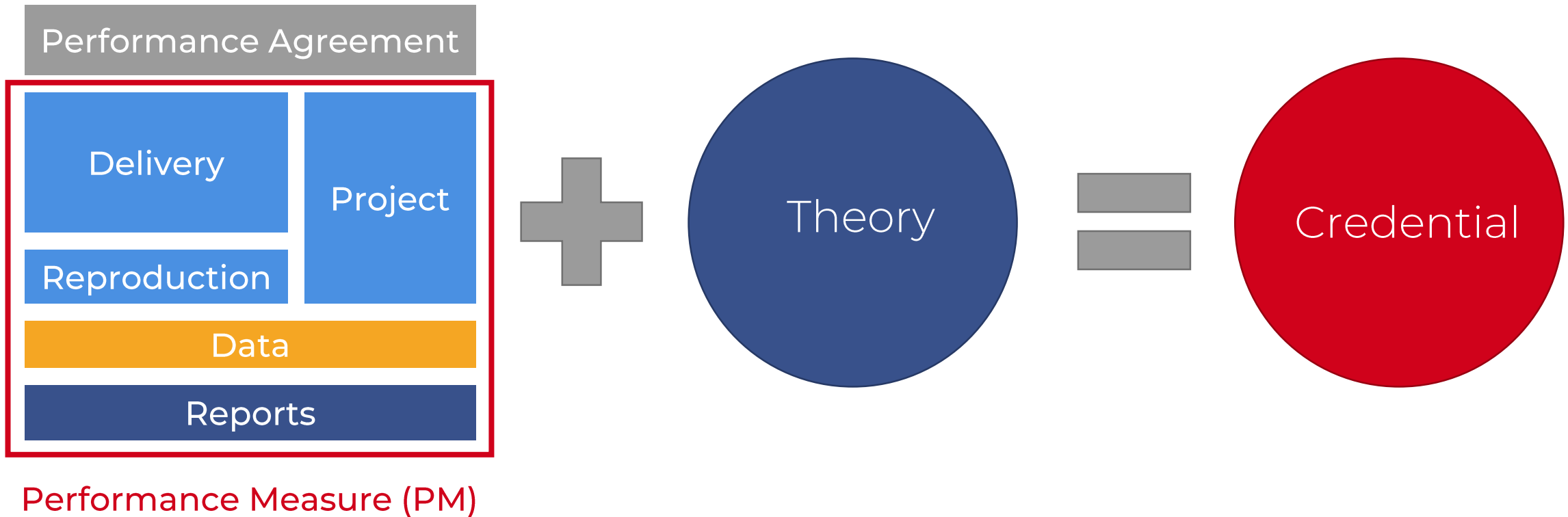
Why and How New NIMS Credentials are Customizable

◢ Use of Smart Standards

◢ Use of Smart Performance Measure (PM) to validate end performance

◢ Framework Components

◢ Digital Data Tool

Smart Standards Role Building Concept
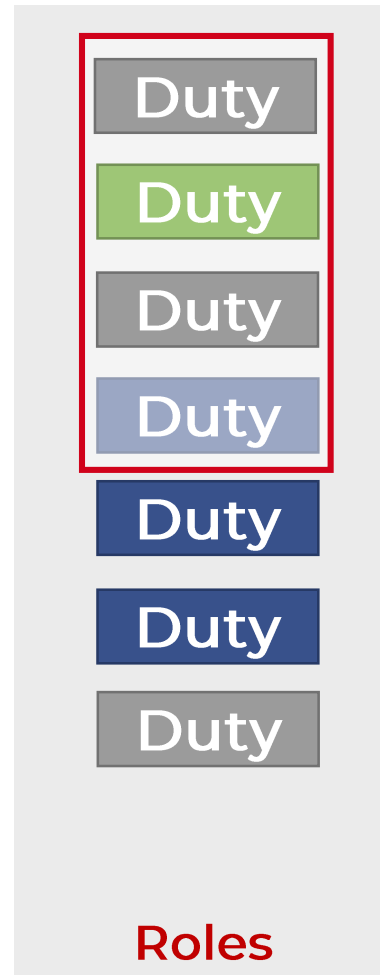
Building Your Roles

Roles

NIMS®

New Credentialing Process

Performance Agreement

Delivery

Project

Reproduction

Data

Reports

Performance Measure (PM)

+

Theory

=

Credential

Performance Measure Framework

◢**Performance Agreement:** Defines the Scope of the performance measure. It is a one page agreement between stakeholders.

◢**Delivery:** Resources required for an organizer to administer the Project

◢**Project:** Resources provided to the trainee to satisfy the Project

◢**Reproduction:** Resources for a project organizer to manufacture unique components that are required for project delivery, but are not readily available for purchase

◢**Data:** The observed (measured) features of a performance measure.

◢**Reports:** Dashboard of graphs that benchmark the performance of all stakeholders in a community

CAM PM Overview

CAM Performance Measure

Performance Measure Component	Document Name	Intended Audience
Performance Agreement	Performance Agreement	Trainee, Trainer, Organization
Delivery	Instructions	Trainer
Delivery	Evaluation Checklists	Trainer or Evaluator
Delivery	Infrastructure Requirements	Organization
Project	Instructions	Trainee
Project	Models and Prints	Trainee
Project	Resource List	Trainee, Provided by Organization
Data	Ask NIMS for link to data tool	Evaluator
Reports	Ask NIMS for link to data tool	Trainee, Trainer, Organization
Reproduction	Not Applicable	Not Applicable

CAM Performance Measure

◢ Final validation method is **part verification**

◢ In-process validation through **observation**

◢ Someone other than the candidate must:

    ◢ Run the program in a physical machine

    ◢ Use the deliverables from the candidate

    ◢ Produce the parts to 100% specifications

◢ The machine operator can only perform minor adjustments to speeds, feeds, and offsets

◢ No geometry or workholding changes or markups on documentation are allowed by the operator to bring the part into specification

◢ If there is something wrong, the Operator rejects the program and returns it to the Trainee without a specific explanation about what is wrong

Smart Standards Dive

Framework

◤Duties are one pagers (see duty structure)

◤Duties are individual Standards

◤Duties are revised independently

◤Duties state minimum performance (**not** specs)

◤Duties are used to design performance measures (PMs)

◤Duties are organized into Industry Roles

◤Credentials are aligned to Industry Roles

◤Roles are **not** identified by complexity levels

◤Complexity is expressed through PMs

◤Knowledge requirements are listed by Role

Duty Structure

NIMS

XXXX Standard
Role:
Duty Area:
Duty 1.01:

Responsibility:
Description of the duty in 100 words or less

Resources:
Resources available to perform the duty

Performance:
Practical
        Learned behaviors

Critical Thinking
        Judgement or decisions

Compliance:
Level required to satisfy the duty

Evaluation:
Method(s) to validate the duty

Benefits to Smart Standards

▰ Easy to interpret!

▰ Allows for a shift toward **true** competency-based training

▰ Easy customization while maintaining standardization

▰ Ideal for adding or revising duties to keep pace with emerging technologies

▰ Organizes training into short-term tracks that align to the objectives of stackable credentials

Demo: CAM Milling Standards

CAM PM Review

PM Activities

- Compare models to drawings
- Modify models to correct any discrepancies
- Create opposite hand model
- Program parts
- Create all technical documents

Demo: Milling Drawings

PM Storyline

Demo: Data and Reports Tool

Want a different project?

Make your own PM!

Benefits to Customized PMs

◢ Provides choices for organizations

◢ Allowed trainees to build a portfolio experiences for employer

◢ Increases employer engagement

◢ Relevant to the performance needs of your community

Resources

CAM Study Resources and Important Dates

◣ [Online Sample Test](#) in NIMS Testing Center – Available June 1

 ◣ Only available in Candidate role, admins can request to have role added

◣ [Online Prep Guide](#) – Available June 1

◣ Autodesk training resources

 ◣ [Curriculum Assets](#) for instructors to incorporate the content into your own study guide.

 ◣ [Course](#) for self-paced learning or for educators to assign to students.

◣ Other resources

Q&A

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