

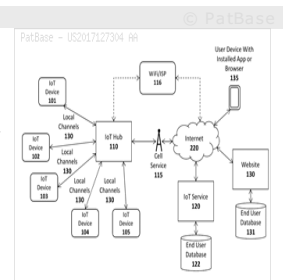
1) Family number: 65568393 (US2017127304 AA)

APPARATUS AND METHOD FOR CAPTURING, MANIPULATING, AND ANALYZING WIRELESS NETWORK TRAFFIC

Abstract: Source: US2017127304 AA An apparatus and method are described for capturing, manipulating and analyzing wireless network communication. For example, one embodiment of the invention comprises: a plurality of channel filters, each channel filter to remove all but a specified portion of a wireless network spectrum associated with each of a plurality of wireless network channels; a plurality of radios each configured to receive one of the specified portions of the wireless network spectrum associated with one of the channels, each of the radios to demodulate the received portions to produce a digital data stream for each channel; wireless device identification logic to analyze the digital data stream for each channel to identify wireless devices sending and/or receiving wireless communications over each channel and to packetize the transmissions using the identity of the sender and/or recipient; a plurality of wireless networking stacks, each of the wireless networking stacks associated with one of the wireless devices identified by the wireless device identification logic; stack forwarding logic to receive packets from the wireless device identification logic and to forward the packets to wireless networking stacks corresponding to each of the wireless devices identified by the wireless device identification logic; and a communication feature extraction module to extract a specified set of features from the digital data stream generated by the radios, the packets generated by the wireless device identification logic and/or the wireless networking stacks, including characteristics of a wireless networking protocol implemented by each of the wireless devices.

Probable Assignee: AFERO INC

Earliest Publication Date: 20170504



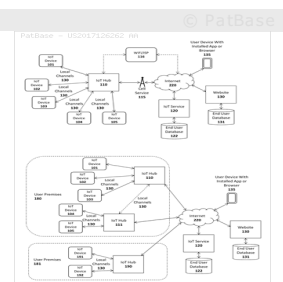
2) Family number: 65567968 (US2017126262 AA)

APPARATUS AND METHOD FOR FILTERING WIRELESS SIGNALS

Abstract: Source: US2017126262 AA An apparatus and method are described for filtering wireless signals. For example, one embodiment of the invention comprises: one or more radios to receive a plurality of wireless signals within a defined spectrum; an energy detection and filtering module to filter received wireless signals based on a detected energy level of the received wireless signals and in accordance with a set of energy-based filtering parameters, the energy detection and filtering module to output energy-filtered wireless signals; and a signal characteristic analysis and filtering module to analyze and filter the energy-filtered wireless signals based on characteristics of the received wireless signals in accordance with a set of signal analysis filtering parameters to output energy-and-characteristic filtered wireless signals.

Probable Assignee: AFERO INC

Earliest Publication Date: 20170504



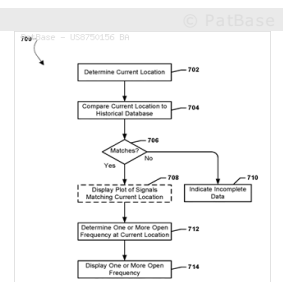
3) Family number: 56612342 (US8750156 BA)

SYSTEMS, METHODS, AND DEVICES FOR ELECTRONIC SPECTRUM MANAGEMENT FOR IDENTIFYING OPEN SPACE

Abstract: Source: US8750156 BA Systems, methods, and apparatus are provided for automated identification of open space in a wireless communications spectrum, by identifying sources of signal emission in the spectrum by automatically detecting signals, analyzing signals, comparing signal data to historical and reference data, creating corresponding signal profiles, and determining information about the open space based upon the measured and analyzed data in near real time.

Probable Assignee: DIGITAL GLOBAL SYSTEMS INC

Earliest Publication Date: 20140610



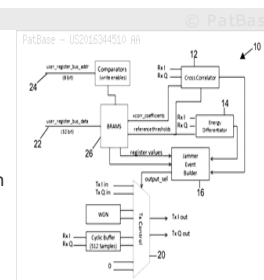
1) Family number: 64051272 (US2016344510 AA)

REAL-TIME AND PROTOCOL-AWARE REACTIVE JAMMING IN WIRELESS NETWORKS

Abstract: Source: US2016344510 AA A real-time capable, protocol-aware, reactive jammer using GNU Radio and the USRP N210 software-defined radio (SDR) platform detects in-flight packets of known wireless standards and reacts to jam them-within 80 ns of detecting the signal. A reactive jamming device is achieved using low-cost, readily available hardware. The real-time reactive jamming device includes a real-time signal detector that detects an event in received packets in the wireless network, a reactive jamming device that sends a triggering signal when the event is detected, and a jamming generator responsive to the triggering signal to generate a jamming signal that has a user-defined delay so as to enable jamming of specific locations in received packets in the wireless network. The effects of three types of jamming on WiFi (802.11g) and mobile WiMAX (802.16e) networks are demonstrated and jamming performances are quantified by measuring the network throughput using the iperf software tool.

Probable Assignee: DREXEL UNIV

Earliest Publication Date: 20161124



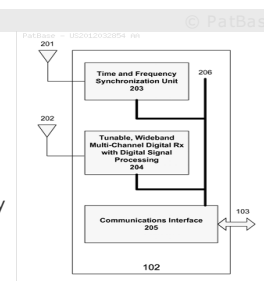
2) Family number: 45945664 (US2012032854 AA)

INTERFERENCE DETECTION, CHARACTERIZATION AND LOCATION IN A WIRELESS COMMUNICATIONS OR BROADCAST SYSTEM

Abstract: Source: US2012032854 AA A Wide Area Sensor Network (WASN) is disclosed that utilizes wideband software defined radios (SDRs) to monitor RF energy over a wide frequency range, detect when critical frequencies are being jammed or otherwise interfered with, and locate the source of the interference so that the interference can be eliminated. The WASN may use one or more geolocation techniques. In addition, the WASN may detect and locate unauthorized transmitters as well as estimate the transmitted power of authorized transmitters to assure they are not transmitting more power than authorized.

Probable Assignee: SKYHOOK HOLDING INC

Earliest Publication Date: 20100708



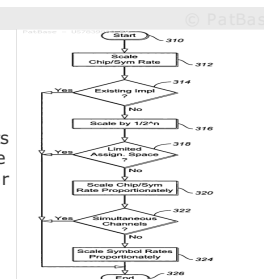
3) Family number: 47638314 (US7839900 BA)

METHOD AND ARCHITECTURE FOR TTNT SYMBOL RATE SCALING MODES

Abstract: Source: US7839900 BA An architecture for a frequency hopped spread-spectrum transmitter-receiver in an advanced tactical data link packet switched network that ensures optimal Statistical Priority-based Media Access (SPMA) performance, enables more efficient packing of hop channels in a given allocated bandwidth and counteracts hostile jamming. The transmitter-receiver supports a scalable symbol rate mode that reduces the symbol rate in the time domain and decreases the bandwidth in the frequency domain, over a predetermined prior value. A transceiver according to the present architecture is able to statically or dynamically scale the symbol rate of transmissions, operate in burst mode and change the hop set. In one embodiment the transceiver is part of a Software Defined Radio (SDR).

Probable Assignee: ROCKWELL COLLINS INC

Earliest Publication Date: 20101123



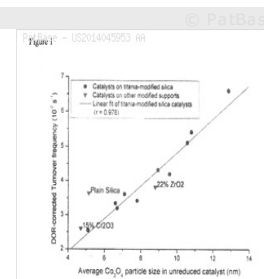
4) Family number: 52151423 (US2014045953 AA)

TREATING OF CATALYST SUPPORT

Abstract: Source: US2014045953 AA A method for the preparation of a modified catalyst support comprising: (a) treating a catalyst support material with an aqueous solution or dispersion comprising one or more zirconium metal sources, chromium metal sources, manganese metal sources and aluminium metal sources, and one or more polar organic compounds; and (b) drying the treated support, and (c) optionally calcining the treated support. Also provided are catalyst support materials obtainable by the methods, and catalysts prepared from such supports.

Probable Assignee: OXFORD CATALYSTS LTD

Earliest Publication Date: 20140213

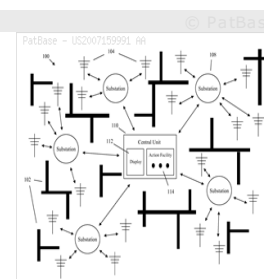


5) Family number: 34116196 (US2007159991 AA)

SYSTEMS AND METHODS OF DETECTION TRANSMISSION FACILITIES

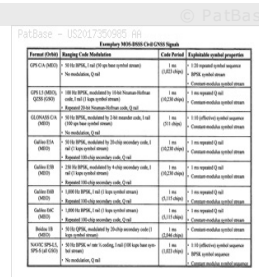
Abstract: Source: US2007159991 AA In embodiments, a method of detecting a transmitting device within an obstruction rich environment is disclosed. The method may involve detecting the transmitting device with a wireless transmission detection facility; communicating signal information relating to the detected transmitting device from the wireless transmission detection facility to a central unit; determining the location of the transmitting device; displaying information of the detection and location of the transmitting device through a user interface; and providing an action facility for causing actions related to the detected transmitting device.

Probable Assignee: BINJ LABORATORIES INC

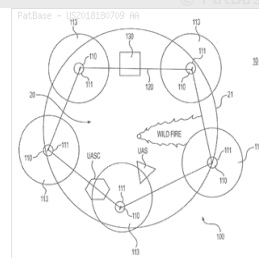


6) Family number: 67745231 (US2017350985 AA)**BLIND DESPREADING OF CIVIL GNSS SIGNALS FOR RESILIENT PNT APPLICATIONS**

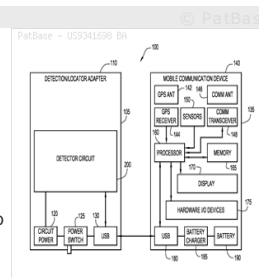
Abstract: Source: US2017350985 AA A method, system and apparatus are claimed for receiving, blindly despreading, and determining geo-observables, of true civil Global Navigation Satellite Systems (GNSS) navigation signals generated by any of the set of satellite vehicles and ground beacons, amongst false echoes and malicious GNSS signals from spoofers and repeaters; for identifying malicious GNSS signals, and preventing those signals from corrupting or capturing Pointing, Navigation, and Timing tracking operations; and for geolocating malicious GNSS signals. The invention also provides time-to-first-fix over much smaller time intervals than existing GNSS methods and can operate both in the presence of signals with much wider disparity in received power than existing techniques, and in the presence of arbitrary multipath. Further embodiments employing spatial/polarization diverse receivers that remove non-GNSS jammers received by the system, as well as targeted GNSS spoofers that can otherwise emulate GNSS signals received at victim receivers, are also claimed.

Probable Assignee: AGEE BRIAN G**Earliest Publication Date:** 20171207**7) Family number: 70238411** (US2018180709 AA)**MOBILE EMERGENCY PERIMETER SYSTEM AND METHOD**

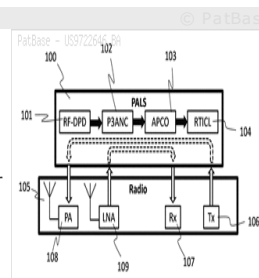
Abstract: Source: US2018180709 AA A mobile emergency perimeter system includes one or more fixed radio frequency (RF) sensors, and one or more moving RF sensors; a wireless mesh network coupling together each of the sensors; and a central processor system coupled to the wireless mesh network. The central processor system executes machine instructions stored on a computer-readable storage medium to control each of the RF sensors to receive time of arrival data for a RF signal transmitted by an emitter and received at each of the RF sensors, receive location information for each of the RF sensors and determine a three-dimensional (3-D) estimate of the geographical location of the emitter.

Probable Assignee: ARCHITECTURE TECH CORP**Earliest Publication Date:** 20180628**8) Family number: 62362586** (US9341698 BA)**RADIO FREQUENCY JAMMING SOURCE LOCATOR**

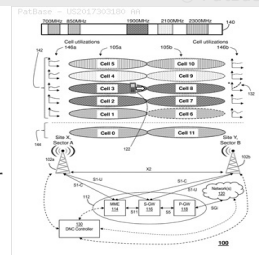
Abstract: Source: US9341698 BA A radio interference locator includes a detector circuit having a directional antenna defining a boresight along which electromagnetic radiation is preferentially accepted. The antenna is coupled to a signal detector which generates an electrical signal from a selected radio-frequency (RF) spectral band of the electromagnetic radiation accepted by the antenna. A processor determines the boresight direction at prescribed sample times as well as an associated signal characteristic, such as a signal level of the electrical signal, measured at the sample times. Data are presented that indicate the signal characteristic for the associated boresight direction at each of the sample times. A mobile platform connects the detector circuit and the processor so that they can be freely oriented in space in fixed mechanical formation by a single human operator.

Probable Assignee: HARRIS CORP**Earliest Publication Date:** 20160517**9) Family number: 66502279** (US9722646 BA)**INTEGRATIVE SOFTWARE RADIO FREQUENCY MANAGEMENT SYSTEM AND METHOD FOR COMPENSATION OF NONLINEAR RESPONSE IN RADIO FREQUENCY DEVICES**

Abstract: Source: US9722646 BA A RF communication system includes a radio transmitter comprising an RF power amplifier, the RF power amplifier including an input to receive an RF signal for transmission and being configured to amplify the RF signal for transmission across a communication channel; a RF digital pre- or post-distortion configured to compensate for nonlinearity of the RF communication system by operating on the RF signal entering or exiting the amplifier.

Probable Assignee: PHYSICAL OPTICS CORP**Earliest Publication Date:** 20170801**10) Family number: 67234154** (US2017303180 AA)**MANAGEMENT OF MOBILITY TRAFFIC FLOWS IN MOBILE CELLULAR NETWORKS**

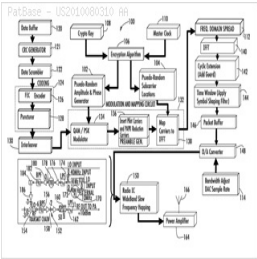
Abstract: Source: US2017303180 AA Aspects of the subject disclosure may include, for example, detecting a triggering event based on a monitoring of utilization of a target cell within a cellular network system. A configuration policy including a handover configuration parameter set is determined, responsive to the triggering event. A target cell of a plurality of neighboring cells of the source cell is identified and a handover procedure of a user equipment from the source cell to the target cell is configured based on the handover configuration parameter set. The source cell provides the handover configuration parameter set to the user equipment connected to the source cell. The user equipment, while connected to the source cell, performs handover measurements from the source cell to the target cell based on the handover configuration parameter set, and a handover of the user equipment from the source cell to the target cell is based on the handover measurements. Other embodiments are disclosed.

Probable Assignee: AT AND T MOBILITY II LLC**Earliest Publication Date:** 20171019**11) Family number: 44816837** (US2010080310 AA)**ORTHOGONAL FREQUENCY DIVISION MULTIPLEXING (OFDM) COMMUNICATIONS DEVICE AND METHOD THAT INCORPORATES LOW PAPR PREAMBLE AND VARIABLE NUMBER OF OFDM SUBCARRIERS**

Abstract: Source: US2010080310 AA A communications device includes communications data and a training sequence corresponding to a preamble. A modulation and mapping circuit modulates the communications data and training sequence into a plurality of multiple subcarriers that are orthogonal to each other to form an OFDM communication signal having modulated subcarriers carrying the communications data forming a data payload and modulated subcarriers forming the preamble. A circuit turns OFF and ON selected subcarriers based on an encryption algorithm to increase transmit power and signal-to-noise ratio and reduce the Inter-Carrier Interference (ICI). The modulation and mapping circuit applies a quadratic modulation to the subcarriers carrying the training sequences to produce a low peak-to-average power ratio (PAPR) preamble with a PAPR value of approximately 2.6 decibels (dB).

Probable Assignee: SMARTSKY NETWORKS LLC

Earliest Publication Date: 20100401



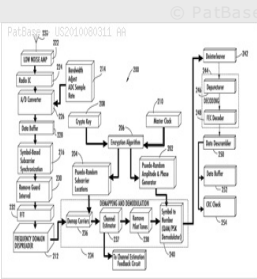
12) Family number: 44816842 (US2010080311 AA)

ORTHOGONAL FREQUENCY DIVISION MULTIPLEXING (OFDM) COMMUNICATIONS DEVICE AND METHOD THAT INCORPORATES LOW PAPR PREAMBLE AND RECEIVER CHANNEL ESTIMATE CIRCUIT

Abstract: Source: US2010080311 AA A communications device includes a demapping and demodulation circuit that demaps and demodulates an OFDM communications signal as modulated subcarriers carrying communications data and modulated subcarriers carrying a training sequence forming a preamble that includes a long sync sequence for channel and frequency offset estimation having an extended guard interval (GI). The OFDM subcarriers carrying the training sequence have a quadratic modulation to produce a low peak-to-average power (PAPR) preamble with PAPR of approximately 2.6 decibels (dB). A channel estimate circuit is positioned to receive signals after processing within a FFT circuit and subcarrier demapper circuit and estimates the channel characteristics of the communications channel based on splitting the extended guard interval from the long sync sequence and processing into values that represent the low PAPR preamble as plus or minus one (plus or minus 1) values in a real or imaginary component as adds and subtracts.

Probable Assignee: SMARTSKY NETWORKS LLC

Earliest Publication Date: 20100401



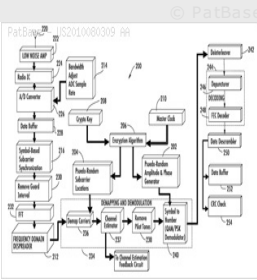
13) Family number: 44816835 (US2010080309 AA)

LOW PEAK-TO-AVERAGE POWER RATIO (PAPR) PREAMBLE FOR ORTHOGONAL FREQUENCY DIVISION MULTIPLEXING (OFDM) COMMUNICATIONS

Abstract: Source: US2010080309 AA A communications device includes communications data and a training sequence corresponding to a preamble. A modulation and mapping circuit modulates the communications data and training sequence into a plurality of multiple subcarriers that are orthogonal to each other to form an orthogonal frequency division multiplexing (OFDM) communications signal having modulated subcarriers carrying the communications data forming a data payload and modulated subcarriers forming the preamble. The modulation and mapping circuit applies a quadratic modulation to the subcarriers carrying the training sequences to produce a low peak-to-average power (PAPR) preamble of approximately 2.6 decibels (dB) independent of the number of subcarriers.

Probable Assignee: SMARTSKY NETWORKS LLC

Earliest Publication Date: 20100401



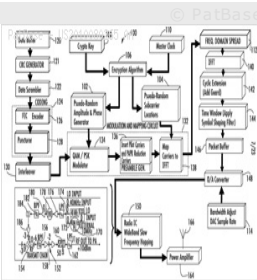
14) Family number: 44816619 (US2010080265 AA)

ORTHOGONAL FREQUENCY DIVISION MULTIPLEXING (OFDM) COMMUNICATIONS DEVICE AND METHOD THAT INCORPORATES LOW PAPR PREAMBLE AND FREQUENCY HOPPING

Abstract: Source: US2010080265 AA A communications device includes communication data and a training sequence corresponding to a preamble. A modulation and mapping circuit modulates the communications data and training sequence into a plurality of multiple subcarriers that are orthogonal to each other to form an OFDM communications signal having modulated subcarriers carrying the communications data forming a data payload and modulated subcarriers forming the preamble. A pseudo-random signal generator is operative with the modulation and mapping circuit and generates pseudo-random signals based on an encryption algorithm for frequency hopping each subcarrier at an OFDM symbol rate. The modulation and mapping circuit applies a quadratic modulation to the subcarriers carrying the training sequences to produce a low peak-to-average power ratio (PAPR) preamble with a PAPR value of approximately 2.6 decibels (dB).

Probable Assignee: SMARTSKY NETWORKS LLC

Earliest Publication Date: 20100401



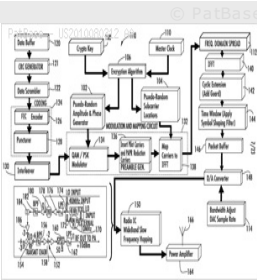
15) Family number: 44816844 (US2010080312 AA)

ORTHOGONAL FREQUENCY DIVISION MULTIPLEXING (OFDM) COMMUNICATIONS DEVICE AND METHOD THAT INCORPORATES LOW PAPR PREAMBLE WITH CIRCUIT FOR MEASURING FREQUENCY RESPONSE OF THE COMMUNICATIONS CHANNEL

Abstract: Source: US2010080312 AA A communications device includes a demapping and demodulation circuit and processes an OFDM communications signal that includes modulated subcarriers carrying communications data forming a data payload and modulated subcarriers carrying a training sequence forming a preamble. Those OFDM subcarriers carrying the training sequence have a sample for each subcarrier at a frequency bin using evenly spaced, equal amplitude subcarriers that have a set phase of each sinusoid to a specific angle with quadratic phase to form a low peak-to-average power ratio (PAPR) preamble with about a PAPR value of 2.6 decibels (dB). A channel estimate circuit is operative for measuring fluctuations within a flat-top spectrum of the received OFDM communications signal corresponding to the preamble to reflect the frequency response of the communications channel.

Probable Assignee: SMARTSKY NETWORKS LLC

Earliest Publication Date: 20100401



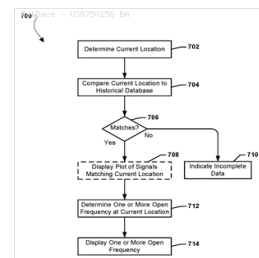
16) Family number: 56612342 (US8750156 BA)

SYSTEMS, METHODS, AND DEVICES FOR ELECTRONIC SPECTRUM MANAGEMENT FOR IDENTIFYING OPEN SPACE

Abstract: Source: US8750156 BA Systems, methods, and apparatus are provided for automated identification of open space in a wireless communications spectrum, by identifying sources of signal emission in the spectrum by automatically detecting signals, analyzing signals, comparing signal data to historical and reference data, creating corresponding signal profiles, and determining information about the open space based upon the measured and analyzed data in near real time.

Probable Assignee: DIGITAL GLOBAL SYSTEMS INC

Earliest Publication Date: 20140610



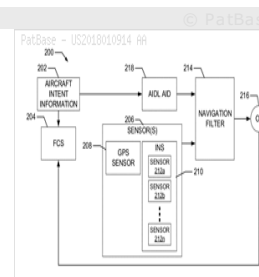
17) Family number: 68161834 (US2018010914 AA)

NAVIGATION AIDS FOR UNMANNED AERIAL SYSTEMS IN A GPS-DENIED ENVIRONMENT

Abstract: Source: US2018010914 AA Example navigation aids for increasing the accuracy of a navigation system are disclosed herein. An example method disclosed herein identifying, with an aircraft intent description language (AIDL) aid, an AIDL instruction as associated with a first dynamic activity level of a plurality of dynamic activity levels and determining, with the AIDL aid, an aircraft state to be affected by the AIDL instruction. The example method also includes changing, with a navigation filter, a weighting scheme for a measurement of the aircraft state obtained by an inertial navigation system (INS) of the aircraft and estimating, with the navigation filter, a trajectory of the aircraft based on the weighting scheme and the measurement.

Probable Assignee: BOEING CO

Earliest Publication Date: 20180110



18) Family number: 32582661 (US2006023803 AA)

SYSTEM AND METHOD FOR DISTRIBUTED INPUT-DISTRIBUTED OUTPUT WIRELESS COMMUNICATIONS

Abstract: Source: US2006023803 AA A method is described comprising: transmitting a training signal from each antenna of a base station to each of a plurality of client devices, each of the client devices analyzing each training signal to generate channel characterization data, and transmitting the channel characterization data back to the base station; storing the channel characterization data for each of the plurality of client devices; receiving data to be transmitted to each of the client devices; and precoding the data using the channel characterization data associated with each respective client device to generate precoded data signals for each antenna of the base station; and transmitting the precoded data signals through each antenna of the base station to each respective client device.

Probable Assignee: REARDEN LLC

Earliest Publication Date: 20060130

