



Symbiotic Sensor and Communication System

The technology is a sensor system designed to function as part of a communication system that uses electromagnetic spectrum in the Whitespace Allocations. The system can best be described as a symbiotic sensor and communication system with the sensor forming an integral part of the whole system. Although it is built on the principles of commensal sensor, it differs in many respects.

The current invention differs from conventional commensal radars in that a spatially distributed network of receivers and transmitters is used to achieve diversity for detection and tracking of objects. This eliminates the need for complex cancellation techniques or a design limited to area topography.

Whitespace systems are currently being developed for the provision of internet to remote regions where ordinary wireless internet is not available. A whitespace communication system is therefore ideally suited to sparsely populated areas, which are also regions where radar surveillance is typically useful.

Benefits

- Use existing whitespace for communication & sensing applications
- Improved synchronisation of multiple sensors
- Achieving frequency diversity for improved countermeasures to signal jamming and interference

Market

The technology has been envisioned as a base technology for potential commercial partners to develop client specific applications. UCT is targeting a commercial partner interested in a solution to monitor events in an area with an existing communication systems as mentioned above.

Technical description

More specifically, the technology is a method of monitoring changes in an environment by means of one or more communication devices within the environment that are able to receive wireless communication signals transmitted from a source. The method is conducted by a central computing device, and entails receiving, from each communication device, device data including channel equalisation information, and using the received device data to generate an estimate of the environment, and recording changes in the generated estimate of the environment over time so as to monitor changes in the environment.

Keywords:

Commensal sensor, symbiotic sensor, whitespace, wireless internet, direct signal shielding

Priority Date:

18 Feb 2013

Intellectual Property Rights:

South Africa: 2015/05936

UK: GB2525550

India: 2962/KOLNP/2015

Technology Readiness Level:

3 - Proof of concept

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