

Diego Gonzalez Castillo

1) Family number: 67558179 (US2017339697 AA)

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Title: NON-EQUAL BIT ALLOCATION FOR COEXISTENCE WITH SCALED NUMEROLOGY SYSTEMS

Abstract: Aspects of the present disclosure describe a guard band signal for communication on a guard band between a first frequency band utilized by a first radio access technology having a first sub-carrier spacing and a second frequency band utilized by a second radio access technology having a second sub-carrier spacing that is a multiple of the first sub-carrier spacing. The guard band signal includes a symbol that is repeated a number of times equal to the multiple. The guard band signal may be generated and transmitted by a transmitting device. The guard band signal may be received and decoded by a receiving device. The guard band signal is interpretable according to a first numerology of the first radio access technology and according to a second numerology of the second radio access technology.

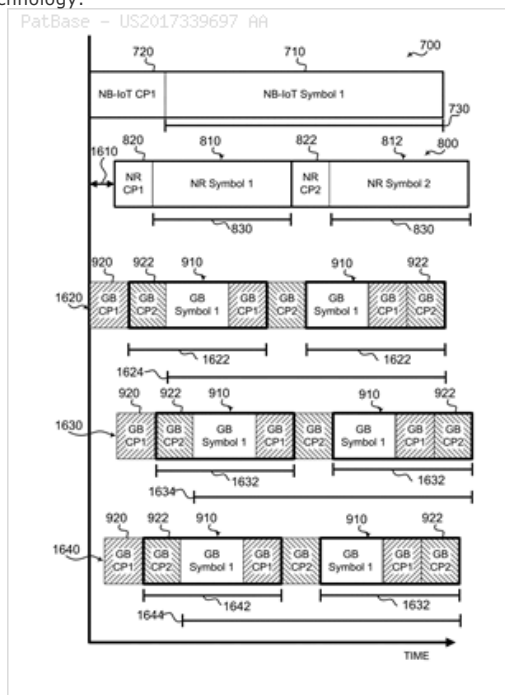
Classifications:

International (IPC 8-9): H04L25/03 H04L27/26 H04L5/00 H04W16/14 H04W72/04

CPC: H04L25/03821 H04L27/2602 H04L5/0007 H04L5/0044

H04W16/14 H04W72/0453

US: 1/1 370/329

**Family:**

Publication number	Publication date	Application number	Application date
CN109155718 A	20190104	CN201780030739	20170511
EP3459198 A2	20190327	EP20170725439	20170511
IN201847037283 A	20181116	IN201847037283	20181003
US10200994 BB	20190205	US20170591374	20170510
US2017339697 AA	20171123	US20170591374	20170510
WO17200840 A2	20171123	WO2017US32188	20170511
WO17200840 A3	20171228	WO2017US32188	20170511

Priority:

US20160339647P 20160520 US20170591374 20170510 WO2017US32188 20170511

Probable Assignee: QUALCOMM INC

Assignee(s): (std): QUALCOMM INC

Inventor(s): (std): JIANG JING ; LOU HUANG ; MANOLAKOS ALEXANDROS ; NAMGOONG JUNE ; PARK SEYONG ; XU HAO ; ZENG WEI ; ZHAO LU

Agent(s): ARENT FOX LLP; BINDSEIL JAMES J ET AL; WEGNER HANS

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU IE IL IN IR IS IT JP KE KG KH KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

2) Family number: 35719939 (US7263133 BA)

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Title: MIMO-BASED MULTIUSER OFDM MULTIBAND FOR ULTRA WIDEBAND COMMUNICATIONS

Abstract: A MIMO-based multiuser OFDM multiband of UWB communications is presented to meet FCC emission limitations for indoor UWB operations. The present UWB system divides a single UWB frequency band of 7.5 GHz into eleven frequency bands as a multiband. Each frequency band has 650-MHz frequency bandwidth, uses an OFDM with multicarrier, and employs

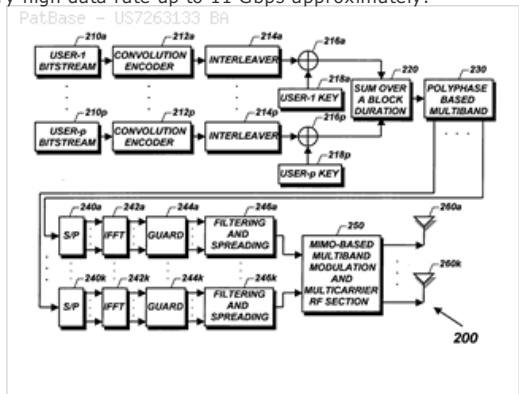
different modulations. The present UWB system can be programmable not only to transmit different data rates in a relatively longer distance but also to avoid interference with other devices by controlling the multiband and/or some of the multicarrier within each of the OFDM. The present UWB system can transmit a very high data rate up to 11 Gbps approximately.

Classifications:

International (IPC 8-9): H04B7/02

CPC: H04B1/71632 H04B1/719 H04B7/0452 H04L27/2608

US: 370/208 375/130 375/146 375/260 375/267 375/349 714/755



Family:

Publication number	Publication date	Application number	Application date
US7263133 BA	20070828	US20030653651	20030902

Priority:

US20030653651 20030902

Probable Assignee: MIMO RESEARCH LLC

Assignee(s): (std): MIAO GEORGE J

Assignee(s): FLEZI LLC ; MIMO RESEARCH LLC

Inventor(s): (std): MIAO GEORGE J

3) Family number: 74953345 (US2019207723 AA)

Title: REFERENCE SIGNAL TRANSMISSION TECHNIQUES IN WIRELESS COMMUNICATIONS

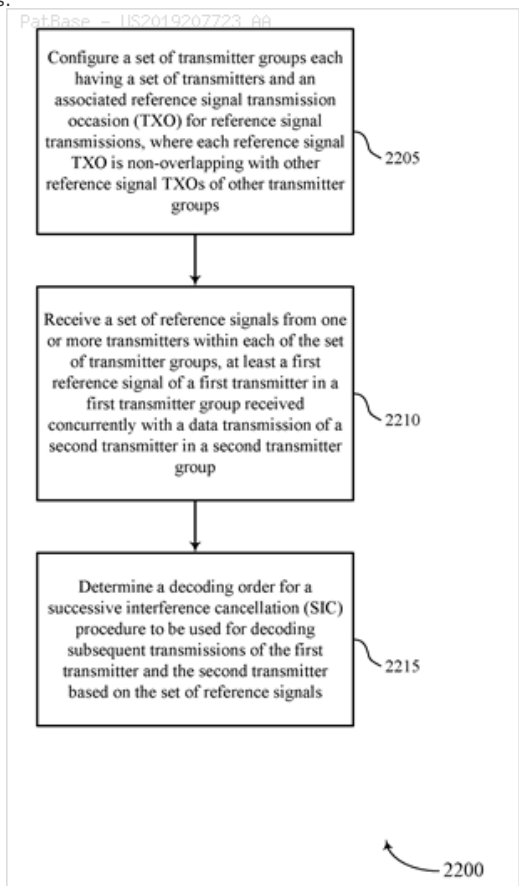
Abstract: Methods, systems, and devices for wireless communications are described that provide a number of groups of transmitters, each group of transmitters having at least one user equipment (UE), and each group of transmitters having an associated transmission opportunity (TXO) for transmission of a reference signal. A number of UEs may transmit transmissions to a base station according to non-orthogonal multiple access (NOMA) techniques in which two or more UEs concurrently transmit to the base station. Depending upon a number of UEs, a number of groups of transmitters, an overloading factor of NOMA transmissions, a system bandwidth, a time span of the reference signal TXO, or any combination thereof, a binary or non-binary orthogonal cover code (OCC) may be applied to transmitted reference signals, which the base station may use to identify reference signals from particular UEs.

Classifications:

International (IPC 8-9): H04J11/00 H04J13/00 H04L27/06 H04L27/26 H04L5/00 H04W72/12 H04W74/00 H04W76/27 H04W76/28

CPC: H04J11/0043 H04J13/0059 H04J13/0062 H04L27/06

H04L27/261 H04L27/2614 H04L5/0048 H04L5/005 H04L5/0051 H04L5/0053 H04L5/0092 H04L5/0094 H04W76/27 H04W76/28



Family:

Publication number	Publication date	Application number	Application date
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CN111543022 A	20200814	CN201980007342	20190103
IN202027021566 A	20201002	IN202027021566	20200522
US10728000 BB	20200728	US20190238268	20190102
US2019207723 AA	20190704	US20190238268	20190102
WO19136116 A1	20190711	WO2019US12134	20190103

Priority:

US20180613557P 20180104 US20190238268 20190102 WO2019US12134 20190103

Probable Assignee: QUALCOMM INC

Assignee(s): (std): QUALCOMM INC

Inventor(s): (std): BHUSHAN NAGA ; HUANG YI ; JI TINGFANG ; JIANG JING ; LEI JING ; PARK SEYONG ; SORIAGA JOSEPH ; SORIAGA JOSEPH BINAMIRA ; WANG RENQIU ; WANG YING

Agent(s): HOLLAND AND HART LLP; KARREN J SCOTT

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

4) Family number: 30573032 (US2004095907 AA)

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Title: METHOD AND APPARATUS FOR OPTIMIZATION OF WIRELESS MULTIPOINT ELECTROMAGNETIC COMMUNICATION NETWORKS

Abstract: Exploiting the substantive reciprocity of internode channel responses through dynamic, adaptive modification of receive and transmit weights, enables locally enabled global optimization of a multipoint, wireless electromagnetic communications network of communication nodes. Each diversity-channel-capable node uses computationally efficient exploitation of pilot tone data and diversity-adaptive signal processing of the weightings and the signal to further convey optimization and channel information which promote local and thereby network-global efficiency. The preferred embodiment performs complex digital signal manipulation that includes a linear combining and linear distribution of the transmit and receive weights, the generation of piloting signals containing origination and destination node information, as well as interference-avoiding pseudorandom delay timing, and both symbol and multitone encoding, to gain the benefit of substantive orthogonality at the physical level without requiring actual substantive orthogonality at the physical level.

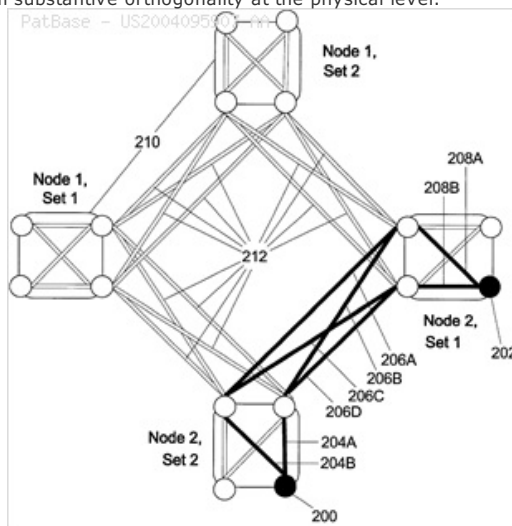
Classifications:

International (IPC 8-9): H03C7/00 H03C7/02 H04B1/38 H04B1/40 H04B7/005 H04B7/02 H04B7/04 H04B7/0413 H04B7/0417 H04B7/0426 H04B7/0456 H04B7/10 H04B7/216 H0411/00 H04L1/02 H04L12/28 H04L12/56 H04L27/00 H04L27/26 H04L27/28 H04L5/00 H04W16/00 H04W16/14 H04W24/00 H04W24/02 H04W28/02 H04W28/06 H04W40/04 H04W52/00 H04W52/24 H04W52/26 H04W52/42 H04W72/04 H04W72/08 H04W88/08

International (IPC 1-7): H04Q7/00

CPC: H04B7/0413 H04B7/0417 H04B7/0443 H04B7/0456 H04L27/26 H04L27/2602 H04L27/2605 H04L27/2607 H04L27/2627 H04L27/263 H04L27/2646 H04L5/0007 H04L5/0044 H04L5/005 H04W16/14 H04W24/02 H04W28/06 H04W40/04 H04W52/241 H04W52/265 H04W52/42 H04W72/04 H04W72/042 H04W72/044 H04W72/0453 H04W72/085 H04W88/08 Y02D30/70 H04B7/0408 H04B7/0465 H04B7/10 H04B7/0619 H04B7/0695 H04W28/0236 H04W52/362 H04W72/00

US: 1/1 370/208 370/208P 370/329 370/330 370/334 370/334P 370/342 370/342P 370/343 370/343S 370/400 370/400S 375/219 375/219P 375/219S 375/260 375/260S 375/267 375/267P 375/316 375/316S 455/101 455/132 455/272 455/450



Family:

Publication number	Publication date	Application number	Application date
US2004095907 AA	20040520	US20010878789	20010610
US7248841 BB	20070724	US20010878789	20010610
US2008232238 AA	20080925	US20070880825	20070723
US8363744 BB	20130129	US20070880825	20070723
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US9209871 BB	20151208	US20140480542	20140908
US10349332 BB	20190709	US20150734667	20150609

US2015271004 AA	20150924	US20150734667	20150609
US2016134455 AA	20160512	US20150961445	20151207
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US9356666 BA	20160531	US20150961559	20151207
US2016164647 AA	20160609	US20160042280	20160212
US9391745 BB	20160712	US20160042280	20160212
US2016204913 AA	20160714	US20160076770	20160322
US9401783 BA	20160726	US20160076770	20160322
US2016204914 AA	20160714	US20160078603	20160323
US9722842 BB	20170801	US20160078603	20160323
US2017085407 AA	20170323	US20160369393	20161205
US9654323 BB	20170516	US20160369393	20161205
US2017332304 AA	20171116	US20170595432	20170515
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US10257765 BB	20190409	US20170811087	20171113
US2018192349 AA	20180705	US20170811087	20171113

Priority:

US20000211462P	20000613	US20000234831P	20000922	US20000243831P	20001027
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Probable Assignee: COMCAST CABLE COMMUNICATIONS LLC

Assignee(s): (std): AGEE BRIAN G ; ALOFT MEDIA LLC ; BROMBERG MATTHEW C ; COMCAST CABLE COMM LLC ; COMCAST CABLE COMMUNICATIONS LLC ; CPU CONSULTANTS INC

Assignee(s): BOETHIAN TECHNOLOGY LLC

Inventor(s): (std): AGEE BRIAN G ; BROMBERG MATTHEW C

Inventor(s): BRIAN G AGEE ; MATTHEW C BROMBERG

Agent(s): BANNER AND WITCOFF LTD; CALDWELL FIRM LLC; GEORGE S; GEORGE S COLE ESQ; PATRICK E

5) Family number: 75273037 (EP3662331 A2)

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Title: METHODS AND SYSTEMS FOR DETECTION IN AN INDUSTRIAL INTERNET OF THINGS DATA COLLECTION ENVIRONMENT WITH LARGE DATA SETS

Abstract: A monitoring apparatus, systems and methods for data collection in an industrial environment are disclosed. A system may include a data collector communicatively coupled to a plurality of input channels and to a network infrastructure, wherein the data collector collects data based on a selected data collection routine, a data storage structured to store a plurality of collector routes and collected data, a data acquisition circuit structured to interpret a plurality of detection values from the collected data, and a data analysis circuit structured to analyze the collected data and determine an aggregate rate of data being collected from the plurality of input channels, wherein if the aggregate rate exceeds a throughput parameter of the network infrastructure, then the data analysis circuit alters the data collection to reduce the amount of data collected.

Classifications:

International (ipc 8-9): G05B19/10 G05B19/12 G05B19/418 G05B23/02

CPC: G05B13/028 G05B19/0425 G05B19/4183 G05B19/4184 G05B19/41845 G05B19/4185 G05B19/41865 G05B19/41875 G05B2219/25428 G05B2219/31282 G05B2219/32287 G05B2219/33331 G05B2219/35001 G05B2219/37337 G05B2219/37351 G05B2219/37434 G05B2219/40115 G05B2219/45004 G05B2219/45129 G05B23/0221 G05B23/0229 G05B23/024 G05B23/0264 G05B23/0283 G05B23/0286 G05B23/0289 G05B23/0291 G05B23/0294 G05B23/0297 G06K9/62 G06K9/6262 G06K9/6263 G06N20/00 G06N20/10 G06N20/20 G06N3/006 G06N3/02 G06N3/0427 G06N3/0436 G06N3/0445 G06N3/0454 G06N3/0472 G06N3/049 G06N3/084 G06N3/086 G06N3/088 G06N3/126 G06N5/0002 G06N5/046 G06N7/005 H04B17/309 H04B17/318 H04L1/0002 H04L1/004 H04L1/0041 H04L5/0064 H04L67/1097 H04L67/12 Y02P80/10 Y02P90/02 Y04S40/18 G05B19/102 G05B19/12 G05B23/02

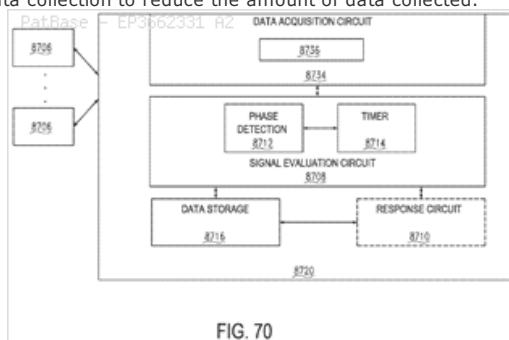


FIG. 70

Family:

Publication number	Publication date	Application number	Application date
CA3072045 AA	20200203	CA20183072045	20180802
CN110073301 A	20190730	CN201880002528	20180802
EP3662331 A2	20200610	EP20180840994	20180802
KR20200037816 A	20200409	KR20207005662	20180802

Priority:

US20170540557P	20170802	US20170540513P	20170802	US20170562487P	20170924
US20170583487P	20171108	US20180973406	20180507	WO2018US45036	20180802

Probable Assignee: STRONG FORCE IOT PORTFOLIO 2016 LLC

Assignee(s): (std): STRONG FORCE IOT PORTFOLIO 2016 LLC

Assignee(s): CELLA CHARLES HOWARD ; DESAI MEHUL ; DUFFY GERALD WILLIAM JR ; MCGUCKIN JEFFREY P ; POWERFUL THINGS COMPOSITION 2016 INVESTMENT CO LTD

Inventor(s): (std): CELLA CHARLES HOWARD ; DESAI MEHUL ; DUFFY GERALD WILLIAM ; DUFFY GERALD WILLIAM JR ;

DUFFY JR GERALD WILLIAM ; MCGUCKIN JEFFREY P

Agent(s): KRANSELL AND WENNBORG KB; MACRAE AND CO

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO
PL PT RO RS SE SI SK SM TR

6) Family number: 73887612 (WO19028269 A2)

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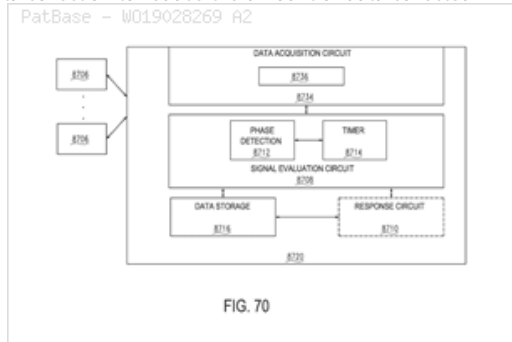
Title: METHODS AND SYSTEMS FOR DETECTION IN AN INDUSTRIAL INTERNET OF THINGS DATA COLLECTION ENVIRONMENT WITH LARGE DATA SETS

Abstract: A monitoring apparatus, systems and methods for data collection in an industrial environment are disclosed. A system may include a data collector communicatively coupled to a plurality of input channels and to a network infrastructure, wherein the data collector collects data based on a selected data collection routine, a data storage structured to store a plurality of collector routes and collected data, a data acquisition circuit structured to interpret a plurality of detection values from the collected data, and a data analysis circuit structured to analyze the collected data and determine an aggregate rate of data being collected from the plurality of input channels, wherein if the aggregate rate exceeds a throughput parameter of the network infrastructure, then the data analysis circuit alters the data collection to reduce the amount of data collected.

Classifications:

International (IPC 8-9): G01D21/02 G05B19/10 G05B19/12
G05B19/418 G05B23/02 H04L29/08

CPC: G05B13/028 G05B19/0425 G05B19/4183 G05B19/4184
G05B19/41845 G05B19/4185 G05B19/41865 G05B19/41875
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G06N3/088 G06N3/126 G06N5/003 G06N5/046 G06N7/005
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H04L5/0064 H04L67/1097 H04L67/12 Y02P80/10 Y02P90/02
Y04S40/18



Family:

Publication number	Publication date	Application number	Application date
CN209085657 U	20190709	CN201821243404U	20180802
WO19028269 A2	20190207	WO2018US45036	20180802
WO19028269 A3	20190425	WO2018US45036	20180802

Priority:

US20170540557P 20170802 US20170540513P 20170802 US20170562487P 20170924
US20170583487P 20171108 US20180973406 20180507

Probable Assignee: STRONG FORCE IOT PORTFOLIO 2016 LLC

Assignee(s): (std): STRONG FORCE IOT PORTFOLIO 2016 LLC

Inventor(s): (std): CELLA CHARLES ; CELLA CHARLES HOWARD ; DESAI MEHUL ; DUFFY GERALD ; DUFFY JR GERALD
WILLIAM ; MCGUCKIN JEFFREY ; MCGUCKIN JEFFREY P

Inventor(s): DUFFY GERALD WILLIAM JR

Agent(s): WILLS J STEPHEN ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR
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MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC
SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW