



CONTRIBUTIONS IN COMMUNICATIONS AND QOS OF NAN NETWORKS FOR EMERGENCY VEHICLES IN INTELLIGENT CITIES.



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DocTIC

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MOTIVATION OF WORK

Developing technologies for smart cities is increasing, As well as the population that lives in the main cities. (See Fig.2)

The main motivation is the quality of communication services in sensor networks for intelligent management of mobility in cities. (See Fig. 3, 5)

Ensure synchronization of connections to neighborhood networks using the radio frequency spectrum. (See Fig. 4)

Monitor the availability of services and user requirements by calculating geolocation, signal strength, service access time, among other factors (See Fig. 1).

THESIS OBJECTIVES

GENERAL

- Analyze communication protocols oriented to administration and quality of service in prototype to be developed.

SPECIFIC

- Examine communication protocols aimed at ensuring quality of service and device management.
- Expose the contribution to service quality in wireless approach communications.
- Represent the contribution through a prototype developed according to the results.

METHODOLOGY

- Review the state of the art for NAN connectivity ensuring quality of service.
- To propose a prototype design that allows the quality of service in communications.
- To develop the implementation scheme to validate the proposal.
- Validate the efficiency in service quality of the prototype of communications and remote administration
- Present the results of the research for discussion.

NETWORK DIAGRAM SMART TRAFFIC LIGHTS

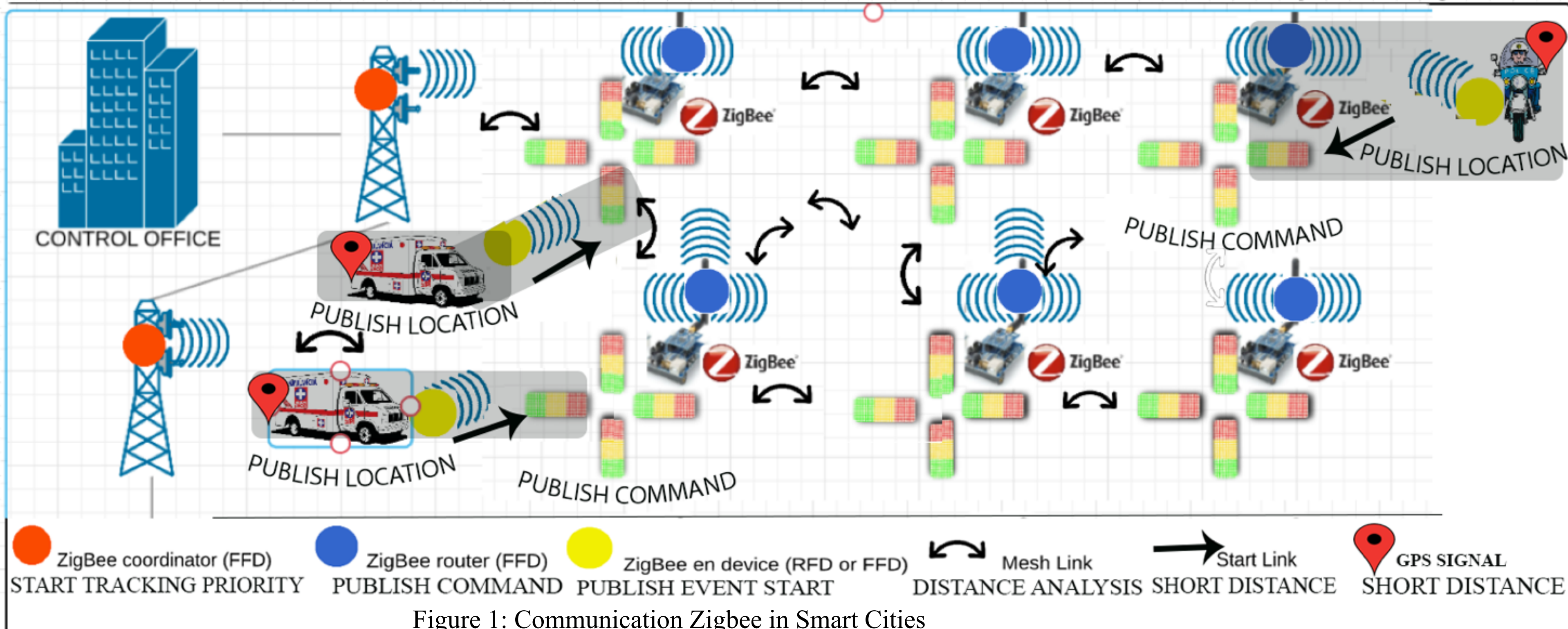


Figure 5: ZigBee Networking Guide
Source: Libelium, 2016. [10]



Figure 2: Smart traffic lighth for ambulance.
Source: Smart Traffic Light , 2015. [8].

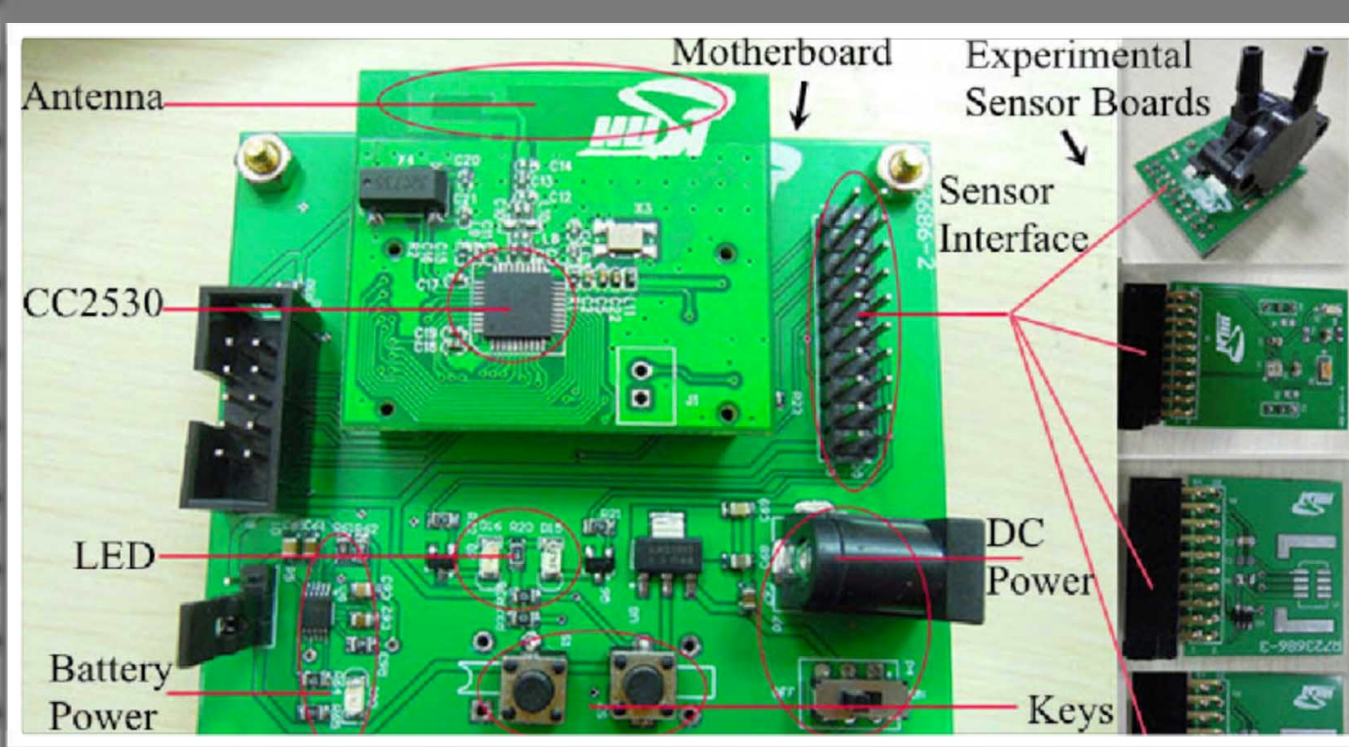


Figure 3: Zigbee Mainboard end node
Source: Internet of Things , 2015. [9].

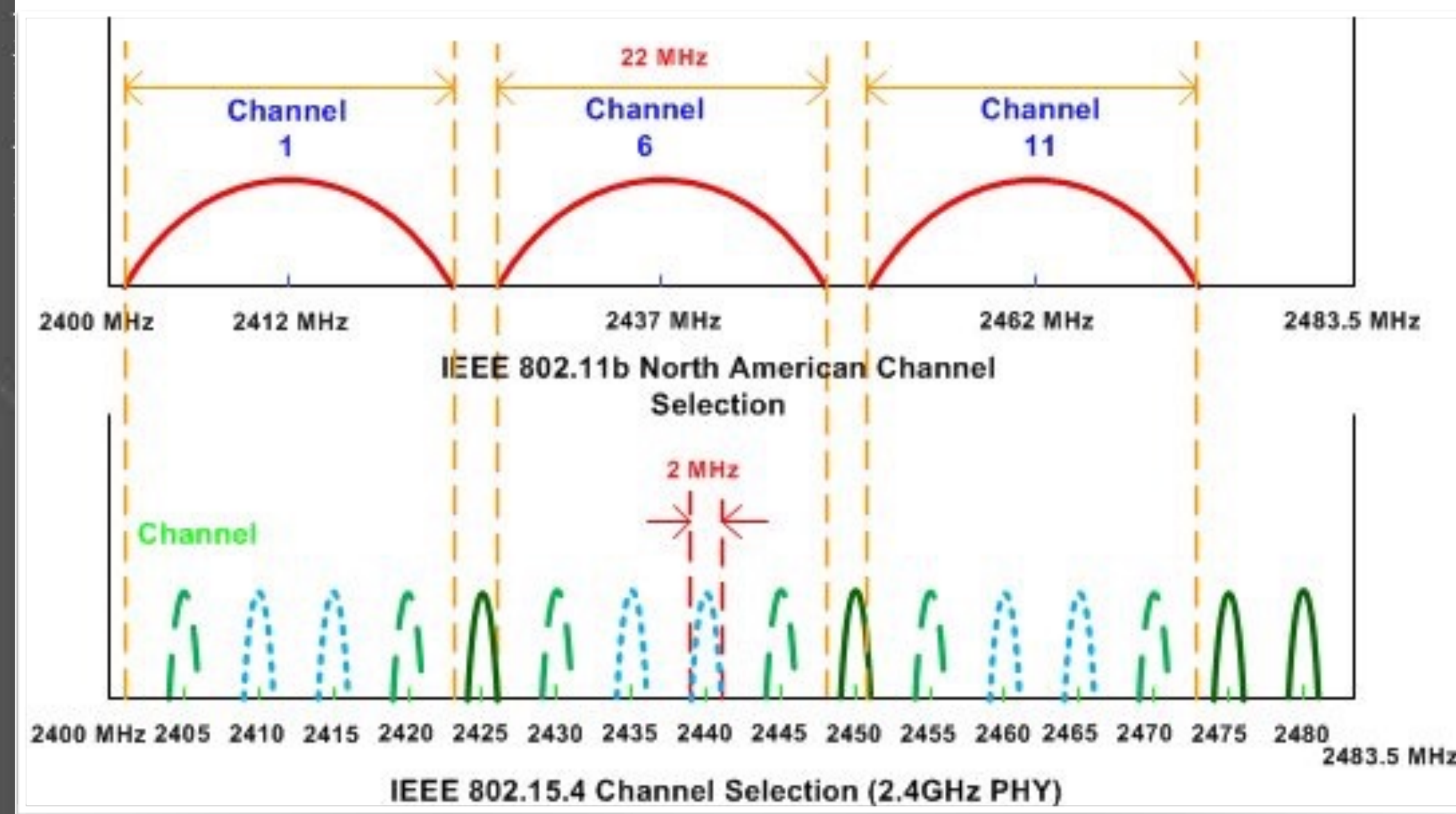


Figure 4: Channel Selection Zigbee 2.4 GHz.
Source: Help to Mobility in Smart Cities , 2015. [5].

NEXT YEAR PLANNING

- Definition of physical and simulated components needed in research.
- Definition of the initial contribution to the achievement of the objectives of the thesis.
- Identification of the most adequate protocols in quality of service for the development of the doctoral thesis.
- Publication of research progress in at least two conferences on intelligent cities.

RESEARCH PLAN

- First year: Review of the state of the art and contribution to connectivity to ensure quality of service.
- Second year: Prototype development for validation and tabulation of results for dissemination in technological area conferences.
- Third year: Validation of the results obtained and their diffusion in the thematic congresses.
- Fourth year: Publication of results in congresses of connectivity for intelligent cities and writing of doctoral thesis for dissertation..

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