Spectrum Coordination Lab Structure

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Network Structure:

Single802.11Concole
Java Concole can show the spectrum and
power condition of the network
(use PC with Airo wireless intf)
Amount:1

Single802.11devicves
(use Prism2, or notebook)
Amount:2-3

Bluetooth with 802.11
control Radio
(use forwarding node)
Amount:1-2
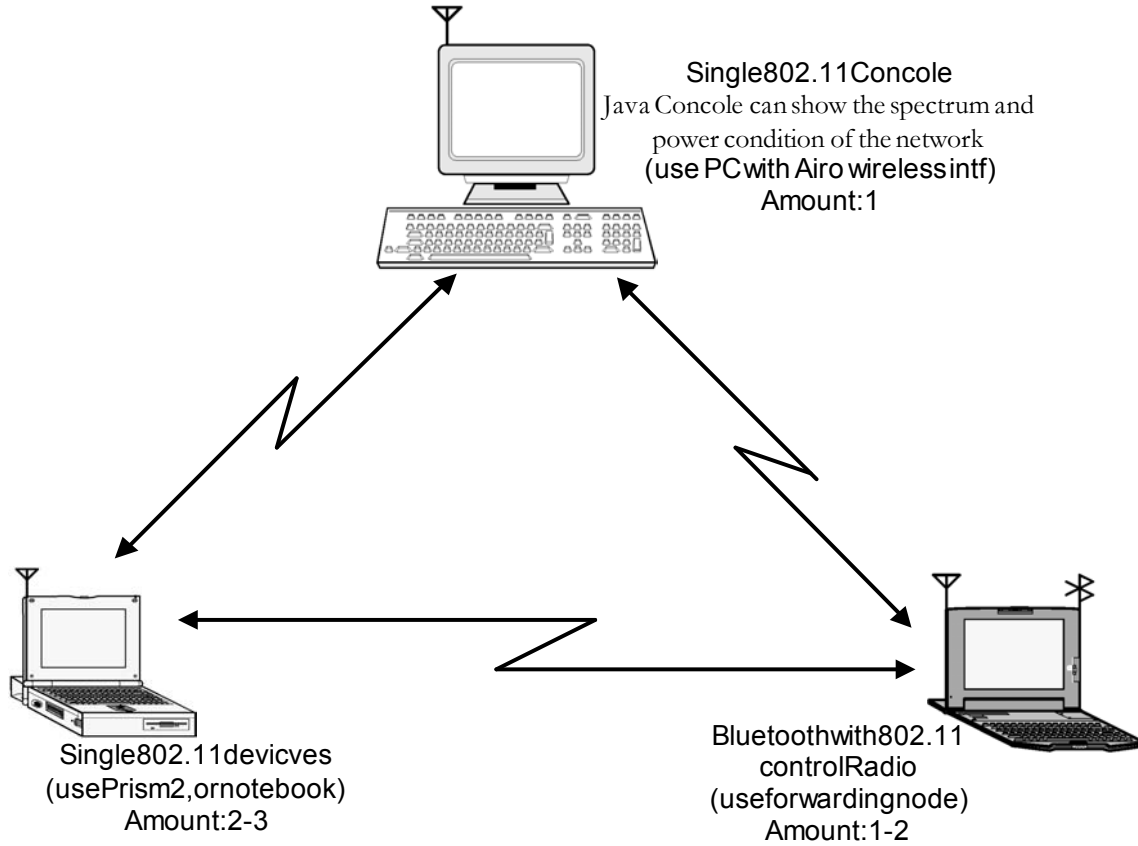
CSCC Format v.9:

    For the first version, we design a simple CSCC packet type to implement "self-announcement". At the same time, reserve some field for future use.

| 0	8	16	24	31
802.11 MAC Address (48bits)…				
… MAC Address		Device Name and …		
… Device Name and Description (64bits)…				
… and Description		Type (8b)	Channel(8b)	
Service Time Duration (32b)				
Transmitted Power (32b)				
Received Power (32b)				
Reserved (variable bits)				

CSCC Packet Format (v.9), 7x32 = 224bits + reserved

Description:

1: 6 (char) x 8=48bits, Standard 802.11 MAC addr

2: String, 8 x 8=64bits, Device name or description

3: 8 bits, Service type: 1 = 802.11 device, 2 = Bluetooth, …

4: 8 bits, 1-11 channels available from 2.4GHz to 2.48GHz

5: 32 bits, time duration, units of ms
6: 32 bits, unit of mW or mdB
7: 32 bits, unit of mW or mdB
8: Variable bits, reserved

Console Display:
Screen Design
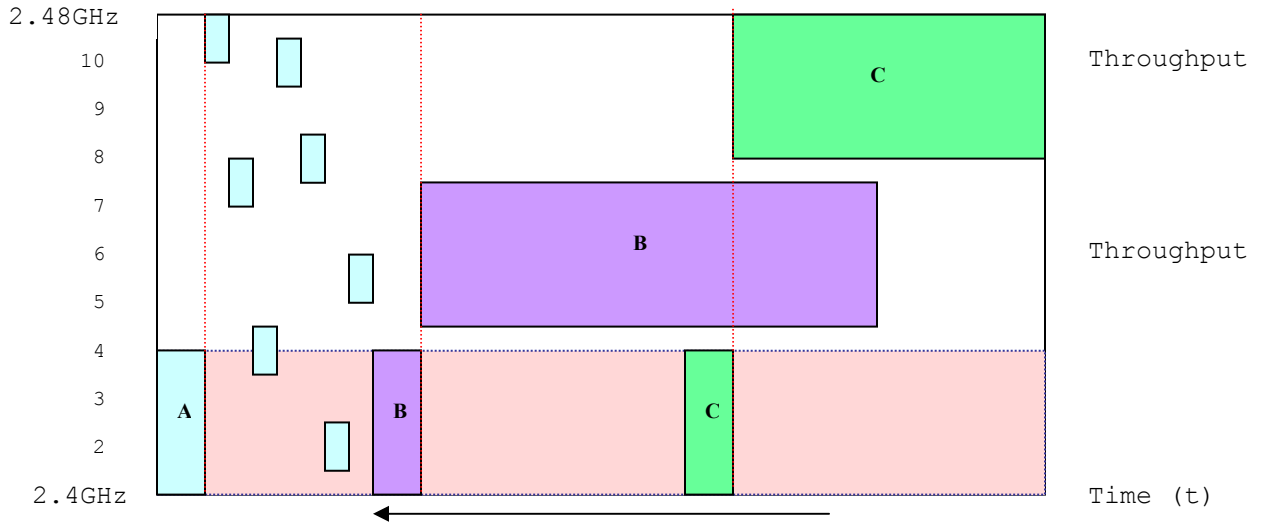
Console Display: A maybe a hopping BT device, BC maybe 802.11 Device,
the color of blocks means the power strength of each device,
Throughput information may display as runtime flows.

Currently, we have to reserve the whole spectrum for BT devices since they are hopping, based on its priority. Later we may have BT MAC scheduling.

Problems:

(1) CSCC may take upto 22MHz spectrum, seems too much.
(2) What other kinds of devices may we have? Microwave Oven?
(3) We only have one forwarding node available now. We are lack of multi-interface devices. Use notebook?
(4) Some technical difficulties:
    Airo and Prism2 802.11 drivers are not compatible; Java console flow display…