

The Republic of Palau

Ministry of Public Infrastructure, Industries & Commerce

Bureau of Aviation

**Collaboration Program
with the Private Sector
for Disseminating Japanese Technologies
for Face Recognition Technology
in the Republic of Palau**

Final Report

December 2019

Japan International Cooperation Agency (JICA)

Sojitz Corporation/ NEC Corporation

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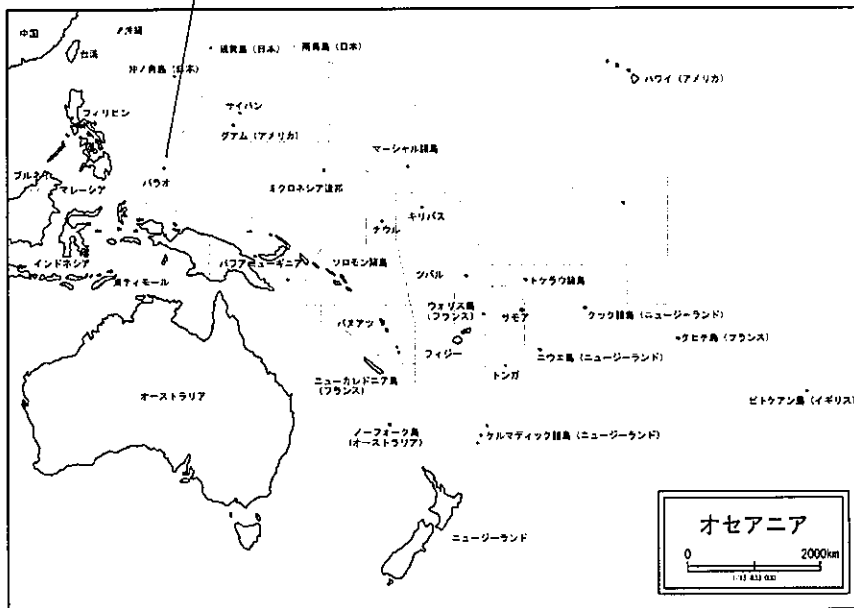
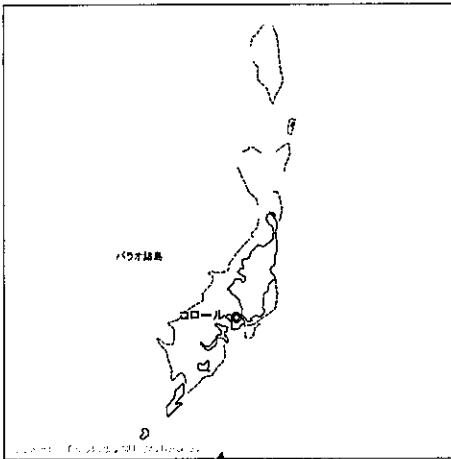
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Program Location



Abbreviation table

Abbreviation	Definition
ROP	Republic of Palau
ODA	Official development Assistance
PIAC	Palau International Airport Company

1. Back Ground of the Program

The international airport in the Republic of Palau (ROP), which is an island country and depends on tourism industry, plays two essential roles:

1) as a lifeline for the residents in ROP to secure education, logistics, business and etc. 2) as a gateway for international tourists and an indispensable asset for major industry.

However airport security is managed by minimum number of staffs and there is a challenge to make more efficient and secure operation. Hence, since there are limited number of commercial tenants in the airport, it is expected to improve profits from tourism industry through effective advertising systems. Under such circumstances, the implementation of access control system utilizing face recognition technology, proposed in this program, will be a tool to contribute to improve airport security. What is more, the implementation of sales promotion signage systems utilizing face recognition technology will also be a tool to realize a solution for increasing and securing strategic financial resource.

2. Target Disseminating Technology

For dissemination of face recognition technology in the ROP, implementation at Palau International Airport had been done in 2 configurations/applications as below

① Sales promotion signage systems utilizing face recognition technology

A signage system will be installed and deployed, in order to provide relevant information based on a person's age and gender, estimated by the face image detected by a camera. The system is expected to solve the issues of need to increase tourism revenue by effectively using the limited advertising space at small scale airport.

Hence, its advertising contents include, not only products at airport duty-free shops, but also products that can be purchased in the city such as local sightseeing optional tours, etc. The signage systems will be deployed (i) departure gate lounge, (ii) arrival baggage conveyor belt, and (iii) entrance hole.

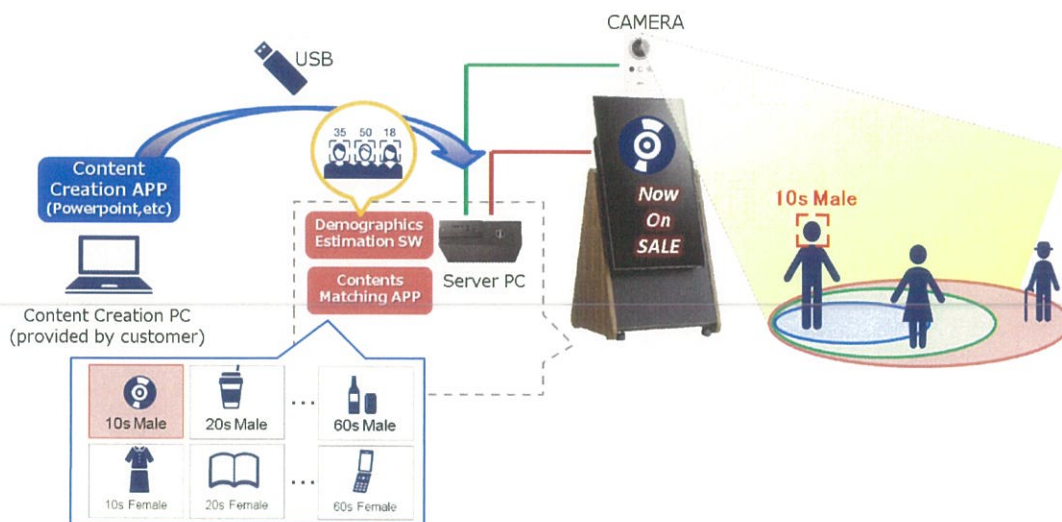


Figure 1 : Operation image of Sales promotion signage systems utilizing face recognition technology

② Access control system utilizing face recognition technology

An access control system will be installed and deployed at restricted areas that require high security control, in order to realize more efficient identity verification for ensuring safety of airports. The system is expected to solve the issues of ensuring the security of restricted areas by prevent entry by anyone who is not pre-registered. For assurance of airport security, in addition to immigration and security clearance of passengers, it is essential to have secure access control of restricted area.

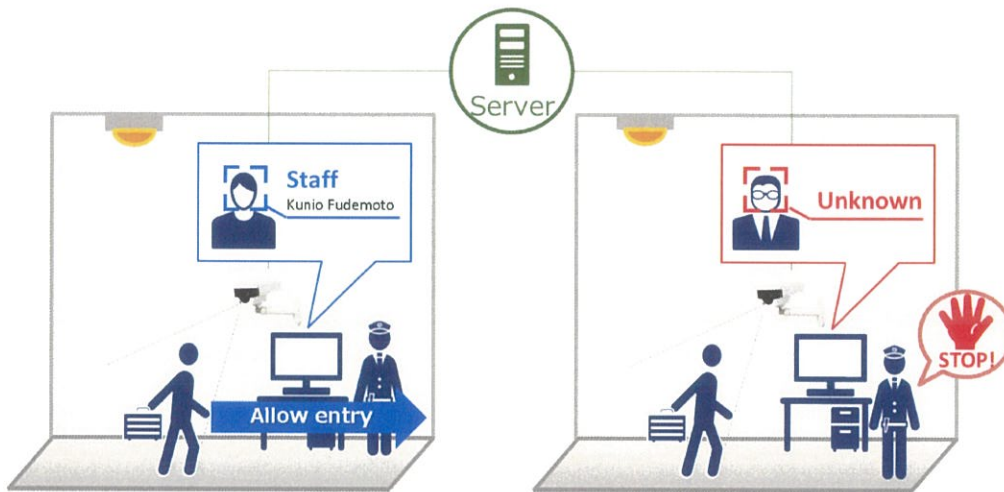


Figure 2 : Operation image of Access control system utilizing face recognition technology

3. Program Purpose and Objective

- 1) To disseminate the target technology and its technical effectiveness to Palau Ministry of Public Infrastructure, Industries & Commerce and private companies through the trial and site visiting tour in Japan.
- 2) To assess business model and local partners in order to develop future business.
- 3) To pursue the possibility of introducing target disseminating technology with financial support from Japanese Official Development Assistance (ODA).

4. Program Activities

- 1) Visited the ROP three times and conducted local site survey, equipment installation, trial(from July to September in 2019).
- 2) Invited two (2) delegations from ROP Government in August, 2019 and November, 2019 to Japan and introducing target disseminating technology and its case study through site survey.

5. Implementation System

The implementation was done by Sojitz Corporation and NEC Corporation and the work scope of each party was as follows

- 1) Sojitz: Coordinate total program. Discussion with ROP Government and arrangement of schedule of local site survey as well as invitation of ROP Government staff to Japan.
- 2) NEC: Design, Installation, Training for Operation of Disseminating Technology System.

6. Program Achievement

- 1) Target disseminating technology is now well recognized by both Palau public and private sector through program activities in ROP and demonstration/ presentation in Japan.
- 2) With regards to access control, technical feasibility and accuracy of face recognition technology is confirmed. (Operational improvement is required on the other hand)
- 3) Two private companies expressed particular interest in utilizing the signage system. Moreover, several companies showed interest in providing advertising contents on the signage system.
- 4) ROP Government shows interest in utilizing face recognition system in certain application. (details cannot be disclosed.)

7. Prospect of Future Business Development

Business model for the signage system can be developed in the following four patterns:

- ①A business model that can be used as an advertising display to generate advertising display revenue.
- ②A business model that sells signage systems that can be incorporated customer requests.
- ③A business model that rents the signage system equipment
- ④A business model that sells access control system and related system that can be incorporated customer requests.
- ⑤A business model that sells the system utilizing face recognition system to ROP Government.

Above prospects are based on the information from the interview of local partners.

8. Future Challenges and Tasks for Business Development

- 1) With regards to business model ①, the challenge is whether owners can get higher advertising fee through playing videos and obtaining digitalized viewer data and recognize those added values in comparison with existing billboard (wall) advertisements. Although showing potential owners data collected during the program, the data wasn't evaluated as high value added. In the case of ROP, the first step is to enhance understanding of the value of data.
- 2) With regards to business model ② and ③, although there are demands, it is necessary to establish an appropriate operation and maintenance system. Hence, for the same reason as 1), there is a challenge of cost-effectiveness, and more consideration is necessary to check whether it can be managed as a business.

Another common issue of business models ①, ② and ③ is that the value of viewer data is not evaluated because advertisers / customers do not understand how to use viewer data effectively. Therefore, to enhance understanding of advertisers / customers on how to use viewer data effectively may be an effective means for disseminating the signage system.

- 3) With regards to business model ④, the access control system at the Palau International Airport installed this time has demonstrated that face recognition can be performed properly even in Palau environments (even in outdoor environments). This system can be used for public infrastructure facilities in the Republic of Palau (it has restricted areas) at access control system and the employment management system of private companies, and the system can be used for people monitoring system in addition to above application. We want to use this installed system as a demonstration system and let potential users observe it, which will lead to sales.
- 4) With regards to business model ⑤, it is required to discuss detailed specification with ROP Government for further progress.

9. Future Activities

With regards to business model ①~④, we will have a discussion with Palau government and transfer/rent the signage system/access control system to Palau International Airport Company (PIAC). With collaboration with PIAC we will discuss business opportunities with partners, which are recognized as candidates thorough this project.

With regards to business model ⑤, we will have discussion with ROP Government and clarify the required specification.

10. Collaboration Possibility with ODA

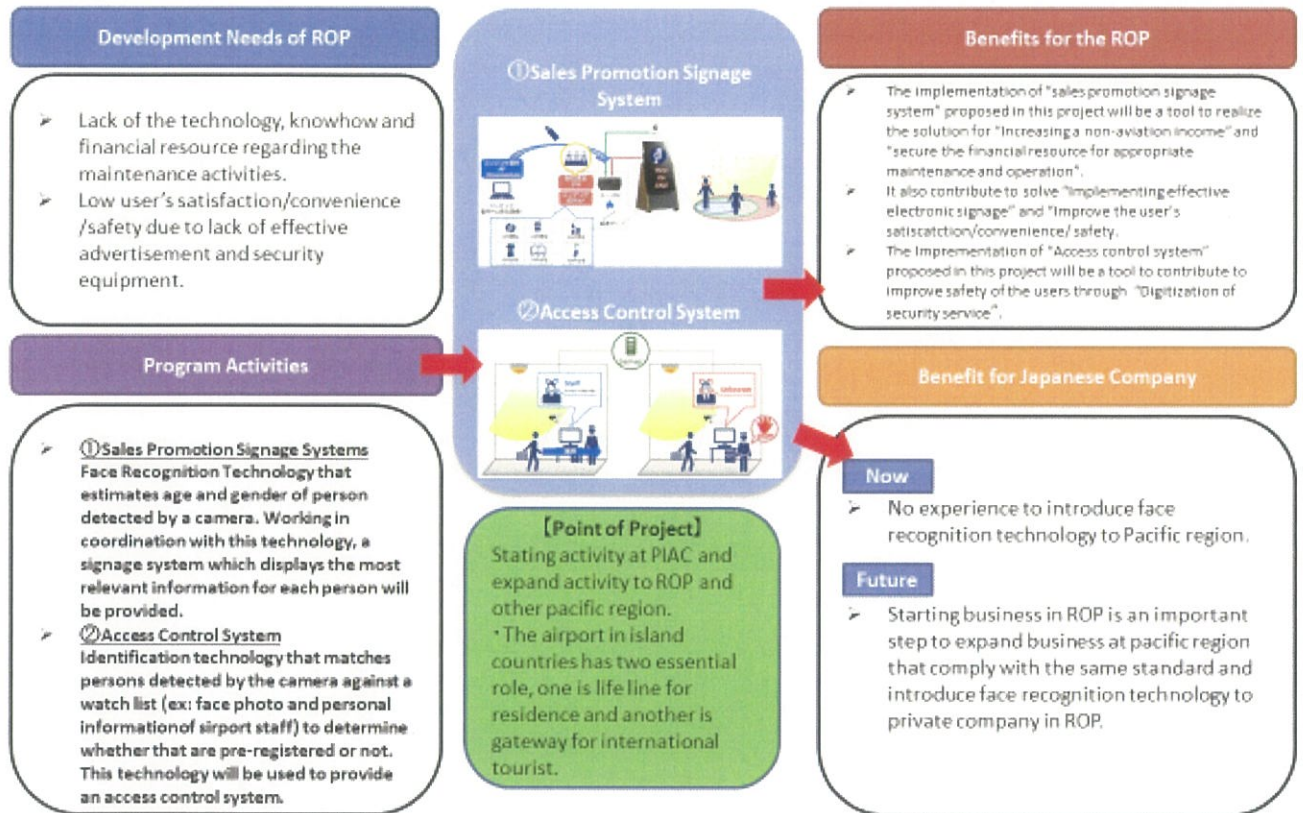
ROP Government shows interest in utilizing face recognition system in certain appreciation (details cannot be disclosed).

So there is a possibility to be a target project for grant aid.

11. Project Overview

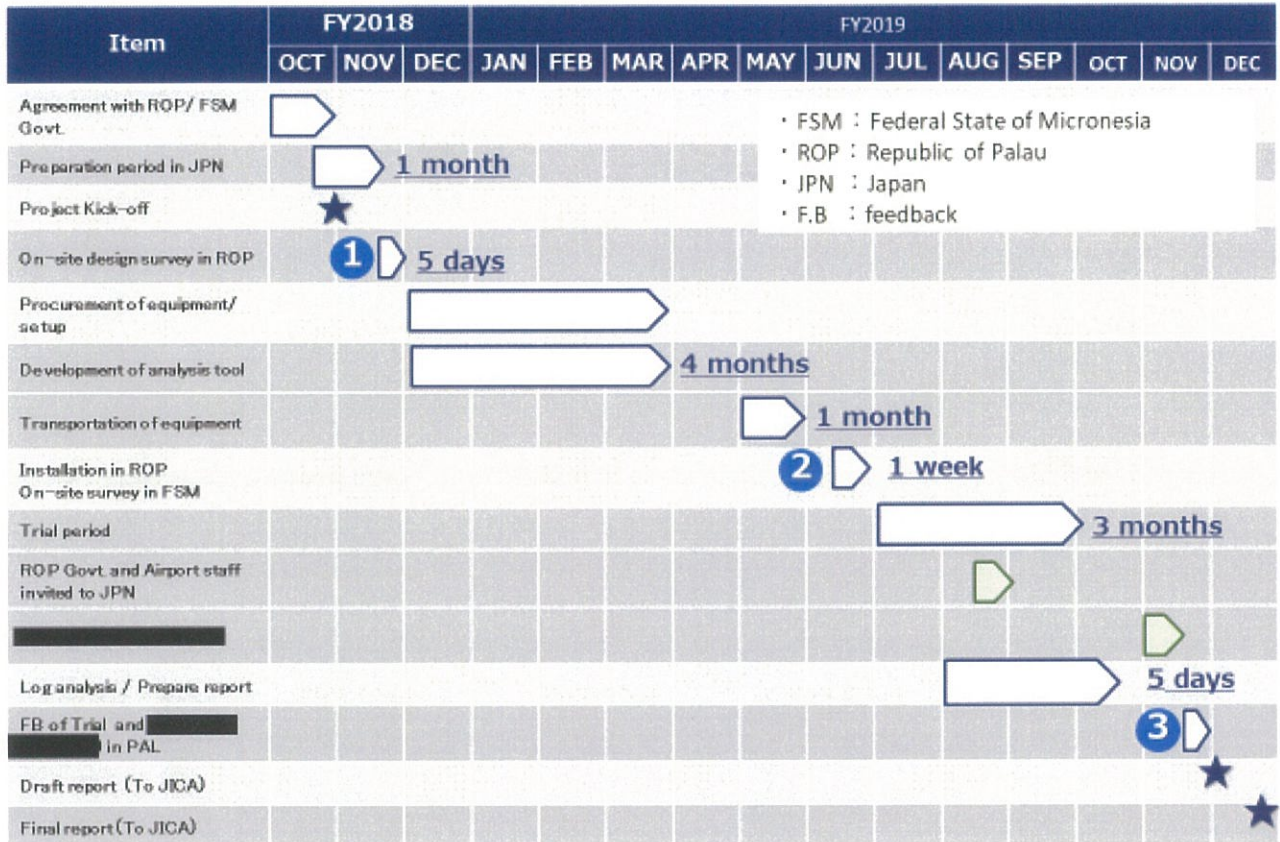


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12. Program Schedule

Collaboration Program schedule



- FSM : Federal State of Micronesia
- ROP : Republic of Palau
- JPN : Japan
- F.B : feedback

13 . Business Development Plan

ROP Government has keen interest to utilize Face Recognition Technology in several applications. However, due to lack of budget in ROP, ROP Government likes to receive support from overseas' donor. Therefore, Sojitz Corporation and NEC Corporation will try to support ROP's request as the project under Japanese Grant Aid.