

# Appendix 4.2

## [Visual IoT Network for Environment Protection and Disaster Prevention] [Meeting for University Studies, Computer Yangon] Report Form

#### I. Organizer:

Name:	Prof. Thin Lai Lai Thein		
Position:	Professor		
Institution:	University of Computer Studies, Yangon (UCSY)		

#### II. Program:

Date: 13 – 17 March 2024 Venue: Novotel Yangon Max hotel

#### Program Agenda:

14 Mar	09:00 - 12:00	Venue: Hotel's meeting room	
		1. Meeting on Visual IoT system configuration	
	12:00 - 13:30	Working lunch	
	13:30 - 16:00	Venue: Hotel's meeting room	
		1. Meeting on configuration of connectivity to	
		server of NICT.	
15 Mar	09:00 - 12:00	Venue: Hotel's meeting room	
		1. Updating and reviewing current activities in	
		Thailand and Myanmar	
	12:00 - 13:30	Working lunch	
	13:30 - 16:00	Venue: Hotel's meeting room	
		1. Suggestions and recommendations about the	
		further R&D activities in Myanmar and	
		Thailand.	

#### III. Participants:

No.	Name	Organization	Itinerary
1	Dr. Kanokvate Tungpimolrut	NECTEC	13/3/2024 (in)
			17/3/2024 (out)
2	Prof. Thin Lai Lai Thein	UCSY	NA
3	Mr. Nay Win Aung	UCSY	NA
4	Ms. Zin May Oo	UCSY	NA
5	Ms. Moe Moe Myint	UCSY	NA
6	Dr. Nathavuth Kitbutrawat	NECTEC	On line participants



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7	Mr. Montri Chatpoj	NECTEC	On line participants
8	Dr. Ken Murata	NICT	On line participants
9	Dr. Kazutaka Kikuta	NICT	On line participants

<sup>&</sup>lt;u>**Remarks:**</u> Mr. Ye Nang (USCY) have been assigned to do another task in the other city, so he c ould not attend this meeting with us.

### IV. Summary of the activities corresponding to the objectives

In these 2 days meeting, there are the following 2 objectives. The meeting could be successfully completed as scheduled. The summary of each meeting are shown below.

**Objective #1**: To organize a meeting for UCSY team supported by NECTEC team and NICT team in order to configure the Visual IoT system including microcontroller (RasPi-4) board, IP camera and communication channel. The configuration of the system to upload and download the taken images to NICT server will be also investigated.

- The model of existing IP camera of UCSY team (Dahua, model DH-IPC-HDW2831TP-AS-S2) is different to NECTEC team (Hikvision, model DS-2CD1023G0R-I), so NECTEC team have to check and find the method to configure the IP address of UCSY camera.
- The IP camera of UCSY is connected to Lan network of the building instead of using Wi-Fi or Sim Card, so the IP address of the IP camera have to be rechecked and all related information has to be sent to administrators of system in NICT in order to reconfigure the sytem for UCSY.
- UCSY is planning to purchase for 2 new cameras. One of those cameras will be installed outside of the building. The distance between the installation point is about 100 meter from the building. The Lan cable and AC power line have to be installed for that camera. NICT team suggests to check the strength of the signal, since 100 meter might be larger than value in the data sheet.
- The installation of one of existing Visual IoT system at office 11 in Nayphitaw was successfully completed and the images from that camera could be successfully uploaded and downloaded to and from NICT server.

**Objective #2**: To organize a progress meeting via on line among NICT team, USCY team and NECTEC team in order to update the current status of UCSY team and NECTEC team and to receive the suggestions and recommendations from NICT about the guideline of preparation and installation of the Visual IoT system to be installed in Naypidaw for UCSY team and how to collect and utilize the taken images from Chiang Mai for further smoke/fire detection development.

- NICT team will try to apply the proposed optical flow technique for images taken by one of installed camera with PTZ function in Chiang Mai.
- NECTEC team will discuss to NICT team about further development of smoke/fire detection algorithms based on YOLOv5 on server of NICT team. The output of this development is an automatic warning message to the local government officer whenever the Visual IoT could detect smoke/fire.



- Data visualization will be designed based on stored images in NICT server. Some unused image from the previous experiments have to be deleted by the administrator of NICT team.
- The dataset collected by UCSY team is too small, so UCSY team have to take more image without smoke from the field and more annotation work of the images with smoke has to be completed soon.
- The model based on YOLOv5 developed by UCSY team still generates too low precision, since the number of dataset is too small and there is some mistake on the procedure of coding.

Since Mr. Ye Nang could not attend this meeting, so the number of on site participants became 5 persons and the paid amout for the meeting package decreased.

#### V. Others



