



PROJECT IMPLEMENTATION PLAN

PIP Issue Date	24 May 2019
Project Code	18-RP-01-GE-RES-C-13
Title	Accreditation and Certification Process: Authentication of APO Certificates Using Blockchain Technology
Reference	Project Notification 18-RP-01-GE-RES-C dated 13 March 2018
Timing and Duration	1 June–15 September 2019 (3.5 months)
Venue	APO Secretariat
Implementing Organization(s)	APO Secretariat
Maximum Number of Participants	NA
Number of Local Participants	NA
Closing Date for Nominations	NA

1. Objectives

This digital business transformation project will authenticate APO professional certificates through blockchain-based technologies. The objectives of this blockchain pilot project are:

- a. To complete the APO accreditation and certification process under the Accreditation Body Initiative administered by the Office of the Accreditation Body by offering greater security, resilience, and transparency, while ensuring tamper-proof data integrity;
- b. To showcase the viability of the certificate authentication process within the APO Secretariat through deploying decentralized distributed ledger technology (DLT) and SHA256 cryptographic hash algorithm, based on the Ethereum Operating System (EOS) technical architecture; and
- c. To validate the feasibility of scaling up blockchain solutions on the APO's digital business platform with the desired features of immutability, resistance to fraudulent unauthorized changes, and decentralized maintenance, while eliminating the need for a centralized trusted third party.

2. Background

Blockchain has been termed the "next Internet Revolution." The potential of blockchains across traditional industries has been widely discussed and is rapidly impacting APO member countries in all sectors and aspects of people's lives. All countries face challenges in addressing the wide-ranging implications of blockchains and prioritizing targets, resources, and policy measures for digital transformation. It is thus necessary to establish a holistic understanding of blockchain technologies and develop strategies in response to the opportunities and challenges of the DLT concept.

In addition, blockchain technology has revolutionized the authentication of university transcripts, degree scrolls, and similar forms of certification. Blockchaining provides a robust framework that securely stores and verifies data so that certification records, attendance records, and other related transactions are in tamper-proof, open-source format. This project therefore dovetails with the Accreditation Body efforts of the APO and will enable the authentication of the following existing and future APO-issued certificates:

- a. Accreditation Certificates;
- b. Productivity Specialists' Certificates;
- c. Green Productivity Specialists' Certificates;
- d. Public-sector Productivity Specialists' Certificates; and
- e. Strategic Foresight Specialists' Certificates

3. Scope and Methodology

Scope

Program development, coding of blockchain algorithms, and training in and maintenance of blockchainization of certification to ensure decentralized distributed data records related to certificates awarded by the APO.

Methodology

Providing consultancy services to the APO in setting up a blockchain system for the digital assets of APO-issued certificates; conducting programming, coding, software engineering, and maintenance of blockchainization of APO certificates; and training of officials in the use of the blockchain system. In particular, the pilot project on the Authentication of APO Certificates Using Blockchain Technology will be conducted under 4 phases:

- Phase 1 (Project Consultancy): case analysis, situational assessment and project consultancy by blockchain advisor and main project consultant, Mr. Anndy Lian, to assess viable solutions;
- Phase 2 (Coding and Programming): Programming development team convenes for coding and programming session;
- Phase 3 (Testing and Deployment): Program development team stress-tests and deploys the

final product; and

- Phase 4 (Training and Development): Delivery of training and development sessions for APO secretariat and/or related officers.

4. Financial Arrangements

To be met by the APO

All consultancy costs of experts for the blockchainization of APO certificates including, not limited to, travel costs, software coding, program development, maintenance costs for the project; and training development costs of Mr. Anndy Lian for the training of staff during the project.

5. Final Project Output and Outcomes

The project is expected to complete the accreditation and certification process through creating the digital assets of APO professional certificates backed by information on-chaining. This project dovetails with the Accreditation Body efforts of the APO and will enable the authentication of existing and future APO-issued certificates. The pilot project will be showcased to NPOs to validate the feasibility of ensuring data integrity through blockchain technologies.



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