ASEAN IVO Forum 2018

Cambodia NerveNet Field Testing Project Review 2018

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Content

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Tele Center (Previous Site Implementation)

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Tele Center (Previous Site Implementation)

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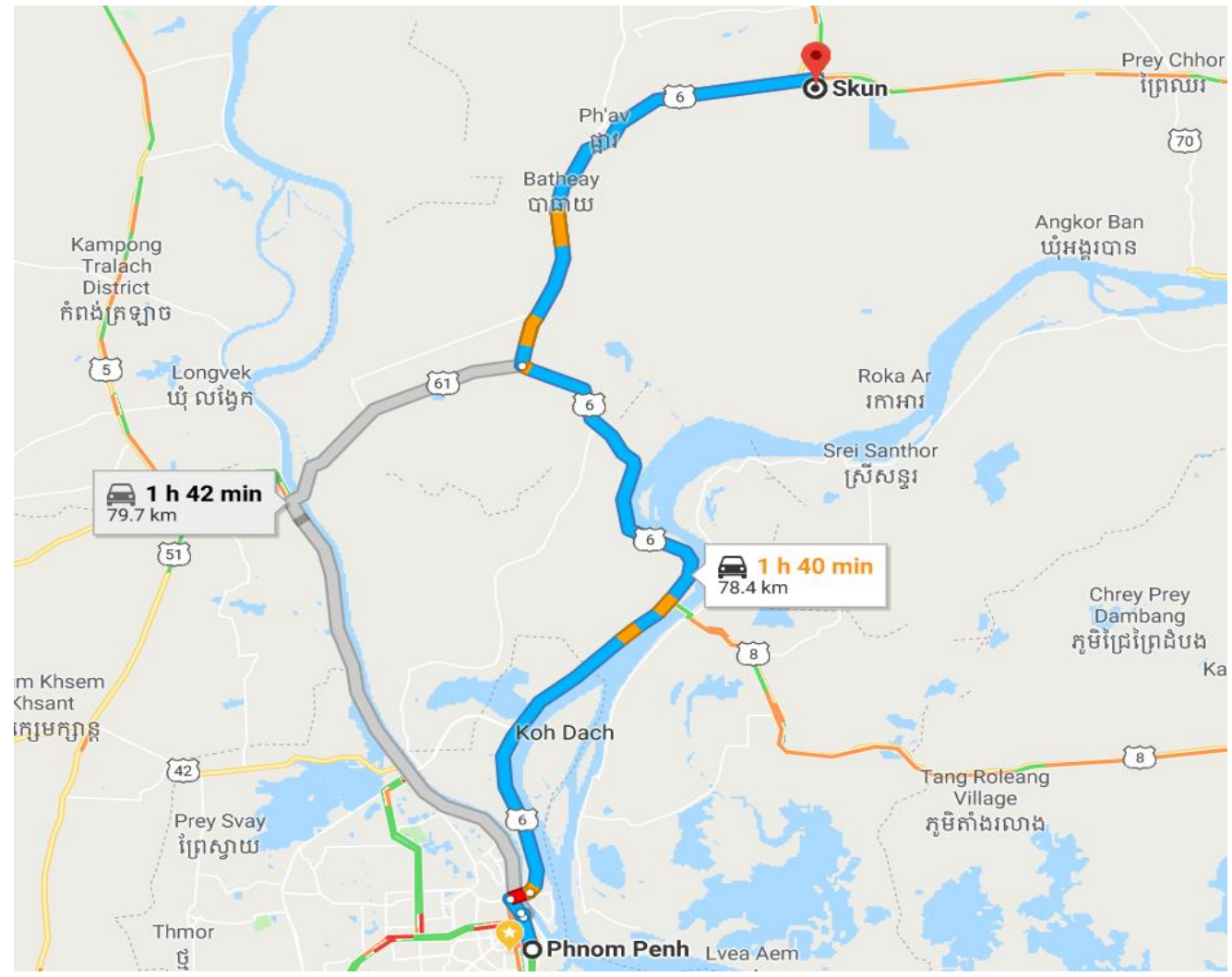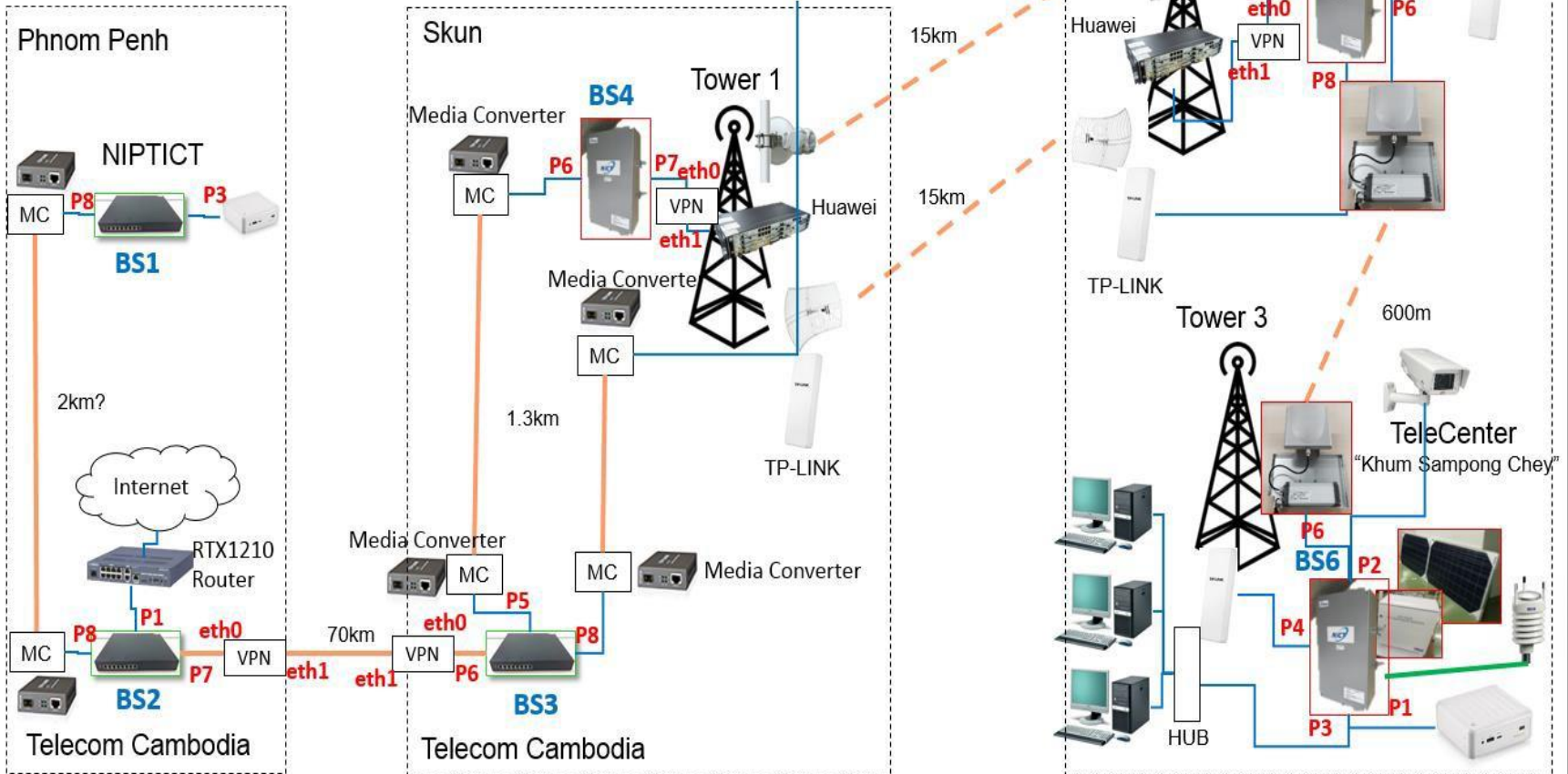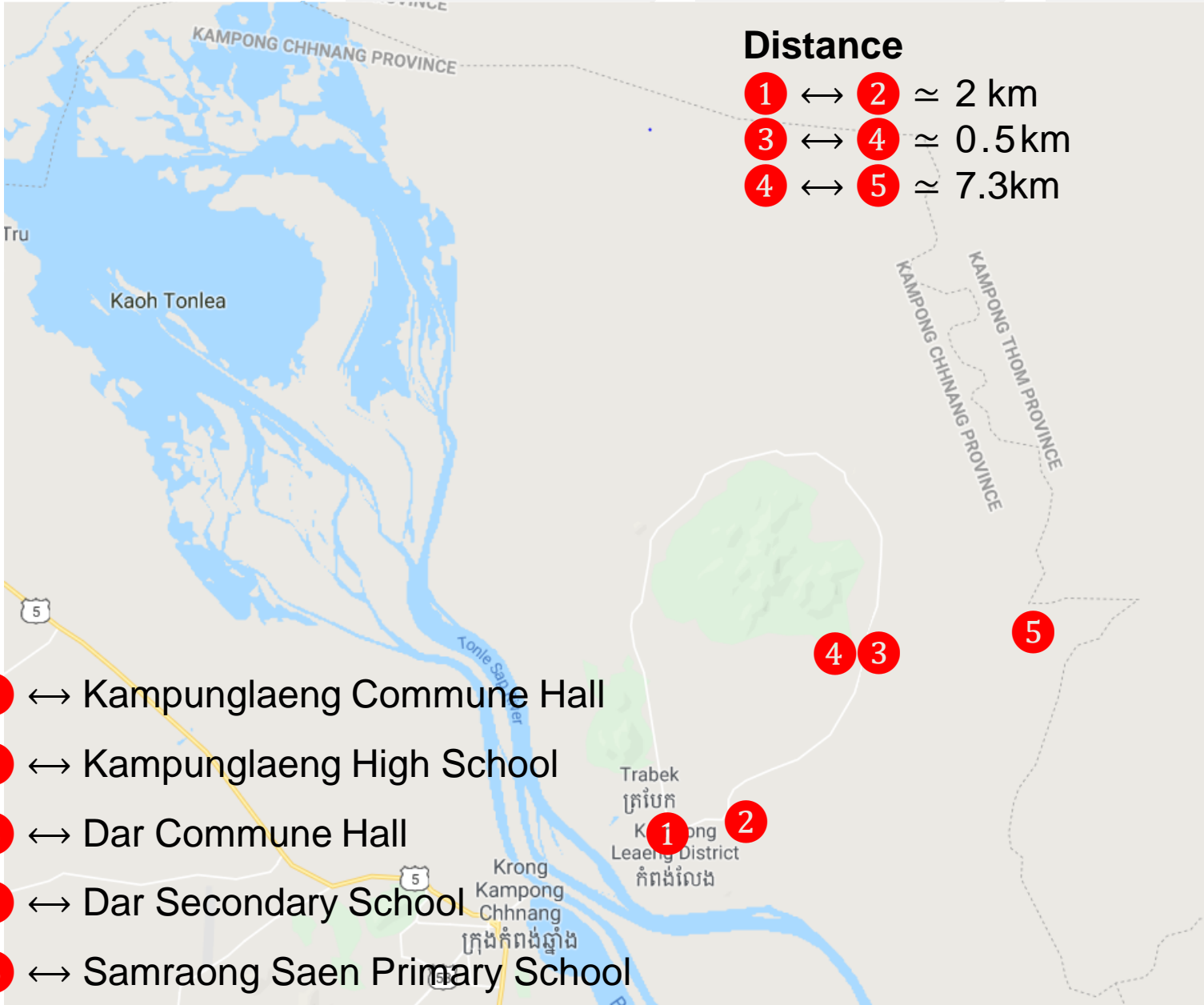
- ## Current location:
  - ### 108km from Phnom Penh to Kampong Chhnang province.

  - ### 1 High School

  - ### 1 District Hall

  - ### 2 Secondary Schools

  - ### 1 Primary School

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Distance

① ↔ ② ≃ 2 km
③ ↔ ④ ≃ 0.5 km
④ ↔ ⑤ ≃ 7.3 km

① ↔ Kampunglaeng Commune Hall

② ↔ Kampunglaeng High School

③ ↔ Dar Commune Hall

④ ↔ Dar Secondary School

⑤ ↔ Samraong Saen Primary School

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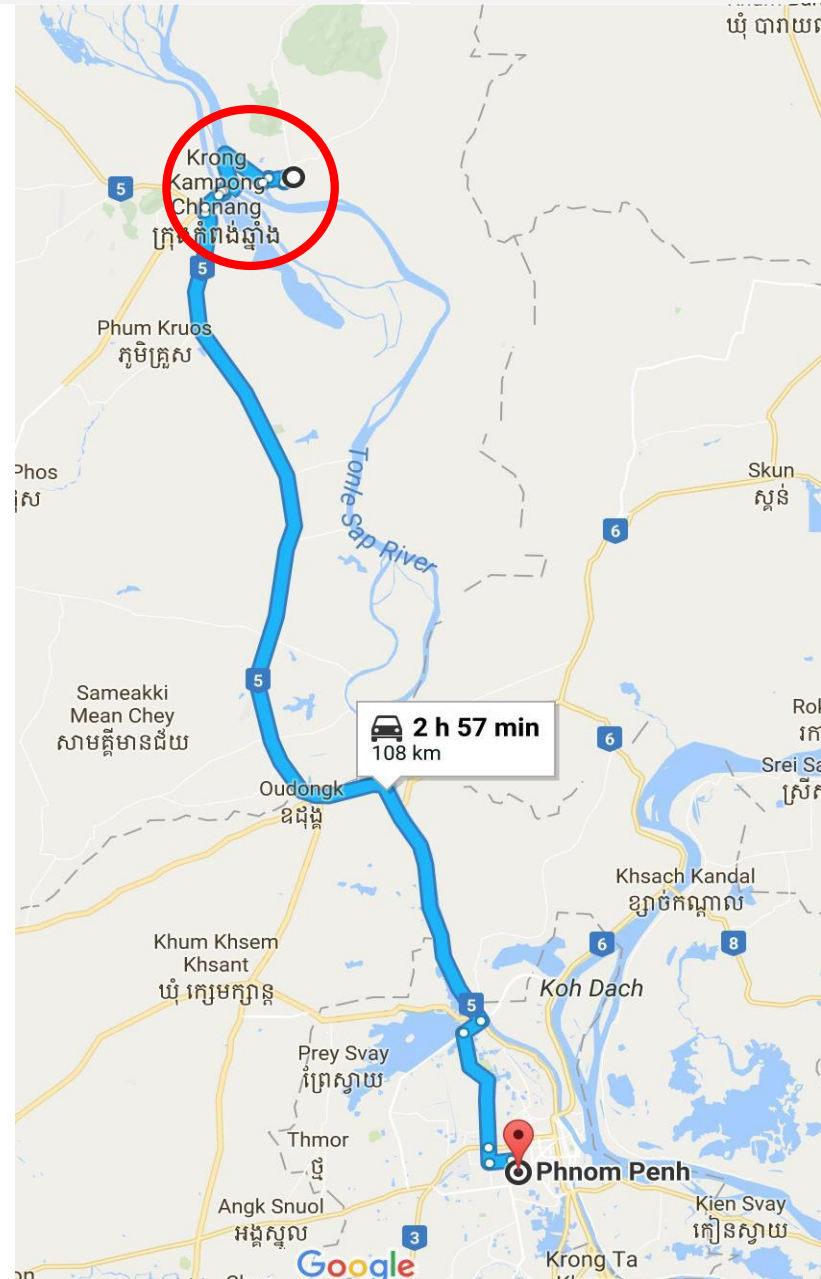
Ferry

Fast Boat

Logistical Activities

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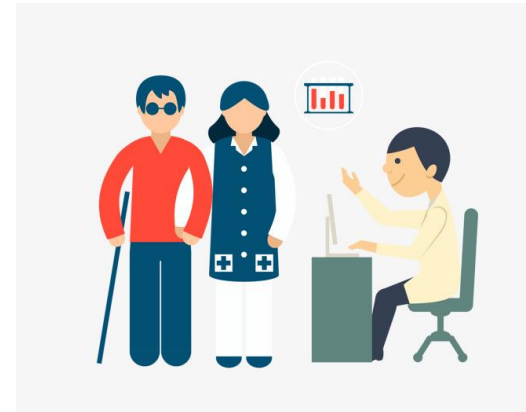# Vision "Smart Village" with NerveNet
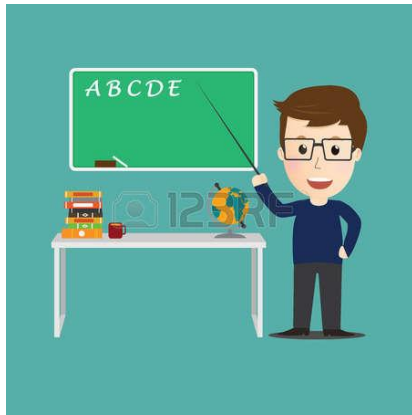
Education

Agriculture

Healthcare

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Network Topology

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Distance

❶ ↔ ❷ ≃ 2 km
❸ ↔ ❹ ≃ 0.5km
❹ ↔ ❺ ≃ 7.3km

Antenna

Fiber Optic

❶ ↔ Kampunglaeng Commune Hall

❷ ↔ Kampunglaeng High School

❸ ↔ Dar Commune Hall

❹ ↔ Dar Secondary School

❺ ↔ Samraong Saen Primary School

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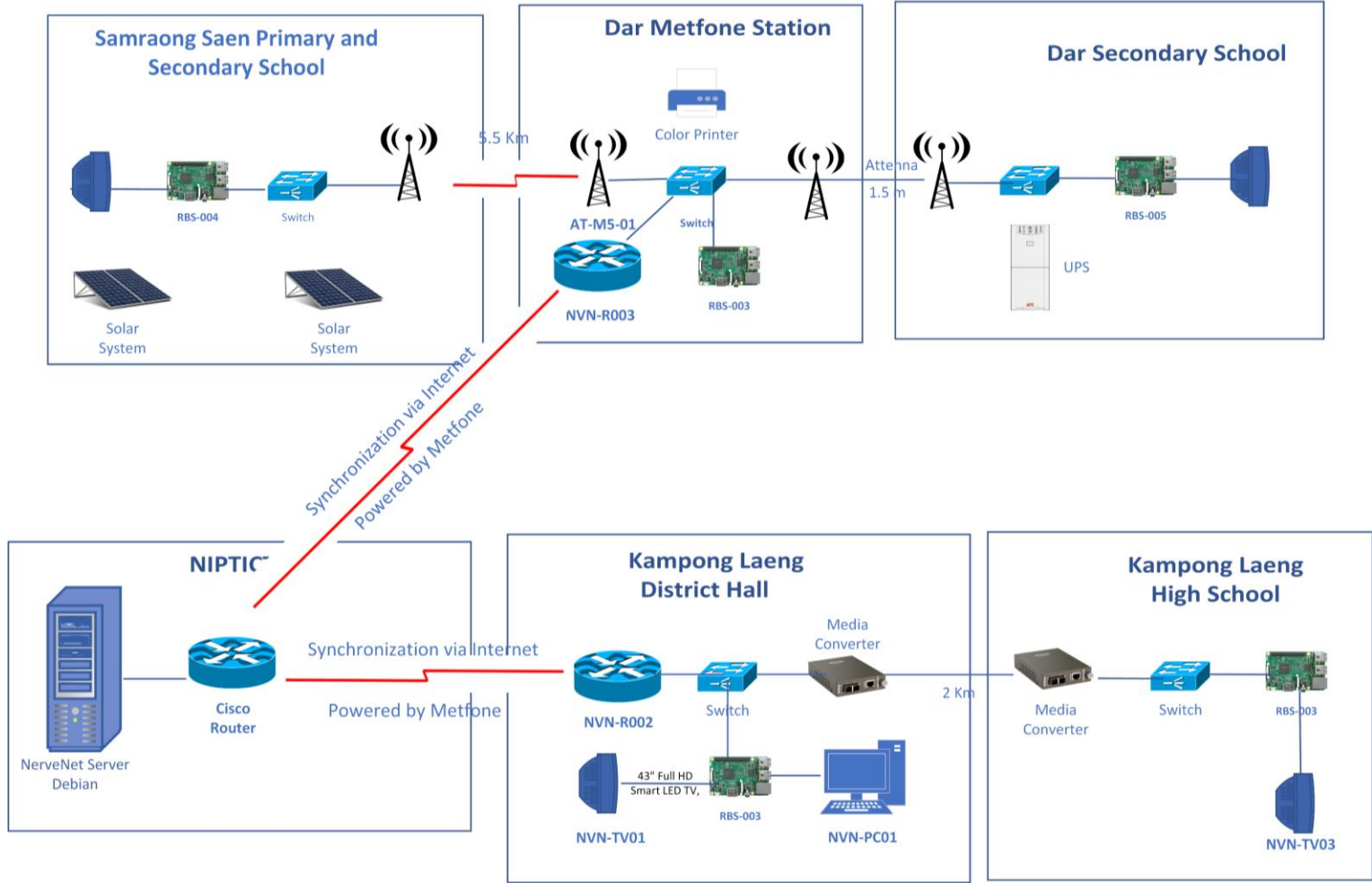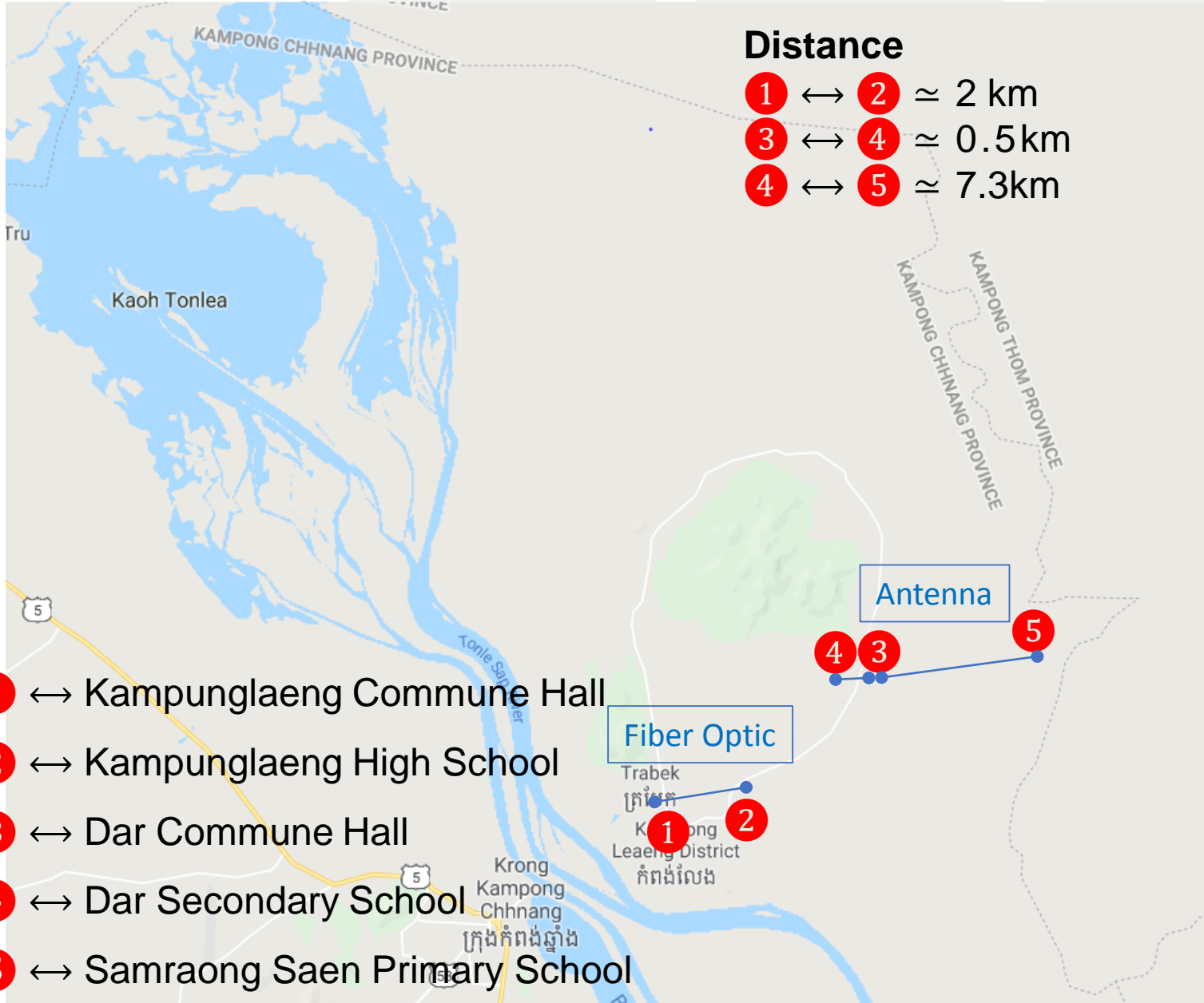
## Raspberry Pie 3 powered by NerveNet OS

- Small and inexpensive computer

- First time with NerveNet OS

- 4 USB Ports and 1 embedded Ethernet

- Embedded WiFi (DHCP Server)

- Each port can be configured as either router or switch port.

- Each port can be bridged together

- VPN Layer 2 is established by default when each raspberry pie connect to each other

- VPN Layer 3 can be deployed between Server and Remote Sites.

Raspberry Pie 3

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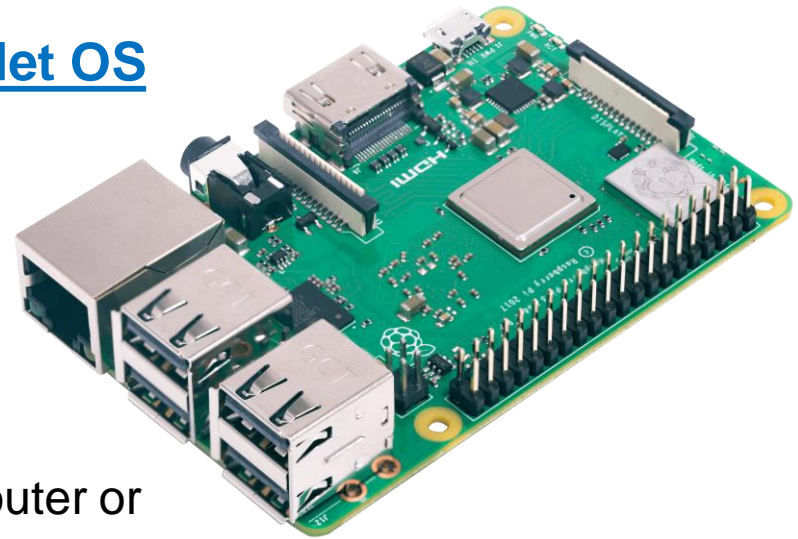
What We have done recently

- Debian Replace of Raspberry Pie Server at NIPTICT

- ZABBIX will be used to monitoring the connection between Raspberry Pie.

- **Database Synchronization**

Raspberry Pie 3

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Rocket M5 Antenna

- Geographical location and status of the area do not allow us to implement the Fiber Optic Cable.

What We Learn

- Antenna runs at Layer 3 as IP address is used between its antenna pairs. So, the default VPN Layer 2 does not work as tagged VLAN cannot be transmitted.

- VPN Layer 3 is instead used between each antenna

Rocket M5 Antenna

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<u>Applications</u>

・Kids are able to study English, Math, Physic and so on through e-learning system.

・Local government officials learn about the information regarding public services information.

・Farmers are expected to benefits from the agricultural content and are able to share that knowledge within their community.

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Education Content

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Education Content

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Education Content

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- Cost-effective and stable network infrastructure

- Trial E-learning content

- Data Synchronization

- VPN Connection between each Raspberry Pie

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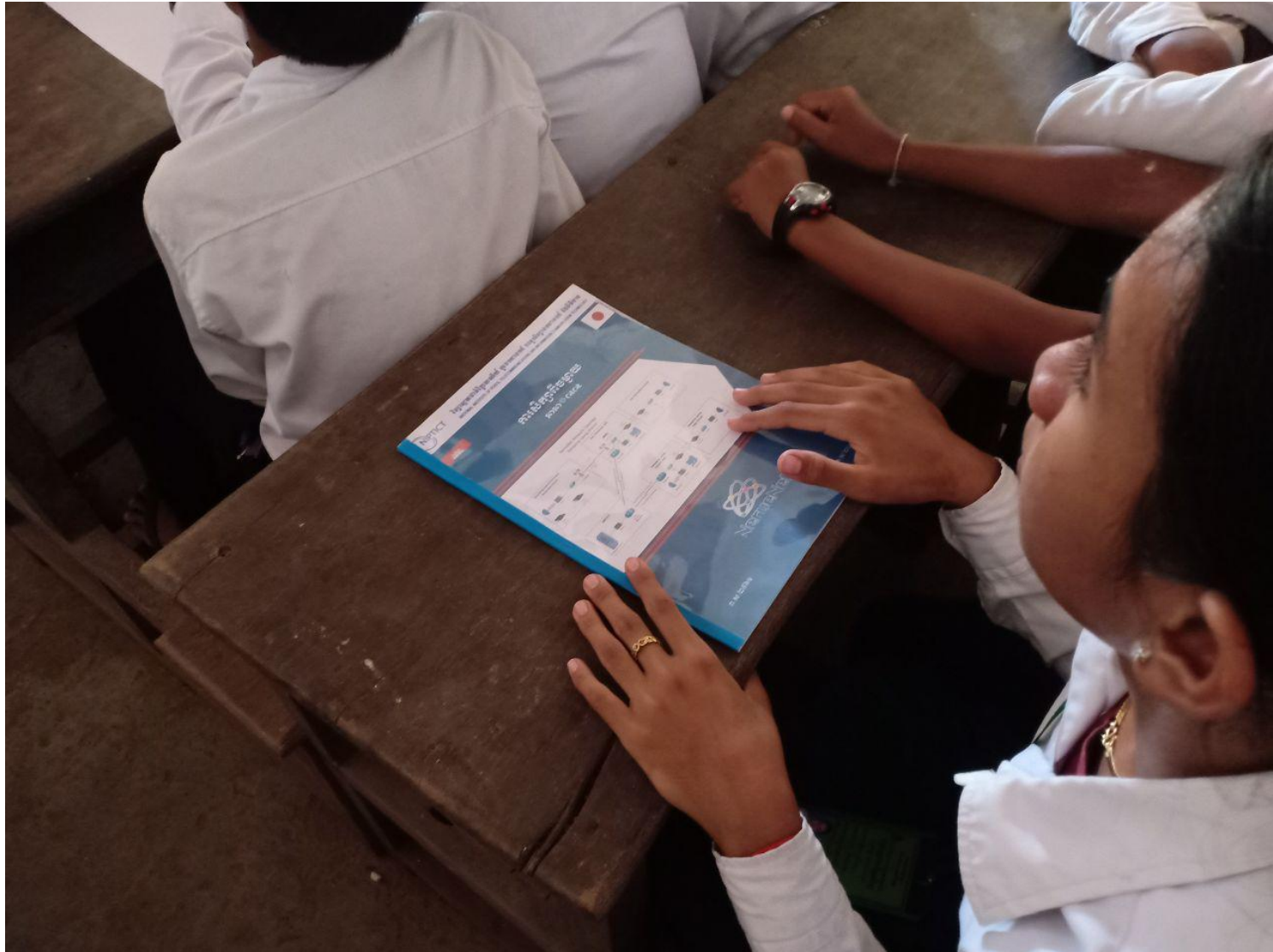
Book designed to educate students and teachers about computer

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Local Government Officials

Secondary School Students

Secondary School

Basic Computer Course

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Distance

1 ↔ 2 ≃ 2 km
3 ↔ 4 ≃ 0.5km
4 ↔ 5 ≃ 7.3km
1 ↔ 7 ≃ 15 km
1 ↔ 6 ≃ 45 km

1 ↔ Kampunglaeng Commune Hall
2 ↔ Kampunglaeng High School
3 ↔ Dar Commune Hall
4 ↔ Dar Secondary School
5 ↔ Samraong Saen Primary School
6 ↔ **Plov Touk Village**

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Plov Touk Visit

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Plov Touk Visit

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Plov Touk Visit

Future Plan

FY2018	FY2019

Complete Cambodia Field Testing

a) Final target site "Plov Touk Village".
b) Modifying Phase1 Telecenter
configuration to connect to Phase2
system using   Raspberry Pie.
c) Complete Exam Management system
development

Continue the Evaluation Activity

a) Support deployed site.
b) Gather comment from users.
c) Minor change to Phase-2 system.

Main Goal: Conduct Government Level Workshop

a) Demo to several sectors.
b) Negotiation with government level

Myanmar Test Deployment

a) Set up "Taw Ku Village" with Mobile internet +
RasPi NerveNet
b) Connect to NIPTICT.
c) Technically Supported by NIPTICT

Thanks You For Your Attention