



PROJECT IMPLEMENTATION PLAN

PIP Issue Date	8 January 2020
PIP Revision 1 Issue Date	20 February 2020
PIP Revision 2 Issue Date	30 March 2020
PIP Revision 3 Issue Date	17 July 2020
Project Code	18-RP-33-GE-DON-C-05
Title	Development of the Centers of Excellence (COE)
Activity	Research on a National Smart Manufacturing Implementation Framework
Reference	APO Project Notification 18-RP-33-GE-DON-C dated 23 May 2018
Timing and Duration	August 2020–January 2021 (six months) <u>Coordination Meeting</u> 15–17 September 2020 (three days) (online meeting)
Venue	APO Secretariat
Number of Overseas Experts	One chief expert and up to eight national experts from Cambodia, Lao PDR, Indonesia, Malaysia, Pakistan, the Philippines, Thailand, and Vietnam
Closing Date for Nominations of National Experts	30 July 2020

Change History of Program Implementation Plan

Revision	Date of Issue	Clause	Modifications
Revision 1	20 February 2020	Timing and Duration	The timing of the coordination meeting has been changed from 10–12 June 2020 to 8–10 June 2020
Revision 2	30 March 2020	Timing and Duration	The timing of the coordination meeting has been changed from 8–10 June 2020 to 10–12 August 2020
		Closing Date for Nominations of National Experts	Closing Date for Nomination of National Experts has been changed from 28 March 2020 to 20 April 2020
		7. Action by Member Countries	Due to the change in the closing date for nomination of national experts, the action by member countries in section 7 has been changed as follows: Member countries included in the research project are requested to submit appropriate nominations by 20 April 2020 , in line with the provisions in section 4.
Revision 3	17 July 2020	Timing and Duration	The timing of the research has been changed as follows. August 2020–January 2021 (six months) <u>Coordination Meeting</u> 15–17 September 2020 (three days) (online meeting)

		Number of Overseas Experts	The number of overseas experts has been changed as follows. One chief expert and up to eight national experts from Cambodia, Lao PDR, Indonesia, Malaysia, Pakistan, the Philippines, Thailand, and Vietnam
		Closing Date for Nomination of National Experts	Closing Date for Nomination of National Experts has been changed to 30 July 2020
		6. Financial Arrangements	Financial Arrangements in section 6 have been updated in accordance with the arrangements for a virtual coordination meeting of experts.
		7. Actions by Member Countries	Provision a. in section 7 has been changed in accordance with the new closing date for nomination of National Experts.
		8. Preparatory Work by National Experts	Section 8 has been changed in accordance with the arrangements for a virtual coordination meeting of experts.

1. Objectives

- a. To design a framework for the national implementation of smart manufacturing (SM) in member countries; and
- b. To recommend the roles of different actors in the implementation of SM at national level, across industries, and at enterprise level.

2. Background

SM, a technology-driven approach that uses intensive applications of ICT and Internet-connected machines in the production process, has become more prevalent in recent years. SM is typically led by highly industrialized economies and technology giants. However, there is no commonly defined and agreed upon concept of SM, and its applications are at different levels in different countries. SM requires concerted efforts and includes components such as policies at national level, standards to align SM practices at industry level, and the ability to adopt technologies, tools, and techniques at individual enterprise level.

As the ROC is a leading economy in manufacturing and machinery, the China Productivity Center (CPC) was appointed by the APO Governing Body in April 2019 to become the APO Center of Excellence (COE) on SM. The main objective of the APO COE on SM is to support member countries in promoting the adoption of SM in key industries. Various activities have been conducted since the inauguration of the COE on SM, including research to identify the SM needs of member countries, and assessment of the extent of their implementation and adoption of SM is underway. As a follow-up activity after those needs are determined, a framework detailing SM implementation mechanisms will be designed, with the roles of different stakeholders delineated. The research findings with the need assessment will clarify the current SM status and recommend effective approaches APO members can follow to benefit from it. Recommendations on SM implementation at national level, among industry sectors, and at enterprise level will be generated.

3. Scope and Methodology

Scope

1) Coordination meeting:

A coordination meeting of experts will be held virtually 15–17 September 2020. The tentative topics of discussion to be covered in this meeting are:

- i) Details of the methodology and the overall research framework;
- ii) Preliminary proposal on sources of data, data collection, and data analysis methodology; and
- iii) Finalization of report content and format.

2) Conducting in-country research:

Each national expert will gather primary and secondary data based on the agreed methodology and parameters. This activity will be undertaken and completed within six months. The provisional coverage of the research report will include:

- i) Status of SM promotion and implementation in member countries, focusing on the needs defined in the previous study;
- ii) Review of SM tools and techniques for readiness assessment and strategy recommendations at enterprise level;
- iii) Review of relevant standards on SM; and
- iv) Framework for SM implementation at national level.

Methodology

One chief expert will lead the team of national experts in conducting the research.

Chief expert's tasks:

- 1) Developing the guidelines, formulating the overall framework, and outlining the report structure for the research;

- 2) Providing support and advice to the national experts in conducting the research;
- 3) Reviewing and providing comments on the national experts' preliminary reports and giving feedback prior to and during the coordination meeting of experts;
- 4) Reviewing the final draft of the national experts' reports to ensure the quality of the work after the coordination meeting of experts; and
- 5) Preparing the final report and submitting it to the APO Secretariat by the deadline.

National experts' tasks:

- 1) Collecting data at the national level following the methodology, framework, and timeline circulated by the APO;
- 2) Writing preliminary reports with analyses based on the data collected;
- 3) Presenting preliminary reports during the coordination meeting;
- 4) Revising the reports following agreement during the coordination meeting and reflecting the comments of the chief expert and APO;
- 5) Submitting the reports in the agreed format to the chief expert and APO by the deadline; and
- 6) Cooperating with the chief expert to ensure the quality and consistency of the final report.

4. Qualifications of National Experts

The national experts must have experience and knowledge in the area of SM. They could be researchers or policy analysts who have sufficient background in SM transformation strategies and Industry 4.0. National experts must have excellent writing skills as confirmed by the publication of articles, books, or substantial reports on the subject of SM. This should be reflected in their biodata.

5. Qualifications of the Chief Expert

The APO will appoint a chief expert for this project to guide the group of national experts in undertaking the research. The APO-appointed chief expert must possess the following:

- a. Extensive knowledge of SM with publications in English on the topic;
- b. Excellent English writing and presentation skills, as the final report will be written in English; and
- c. Strong commitment to undertaking and completing the research project within the given time frame and producing the consolidated analyses of all national reports.

6. Financial Arrangements

To be met by the APO

Honoraria for the chief and national experts to be paid upon completion of the final research report.

To be met by experts or participating countries

All local implementation costs incurred by the national experts when conducting the research and related activities at the national level.

7. Actions by Member Countries

- a. Member countries included in the research project are requested to submit appropriate nominations by 30 July 2020, in line with the provisions in section 4.
- b. Each nomination should be accompanied by the candidate's biodata on the standard APO form in duplicate along with a passport-sized photograph. In addition to the standard APO form, nominees should also prepare a list of publications, research, and/or consulting projects they have undertaken in this field. A nomination lacking any of these documents will not be considered.
- c. The selection of national experts will be based strictly upon their professional qualifications and experience, academic background, and commitment to this research.

8. Preparatory Work by National Experts

The selected national experts will be instructed to prepare a preliminary report on the proposed SM implementation framework at national level. The preliminary report will be presented at the virtual coordination meeting and will form the basis for further deliberations and finalization of the research output. The detailed guidelines for the preliminary reports will be provided later.



Dr. AKP Mochtan
Secretary-General