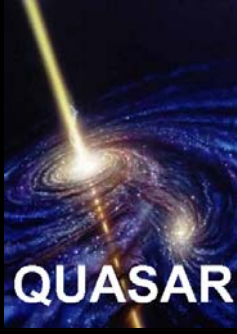
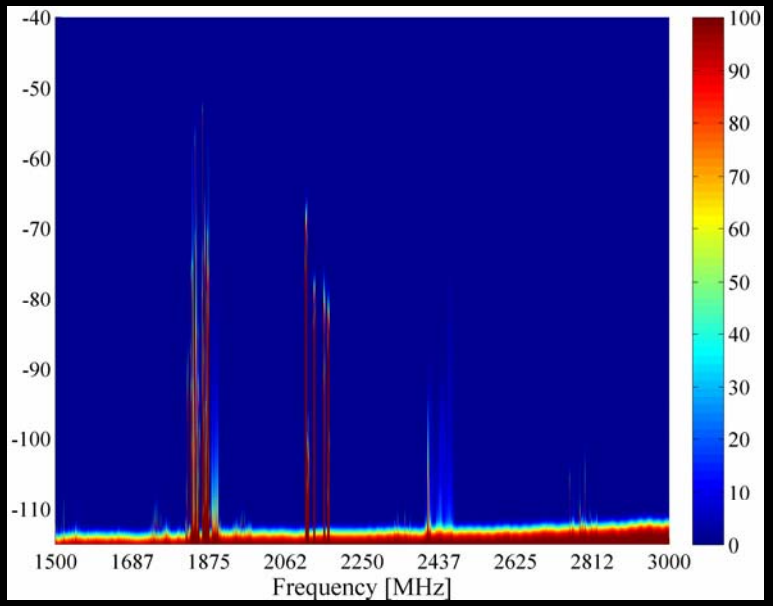


QUASAR

QUantitative Asessment of SecondARy spectrum access

Accessing the Real-world benefits of Cognitive Radio

Low Spectrum Occupancy = Lots of Available Spectrum ?



QUASAR objectives:

- ***Remove the "hype"*** *from CR and DSA discussion*
- ***Justified and quantified spectrum opportunity models***
- *Enable real business and deployment decisions*

QUASAR Objectives

1. Investigating the impact of opportunistic spectrum access on **primary system performance**
2. **From "detecting spectrum holes" to the regime of "discovering 'real' spectrum opportunities"** -beyond signal processing into a data fusion problem.
3. Assess impact of **multiple secondary users**.
4. Multi-Parameter and **Utility based assessment of Spectrum value**
5. **Business impact of Secondary spectrum sharing**.
6. Providing specific and reasoned proposals to go **beyond the current regulatory framework** for the whole value-chain

Closing the loop: Business and regulatory impact

- Scenarios, mechanism and metrics for real-life secondary spectrum access: both non-coperative (e.g. TVWS) and cooperative

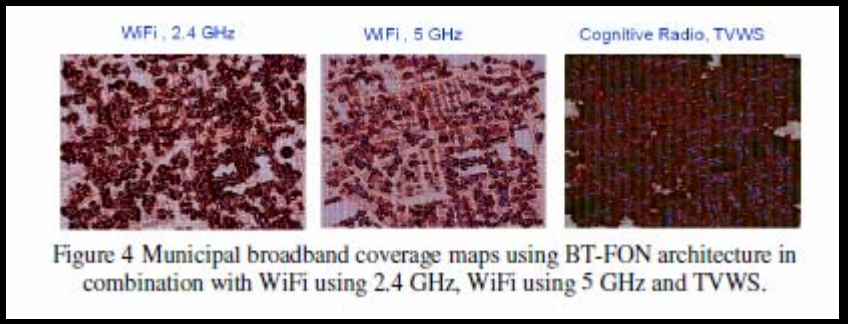
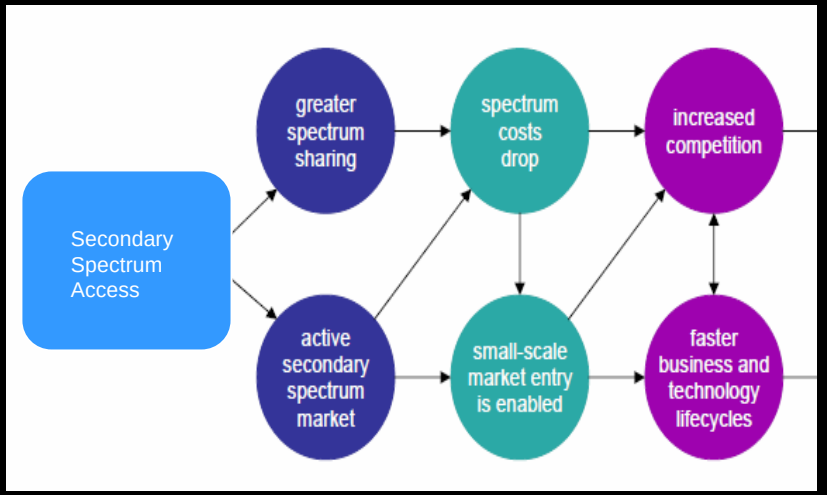


Figure 4 Municipal broadband coverage maps using BT-FON architecture in combination with WiFi using 2.4 GHz, WiFi using 5 GHz and TVWS.

- Business modelling and quantitative impact anlysis across the entire value chain



- Inputs and recommendations to European regulators on secondary spectrum access/cognitive radio

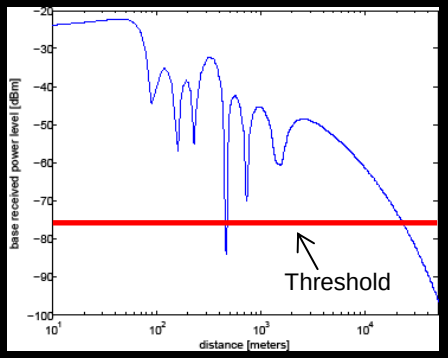
Quantitative Assessment of ”white space”

Evaluation methodology:

- Develop relevant definitions of white space (secondary system dependent)
- Simulations based on DTV Tx databases (locations, Tx power) & propagation models
- Measurements to verify models

Expected output:

- Assessment of the usefulness of the white space for secondary usage
- Secondary system performance
- White space availability maps



ITU-R P.1546.
Tx height 200m, P_{Tx}= 47dBW

Ch 21 occupancy (blue) and availability (the rest) in Sweden

The partners

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