TCCN SIG on Cognitive Radio for 5G

Sync Meeting

23-May-2017

Overview

- The SIG has evaluated topics for which there is interest for researchers to collaborate
- The SIG has been developing a crowd-source real-time spectrum sensing system

Objectives for Remote Workshops of IEEE TCCN SIG for Cognitive Radio in 5G

- Industry/Academics representatives will share views / information on open problems.
- We will discuss the relevance of the proposed problems to academic / industrial research.
- We identify most promising directions and invite interested participants to jointly develop scientific papers addressing the suggested needs.

Three remote Workshops had been organized

- 1st remote workshop: New Spectrum Usage paradigms for 5G
  - The discussion was followed by the creation of a White Paper
- 2nd remote workshop: Millimeter-wave Access for 5G and Context Aware Cell Association to Enhance the Performance by Kei Sakaguchi, Osaka University
- 3rd remote workshop: Next generation Spectrum Sharing approaches (presentation: „Spectrum Sharing for Capacity and Business Growth“ by INTEL)

Topics for future collaboration and workshops

We suggest to focus on enabling vertical applications

- Proposed topic:

1. Automotive communications:

How can SW Reconfigurability & Cognitive Radio address required system adaptation in case of emergency (safety of users endangered, malicious security breach, etc.)

2. IoT:

How can SW Reconfigurability & Cognitive Radio address the need for adaptation of mass market IoT chipsets to niche applications?

3. Smartphone optimization:

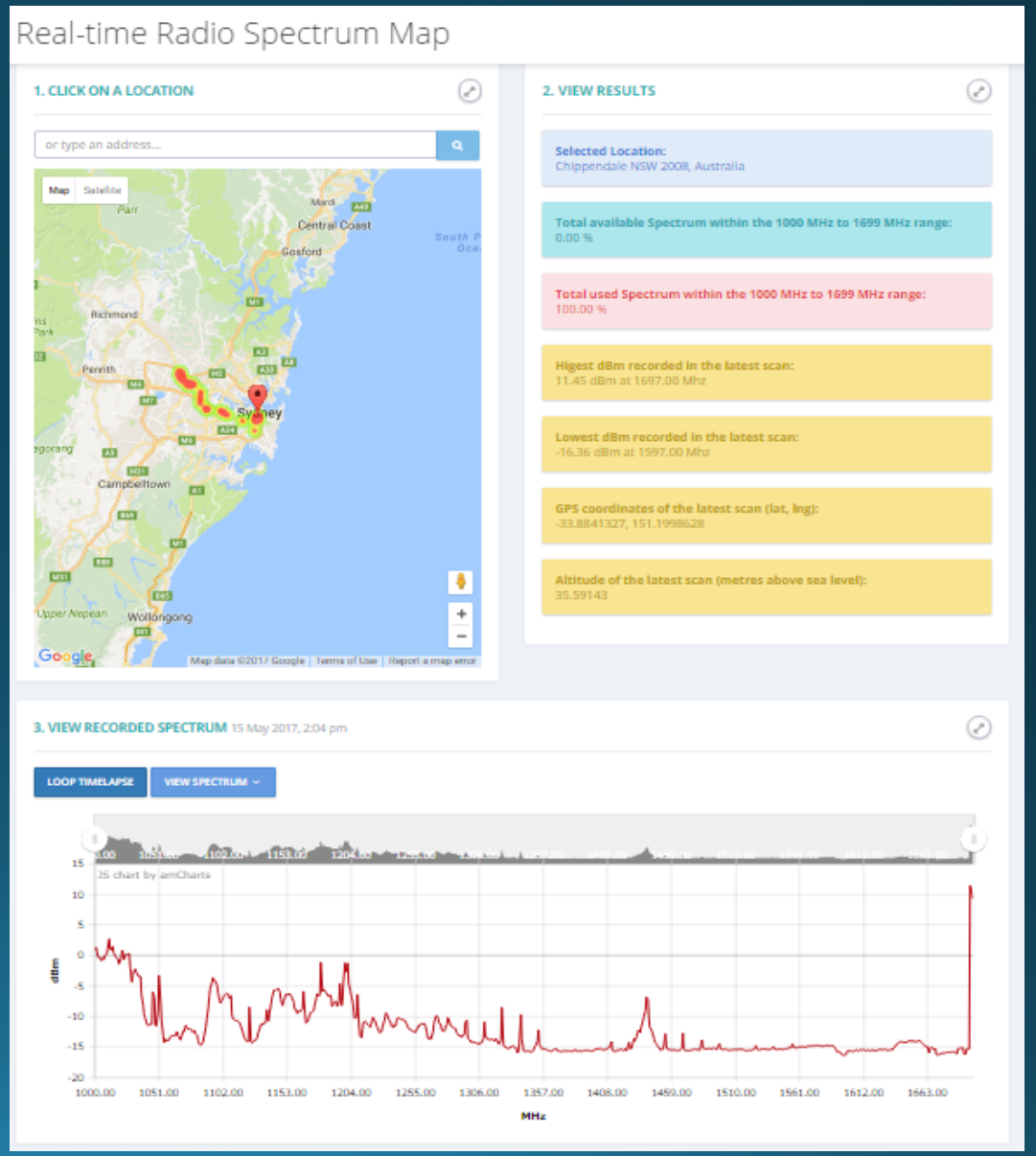
How can SW Reconfigurability & Cognitive Radio be exploited to better use the entire radio context?

Reasoning

- Automotive Communications are HOT !
- A major challenge needs to be addressed: How to make sure that the on-board communication technology remains relevant during the lifetime of a car?
- Efficient Software Reconfiguration technology is a key enabler. ETSI RRS recently published an eco-system including technical, security & certification solutions of increased efficiency over existing (middleware based) approaches.

Crowd-source real-time spectrum sensing system

- Similar to Google spectrum database but real-time, cost effective (powered by smartphone sensing data)
- Can serve as Environment Sensing Capability (ESC)



We are very much looking forward to a fruitful cooperation