



PROJECT IMPLEMENTATION PLAN

Ref. No. 19-IN-06-GE-DLN-A-AP04-PP2000013-002

PIP Issue Date	20 April 2020
Project Code	19-IN-06-GE-DLN-A-AP04
Title	Self-learning e-Course on Advanced Smart Manufacturing 101 in a Blockchain-driven Era
Reference	Project Notification 19-IN-06-GE-DLN-A Self-learning e-Courses for the Industry and Service Sectors dated 8 January 2019
Timing and Duration	1 November 2020–31 October 2021 (12 months)
Venue	e-Learning
Implementing Organization	APO Secretariat
Number of Participants	Minimum 400 participants
Self-registration in case of self-learning e-courses	<p>Self-registration opens from 10:00 AM Japan Standard Time on 1 November 2020 on the eAPO web portal: http://eAPO-tokyo.org</p> <p>Note: Participants can register directly from this portal on the APO website. Those who are already registered can access the course by using the assigned username and password. If you have forgotten your username and password, please refer to the help page on the home page of the portal.</p>

1. Objectives

The objective of this course is to familiarize participants with advanced concepts of smart manufacturing using blockchain solutions. Starting with an overview of current digital transformations in manufacturing processes including blockchain-related technologies and a recap of the topics covered in the basic blockchain course, participants will be able to examine the evolution of blockchain infrastructure components from an end-user perspective and understand the relevance of blockchain technologies in data-driven manufacturing. In particular, this course is intended to help participants:

- a. Understand the key components of smart manufacturing and relevant methodology;
- b. Gain an overview of industry-specific use cases of smart manufacturing;
- c. Understand the fundamentals of blockchain technology such as its benefits, limitations, and potential;
- d. Appreciate applications of blockchain technology to smart manufacturing and how it coexists with other technologies to offer holistic solutions; and
- e. Apply the knowledge from this course in their work to champion internal digital transformation efforts and apply blockchain technologies to help adopt smart manufacturing.

2. Background

Smart manufacturing is often synonymous with Industry 4.0. The goal is to transition from traditional factories into intelligent ones (smart factories) characterized by adaptability, resource efficiency, and ergonomics, as well as the integration of customers and business partners in and value-adding processes.

Smart factories of the future will rely on combinations of new technologies including 5G, the Internet of Things, augmented reality, 3D printing, and others. This course focuses on blockchain or distributed ledger technology that allows for a trustless source of truth binding all internal and external stakeholders in smart factories. According to the UK Government Office of Science, the technology is also defined as “a consensus of replicated, shared, and synchronized digital data geographically spread across multiple sites, countries, or institutions with no central administrator or centralized data storage.”

3. Scope and Methodology

Scope

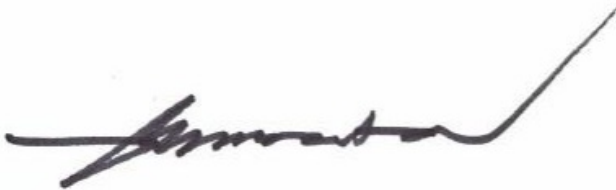
The course will cover the following modules:

- Module 1: Overview of Smart Manufacturing;
 - Module 2: Current Examples of Smart Manufacturing and Use Cases;
 - Module 3: Advanced Concepts of Blockchains;
 - Module 4: How Blockchains Work with Other Technologies;
 - Module 5: Potential and Possibilities of Blockchains in Smart Manufacturing;
 - Module 6: Implications and Ethical Implementation of Blockchain Technology; and
- Graded interim quizzes and final exam.

Methodology

5. Eligibility for e-Certificate

A minimum score of 70% on the final exam is required to qualify for the APO e-certificate.



Dr. AKP Mochtan
Secretary-General