

Wireless Training at Tura, Meghalaya

About the Workshop and Training:

The workshop and training aims to provide primary and secondary knowledge, skills and training on wireless technology, its usefulness, deployment, and operation of wireless networks. It aims to train community youths in the deployment and operation of such networks.

Digital Empowerment Foundation have set up Tura Internet Service Centre (TISC) at Tura, Meghalaya and as one of its early training programme for skill development for youths in wireless connectivity and hardware knowledge have been a successful workshop.

The workshop cum training programme title as “**Wireless for Rural Connectivity**” for empowering rural youths was scheduled for 5 days of practical training / 35 hours of session

Training Workshop Brief

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|--------------------------|---|
| i. Venue: | Old Circuit House, Tura, Meghalaya |
| ii. Date / Duration: | 28th May – 1st June’2011 / 5 Days Training |
| iii. Number of Trainees: | 12 attended |
| iv. Duration of hours: | 35 hours |
| v. Trainer: | Shahid Ahmad |
| vi. Registration fee: | None |
| vii. Nature of Training: | Training of Trainees in Certification Programme |

The Objective:

The objective of the training is to give the trainee a basic understanding of networking and specifically wireless network, configuration of Radio device as Access Point and as a client. It aims to train trainees how to manage, maintain and monitor a small wireless ISP with following features:

- Broadcast a network of internet and create a environment of better security (WEP/WPA, MAC authentication)
- Create different kind of user according to rate, time and volume
- Secure the network from different kind of malicious virus
- Monitor and maintain the traffic accordingly

Training Participants:

1. Humayan Marak
2. Chening R Marak
3. Prewith S Marak
4. Benister Ch. Marak
5. John M Marak
6. Alphonse K Marak
7. Jitu Mathew G Momin
8. Elimer M Marak
9. Noblune M Sangma
10. Tenang N Sangma
11. Sengning M Sangma
12. John Edward Marak

The Contents of the Wireless Training Programme (Training of Trainees)

The five days programme imparted the following wireless knowledge with theory and practice and live demonstration:

- a) Internetworking basic
- b) Basic network topologies
- c) The OSI Reference models
- d) Ethernet networking
- e) Ethernet cabling
- f) TCP/IP Protocols
- g) IP Addressing
- h) Subnetting, Variable Length Subnet Masks (VLSMs), and Troubleshooting TCP/IP
- i) IP Routing
- j) Wireless Standard
- k) Radio Physics
- l) Radio Link
- m) Radio device configuration
- n) User account creation
- o) Security (WEP/WPA, MAC authentication)
- p) Troubleshooting wireless network

General Feedback:

- i. The general feedback session was conducted on the last day for assessment of the training workshop from the participants. The idea was to collect information from the participants to know how they benefit from the wireless training, what is their overall outlook from such unique training.
- ii. Many participants in general said that such training was very effective, they felt their knowledge on hardware and networking was better emphasized with such advance training.
- iii. Participants felt they needed such training very often in order to keep their learning intact.
- iv. Many of them also inquired if there are more above level advance training would be provided to them in future through workshop and training programmes by DEF.
- v. Participants acknowledge the content of the training programmes were well versed and the tutor interactivity and delivery of content was very satisfying.
- vi. Participants were pleased with the overall training aspects of the workshop.

Estimated Feedback:

About venue:	Excellent (80%)	Average (20%)	Poor (0%)
Communication Skills:	Excellent (50%)	Average (50%)	Poor (0%)
About Personal Qualities:	Excellent (60%)	Average (40%)	Poor (0%)
About Content:	Excellent (70%)	Average (30%)	Poor (0%)
About Training Method:	Excellent (70%)	Average (30%)	Poor (0%)
About Duration of Training:	Most of the Participants requested for more trainings in future for advance training in wireless networking lessons.		

Training Outcome:

The Workshop and Training were able to train 12 youths successfully in deploying the wireless set-up for internet connectivity. The participants of the workshop were able to set up a temporary mesh wireless network, with testing and live demonstration with all essential wireless equipments within a range of 5 KM with one relay station and two nodes.

The following outcomes are visualized from this workshop & training:

- i. Trainees build skills to configure the radio (Mikrotik and Engenus) as Access Point, Client and as Mesh through the Tutor's training.
- ii. Trainees were able to configure the Mikrotik router as DHCP Server, Router, and Hotspot server creating the user profile of different varieties and connect the client with Security (WPA/WEP) and Mac authentication.
- iii. Trainees were capable to configure the Engenus radio as Access Point, Client and as Mesh network and know the concept of how to do same in Mikrotik and Have knowledge of configuring Mikrotik router as above mentioned.
- iv. Trainees were able to make all kind of cabling like state cabling, cross cabling etc. and make link analysis between two nodes.
- v. Trainees gained knowledge to configure radio (Mikrotik and Engenus) as Access Point, Client and as Mesh

Limitations and Challenges:

- i. The workshop could gather only 12 youths for the training, which could have enhanced.
- ii. The training venue faced power failure for few hours which hampered the effectiveness of practical training
- iii. Continuous raining weather also hinder training process to start late on the first day and the last day of the training.
- iv. Language difficulty in communication for trainer (needed repetitive explanations in English)
- v. The training duration was shortened for 3 days, whereas such training should be not less than 5 days.