Activities of the Asia-Pacific Telecommunity/Telecommunication Technology Committee BSG (Bridging the Standardization Gap) Working Group

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Abstract

This article introduces the activities underway by the Telecommunication Technology Committee of Japan and the Asia-Pacific Telecommunity to promote solutions that use information and communication technology to resolve social issues in rural areas of Southeast Asian countries.

Keywords: ICT solution, rural area, M2M

1. Introduction

In 2007, the Telecommunication Technology Committee (TTC) established the Promotion Committee to conduct case studies on solutions that use information and communication technology (ICT) to resolve social issues in Southeast Asia, and compiled a handbook to facilitate dissemination of the case study results in the region. In 2012, these activities were transferred to the Bridging the Standardization Gap (BSG) Working Group in TTC. In addition, a case study team was established in the Expert Group on Bridging the Standardization Gap (EG-BSG) of the Asia-Pacific Telecommunity Standardization Program (ASTAP) to promote solutions that use ICT to resolve social issues in rural areas of Asia.

2. Case studies

Since 2007, TTC has been embarking on the following five pilot projects with the support of the J2 (Human Resource Development Program for Exchange of ICT Researchers and Engineers) and J3 (Construction of ICT telecenter) programs of the Asia-Pacific Telecommunity (APT) EBC-J (Extra-Budgetary Contribution from the Government of Japan).

(1) A medical solution in Tanah Datar Regency, West Sumatra Province, Indonesia. This solution involves the construction of a wireless network to link medical institutions and the creation of a medical information database.

(2) An environmental solution in Palangkaraya, Central Kalimantan Province, Indonesia. This is designed to suppress peat fires, which occur during the dry season, by using a machine-to-machine (M2M) network (**Fig. 1**). This study was carried out in cooperation with the University of Palangka Raya.

(3) Optical fiber network construction and educational and medical solution in Bario village, Borneo, Malaysia. This study was carried out in cooperation with the University of Malaysia Sarawak.

(4) Agricultural and fishery solution in Palakpakin Lake in San Pablo City, the Philippines. This solution involves the construction of an M2M network to improve yields from tilapia

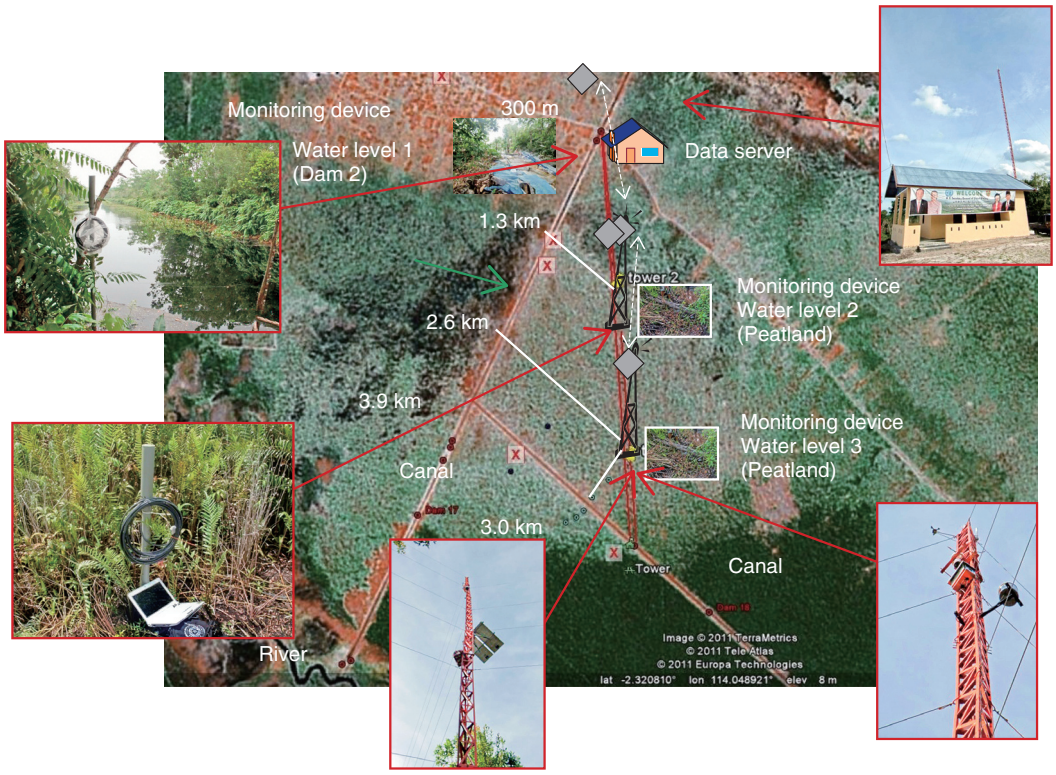

Fig. 1. Solution to suppress peat fires in Kalimantan, Indonesia.

aquaculture (**Fig. 2**). This study was carried out in cooperation with Ateneo de Manila University.

(5) Agricultural and fishery solution in Ho Chi Minh City, Vietnam. An M2M network was constructed in order to improve yields from shrimp aquaculture. This study was carried out in cooperation with Ho Chi Minh City University of Technology.

3. Compilation of a handbook to introduce ICT solutions for rural communities

The five ICT solutions that have been implemented in the Southeast Asian countries mentioned above can also be effectively applied in rural areas in other emerging nations that are facing similar problems. Therefore, we compiled the *Handbook to Introduce ICT Solutions for the Community in Rural Areas* to facilitate the provision of similar solutions in other countries. The handbook describes the case studies that were carried out and also notes items that are universally applicable and can be adopted in different countries. At APT Standardization Program-24 (ASTAP-24) held in April 2004, the handbook was approved as an ASTAP report.

4. Formulation of guidelines

After the handbook was compiled so that generic information from the case studies could be presented, the next step was to develop, with the support of APT, guidelines that provide know-how on how to implement, operate, and maintain the ICT-assisted social issue solutions that were developed from the case studies and adapted to local conditions. Specifically, the case studies carried out by the EG-BSG of ASTAP were scrutinized to develop guidelines that could provide know-how for implementation.

The guidelines can be summarized as follows:

(1) Requirements and implementation procedure for the survey of existing conditions in the area where the selected solution is to be introduced

(2) Requirements and implementation procedure for verifying the effect of introducing the selected solution into the target local area

(3) Steps to estimate the cost of introducing the

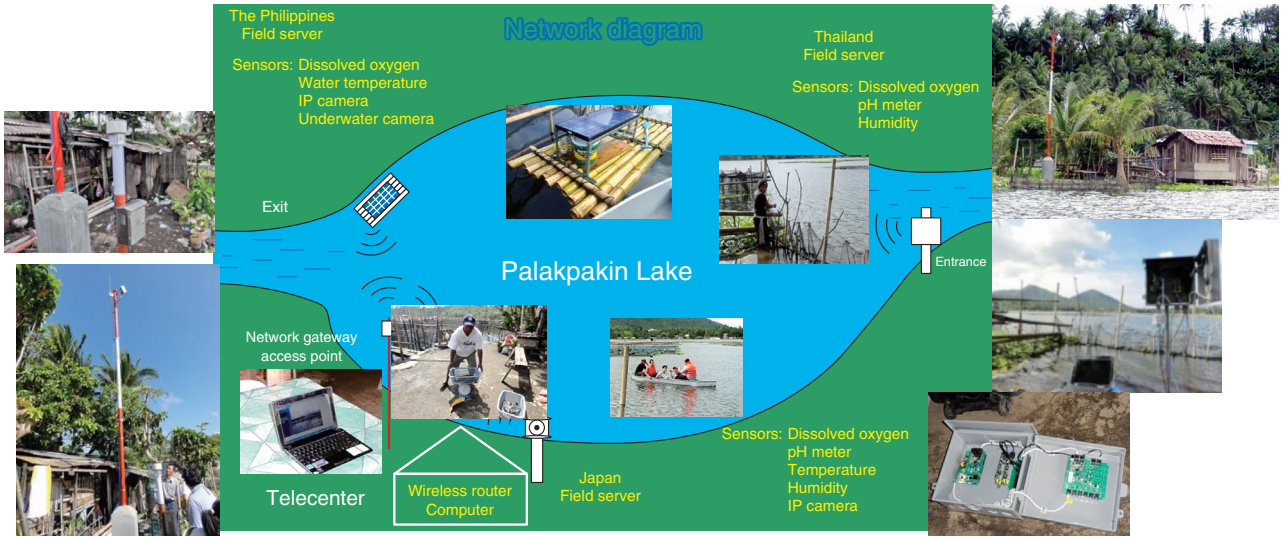

Fig. 2. Solution to improve yields from aquaculture in the Philippines.

selected solution

(4) Requirements and implementation procedure for verifying the cost-effectiveness of introducing the selected solution
(5) Methods to design the network needed to implement the selected solution and select the necessary equipment
(6) Requirements for appointing the person who will be responsible for formulating the selected solution and for data analysis
(7) Requirements for securing appropriate staff for solution operation and maintenance
(8) Development of the ICT staff for operation and maintenance
(9) Issues related to business continuity

The guidelines were mainly developed by members from the University of Malaysia Sarawak (Malaysia), Ateneo de Manila University (Philippines), the University of Palangka Raya (Indonesia), and Kasetsart University (Thailand), which are all project partners in their respective countries, from their own perspectives.

5. Outlook

The term *standardization* generally implies standardization of technical items, but emerging countries require more practical standardization of implementation procedures. As part of the activities to bridge the standardization gap, we are developing guidelines (usage standards) for the provision of ICT-assisted solutions to social issues. These guidelines can also be useful in non-Asia-Pacific areas such as Africa. The pilot models that combine Japan's ICT systems and solutions developed by local universities can be deployed in a manner adapted to specific local conditions. Ensuring business continuity is the greatest challenge, so it is therefore necessary to develop sustainable business models and to encourage local stakeholders to drive the selected solution forward and bring it to fruition.

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He received a Ph.D. in electrical engineering from Yamagata University in 2011. From 1993 to 2000, he was engaged in research on high-density and aerial optical fiber cables at NTT Access Network Service Systems Laboratories. Since 2000, he has been responsible for standardization strategy planning for NTT R&D. He has been a delegate of the International Electrotechnical Commission (IEC) SC (Subcommittee) 86A (optical fiber and cable) since 1998 and of the ITU-T (International Telecommunication Union - Telecommunication Standardization Sector) Telecommunication Standardization Advisory Group since 2003. He is a vice chair of the Expert Group of Bridging the Standardization Gap in the Asia-Pacific Telecommunity Standardization Program Forum. In 2004, he received an award from the IEC Activities Promotion Committee of Japan for his contributions to standardization work in IEC.