# PROJECT IMPLEMENTATION PLAN

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<th>PIP Issue Date</th>
<th>8 January 2020</th>
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<tr>
<td>PIP Revision 1 Issued Date</td>
<td>20 February 2020</td>
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<td>PIP Revision 2 Issued Date</td>
<td>30 March 2020</td>
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<tr>
<td>Project Code</td>
<td>18-RP-33-GE-DON-C-05</td>
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<tr>
<td>Title</td>
<td>Development of the Centers of Excellence (COE)</td>
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<td>Activity</td>
<td>Research on a National Smart Manufacturing Implementation Framework</td>
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<tr>
<td>Reference</td>
<td>APO Project Notification 18-RP-33-GE-DON-C dated 23 May 2018</td>
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| Timing and Duration  | March–September 2020 (six months)  
Coordination Meeting  
10-12 August 2020 (three days)  
Taipei, Republic of China |
| Venue                | APO Secretariat |
| Number of Overseas Experts | One chief expert and up to four national experts from Indonesia, the Philippines, Thailand, and Vietnam |
| Closing Date for Nominations of National Experts | 20 April 2020 |

## Change History of Program Implementation Plan

<table>
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<th>Revision</th>
<th>Date of Issue</th>
<th>Clause</th>
<th>Modifications</th>
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<tr>
<td>Revision 1</td>
<td>20 February 2020</td>
<td>Timing and Duration</td>
<td>The timing of the coordination meeting has been shifted from 10–12 June 2020 to 8–10 June 2020</td>
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| Revision 2 | 30 March 2020   | Timing and Duration | The timing of the coordination meeting has been shifted from 8–10 June 2020 to 10–12 August 2020  
Closing Date for Nomination of National Experts has been shifted from 28 March 2020 to 20 April 2020  
Due to 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. |
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 require 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 10–12 August 2020 in Taipei, Republic of China. 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:

Developing the guidelines, formulating the overall framework, and outlining the report structure for the research;
1) Providing support and advice to the national experts in conducting the research;
2) Reviewing and providing comments on the national experts' preliminary reports and giving feedback prior to and during the coordination meeting of experts;
3) Reviewing the final draft of the national experts' reports to ensure the quality of the work after the coordination meeting of experts; and
4) 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

a. Honoraria for the chief and national experts to be paid upon completion of the final research report;
b. All assignment costs for the chief and national experts including daily subsistence allowances, miscellaneous expenses, and round-trip international airfare by the most direct route between the international airport nearest to the experts’ place of work and Taipei for attending the coordination meeting for the research; and
c. Local implementation costs for the meeting package including meeting room rental and required equipment. Only invoices provided by the third parties may qualify for reimbursement.

To be met by the host country of the coordination meeting (ROC)

a. All local implementation costs not covered by the APO; and
b. Administrative costs of the project incurred by the CPC, including personnel costs and other costs related to preparation and coordination work.

To be met by experts or participating countries

a. Any expenses incurred by the experts for extra stay at the venue before and/or after the official project period due to early arrival, late departure, or any other reason must be met by the experts attending the coordination meeting.
b. All local implementation costs incurred by the national experts when conducting the research and related activities at the national level.

c. All costs associated with the cancellation of attendance at the coordination meeting by national experts or participating countries after the issuance of the Letters of Assignment.

7. Actions by Member Countries

a. 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.

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 coordination meeting in Taipei 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