Department of Computer Science & Engineering
Tezpur University

Cognitive Radio Network Research Laboratory (DIT Assisted)

The Cognitive Radio Network (CRN) Lab, CSE department, Tezpur University funded by Department of Electronics and Information Technology (DeitY), Govt. of India in the year 2013. The lab runs under the supervision of Prof. N. Sarma and Dr. S. K. Deka. The research team in the CRN lab broadly aims at study and development of innovative scientific approaches for maximizing the efficiency of radio-spectrum usage in all possible dimensions, including frequency, time, space, and location in specific. Our research effort bridges several areas, such as modern wireless networking (sensor/ad-hoc networks, cognitive radio networks, 5G and B5G networks, IoT, Software-defined Networking (SDN), Optical Networks (ON), and machine learning applications for networking problems.

Our research has so far been supported/funded by "Ministry of Electronics and Information Technology (MeitY), Govt of India".

a. Equipment(s)

Sl. No.	Equipment (with specification) and Year of Purchase	Quantity
1	PCs - HP Compaq Elite 8300	6
2	PCs - DELL OptiPlex 5070	3
3	Laptops - HP ProBook	6
4	Laptops - Microsoft Surface 4	1
5	Laptops - Microsoft Surface Go	1
6	Server - IBM System X3500 M4	1
7	WorkStation - HP Z420	1
8	WorkStation - DELL Precision 3650	1
9	HPC Cluster (1 Master & 2 Compute node)	1
10	Ettus USRP1	6
11	Ettus USRPM210	4
12	Ettus Daughter Board	16
13	Ettus Antenna	26
14	Switch Rack	1
15	UPS : 1 KVA 6 KVA	2

b. Types of Experiments Conducted/Performed

Sl. No.	Experiments Conducted/Performed
1	Security In Cognitive Radio Network
2	Resource Allocation In 5G Network
3	SDN Controlled Spectrally and Spatially-Elastic Optical Network Spectrally And Spatially
4	SDN Controlled Elastic Optical Network
5	RSA Problem in Elastic Optical Network

c. Open-source tools/software used:

Name of tool/software	Utility
GNU Radio	Development of applications to interface with USRP devices
Python	Development of system for CRNs

d. People working in the Laboratory:

Currently, 17 students from PhD, M Tech, MCA, and B. Tech. are working in this lab.