

50 Documents

Publication numbers	Title	Current assignees
WO2019118245 A1	Data transmission systems and methods using satellite-to-satellite radio links	STAR MESH
WO201660954 A2	Satellite operating system, architecture, testing and radio communication system	SPIRE GLOBAL, ...
EP3442135 A1	Satellite communications networking	IRIDIUM SATELLITE
EP3175647 A1	Centralized ground-based route determination and traffic engineering for software defined satellite communications networks	HUGHES NETWORK SYSTEMS
WO200888963 A1	Dynamic routing from space	DNA GLOBAL SOLUTIONS
EP1797651 A1	Method and apparatus for multicast packet distribution in a satellite constellation network	ITT INDUSTRIES, ...
US5566354 A	System and method for channel assignment in a satellite telephone system	SCHLOEMER JERRY R., ...
US9595989 B1	Rain fade mitigation in a satellite communications system	RKF ENGINEERING SOLUTIONS
EP3050154 A2	Ground-based satellite antenna pointing system	ORBITAL SCIENCES
EP2604525 A2	Multi-purpose electrical coil as a magnetic flux generator, heater or degauss coil	BOEING
US20070075896 A1	Attitude determination exploiting geometry constraints	HEMISPHERE GNSS
EP1303927 A2	Satellite communications system using multiple earth stations	ERICSSON
US6459899 B1	Cellular radio routing system	JSDQ MESH TECHNOLOGIES
EP1024610 A2	An Internet Service Provider system using non-geosynchronous orbit satellites	GLOBALSTAR
EP-831602 A2	Providing control-function data in communication-data channel of a full-mesh satellite communication network by dynamic time-slot assignment in TDMA waveform	LINKABIT WIRELESS
EP-875103 A1	Full mesh satellite-based multimedia networking system	ORION ATLANTIC, ...
WO9725785 A1	Usage-based billing system for full mesh multimedia satellite network	TELESAT NETWORK SERVICES, ...
US5793842 A	System and method of call routing and connection in a mobile (remote) radio telephone system	JSDQ MESH TECHNOLOGIES
US5410728 A	Satellite cellular telephone and data communication system	CDC PROPRIÉTÉ INTELLECTUELLE
EP-506255 A2	Wireless telephone/satellite roaming system	GLOBALSTAR
EP-466843 A1	Satellite communications system.	MOTOROLA
US4937822 A	Skywave adaptable communication apparatus	ROCKWELL

Publication numbers	Title	Current assignees
		INTERNATIONAL
US4965850 A	System for and method of assigning frequencies in a communications system with no central control of frequency allocation	WIRELESS SPECTRUM TECHNOLOGY
US3017777 A		
WO201967651 A1	Radio system using nodes with high gain antennas	STAR MESH
WO2018147925 A1	A satellite system	SKEYEON
US20190013969 A1	Handover method and control transfer method	ELECTRONICS & TELECOMMUNICATIONS RESEARCH INSTITUTE
EP3504808 A1	Radio system using nodes	STAR MESH
US20170070939 A1	System and method for providing continuous communications access to satellites in geocentric, non-geosynchronous orbits	KEPLER COMMUNICATIONS
EP3261271 A1	System and method for facilitating voice and messaging communications via various terrestrial and on board of vehicles networks using satellite links	GOGO
US8918047 B1	Use of satellite-based routing processes with a balloon network	LOON
EP3111510 A1	Method and system for addressing line of sight blockage in satellite communication networks	ELBIT SYSTEMS LAND & C4I
US20140027576 A1	Earth Observation Constellation Methodology & Applications	PLANET LABS
US20140240497 A1	Constellation of Surveillance Satellites	SHEFER MORDECHAI
US20130293415 A1	Correcting for time delay variation in a satellite for positioning, navigation or timing applications	BOEING
US20110080980 A1	Multi-feed diversity receive system and method	UPSERVE, ...
EP2132883 A2	Satellite reference terminal systems and methods	VIASAT
US7925167 B1	Satellite downlink via patterns of uncollimated light	KOZUBAL MAREK J, ...
EP2060024 A2	Network-access in a satellite communication system.	VIASAT
EP1938642 A1	Data transmission in communication system	NOKIA
EP1738490 A1	Satellite diversity system, apparatus and method	QUALCOMM
US20040212533 A1	Method and system for satellite based phase measurements for relative positioning of fixed or slow moving points in close proximity	HEMISPHERE GNSS
EP1523062 A1	Omnidirectional antenna for transmitting and receiving audio/video signals	HERMAN PHILIPPE
US20050052333 A1	Multi-beam and multi-band antenna system for communication satellites	BOEING
EP1468516 A1	Wireless transmission with variable code rates	INMARSAT
US6208312 B1	Multi-feed multi-band antenna	GOULD HARRY J.

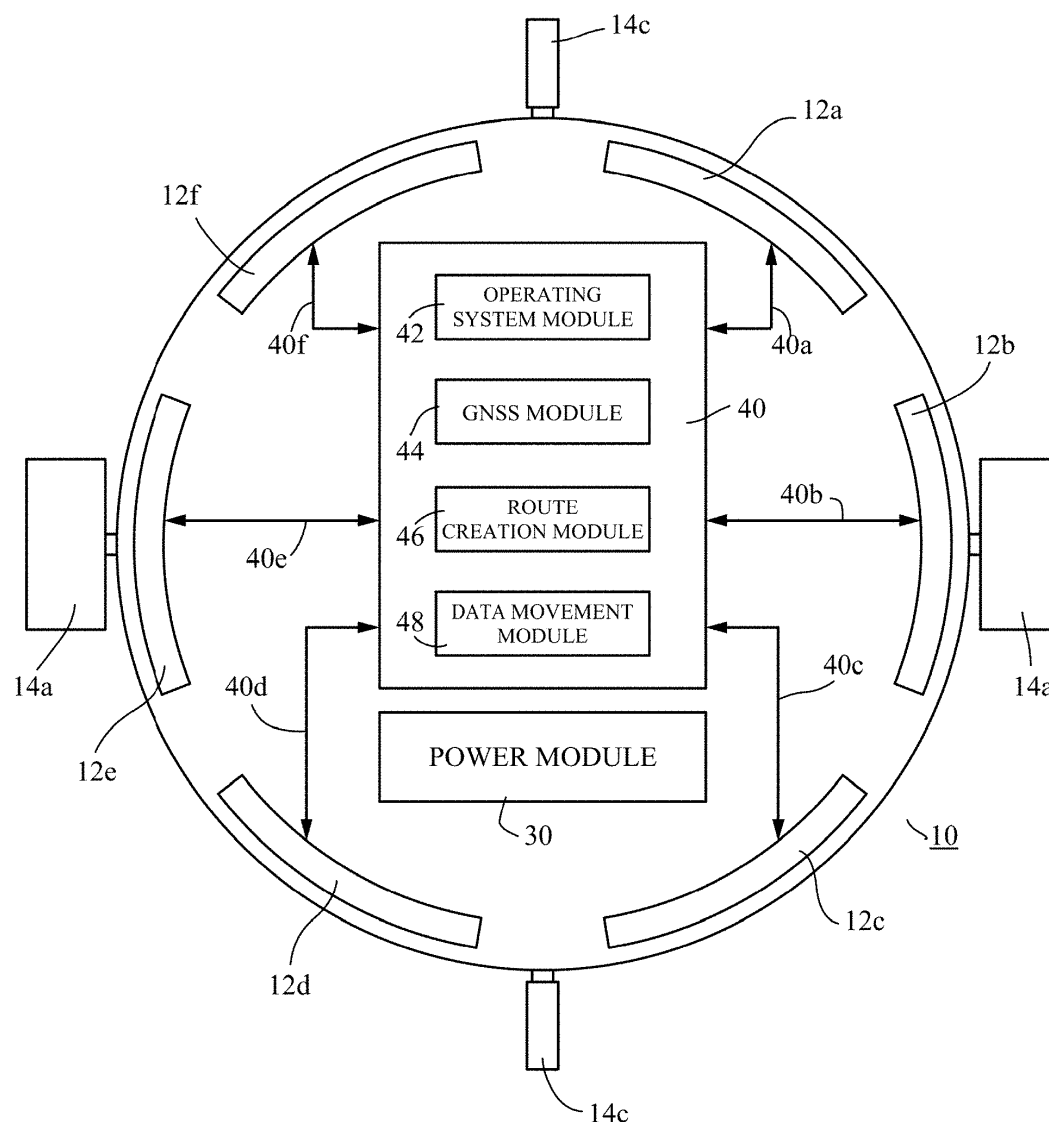
Publication numbers	Title	Current assignees
EP1067630 A2	Reflector with resistive taper in connection with dense packed feeds for cellular spot beam satellite coverage	NORTHROP GRUMMAN, ...
US5574968 A	Satellite cellular communication methods for performing cell-to-cell handoff	CDC PROPRIÉTÉ INTELLECTUELLE
EP-673833 A1	Optimal transfer orbit trajectory using electric propulsion	HUGHES AIRCRAFT, ...
US3815140 A	Multiple feed for microwave parabolic antennas	BOEING

Family 1/50 - FAMPAT - ©Questel

Title

(WO2019118245)

Data transmission systems and methods using satellite-to-satellite radio links

Images**Publication numbers with kind code & date**

WO2019/118245	A1	2019-06-20	WO2019118245
US20190181947	A1	2019-06-13	US20190181947
US10291316	B1	2019-05-14	US10291316

**Abstract**

(WO2019/118245)

Radio communications systems use 100 to 200 satellites in random low-earth orbits distributed over a predetermined range of north and south latitudes. The satellites themselves create a radio route between ground stations via radio links between multiple satellites by virtue of onboard global navigation satellite system circuitry for determining the location of the satellite and route creation circuitry for calculating in real time the direction from the satellite's location at a particular instant to a destination ground station. Directional antennas in the satellites transmit routing radio signals to enhance the probability of reception by other satellites. One embodiment facilitates the creation of satellite-to-satellite links by assigning each satellite a unique identifier, storing orbital information defining the locations of all of the orbiting satellites in the system at any particular time, and including in the radio signal the unique identifier associated with the transmitting satellite.

Inventors

SCHLOEMER GERALD R

Latest standardized assignees - inventors removed

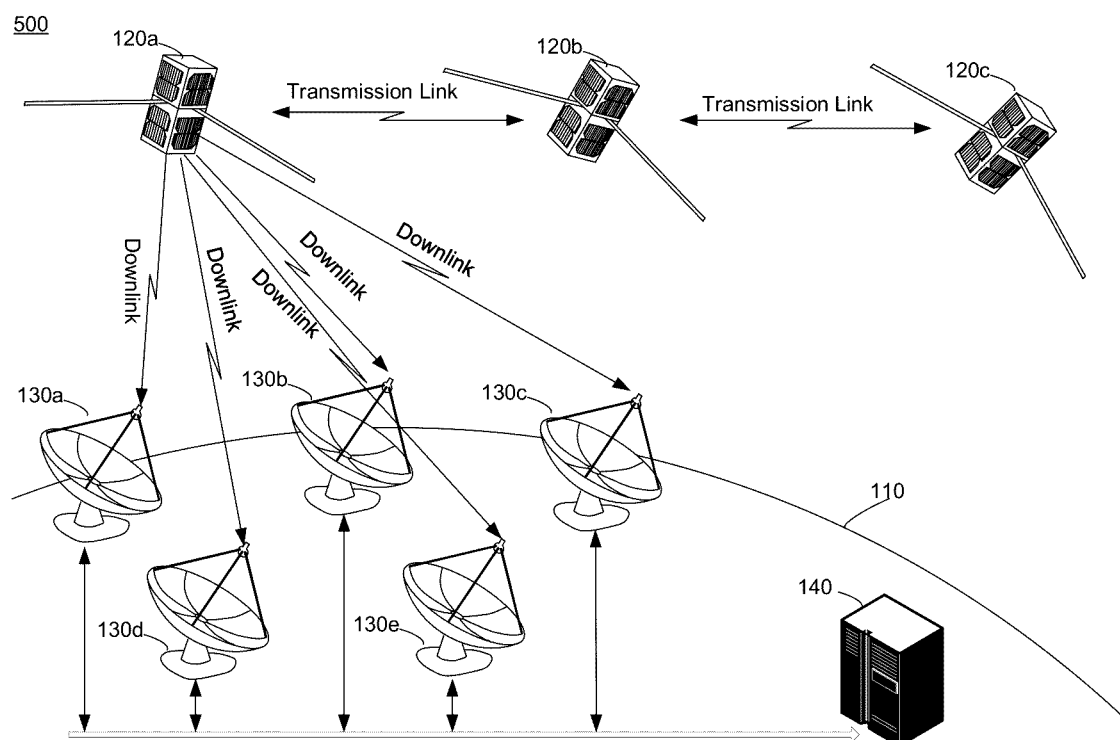
STAR MESH

Family 2/50 - FAMPAT - ©Questel

Title

(WO201660954)

Satellite operating system, architecture, testing and radio communication system

Images**Publication numbers with kind code & date**

US20170272150	A1	2017-09-21	US20170272150
US9673889	B2	2017-06-06	US9673889
WO2016/060954	A3	2016-06-16	WO201660954
US20160112117	A1	2016-04-21	US20160112117
WO2016/060954	A2	2016-04-21	WO201660954

**Abstract**

(WO2016/060954)

A cubesat communication system implementing addressable data packet for transmitting information collected by the cubesat to one or more receive-only ground stations. The cubesat may transmit information to the receive-only ground stations according to a scheduler. The receive-only ground stations may receive information from the cubesat without sending any commands to the cubesat to prompt transmission and re-transmit to a central common station using a bent pipe streaming protocol. Information between the cubesat and the ground station may be transmitted via a connectionless, datagram network protocol.

Inventors

PLATZER PETER

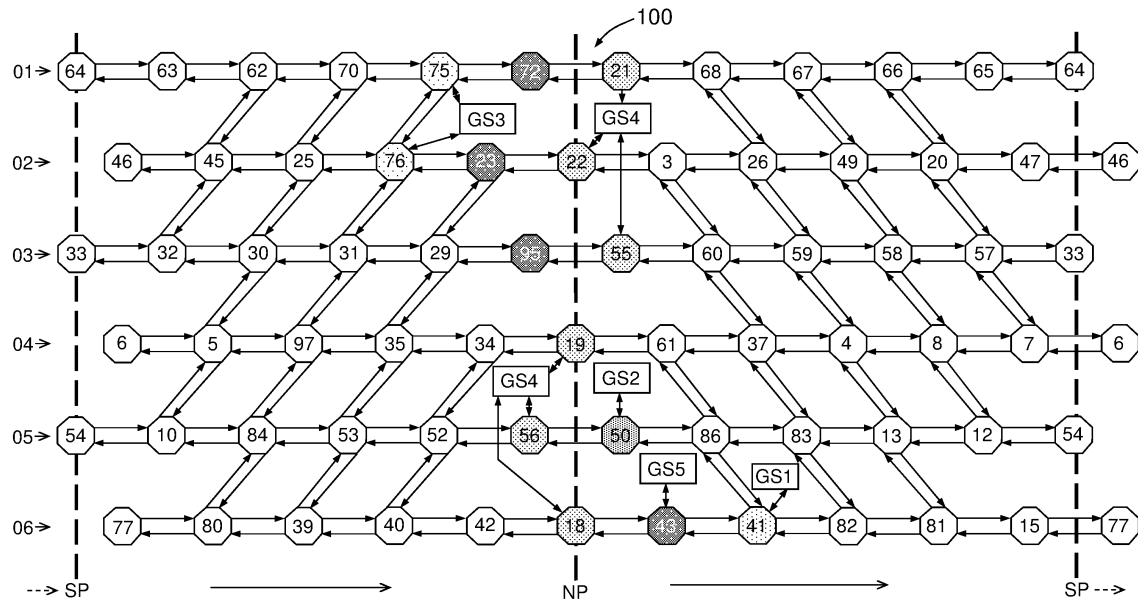
SPARK JOEL

TRUTNA JESSE

CAPPAERT JEROEN

NANOSATISFI

Images



US10361774	B2	2019-07-23	US10361774
US10250321	B2	2019-04-02	US10250321
EP3442135	A1	2019-02-13	EP3442135
EP2999136	B1	2018-10-31	EP2999136
US20180034537	A1	2018-02-01	US20180034537
US20180034538	A1	2018-02-01	US20180034538
US9787392	B2	2017-10-10	US9787392
EP2999136	A1	2016-03-23	EP2999136
US20160080072	A1	2016-03-17	US20160080072



Inventors

BOUTILLON JEAN-FRANÇOIS

BAUDOIN CÉDRIC

Latest standardized assignees - inventors removed

IRIDIUM SATELLITE

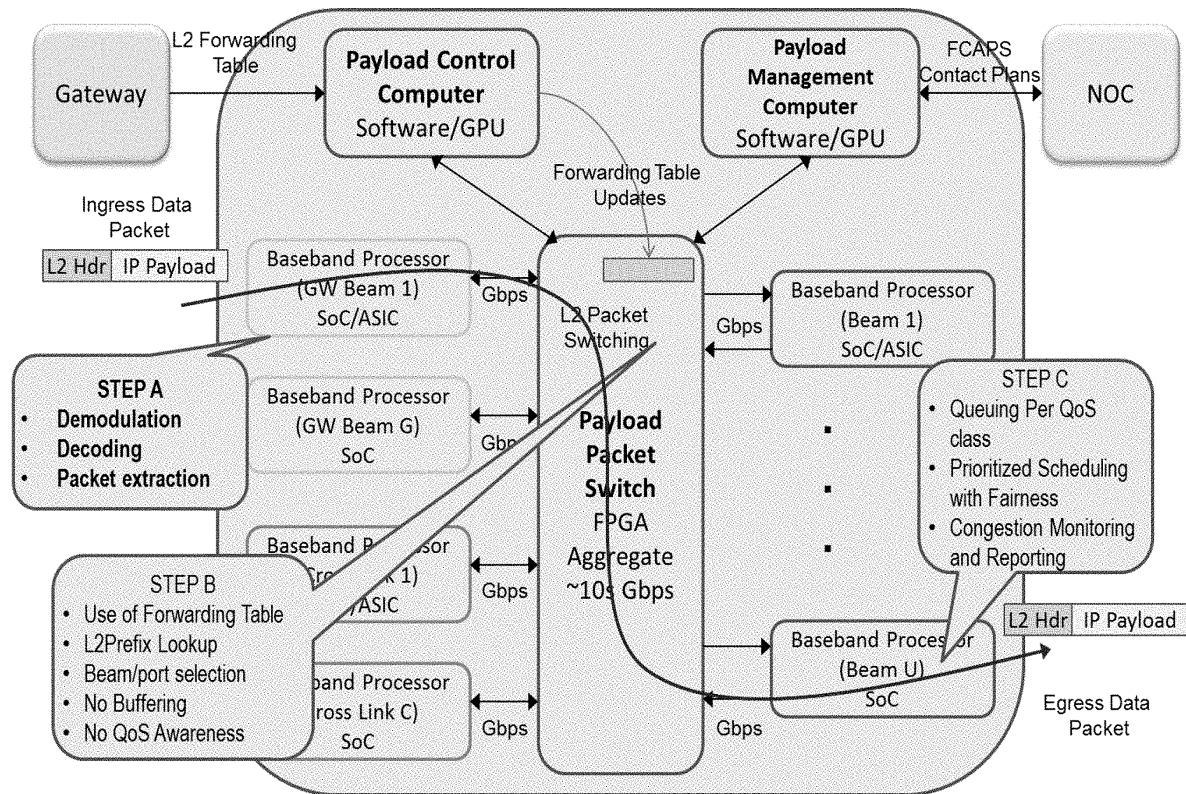
Family 4/50 - FAMPAT - ©Questel

Title

(EP3175647)

Centralized ground-based route determination and traffic engineering for software defined satellite communications networks

Images



Publication numbers with kind code & date

EP3175647	B1	2018-12-12	EP3175647
EP3175647	A4	2018-03-21	EP3175647
US9763167	B2	2017-09-12	US9763167
EP3175647	A1	2017-06-07	EP3175647
WO2016/069077	A1	2016-05-06	WO201669077
US20160037434	A1	2016-02-04	US20160037434



Abstract

(EP3175647)

Approaches are provided for an SDSN that employs a satellite network nodes, where central L2 network nodes are controlled via a centralized Controller. Link status information is obtained regarding links of each L2 node. Global routing constraints, satellite ephemeris data, and resource allocation information are obtained. A constellation topology of the network nodes is determined based on the ephemeris data. Network routes between pairs of endpoints are determined. Each route includes links based on the link status information regarding the links, the global routing constraints, the bandwidth resources of the links and the current allocation of bandwidth resources, and/or the constellation topology. A forwarding table is generated for each network node, wherein each forwarding table includes route entries providing a next hop indicating a destination for data packets, wherein the destination is associated with a link of the respective network node that represents a link of a respective route.

Inventors

GOPAL RAJEEV

RAVISHANKAR CHANNASANDRA

Latest standardized assignees - inventors removed

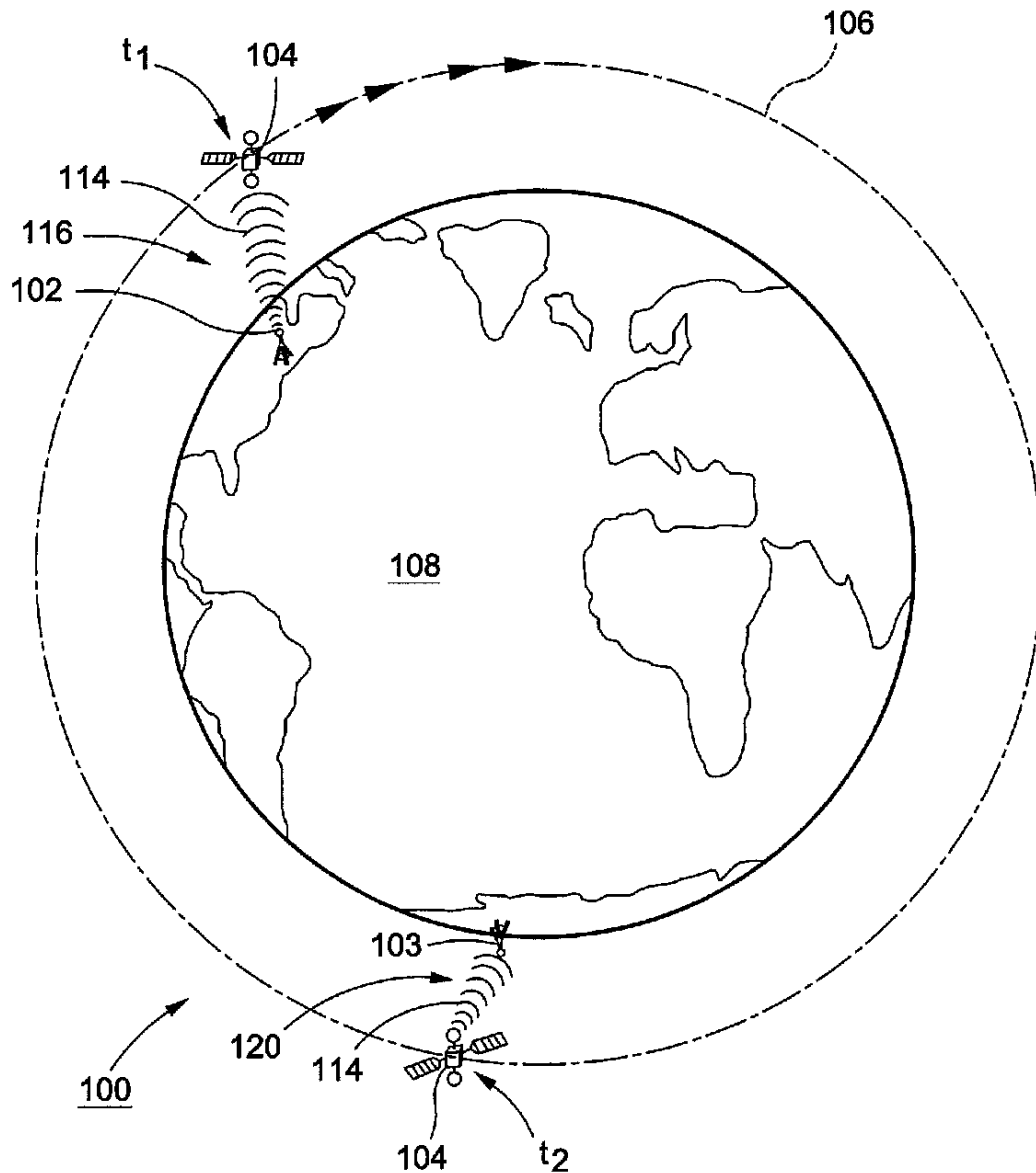
HUGHES NETWORK SYSTEMS

Family 5/50 - FAMPAT - ©Questel

Title

(WO200888963)

Dynamic routing from space

Images**Publication numbers with kind code & date**

US20140177522	A1	2014-06-26	US20140177522
US8665777	B2	2014-03-04	US8665777
WO2008/088963	A1	2008-07-24	WO200888963
US20080170536	A1	2008-07-17	US20080170536



Abstract

(WO2008/088963)

A satellite communication network includes one or more satellites and multiple ground stations, or ground stations. An originating ground station receives an Internet communication, determines when a satellite will be within range, and transmits a stream of data packets including part or all of the communication to the satellite when in communication range. The satellite either forwards the data packets to another satellite, or determines when a destination ground station will be in sight and transmits the data packets to the destination ground station when in range.

Inventors

MARSHACK DAVID

NOZETTE STEWART

FELLOWS ANDREW

TUDOR GEOFFREY

MEHLMAN AMY

Latest standardized assignees - inventors removed

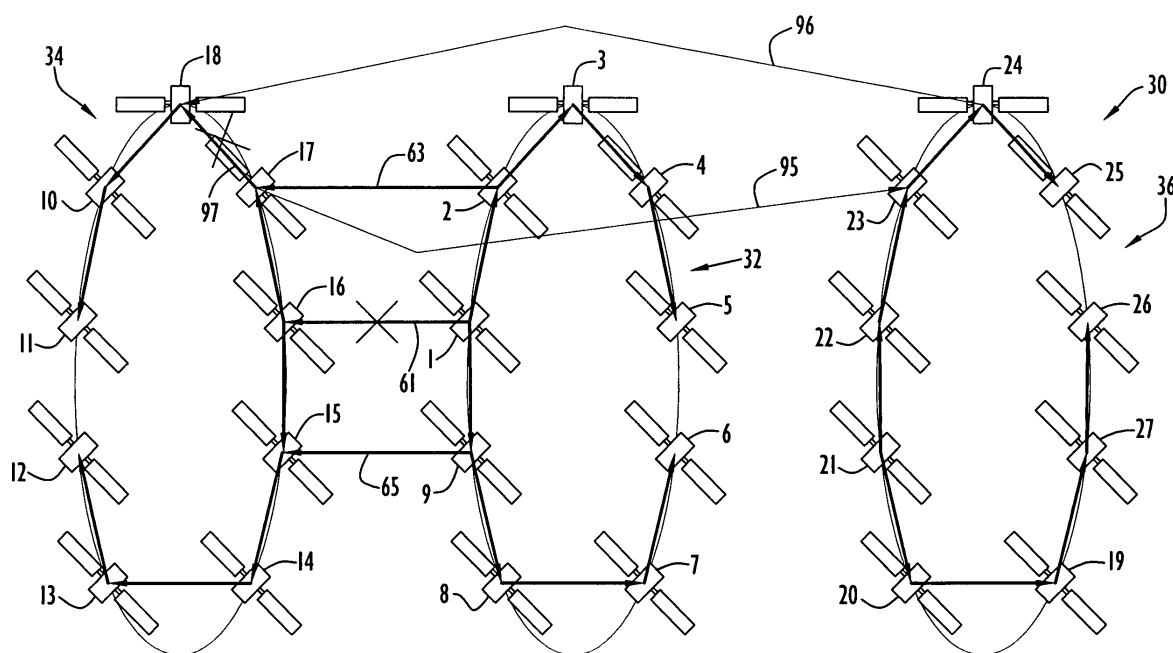
DNA GLOBAL SOLUTIONS

Family 6/50 - FAMPAT - ©Questel

Title

(EP1797651)

Method and apparatus for multicast packet distribution in a satellite constellation network

Images**Publication numbers with kind code & date**

EP1797651	B1	2012-04-04	EP1797651
EP1797651	A4	2011-04-27	EP1797651
AU2005292573	B2	2010-06-24	AU2005292573
US7502382	B1	2009-03-10	US7502382
EP1797651	A1	2007-06-20	EP1797651
AU2005292573	A1	2006-04-13	AU2005292573
WO2006/038992	A1	2006-04-13	WO200638992

**Abstract**

(EP1797651)

A satellite network (30) constellation employs a technique for multicasting packets through the network according to the present invention. The network comprises plural satellites in plural orbital planes with each satellite equipped with a plurality of high-speed point-to-point full duplex radio links for inter-satellite communications (40). A node intending to send a multicast packet to a multicast group or a set of destination satellite nodes (32, 34, 36) initially sends the packet to the orbital planes that include the group members. Once reaching the plane, in-plane routing techniques are used to forward the packet to the intended group members. If there are broken or disabled links, an alternative path is taken to forward the packet without disrupting the functioning links.

Inventors

LIU YU-JIH

SCHNABEL JON WILLIAM

Latest standardized assignees - inventors removed

ITT INDUSTRIES

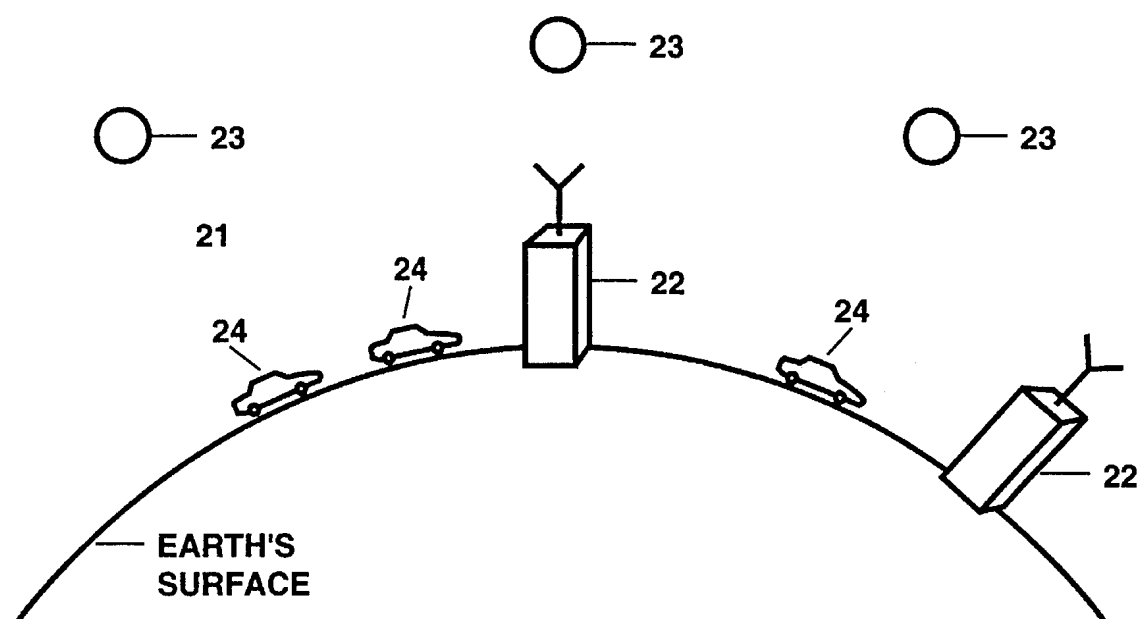
HARRIS

Family 7/50 - FAMPAT - ©Questel

Title

(US5566354)

System and method for channel assignment in a satellite telephone system

Images**Publication numbers with kind code & date**[USRE37140](#)

E1 2001-04-17 USRE37140

[US5566354](#)

A 1996-10-15 US5566354

**Abstract**

(US5566354)

A system and method for making channel assignments in a low earth orbit satellite telephone system wherein Doppler effect is utilized as a parameter in channel assignment. In a first embodiment the satellites orbit in a fixed grid pattern, and in a second embodiment the satellites move in orbits that appear random relative to each other.

Inventors

SEHLOEMER JERRY R

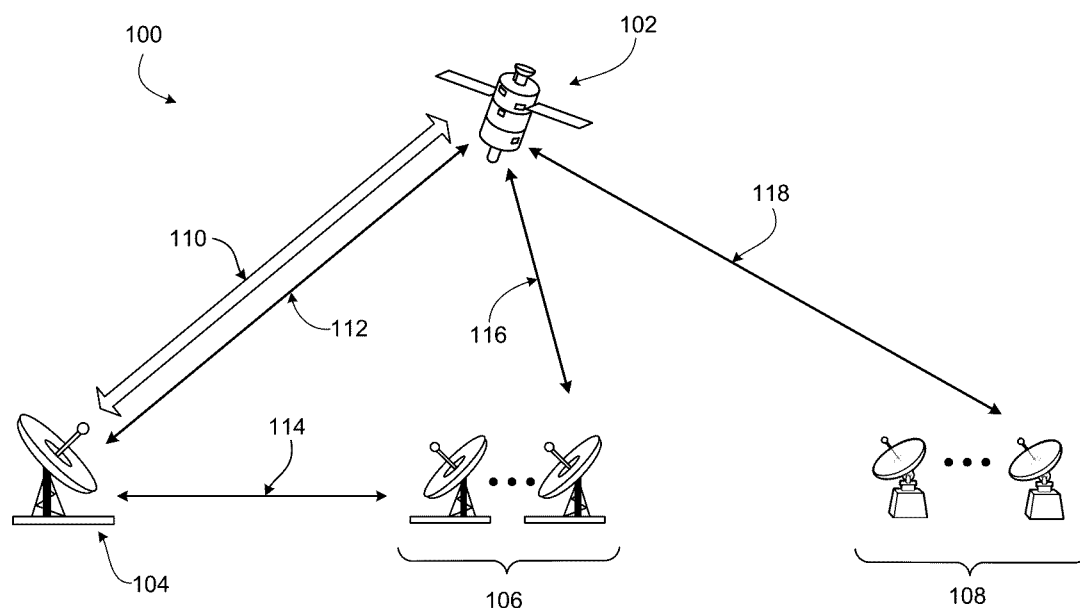
Family 8/50 - FAMPAT - ©Questel

Title

(US9748989)

Rain fade mitigation in a satellite communications system

Images



Publication numbers with kind code & date

US9748989	B1	2017-08-29	US9748989
US9595989	B1	2017-03-14	US9595989



Abstract

(US9595989)

A beam plan that defines beams generated by a satellite that satisfy a set of communication service requirements is obtained. Fade condition information that indicates an amount of fade at particular geographic areas for one or more of the beams is obtained. A modification to the beam plan that mitigates the amount of fade at the particular geographic areas for the one or more of the beams is determined. The beam plan is modified based on the determined modification.

Inventors

FREEDMAN JEFFREY
HALVORSON ERIK
MANDELL MICHAEL
KAPLAN TED
BERMAN ARNOLD
SIPOS BRIAN
MARKLEY SCOTT CONRAD
MARSHACK DAVID

Latest standardized assignees - inventors removed

RKF ENGINEERING SOLUTIONS

Family 9/50 - FAMPAT - ©Questel

Title

(EP3050154)

Ground-based satellite antenna pointing system

Images

400

402 GENERATING A BEACON SIGNAL AT A SATELLITE

**404 PROCESSING THE BEACON SIGNAL INTO A FIRST BEACON
SIGNAL AND A SECOND BEACON SIGNAL**

**406 PROCESSING THE FIRST BEACON SIGNAL AND SECOND BEACON
SIGNAL TO GENERATE A POINTING ERROR SIGNAL**

**408 TRANSMITTING THE POINTING ERROR SIGNAL TO A RECEIVING
STATION**

**410 RECEIVING, AT THE RECEIVING STATION, THE POINTING ERROR
SIGNAL**

**412 DETERMINING A POINTING ERROR BASED AT LEAST IN PART ON
THE FIRST BEACON SIGNAL AND THE SECOND BEACON SIGNAL**

**414 TRANSMITTING A CONTROL SIGNAL TO THE SATELLITE,
WHEREIN THE CONTROL SIGNAL IS ASSOCIATED WITH THE
POINTING ERROR**

**416 MODIFYING AN ORIENTATION OF THE SATELLITE ANTENNA
BASED AT LEAST IN PART ON THE CONTROL SIGNAL**

Publication numbers with kind code & date

US20180205147	A1	2018-07-19	US20180205147				
US9853356	B2	2017-12-26	US9853356				
US20160365629	A1	2016-12-15	US20160365629				
JP2016533657	A	2016-10-27	JP2016533657				
IN201617012119	A	2016-08-26	IN201617012119				
EP3050154	A2	2016-08-03	EP3050154				
IL244754	A	2016-05-31	IL-244754				
WO2015/088627	A3	2015-08-13	WO201588627				
CA2925575	A1	2015-06-18	CA2925575				
WO2015/088627	A2	2015-06-18	WO201588627				

Abstract

(EP3050154)

The present application includes systems and methods for determining pointing error of a satellite antenna. In one aspect a method for determining pointing error of a satellite antenna includes receiving, at a receiving station, a pointing error signal formed by the antenna and transmitted from a satellite, wherein the pointing error signal includes a first beacon (reference) signal and a modulated second beacon (error) signal. The receiving station may demodulate the received pointing error signal to recover the second beacon signal with respect to the first beacon signal, and based at least in part on the demodulated beacon signal, the receiving station may determine the pointing error of the satellite antenna.

Inventors

YAO HUIWEN

CASE GEORGE

Latest standardized assignees - inventors removed

ORBITAL SCIENCES

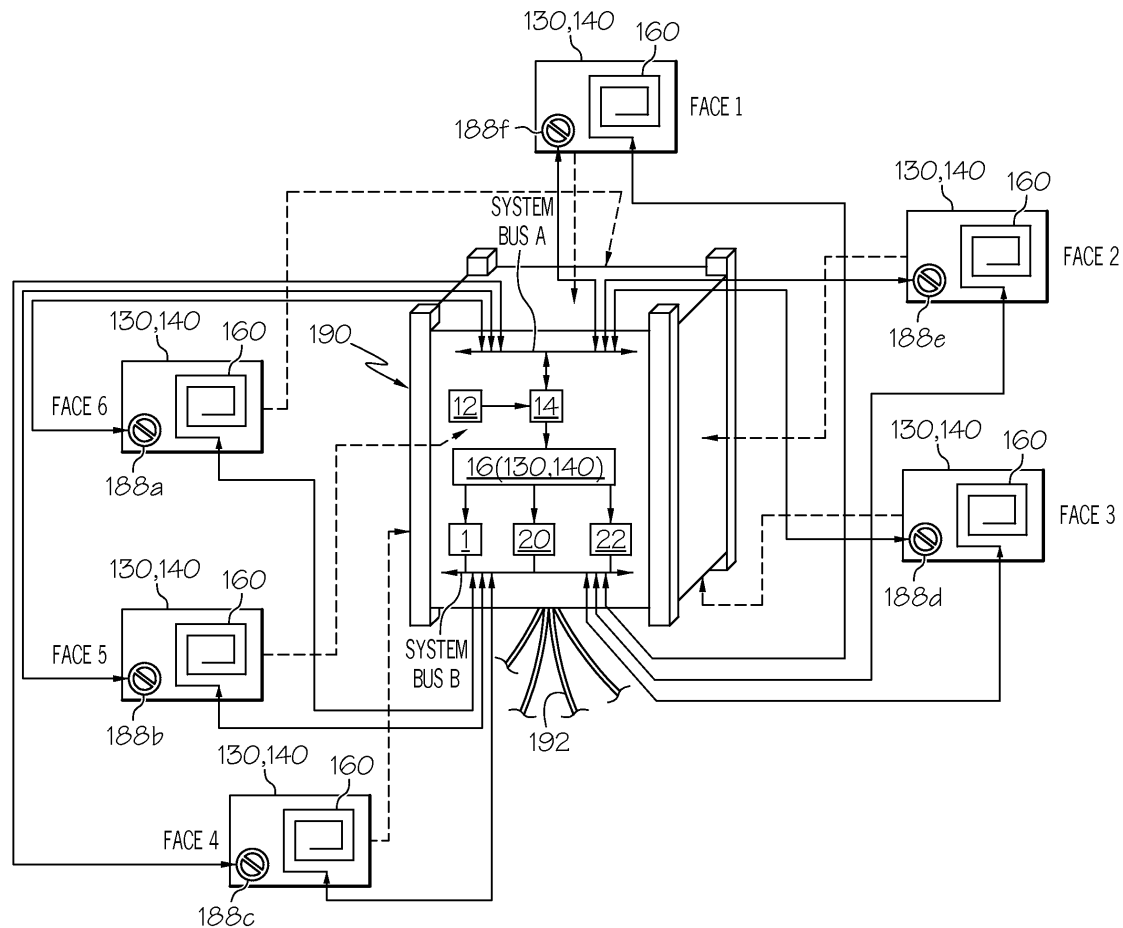
Family 10/50 - FAMPAT - ©Questel

Title

(EP2604525)

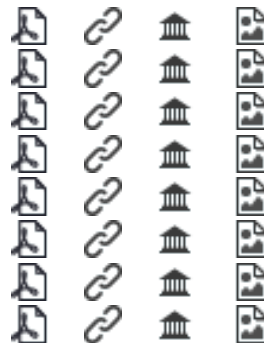
Multi-purpose electrical coil as a magnetic flux generator, heater or degauss coil

Images



Publication numbers with kind code & date

CN103165257	B	2018-12-18	CN103165257B
EP2604525	A3	2017-11-22	EP2604525
JP6224318	B2	2017-11-01	JP6224318
US9114891	B2	2015-08-25	US9114891
JP2013136375	A	2013-07-11	JP2013136375
CN103165257	A	2013-06-19	CN103165257
EP2604525	A2	2013-06-19	EP2604525
US20130148250	A1	2013-06-13	US20130148250



Abstract

(EP2604525)

A method and system of using a common set of coils (16, 160) to provide at least two of magnetic flux, heat and degaussing in a mobile platform (190) are provided. In accordance with one embodiment, the method involves oscillation of current in the coils at a frequency higher than a defined pointing requirement to provide heat. In accordance with another aspect, the coil functions as a degausser by energizing the coil with an oscillating current that decreases in amplitude over time.

Inventors

DAY CHRISTOPHER ALAN

BROWN JEFFREY JACOB

HAYS KENNETH MAXWELL

Latest standardized assignees - inventors removed

BOEING

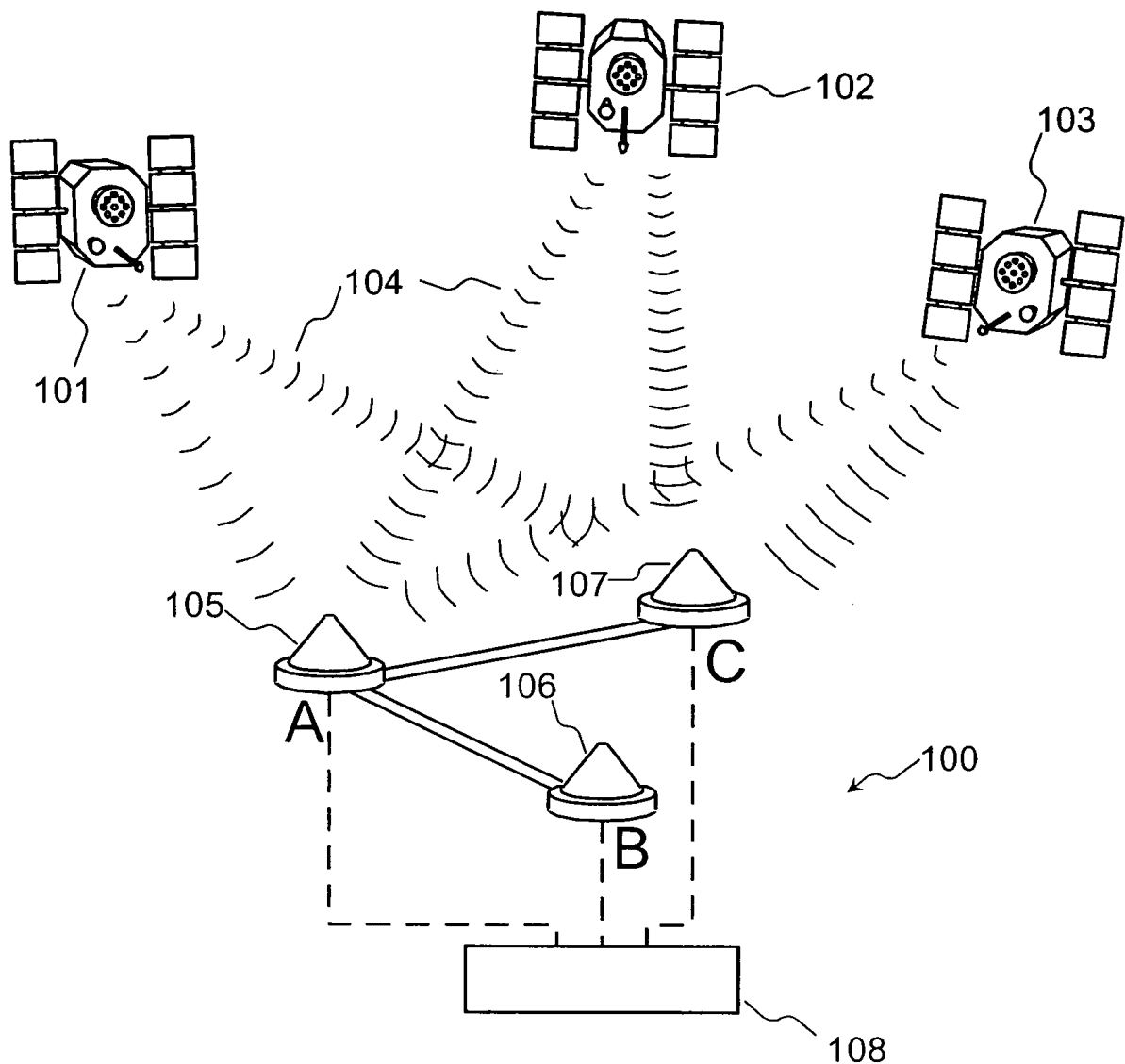
Family 11/50 - FAMPAT - ©Questel

Title

(US7292185)

Attitude determination exploiting geometry constraints

Images



Publication numbers with kind code & date

[US7292185](#)

B2 2007-11-06 US7292185

[US20070075896](#)

A1 2007-04-05 US20070075896



Abstract

(US20070075896)

A method and system for determining at least one attitude angle of a rigid body. The method comprising: receiving a plurality of Global Navigation Satellite System (GNSS) satellite signals with a plurality of antennas; establishing at least one pair of antennas such that each antenna of the plurality of antennas is included in at least one antenna pair; computing single- or double-difference phases corresponding to one or more GNSS satellites for each of the pairs of antennas; and constructing a single Differential Carrier Phase Attitude (DCPA) equation based on known geometry constraints of each of the pairs of antennas. The method also includes determining a solution for the DCPA equation based on a cost function, the solution yielding at least one integer ambiguity value and the at least one attitude angle.

Inventors

WHITEHEAD MICHAEL L

DAVIS CARY

SCOTT DALE R

Latest standardized assignees - inventors removed

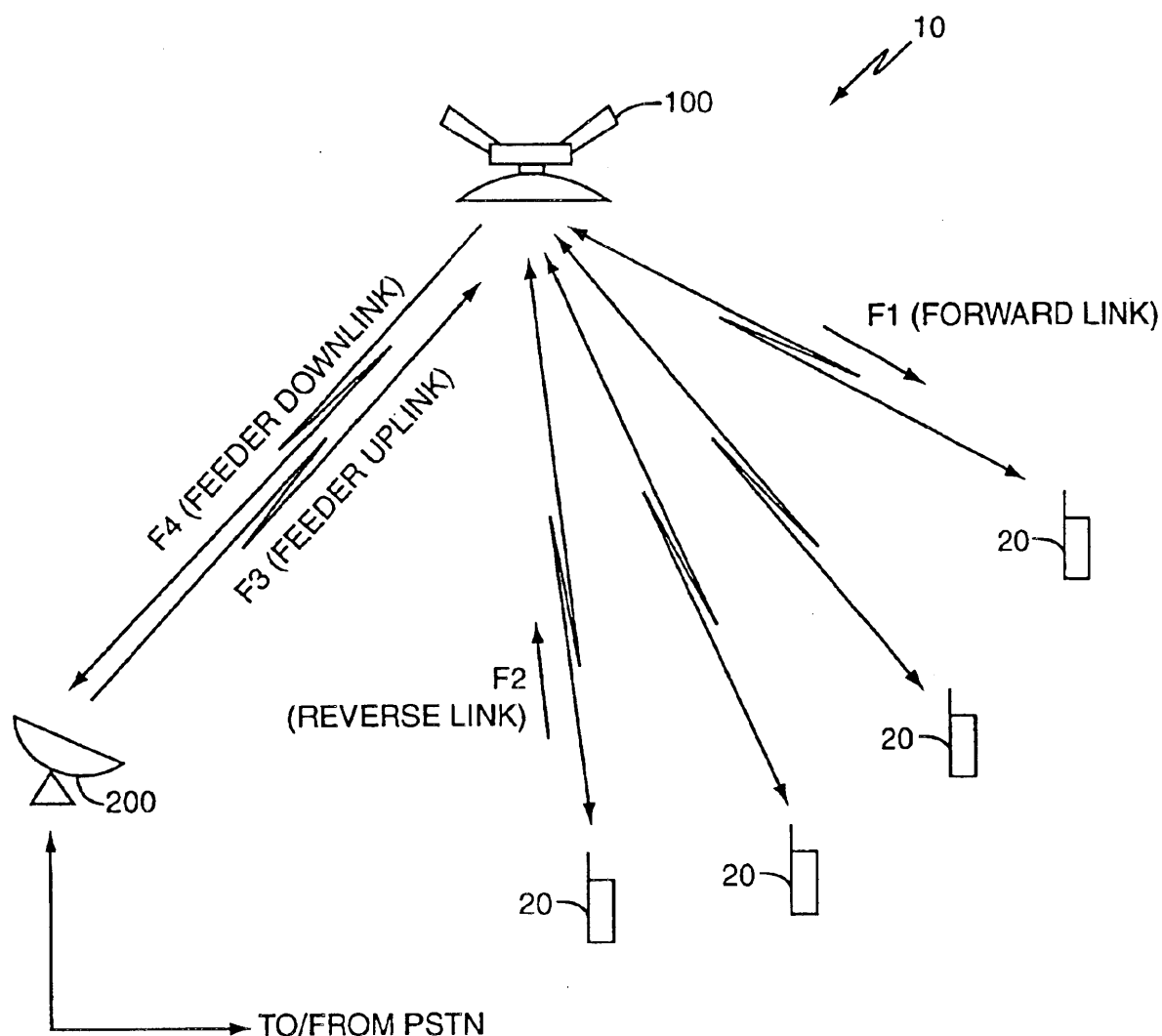
HEMISPHERE GNSS

Family 12/50 - FAMPAT - ©Questel

Title

(EP1303927)

Satellite communications system using multiple earth stations

Images**Publication numbers with kind code & date**

US7305211	B2	2007-12-04	US7305211
DE60126521	D1	2007-03-22	DE60126521
AT353496	T	2007-02-15	ATE353496
EP1482659	B1	2007-02-07	EP1482659
CN1210893	C	2005-07-13	CN1210893C
DE60110798	D1	2005-06-16	DE60110798
CN1625078	A	2005-06-08	CN1625078
EP1482659	A3	2005-05-18	EP1482659
AT295637	T	2005-05-15	ATE295637
EP1303927	B1	2005-05-11	EP1303927
US20040259497	A1	2004-12-23	US20040259497
EP1482659	A2	2004-12-01	EP1482659
US6823170	B1	2004-11-23	US6823170
CN1466824	A	2004-01-07	CN1466824
EP1303927	A2	2003-04-23	EP1303927



WO02/09318	A3	2002-06-13	WO200209318
AU7889601	A	2002-02-05	AU200178896
WO02/09318	A2	2002-01-31	WO200209318

**Abstract**

(EP1303927)

A satellite communications system uses multiple ground station and one or more stellites for communicating between mobile subscribers and a land-based communications network, such as the PSTN or the Internet. Multiple ground stations geographically dispersed minimize tool charges incurred routing calls from a mobile subscriber through the land network by reducing the need for long-distance calling. Further, because each ground station communicates with a given satellite using the same frequency spectrum, the subscriber capacity of the system increases and/or bandwidth requirements for the communications link between ground stations and satellites may be reduced. The present system uses ground-based beamforming techniques enabling each satellite to transmit signal in multiple transmission beams, each beam supporting one or more mobile subscribers. Each beam may reuse the same frequency spectrum, thereby increasing the number of subscribers supported by each satellite. Multiple ground stations cooperatively relay signals through a given satellite in a manner complementary with ground-based beamforming.

Inventors

DENT PAUL

Latest standardized assignees - inventors removed

ERICSSON

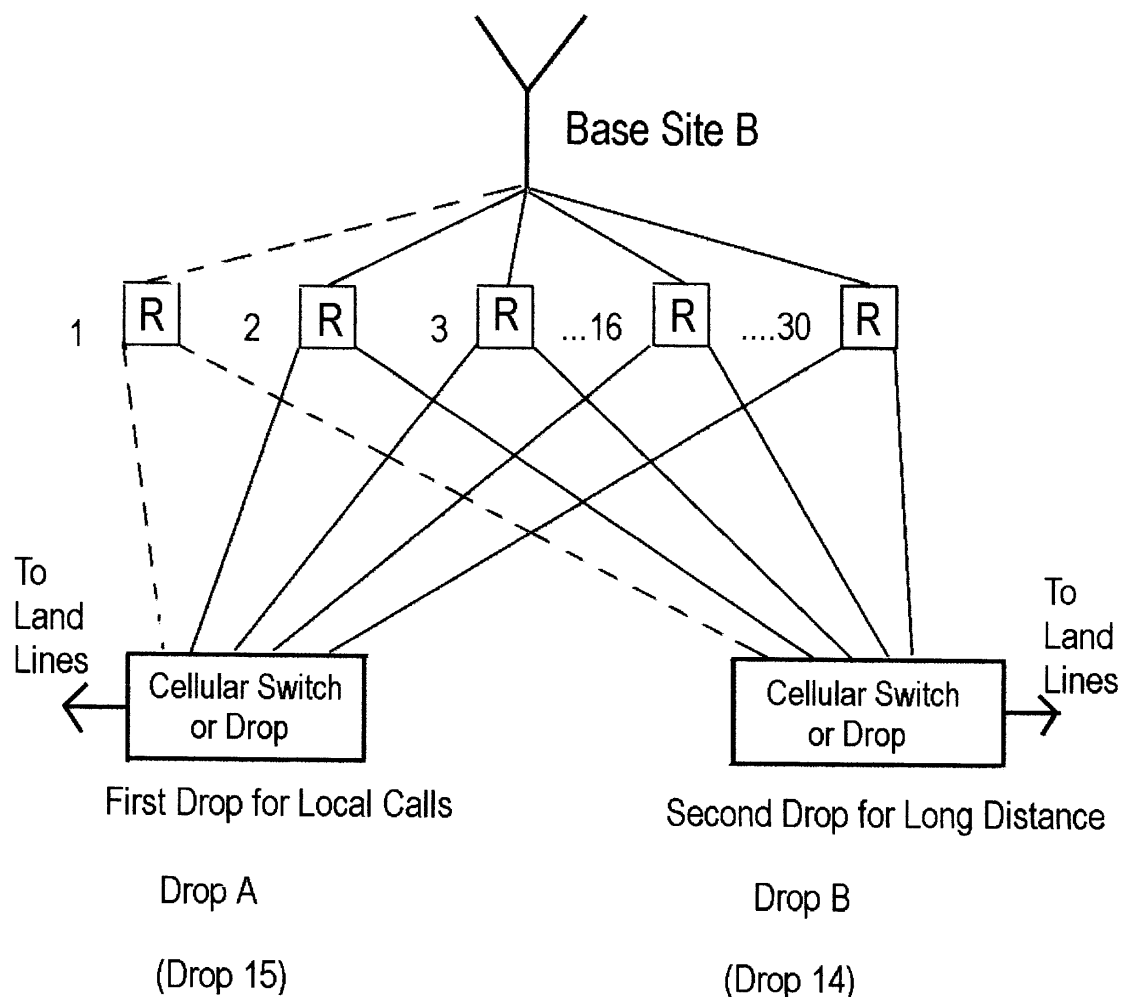
Family 13/50 - FAMPAT - ©Questel

Title

(US6459899)

Cellular radio routing system

Images



Publication numbers with kind code & date

USRE44607	E1	2013-11-19	USRE44607
USRE43675	E1	2012-09-18	USRE43675
USRE41781	E1	2010-09-28	USRE41781
USRE40258	E1	2008-04-22	USRE40258
USRE40117	E1	2008-02-26	USRE40117
US6459899	B1	2002-10-01	US6459899



Abstract

(US6459899)

A routing system of call connection and call routing for radio telephone communications system including cellular radio systems wherein the mobiles transmit on channels in a first band. and the bases transmit on channels in a second band. The routes are selectable from more than one possible route to a desired destination using routing tables to permit different destinations for different calls selectively based on telephone number indications. The system includes multiple blind nodes that do not support direct base to mobile communication. The blind nodes transmitting in the band used for transmission by the mobiles, and nodes receive in the band used for receiving by the mobiles such that the system performs in a limited number of bands of frequencies.

Inventors

SCHLOEMER JERRY R

Latest standardized assignees - inventors removed

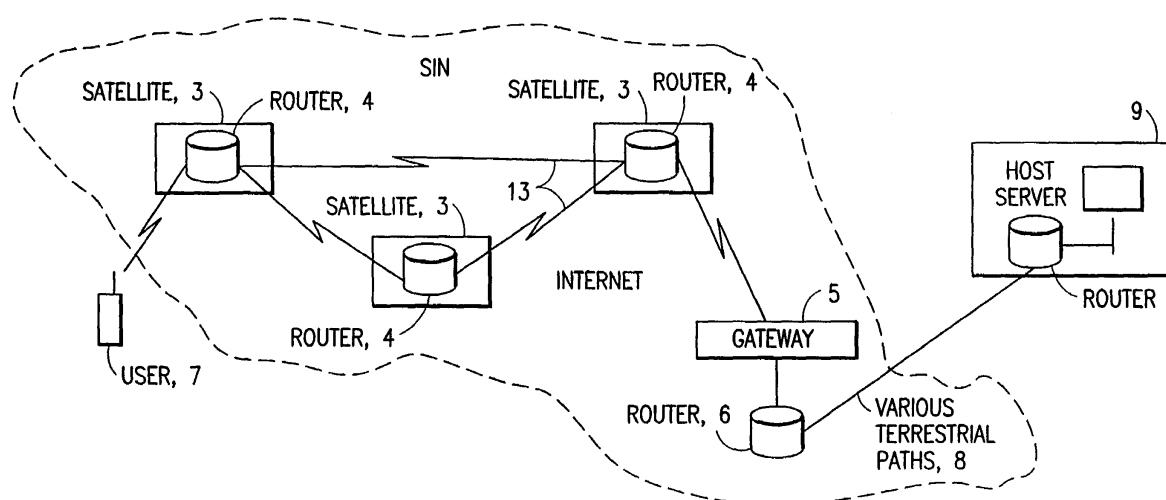
JSDQ MESH TECHNOLOGIES

Family 14/50 - FAMPAT - ©Questel

Title

(EP1024610)

An Internet Service Provider system using non-geosynchronous orbit satellites

Images**Publication numbers with kind code & date**

US6985454	B1	2006-01-10	US6985454
AU759936	B2	2003-05-01	AU-759936
EP1024610	A3	2001-10-24	EP1024610
JP2000224237	A	2000-08-11	JP2000224237
EP1024610	A2	2000-08-02	EP1024610
AU6180599	A	2000-07-27	AU9961805
CA2296202	A1	2000-07-26	CA2296202

**Abstract**

(EP1024610)

A satellite communication system (1) includes a plurality of satellites (3), such as low earth orbit satellites, and a plurality of gateways (5). The satellite communication system (1) is bidirectionally coupled to a terrestrial communication system (8) through at least the plurality of gateways (5). The satellite communication system (1) and the terrestrial communications system (8) together form a data communication network having a plurality of nodes including source nodes, destination nodes and intermediate nodes. Multiple copies of a packet (P1,P2) can coexist within the data communication network, and the packet (P1,P2) and its one or more copies are routed, using at least in part satellite-resident routers (4) and gateway-resident routers (6), over a plurality of different paths between a particular source node and a particular destination node. At least one duplicate copy of a given packet (P1,P2) is simply not used during the execution of a packet reordering procedure in the destination node, or at an intermediate node. Certain of the paths are carried over satellite-to-satellite cross-links (13a,13b), while certain other ones of the paths are carried over satellite-to-gateway uplinks (11a) and downlinks (11b), and at least one path exists between a user terminal (7) and at least one satellite. In a preferred embodiment the packets are TCP/IP (or equivalent protocol) packets containing information for enabling the selective destruction of a duplicate packet to occur.

Inventors

WIEDEMAN ROBERT A
WAKNIS PRASHANT V

Latest standardized assignees - inventors removed

GLOBALSTAR

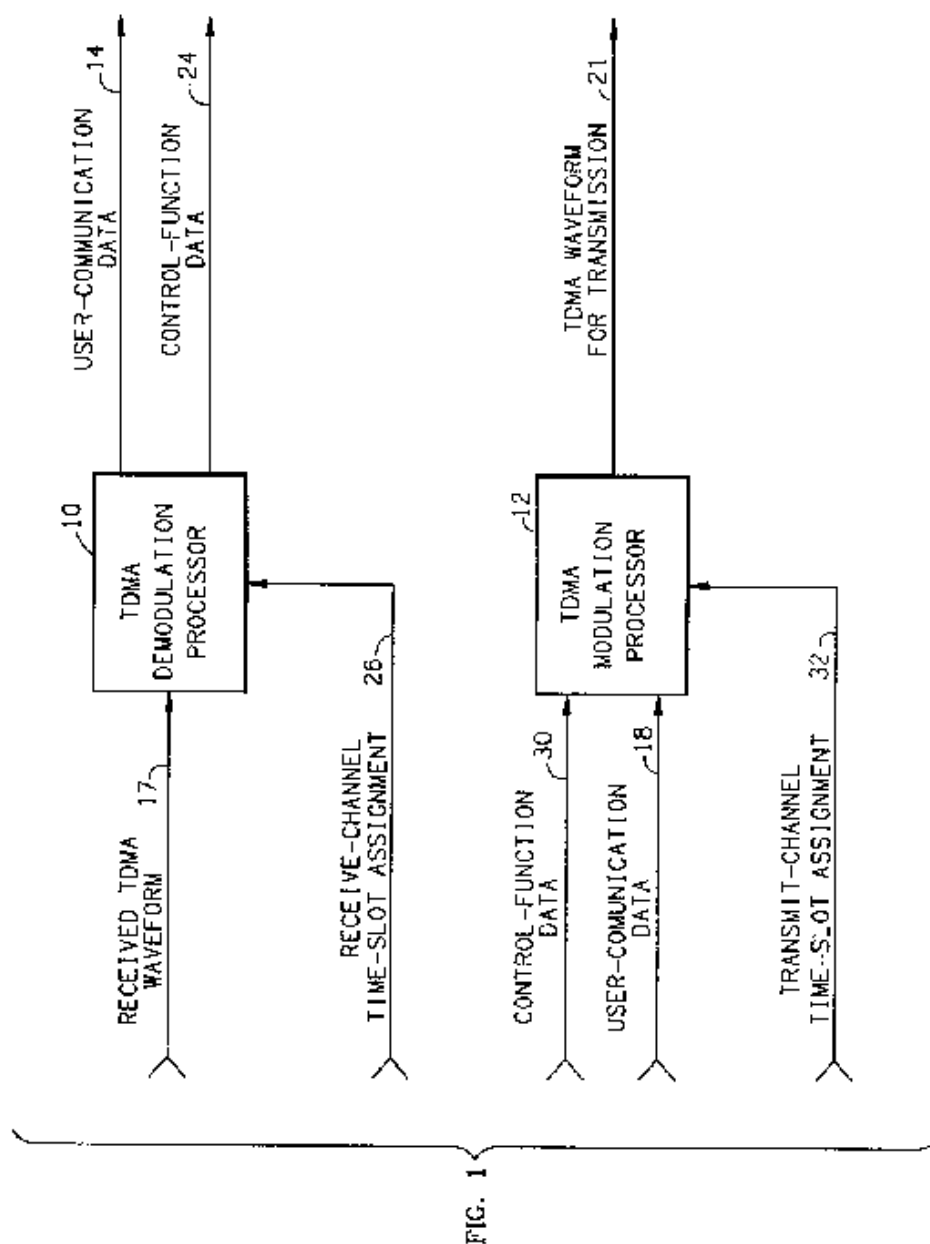
Family 15/50 - FAMPAT - ©Questel

Title

(EP-831602)

Providing control-function data in communication-data channel of a full-mesh satellite communication network by dynamic time-slot assignment in TDMA waveform

Images



Publication numbers with kind code & date

DE69730090	T2	2004-12-30	DE69730090
DE69730090	D1	2004-09-09	DE69730090
EP0831602	B1	2004-08-04	EP-831602
US5959999	A	1999-09-28	US5959999
EP0831602	A3	1999-07-14	EP-831602
ID18316	A	1998-03-26	ID--18316
EP0831602	A2	1998-03-25	EP-831602



Abstract

(EP0831602)

In a full-mesh communication network including a plurality of user terminals (40, 42) and a network-control-station terminal (44), control-function data (24, 30, 46, 48, 50, 52) is communicated between an individual user terminal and the network-control-station terminal over a given communication channel while the given communication channel is being used for communicating user-communication data (14, 18, 54, 56) between user terminals. The control-function data and the user-communication data are communicated within control-function time slots (22, 28) and user-communication time slots (16, 20) respectively of a TDMA waveform (17, 21) communicated in the given communication channel. The time slots for such communications are dynamically assigned in response to time-slot assignment signals (26, 32) communicated from the network-control-station terminal when the communication link between the user terminals is established. Control-function data (46, 48) is communicated from the user terminals to the network-control-station terminal in even-numbered control-function time slots of TDMA waveforms communicated in different given communication channels; and control-function data (48, 50) is communicated from the network-control-station to the user terminals in odd-numbered control-function time slots of the TDMA waveforms communicated in the different given communication channels.

Inventors

SONG HOWARD AN

Latest standardized assignees - inventors removed

LINKABIT WIRELESS

Family 16/50 - FAMPAT - ©Questel

Title

(EP-875103)

Full mesh satellite-based multimedia networking system

Images

OTHER PUBLICATIONS

Roy, Asim, "Frame Relay and Its Transportation Dilemma", *Proceedings from the 1991 Singapore International Conference on Networks* (Singapore, May-June 5, 1991), pp. 398-400.

Rane, Abdul Hamid, "VSAI-Enhanced ISDN: Architectures and Implementation", *IEEE Journal on Selected Areas in Communications*, Aug. 19, 1992, No. 6, pp. 1081-1092.

Platt, A. et al., "Some Aspects of Traffic Management in Frame Relay Networks", *CA Conference Article*, IFF High UK, Teletraffic Symposium, 1992, Boston, U.K., pp. 23/1-23/6.

Poulton, B.A. et al., "ISDN Over Satellite Networks", *Proceedings of the Milcom 1992 Conference on Communications Fusing Command, Control and Intelligence*, San Diego, Oct. 11-14, 1992, vol. 2 of the Conference Record, pp. 551-564.

Liebawitz, Burt, "Cost Effectiveness of TDMA Based, Full Meshed VSAI Networks", presented at International Telecommunications Society Conference, Sep. 1, 1995, Nice, France.

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Fleming, Stephen, "What Users Can Expect from New Virtual Wideband Devices", *Telecommunications*, Oct., 1990, vol. 24, No. 10, pp. 29-36.

Gordon, James, "Extending the LAN Range", *Telecommunications*, Oct., 1990, vol. 24, No. 10, pp. 66-68.

Publication numbers with kind code & date

DE69734705	T8	2007-01-18	DE69734705
DE69734705	T2	2006-08-24	DE69734705
DE69734705	D1	2005-12-29	DE69734705
EP0875103	B1	2005-11-23	EP-875103
EP0875103	A4	2001-01-10	EP-875103
EP0875103	A1	1998-11-04	EP-875103
US5812545	A	1998-09-22	US5812545
AU1823597	A	1997-08-01	AU9718235
WO97/25787	A1	1997-07-17	WO9725787



Abstract

(EP0875103)

A satellite communications system (10) is provided for full mesh connectivity between a number of earth terminals (12) via a satellite link (16). The earth terminals (12) are connected to user access devices (18) to receive and transmit voice, video, and data and are operable to generate bursts to transmit user data via a satellite (14) and to process data received from the satellite (14) and transmit it to the addressed user access devices (18). The terminal (12) comprises a number of ports (40) interfacing a number of user access devices (18), a PCD (52), a TDMA modem (54), a radio frequency transceiver (56), an antenna (58). The PCD (52) also organizes bursts in at least one of a plurality of slots constituting a TDMA frame in accordance with a burst plan. Each terminal has access to a guaranteed number of time slots. The allocation of the remaining time slots among the terminals varies dynamically to increase or decrease the burst transmission rates of the terminals as needed, the length of data queues in the terminals, and the type of the data to be transmitted.

Inventors

LIEBOWITZ BURT

SWEENEY STEVEN

ARENS HEINRICH

THALLER FRANZ

Latest standardized assignees - inventors removed

ORION ATLANTIC

ND SATCOM GESELLSCHAFT FÜR SATELLITENKOMMUNIKATIONSSYSTEME MBH

Family 17/50 - FAMPAT - ©Questel

Title

(WO9725785)

Usage-based billing system for full mesh multimedia satellite network

Images

OTHER PUBLICATIONS

Roy, Asim. "Frame Relay and Its Transportation Dilemma". Proceedings from the 1991 Singapore International Conference on Networks (Singapore, 5-6 Sep. 1991)pp. 393-400.

Rana, Abdul Hamid. "VSAT—Enhanced ISDN: Architectures and Implementation". IEEE Journal on Selected Areas in Communications, Aug. 10, 1992, No. 6, pp. 1081-1092.

Platt, A. et al. "Some Aspects of Traffic Management in Frame Relay Networks". CA Conference Article, IEB High UK, Teletraffic Symposium, 1991 Bexston, U.K., pp. 23/1-23/6.

Pontano, B.A. et al. "ISDN Over Satellite Networks". Proceedings of the Milcom 1992 Conference on Communications—Fusing Command, Control and Intelligence. San Diego, CA Oct. 11-14, 1992, vol. 2 of the Conference Record, pp. 561-564.

Publication numbers with kind code & date

US5757784	A	1998-05-26	US5757784
AU1823497	A	1997-08-01	AU9718234
WO97/25785	A1	1997-07-17	WO9725785



Abstract

(WO97/25785)

A satellite communication system is provided for full mesh connectivity between a number of earth terminals (12) via satellite link. The earth terminals are connected to user access devices (42) to receive and transmit voice, video, and data and are operable to generate bursts to transmit user data via a satellite, and to process data received from the satellite and transmit it to the addressed user access devices. The terminals each comprise a programmable computing device (52) which organizes bursts in at least one of a plurality of slots constituting a time division multiple access frame in accordance

with a burst plan. Billing is based on usage and committed information rates. Data and voice can be billed on one invoice.

Inventors

LIEBOWITZ BURT

SWEENEY STEVEN

Latest standardized assignees - inventors removed

TELESAT NETWORK SERVICES

TELESAT CANADA

ORION ATLANTIC

Family 18/50 - FAMPAT - ©Questel

Title

(US5793842)

System and method of call routing and connection in a mobile (remote) radio telephone system

Images

Abstract

(US5793842)

A system and method for providing radio routing and radio frequency channel assignment in a radio telephone system utilizing signal strength and routing messages as a primary criteria for obtaining interference free call connections and communications.

Inventors

SCHLOEMER JERRY R

AUBEL LEO J

Latest standardized assignees - inventors removed

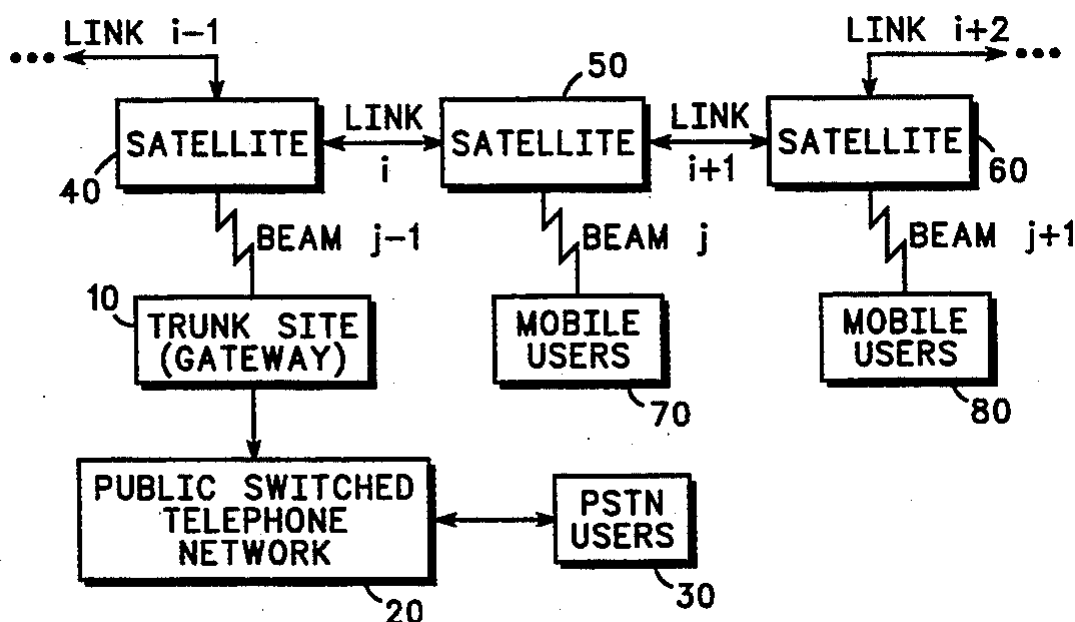
JSDQ MESH TECHNOLOGIES

Family 19/50 - FAMPAT - ©Questel

Title

(US5410728)

Satellite cellular telephone and data communication system

Images**Publication numbers with kind code & date**[US5410728](#)

A 1995-04-25 US5410728

**Abstract**

(US5410728)

A system for facilitating global cellular/trunked mobile communication is disclosed. This system permits communication with hand held and mobile mounted cellular telephones. The system permits two-way communications anywhere on or above the earth up to a particular height above the earth of several hundred nautical miles. The system employs a number of low-earth orbiting satellites moving about the earth in orbit. Links are provided from the satellites directly to the users and via the public switched telephone network to other users. The satellites are interconnected via links in a ring structure surrounding the earth. Switching is performed by each of the satellites. In addition, each of the satellites hands off a call as it moves out of the range of a particular user.

Inventors

BERTIGER BARY ROBERT

LEOPOLD RAYMOND JOSEPH

PETERSON KENNETH MAYNARD

Latest standardized assignees - inventors removed

CDC PROPRIÉTÉ INTELLECTUELLE

Family 20/50 - FAMPAT - ©Questel

Title

(EP-506255)

Wireless telephone/satellite roaming system

Images

JP2558573	B2	1996-11-27	JP2558573				
EP0506255	B1	1996-11-20	EP-506255				
JP06181454	A	1994-06-28	JP06181454				
US5303286	A	1994-04-12	US5303286				
EP0506255	A3	1992-10-14	EP-506255				
CA2063124	A1	1992-09-30	CA2063124				
EP0506255	A2	1992-09-30	EP-506255				

Abstract

(EP0506255)

A wireless telephone system capable of servicing a roaming wireless telephone user includes a satellite communications system consisting of one or more orbiting satellites, each carrying a database of users, destination codes and call codes, within a satellite service area, a satellite control center, and a plurality of terrestrial communications links. The system operates by effecting communication between a terrestrial wireless telephone end user transceiver apparatus and a terrestrial communications link via a single relay through a single satellite or a succession of satellites wherein the relay station may be in motion relative to the end user transceiver apparatus and the terrestrial communications link, wherein the orbiting relay station effects the ultimate decision on linking based on stored on-board information and on-board processing, and wherein the end user transceiver apparatus, the orbiting satellite and the terrestrial communications link are operative in cooperation with the on-board database to effect hand-off from a first orbiting satellite to a second orbiting satellite. The satellite system is a single satellite or preferably a constellation of satellites orbiting near the earth, all of which are capable receiving requests for calls and participating in the call routing and call setup on an autonomous basis. The satellites are capable of decoding the calls, switching, handing off of calls to other satellites, and updating databases of users based on information provided by network control.

Inventors

WIEDEMAN ROBERT A

Latest standardized assignees - inventors removed

GLOBALSTAR

Family 21/50 - FAMPAT - ©Questel

Title

(EP-466843)

Satellite communications system.

Images

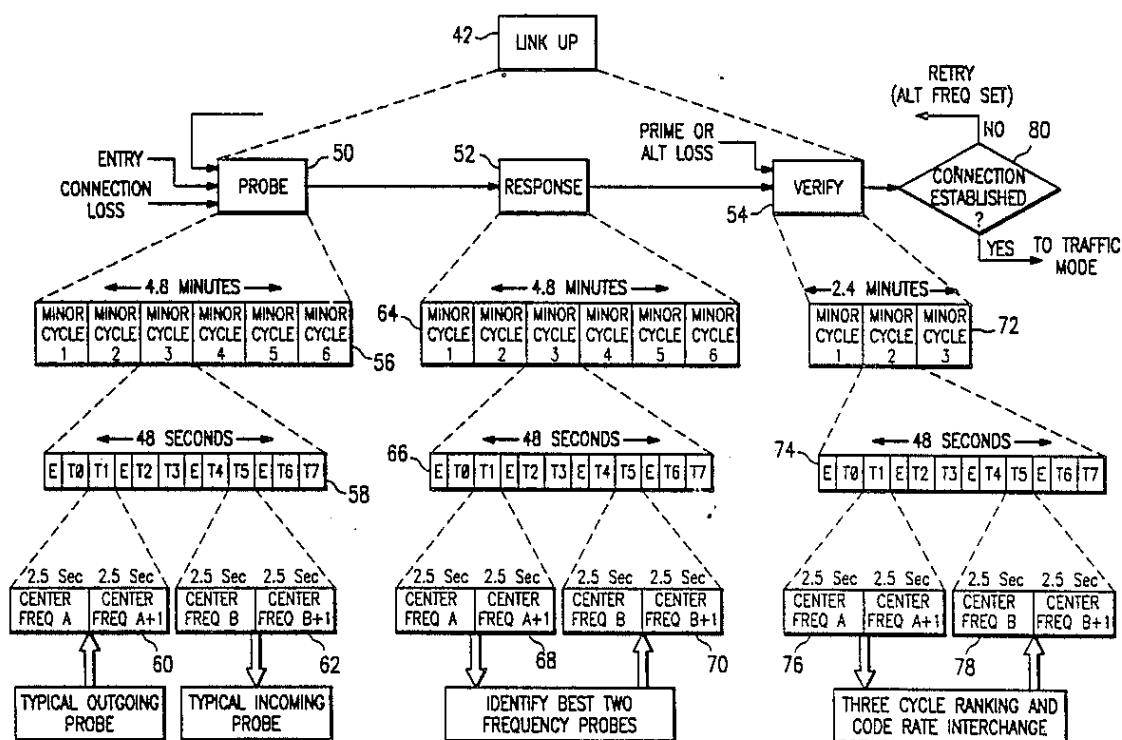
Family 22/50 - FAMPAT - ©Questel

Title

(US4937822)

Skywave adaptable communication apparatus

Images



Publication numbers with kind code & date

US4937822

A 1990-06-26 US4937822



Abstract

(US4937822)

An adaptive TDMA (time division multiple access) communication system is illustrated which dynamically maintains potentially different frequencies between nodes of the communication system using a process of communicating the quality of received signals between the nodes and storing this information so that an optimum frequency band can be selected whereby whenever signal quality deteriorates, an alternate frequency can be selected to provide continued communications. An embodiment of the system spans both high frequency (HF) and very high frequency (VHF) to establish the communications through atmospheric induced refractions (reflections) beyond line of sight between directly communicating nodes of the system. Further, the system uses frequency hopping both for signal transmission security and for node identification. When a node is traffic idle and also on a periodic maintenance basis, frequency bands other than the traffic frequency are analyzed for potential future use.

Inventors

WEDDLE DANIEL O

MILLER BILL C

BEBEE MELVIN G

YOUNG CHARLES D

CABLE STEPHEN W

Latest standardized assignees - inventors removed

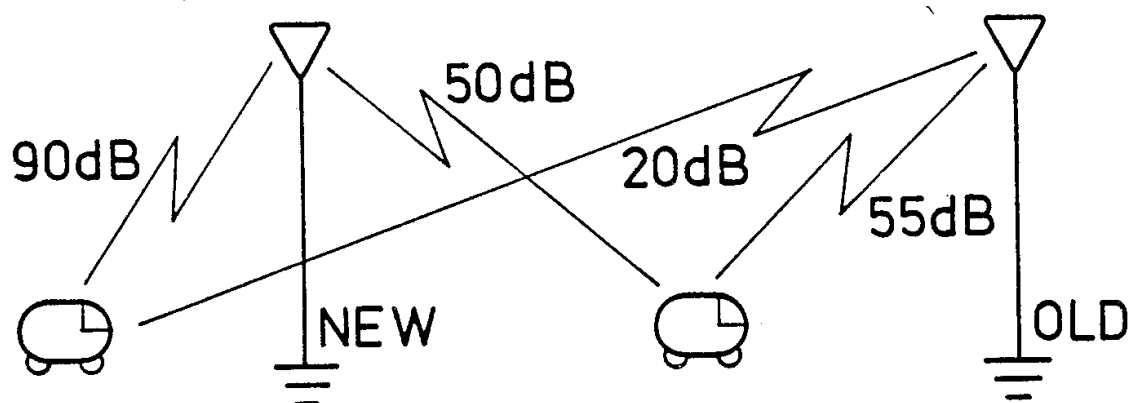
ROCKWELL INTERNATIONAL

Family 23/50 - FAMPAT - ©Questel

Title

(US4965850)

System for and method of assigning frequencies in a communications system with no central control of frequency allocation

Images**Publication numbers with kind code & date**[US4965850](#)

A 1990-10-23 US4965850

**Abstract**

(US4965850)

A system for and method of assigning frequencies in a mobile telephone communication system wherein there is no central control of frequency channel allocations and wherein such assignment is made by real time signal comparisons without reference to geographical patterns.

Inventors

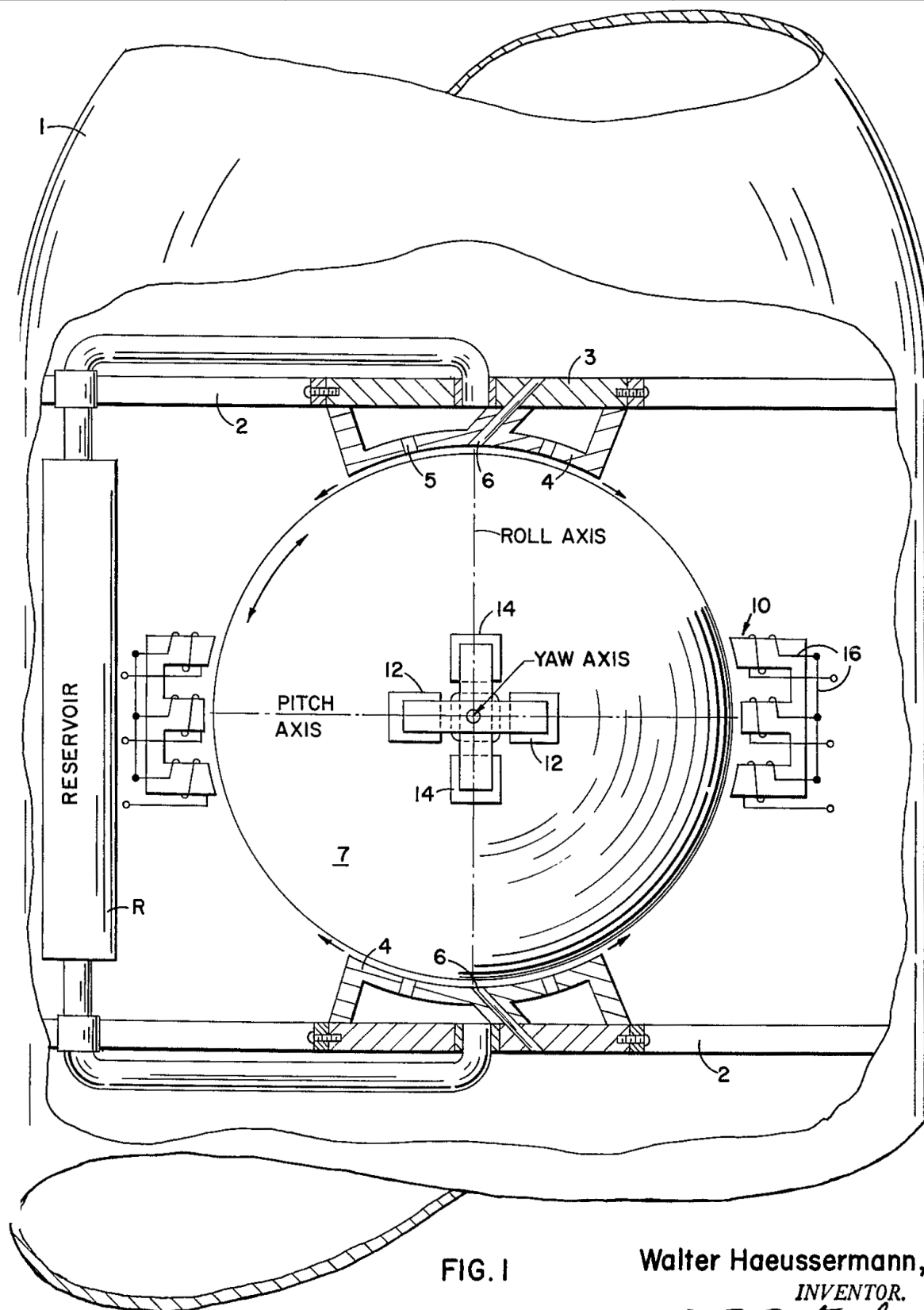
SCHLOEMER JERRY R

Latest standardized assignees - inventors removed

WIRELESS SPECTRUM TECHNOLOGY

Family 24/50 - FAMPAT - ©Questel

Images



Walter Haeussermann,
INVENTOR.

S. J. Rotondi,
BY A. T. Dupont,
and
Alvin E. Moore,
ATTORNEYS

Publication numbers with kind code & date

US3017777

A 1962-01-23 US3017777

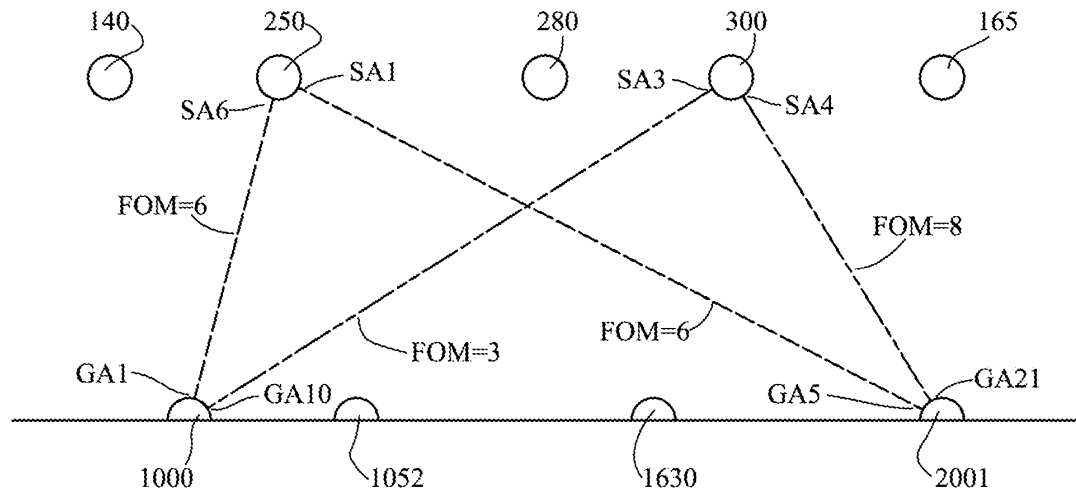


Family 25/50 - FAMPAT - ©Questel

Title

(WO201967651)

Radio system using nodes with high gain antennas

Images**Publication numbers with kind code & date**

US20190104462	A1	2019-04-04	US20190104462
WO2019/067651	A1	2019-04-04	WO201967651
US10085200	B1	2018-09-25	US10085200

**Abstract**

(WO2019/067651)

A radio communication route enables communication from an originating ground station to a destination ground station via one of multiple randomly orbiting satellites with no active attitude control. The ground stations and satellites include multi-feed parabolic antennas for receiving radio signals from and transmitting radio signals in multiple directions. The satellites store an address of a destination ground station from which an initial information signal is transmitted and antenna information identifying the satellite antenna feed on which the initial information signal was received. Plural satellite antennas transmit linking information identifying the satellite to the originating ground station. Data transmissions received at the originating ground station that designate a particular destination are transmitted by the originating ground station using the antenna on which the linking information was received and the satellite retransmits the data transmission using the satellite antenna feed identified by the stored antenna information.

Inventors

SCHLOEMER GERALD

Latest standardized assignees - inventors removed

STAR MESH

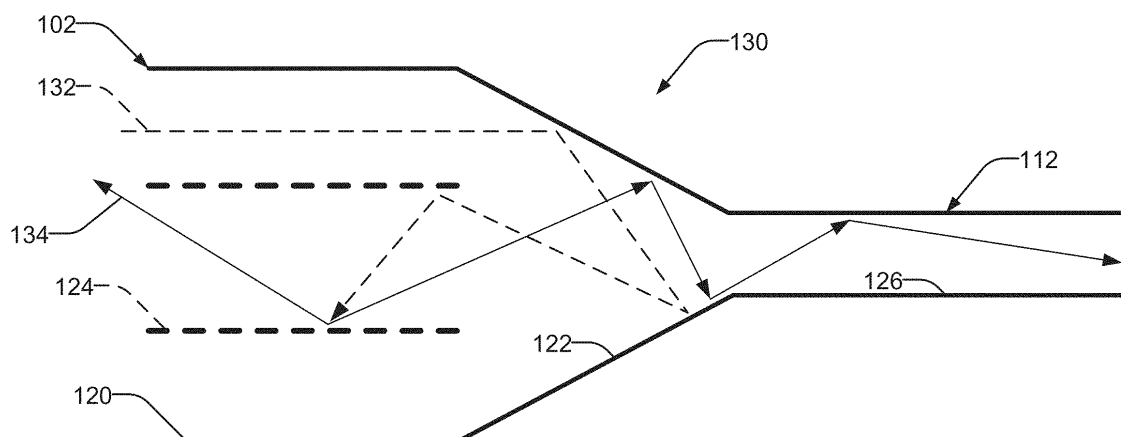
Family 26/50 - FAMPAT - ©Questel

Title

(WO2018147925)

A satellite system

Images



Publication numbers with kind code & date

WO2019/140156	A1	2019-07-18	WO2019140156
WO2019/140159	A1	2019-07-18	WO2019140159
US10351267	B2	2019-07-16	US10351267
US20190016672	A1	2019-01-17	US20190016672
WO2018/147925	A1	2018-08-16	WO2018147925
US20180155067	A1	2018-06-07	US20180155067
US20180156924	A1	2018-06-07	US20180156924
US20180159617	A1	2018-06-07	US20180159617



Abstract

(WO2018/147925)

A satellite system operates at altitudes between 100 and 350 km relying on vehicles including a self-sustaining ion engine to counteract atmospheric drag to maintain near-constant orbit dynamics. The system operates at altitudes that are substantially lower than traditional satellites, reducing size, weight and cost of the vehicles and their constituent subsystems such as optical imagers, radars, and radio links. The system can include a large number of lower cost, mass, and altitude vehicles, enabling revisit times substantially shorter than previous satellite systems. The vehicles spend their orbit at low altitude, high atmospheric density conditions that have heretofore been virtually impossible to consider for stable orbits. Short revisit times at low altitudes enable near-real time imaging at high resolution and low cost. At such altitudes, the system has no impact on space junk issues of traditional LEO orbits, and is self-cleaning in that space junk or disabled craft will de-orbit.

Inventors

REEDY RONALD

SCHWARTZENTRUBER THOMAS

Latest standardized assignees - inventors removed

SKEYEON

Family 27/50 - FAMPAT - ©Questel

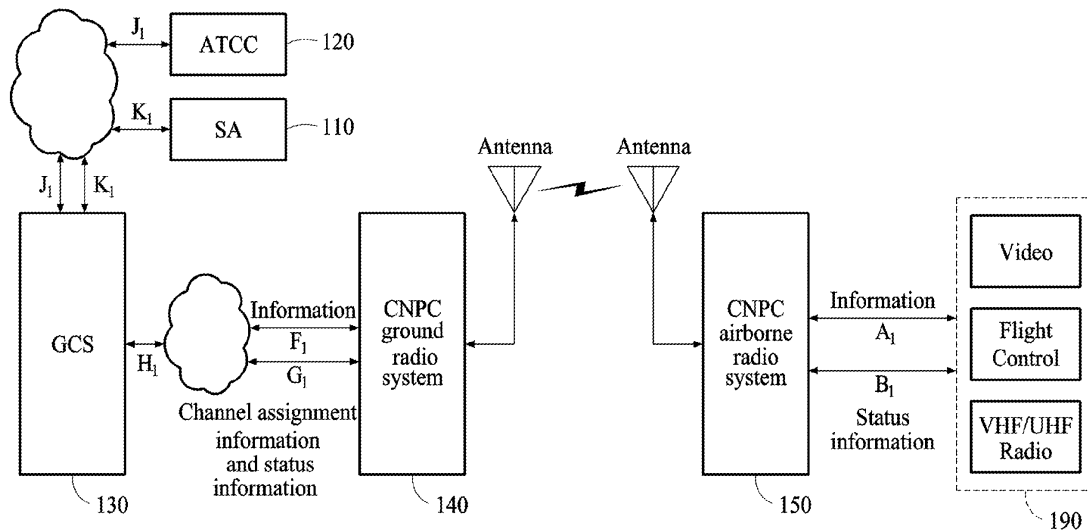
Title

(US20190013969)

Handover method and control transfer method

Images

10

**Publication numbers with kind code & date**

US20190013969	A1	2019-01-10	US20190013969
US10084615	B2	2018-09-25	US10084615
US20180139074	A1	2018-05-17	US20180139074

**Abstract**

(US20190013969)

A handover method and a control transfer method are provided. A handover method of performing an inter-cell handover between a first ground station and a second ground station may include setting a first channel to the second ground station, measuring, by an airborne radio station, a second channel and reporting a measurement result to the first ground station, sending, by the first ground station, a handover request to at least one of a ground control station (GCS) or a control and non-payload communication (CNPC) network, determining, by the at least one of the GCS or the CNPC network, whether to perform a handover, and transmitting, by the at least one of the GCS or the CNPC network, a handover instruction to the airborne radio station based on a result of the determining.

Inventors

HONG TAE CHUL

KIM HEE WOOK

LIM KWANG JAE

Latest standardized assignees - inventors removed

ELECTRONICS & TELECOMMUNICATIONS RESEARCH INSTITUTE

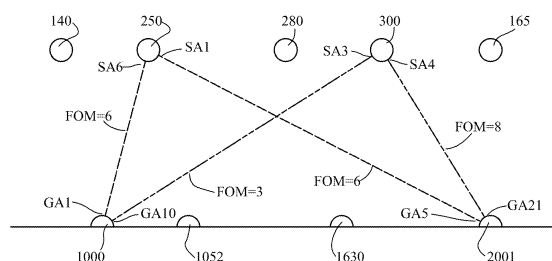
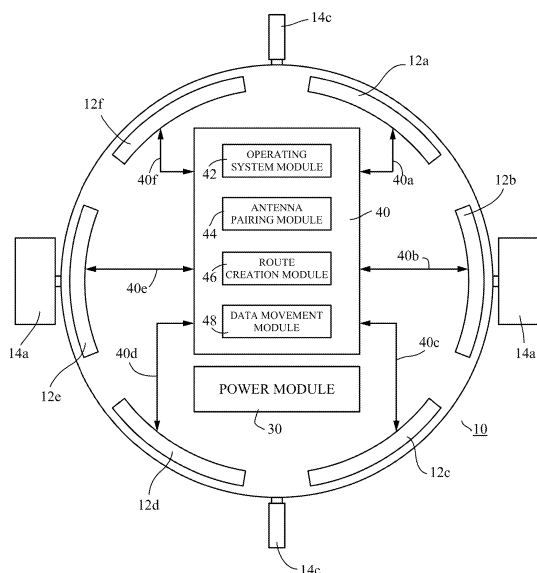
Family 28/50 - FAMPAT - ©Questel

Title

(EP3504808)

Radio system using nodes

Images



Publication numbers with kind code & date

US10447381	B2	2019-10-15	US10447381
JP2019528617	A	2019-10-10	JP2019528617
ZA201900468	B	2019-09-25	ZA201900468
US20190229800	A1	2019-07-25	US20190229800
EP3504808	A1	2019-07-03	EP3504808
PH12019550023	A1	2019-06-03	PH12019550023
MX2019002124	A	2019-05-16	MX2019002124
IL264883	A	2019-04-30	IL-264883
CN109644044	A	2019-04-16	CN109644044
US20190109634	A1	2019-04-11	US20190109634
AU2017316680	A1	2019-04-04	AU2017316680
SG11201900774Q	A	2019-03-28	SG11201900774Q
CO2019001996	A2	2019-03-08	CO2019001996
US10084536	B1	2018-09-25	US10084536
CA3032969	A1	2018-03-01	CA3032969
WO2018/039292	A1	2018-03-01	WO201839292



Abstract

(EP3504808)

A radio communication route enables communication from an originating ground station to a destination ground station via one of multiple randomly orbiting, rotating satellites with no active attitude control. The ground stations and satellites include directional antennas for receiving radio signals from and transmitting radio signals in multiple directions. The satellites store an address of a destination ground station from which an initial information signal is transmitted and antenna information identifying the satellite antenna on which the initial information signal was received. Plural satellite antennas transmit linking information identifying the satellite to the originating ground station. Data transmissions received at the originating ground station that designate a particular destination are transmitted by the originating ground station using the antenna on which the linking information was received and the satellite retransmits the data transmission using the satellite antenna identified by the stored antenna information.

Inventors

SCHLOEMER GERALD R

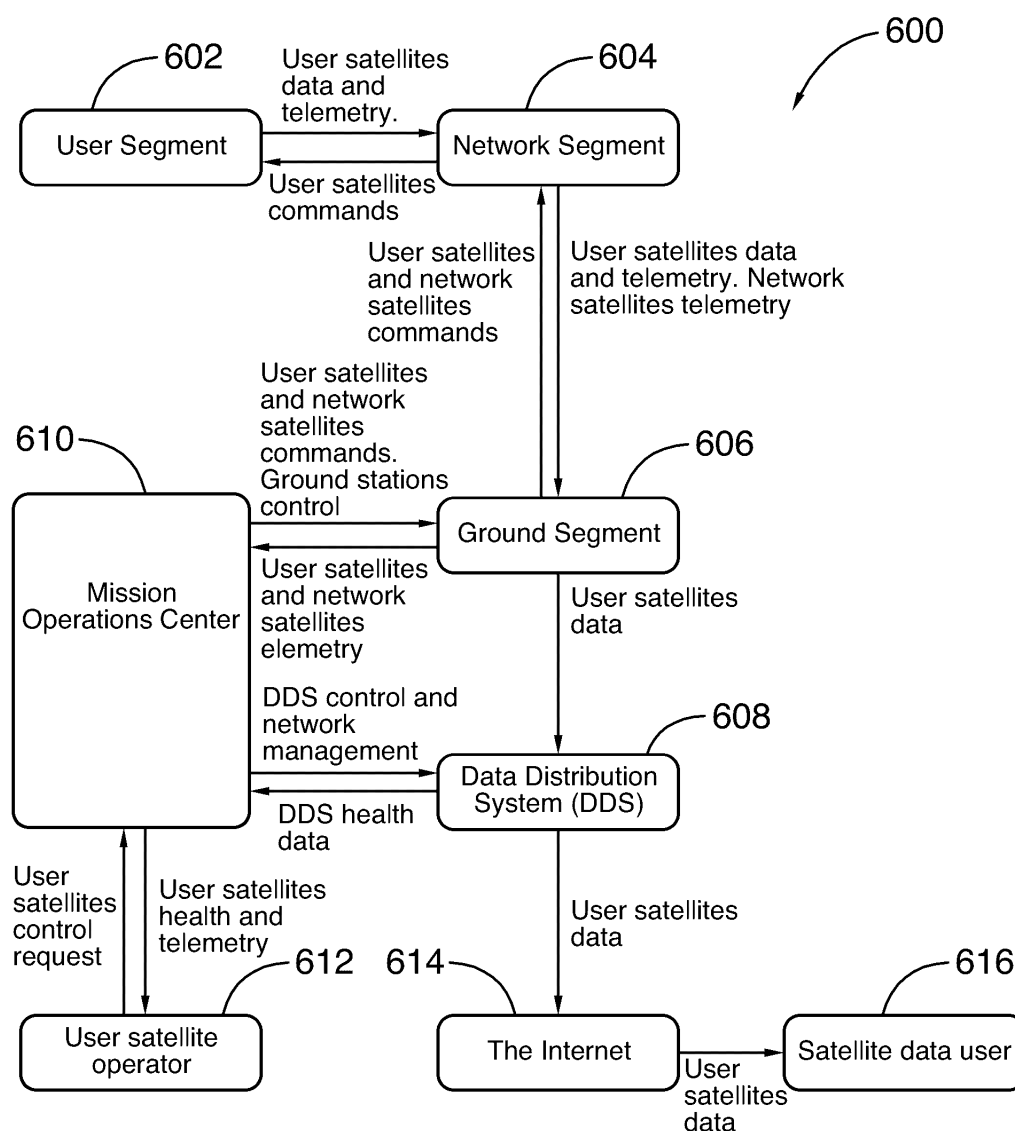
Latest standardized assignees - inventors removed

STAR MESH

Title

(US20170070939)

System and method for providing continuous communications access to satellites in geocentric, non-geosynchronous orbits

Images**Publication numbers with kind code & date**[US20170070939](#)

A1 2017-03-09

US20170070939

**Abstract**

(US20170070939)

A system including a constellation of satellites in Low Earth Orbit and a plurality of ground stations to enable continuous communication for other geocentric, non-geosynchronous spacecraft. Network latency, Doppler effects, and router handover time are minimized through selection of orbital parameters for the satellite constellation and locations of ground stations. A plurality of polar or near polar orbit planes is presented at equally spaced right ascension of the ascending node (RAAN), in an alternative ascending-descending pattern. Inter-satellite communication is performed in-plane to relay data to a ground station, and out-of-plane or in-plane to communicate with another satellite that is not a member of the constellation. The number and location of ground stations is selected based on the number of small satellites and orbital planes in order to maintain continuous communications. The system can enable continuous communication for geocentric satellites without the need for line-of-sight access to a ground station.

Inventors

CHONG WEN CHENG

MITRY MINA

Latest standardized assignees - inventors removed

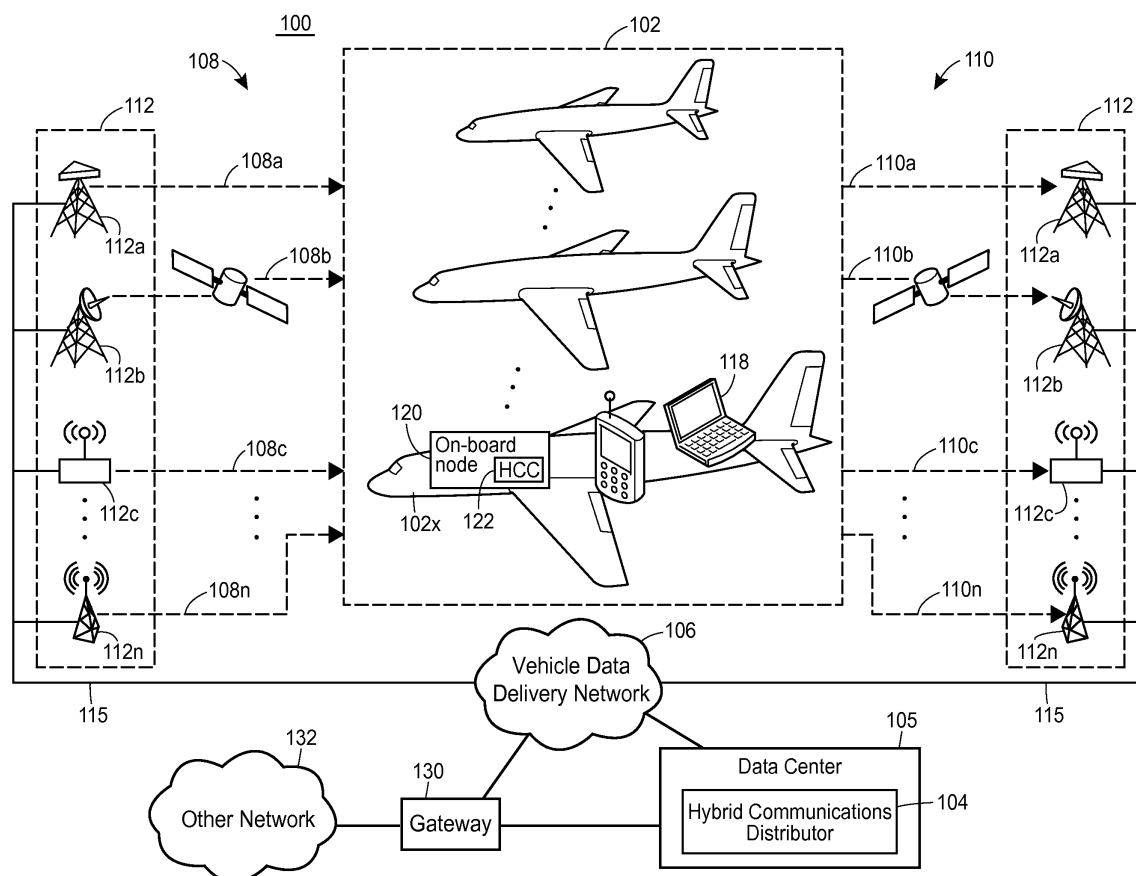
KEPLER COMMUNICATIONS

Family 30/50 - FAMPAT - ©Questel

Title

(EP3261271)

System and method for facilitating voice and messaging communications via various terrestrial and on board of vehicles networks using satellite links

Images**Publication numbers with kind code & date**

JP6271009	B2	2018-01-31	JP6271009
EP3261271	A1	2017-12-27	EP3261271
CN107508630	A	2017-12-22	CN107508630
CN105900354	B	2017-09-12	CN105900354B
EP3066764	B1	2017-08-16	EP3066764
US9577857	B2	2017-02-21	US9577857
JP2016537886	A	2016-12-01	JP2016537886
EP3066764	A1	2016-09-14	EP3066764
CN105900354	A	2016-08-24	CN105900354
US20150131512	A1	2015-05-14	US20150131512
WO2015/070140	A1	2015-05-14	WO201570140

**Abstract**

(EP3261271)

Techniques for providing hybrid communications to devices on vehicles include using a selected modulation scheme on a forward link to deliver data (that is intended to be received by an on-board device) onto a vehicle, and using a reverse link

in a different frequency band to send reverse data from the vehicle. Based on the reverse data, a subsequent pre-defined modulation scheme for a subsequent forward transmission is selected from a plurality of modulation schemes corresponding to a plurality of performance levels of data delivery. The selections may be based on a current geo-spatial location of the vehicle, a type of data, and/or on one or more other dynamic conditions. The forward data may be multiplexed and/or multicast. Thus, adaptive modulation is achieved in a hybrid communications system in which the forward link and the reverse link to the vehicle are supported by different wireless communication bands.

Inventors

LAUER BRYAN ADRIAN

LOGANATHAN RUKMAINI

SASI SAJITI

WALSH PATRICK J

CHARI ANAND

Latest standardized assignees - inventors removed

GOGO

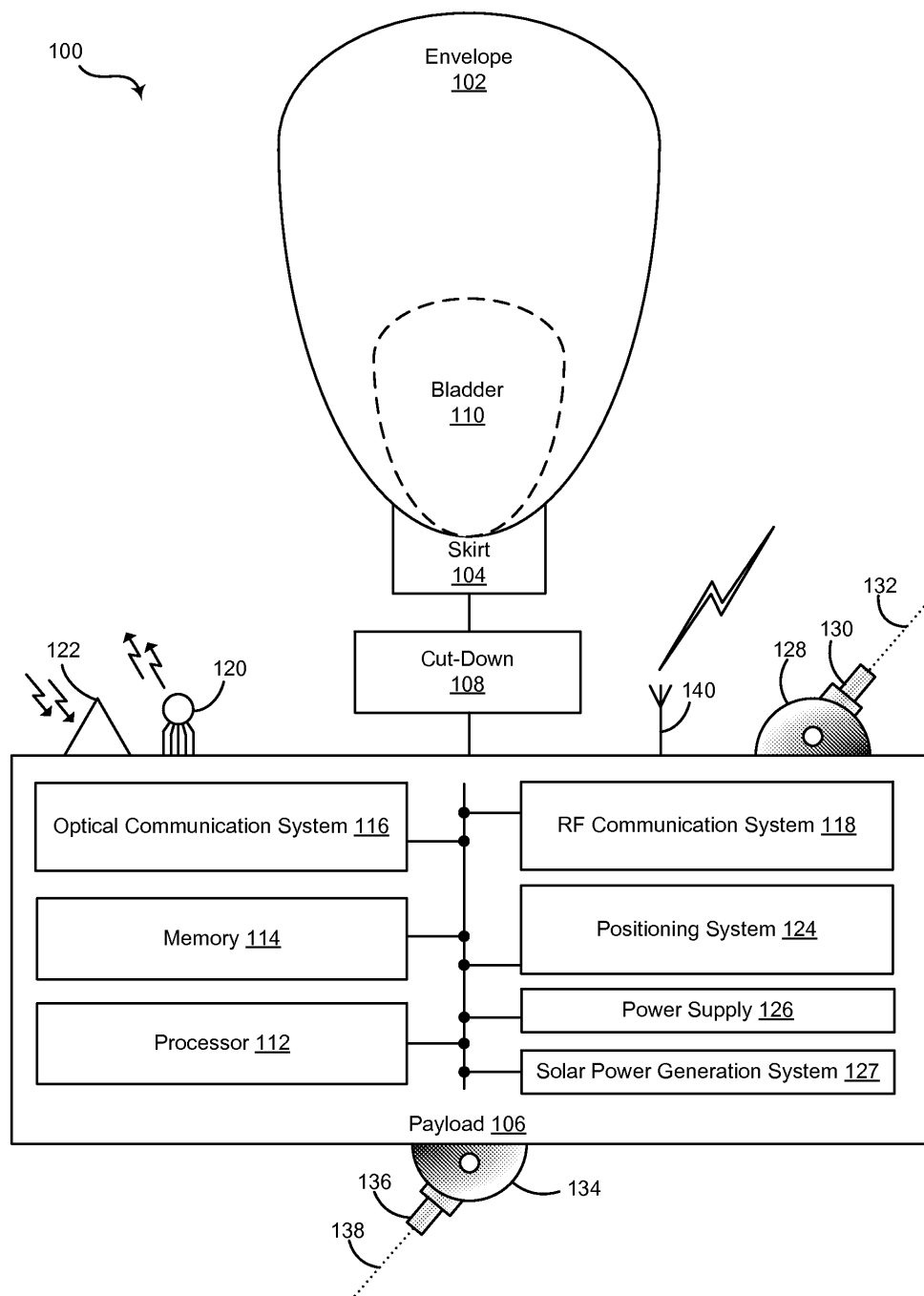
Family 31/50 - FAMPAT - ©Questel

Title

(US8918047)

Use of satellite-based routing processes with a balloon network

Images



Publication numbers with kind code & date

US8918047

B1 2014-12-23 US8918047



Abstract

(US8918047)

This disclosure relates to the use of satellite-based routing processes in connection with a balloon network. A disclosed method includes receiving a communication at a balloon in a balloon network by way of a transmission from a ground-based station. The method includes selecting a routing process for the communication based on at least one parameter associated with the communication. The routing process is selected from a plurality of routing processes including a first routing process and a second routing process. The first routing process includes a satellite network when determining how to route the communication. The satellite network includes one or more satellites. The second routing process includes the balloon network when determining how to route the communication. The method further includes using the selected routing process to determine a target path for the communication.

Inventors

TELLER ERIC

CASSIDY MICHAEL

BIFFLE CLIFFORD L

DEVAUL RICHARD W

Latest standardized assignees - inventors removed

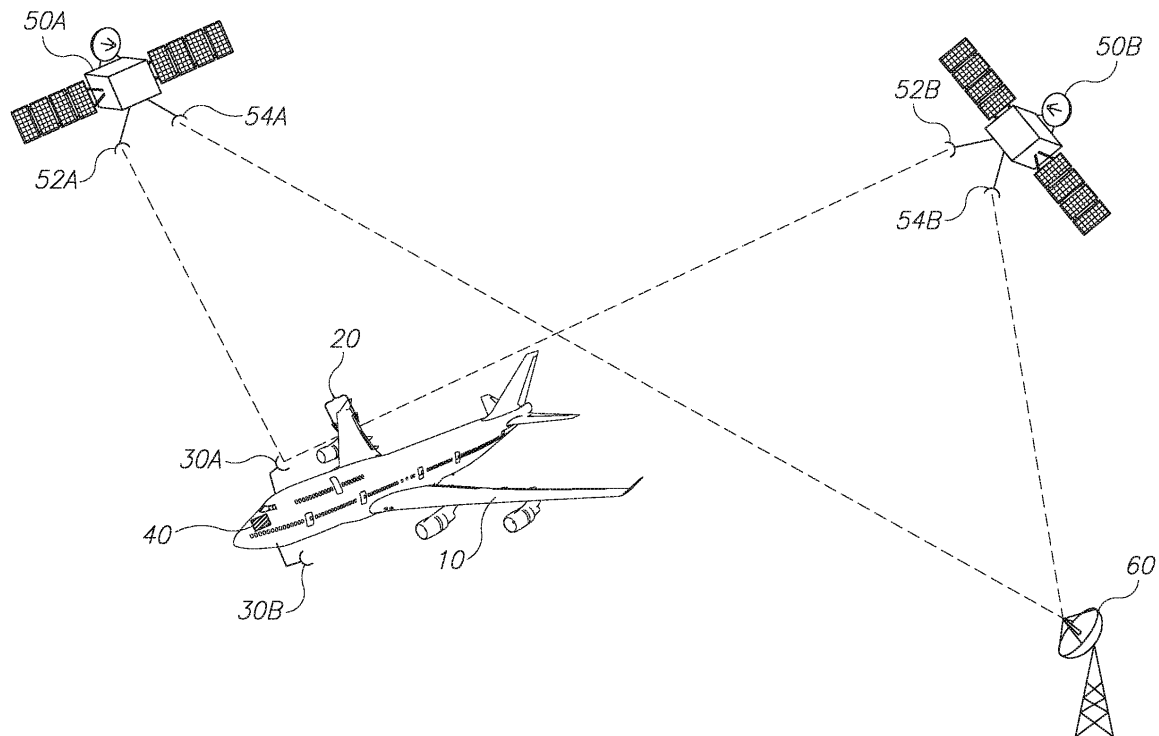
LOON

Family 32/50 - FAMPAT - ©Questel

Title

(EP3111510)

Method and system for addressing line of sight blockage in satellite communication networks

Images**Publication numbers with kind code & date**

AU2015221722	B2	2019-05-16	AU2015221722
US10063309	B2	2018-08-28	US10063309
IL231180	B	2017-11-30	IL-231180
EP3111510	A4	2017-10-25	EP3111510
US20170012698	A1	2017-01-12	US20170012698
EP3111510	A1	2017-01-04	EP3111510
AU2015221722	A1	2016-10-13	AU2015221722
WO2015/128864	A1	2015-09-03	WO2015128864
IL231180	A	2014-08-31	IL-231180

**Abstract**

(EP3111510)

Method and system for addressing line of sight (LOS) blockage in satellite communication networks are provided herein. The method may include the following stages: obtaining forecast input parameters; forecasting at least one future LOS blockage in two or more communication links established between at least one communication satellite and at least one platform-mounted communication system having at least one antenna, based on the forecast input parameters; and addressing the future LOS blockage by applying at least one of: rerouting the communication links between the at least one

platform-mounted communication system and at least one of the communication satellite; changing a power level of at least one of the communication links; changing at least one of: spreading, modulation and coding of at least one of the communication links; changing mobility parameters of the platform-mounted communication system.

Inventors

LAUFER SHAUL

SAGIV ARIEL

Latest standardized assignees - inventors removed

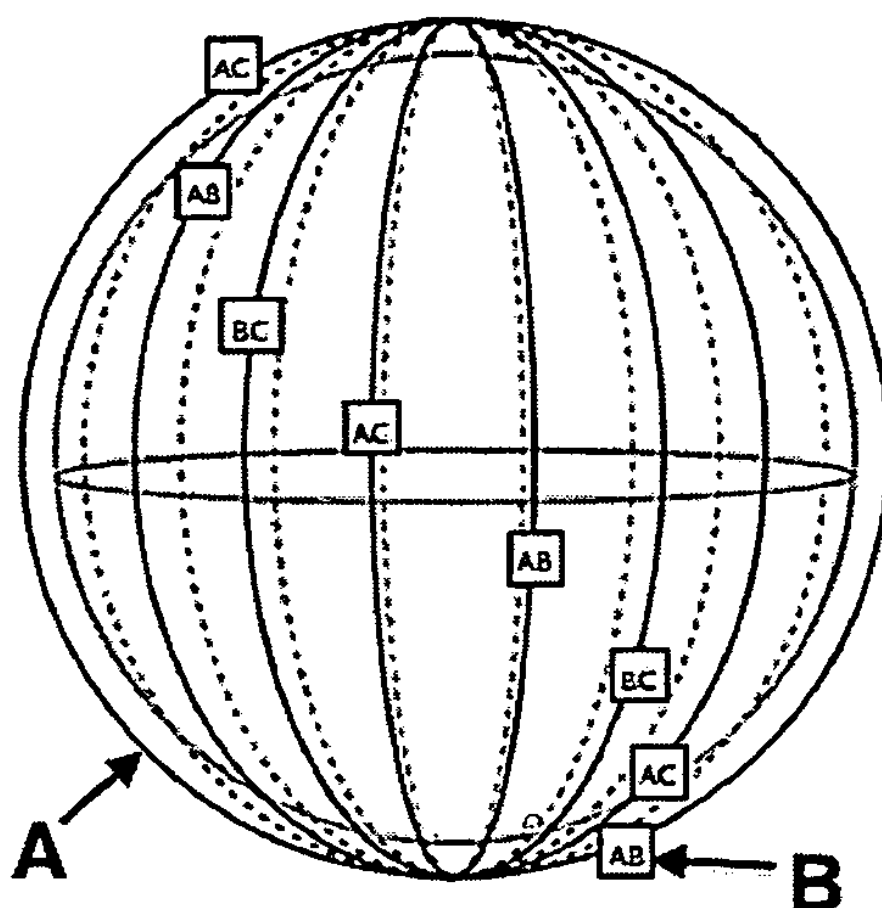
ELBIT SYSTEMS LAND & C4I

Family 33/50 - FAMPAT - ©Questel

Title

(US20140027576)

Earth Observation Constellation Methodology & Applications

Images

Example constellation with elements in
distinct polar orbits with equal coverage
frequency for sensors A, B, C

 indicates a satellite/element with sensing abilities A and B

Multiple orbital planes example

Publication numbers with kind code & date

[US20140027576](#)

A1 2014-01-30 US20140027576



Abstract

(US20140027576)

The focus of this invention pertains to the methodology behind launching line-scanning satellite constellations that can image an entire planet such as the Earth at high temporal cadence (less than a week), at high spatial resolution (less than 10 m). Utilizing simple control and operation, our invention captures images of an entire planet in an effective and distributed manner. Additional benefits are realized by taking advantage of the distributed onboard storage and computing abilities of such a constellation to optimize the data collected, system latency, and data downlinked.

Inventors

BOSHUIZEN CHRISTOPHER

MARSHALL WILLIAM

MASON JAMES

SCHINGLER JR ROBERT

Latest standardized assignees - inventors removed

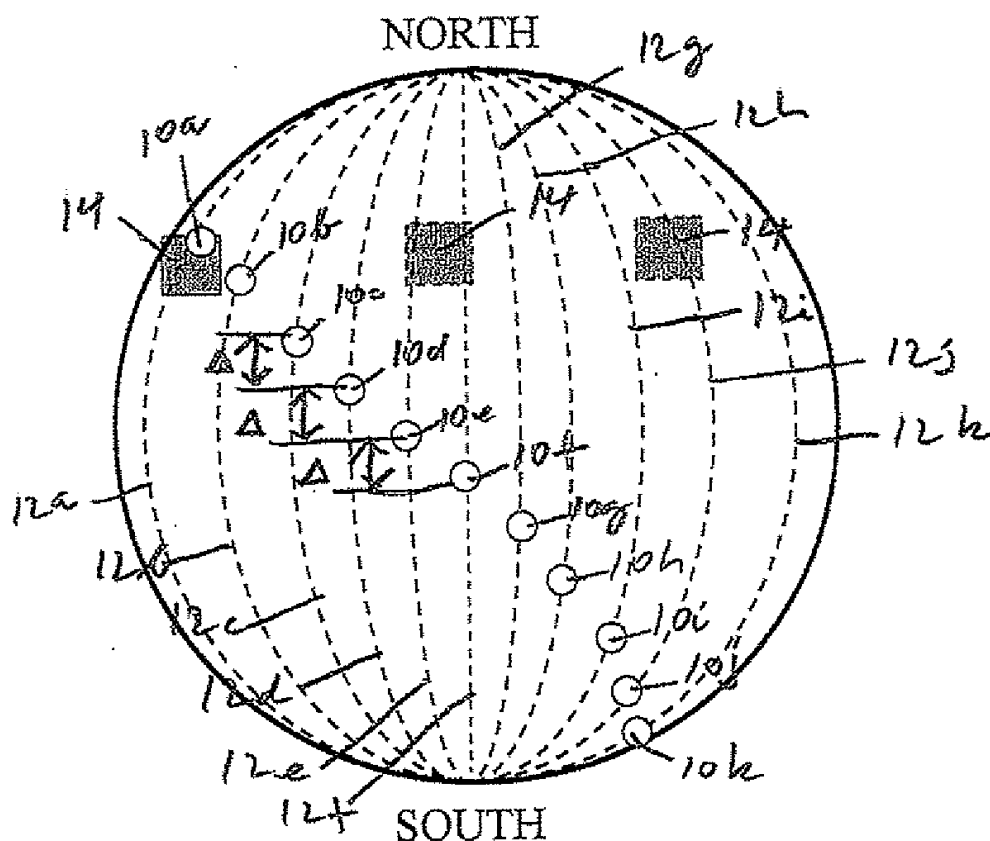
PLANET LABS

Family 34/50 - FAMPAT - ©Questel

Title

(US20140240497)

Constellation of Surveillance Satellites

Images**Publication numbers with kind code & date**[US20140240497](#)

A1 2014-08-28

[US20140240497](#)**Abstract**

(US20140240497)

A satellite constellation includes a plurality of satellites in respective polar orbits. The orbits are spaced evenly in longitude and the satellites of adjacent orbits are spaced evenly in latitude. On board each satellite is one or more sensors for monitoring activity within the satellite's field of view.

Inventors

SHEFER MORDECHAI

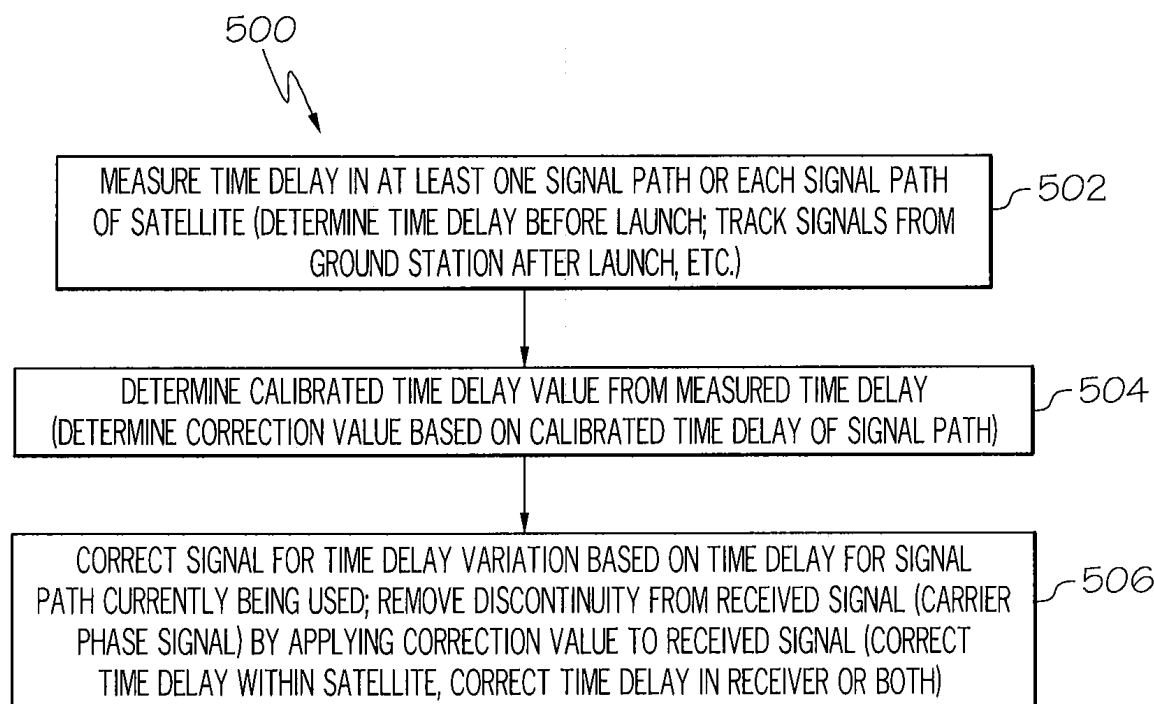
Family 35/50 - FAMPAT - ©Questel

Title

(US9612334)

Correcting for time delay variation in a satellite for positioning, navigation or timing applications

Images



Publication numbers with kind code & date

US9612334	B2	2017-04-04	US9612334
US20130293415	A1	2013-11-07	US20130293415



Abstract

(US20130293415)

A method for correcting for time delay variations between a plurality of signal paths from a signal source to at least one transmit antenna of a satellite may include measuring a time delay for each of the plurality of signal paths. The method may also include correcting a signal for the time delay variation based on the time delay for the signal path that is currently being used by the satellite, the corrected signal being usable for at least one of navigation, determining a geographic location and determining time.

Inventors

GUTT GREGORY
 WHELAN DAVID A
 FYFE PETER M
 LASSA JAMES C

Latest standardized assignees - inventors removed

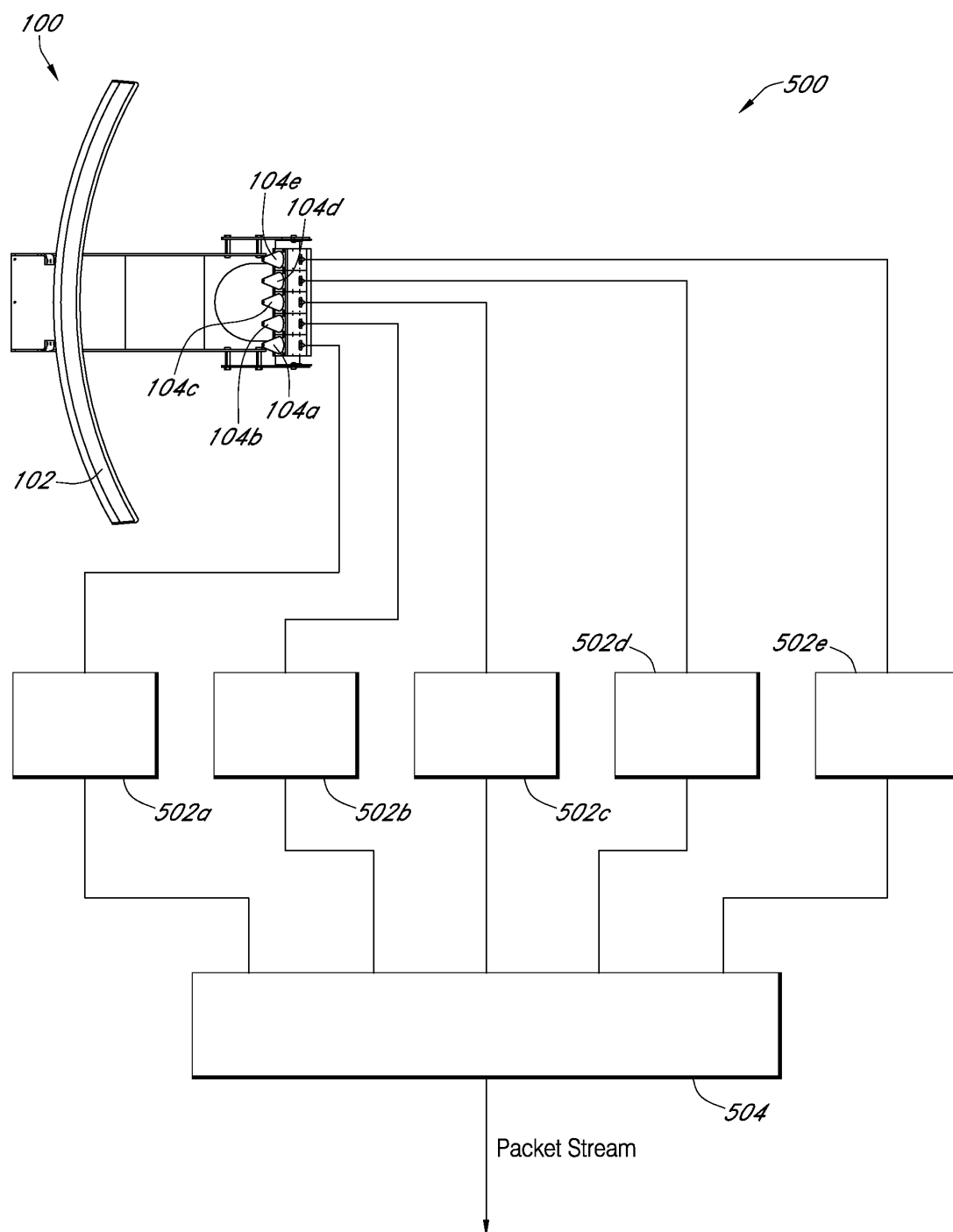
BOEING

Family 36/50 - FAMPAT - ©Questel

Title

(US9035839)

Multi-feed diversity receive system and method

Images**Publication numbers with kind code & date**

US9537211	B2	2017-01-03	US9537211
US20150249287	A1	2015-09-03	US20150249287
US9035839	B2	2015-05-19	US9035839
US20110080980	A1	2011-04-07	US20110080980

**Abstract**

(US20110080980)

Embodiments disclosed herein relate to diversity receive systems and methods. An antenna system may comprise a reflector and a plurality of feed antennas configured to receive a wireless signal from a common source with directional

diversity. A receive system may comprise such antenna system in combination with a plurality of receivers and/or demodulators, and in combination with a combiner and/or controller.

Inventors

SCOTT JULIAN

HOPKINS JEFF

Latest standardized assignees - inventors removed

UPSERVE

AL DENTE INTERMEDIATE HOLDINGS

AL DENTE HOLDINGS

AL DENTE MERGER SUB

TROLL SYSTEMS

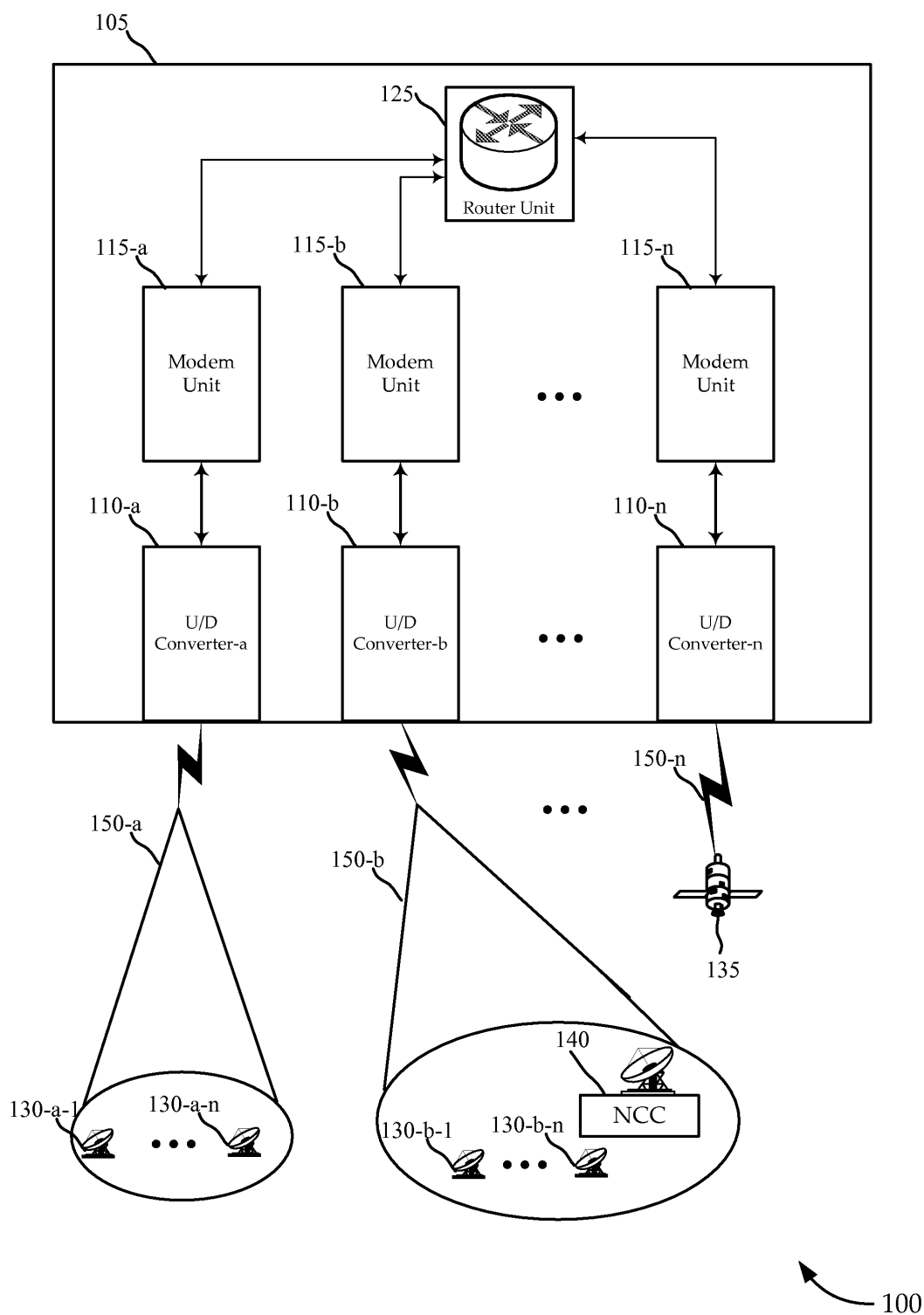
Family 37/50 - FAMPAT - ©Questel

Title

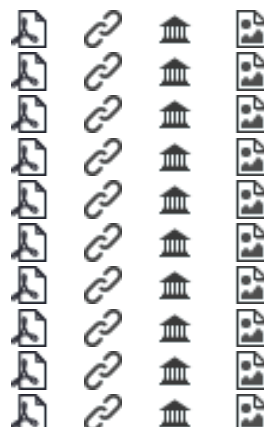
(EP2132883)

Satellite reference terminal systems and methods

Images


Publication numbers with kind code & date

EP2132883	B1	2016-10-05	EP2132883
US8159964	B2	2012-04-17	US8159964
US8159992	B2	2012-04-17	US8159992
CN101675606	A	2010-03-17	CN101675606
EP2132883	A2	2009-12-16	EP2132883
WO2008/109860	A3	2008-12-31	WO2008109860
WO2008/109860	A2	2008-09-12	WO2008109860
US20080219206	A1	2008-09-11	US20080219206
US20080219266	A1	2008-09-11	US20080219266
US20080220771	A1	2008-09-11	US20080220771



Abstract

(EP2132883)

Satellite communications systems, methods, and related devices are described. A satellite communications system may include routing and switching functionality onboard the satellite. Such a system may include a satellite in communication with terminals (e.g., subscriber terminals or gateways) either directly, or via one or more other satellites through an inter-satellite link. The satellite may be configured with different beams which each provide service to a coverage area. A ground-based network control center (NCC) may dynamically allocate bandwidth and process data measured on the satellite. A novel partition of functionality between the satellite and the NCC is described. Routing paths on the satellite, and the distribution of routing tables within the system, are described as well.

Inventors

AGARWAL ANIL

HARIHARAN MOORTHY

Latest standardized assignees - inventors removed

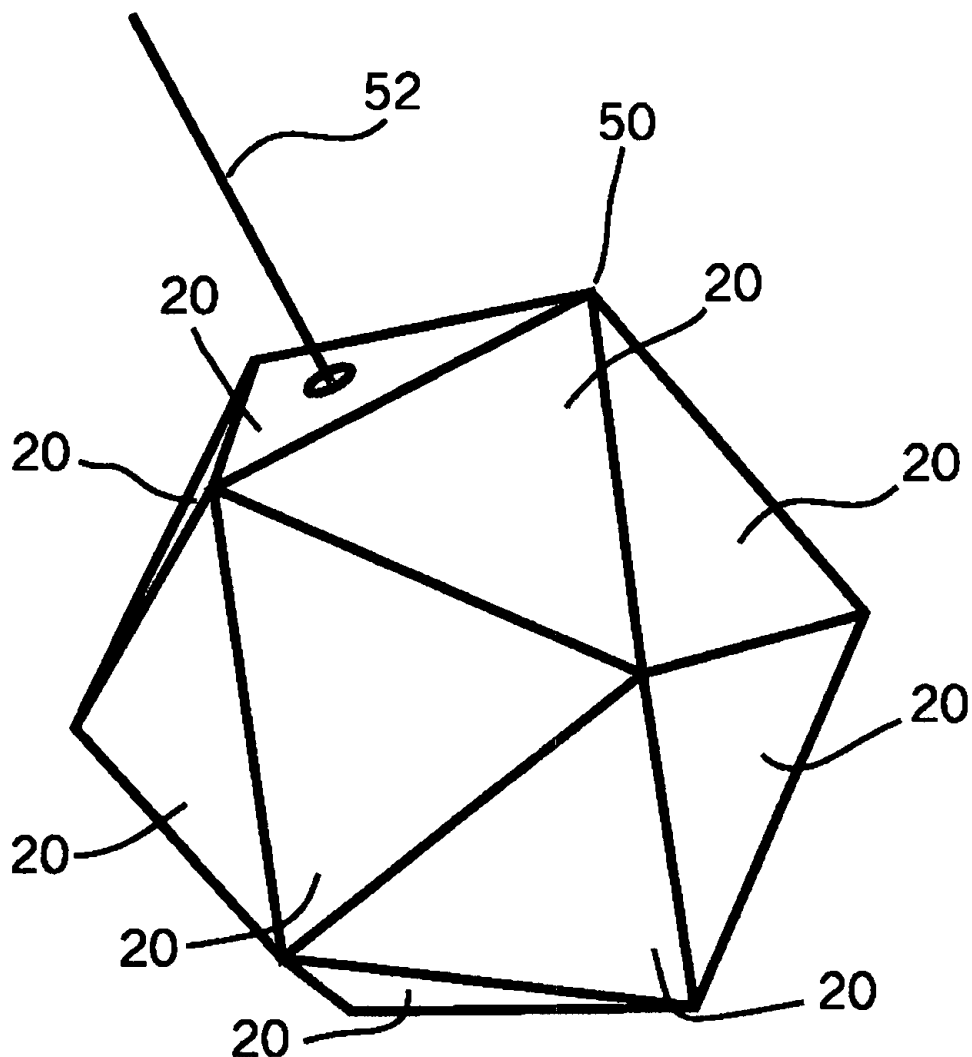
VIASAT

Family 38/50 - FAMPAT - ©Questel

Title

(US7925167)

Satellite downlink via patterns of uncollimated light

Images**Publication numbers with kind code & date**[US7925167](#)

B1 2011-04-12 US7925167



Abstract

(US7925167)

A satellite or spacecraft in low Earth orbit, when in eclipse and not illuminated by sunlight, represents a low-bandwidth datastream through modulation of a source of uncollimated light, such as a set of light emitting diodes. Transmission modes include generating patterns in the color, intensity or polarization of a light source, or precise timing control of a strobe signal. A ground station tracks the satellite in a telescope, stewing the telescope to follow the satellite as it moves across the sky, recording light generated by the satellite with a light sensor such as a video camera. The datastream is regenerated through analysis of recorded video. Satellite downlink is initiated by detection of eclipse, by command via radio uplink, or in response to a periodic automatic timer. In an alternative embodiment, the satellite represents the datastream through modulation of its effective albedo or reflective flux during periods of solar illumination.

Inventors

KOZUBAL MAREK J

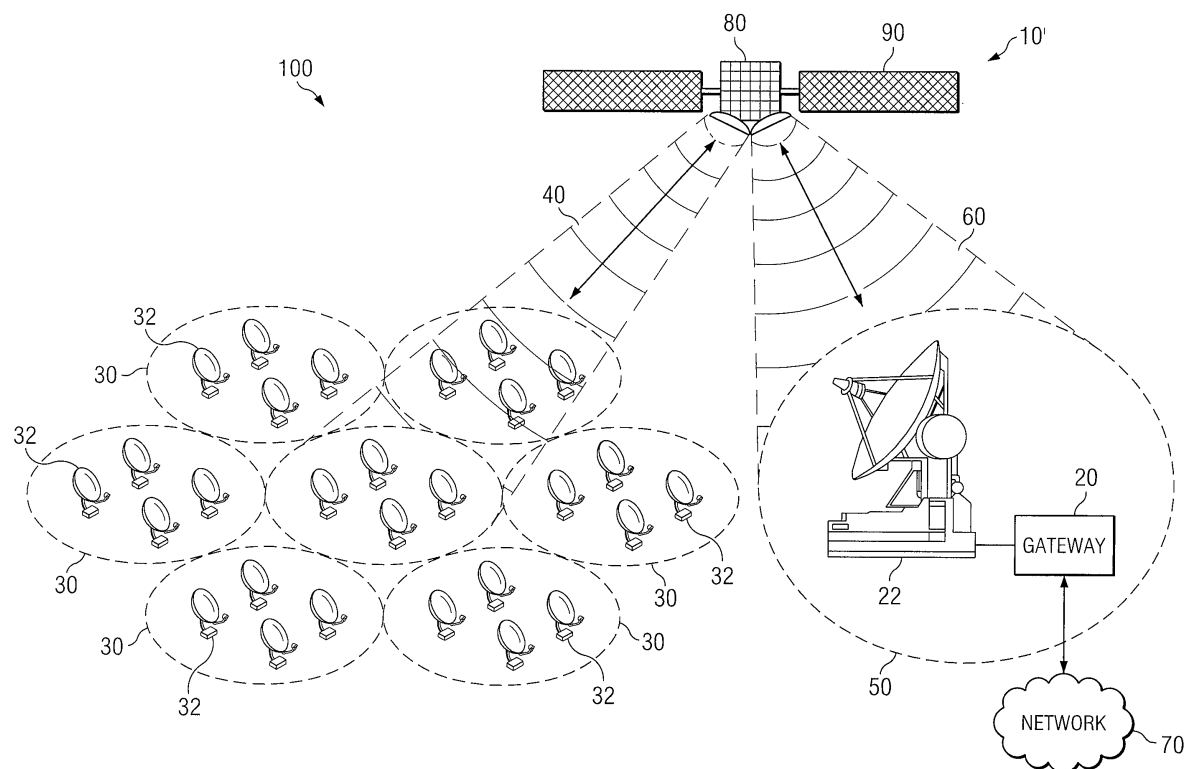
SULLIVAN TERENCE SEAN

Family 39/50 - FAMPAT - ©Questel

Title

(EP2060024)

Network-access in a satellite communication system.

Images**Publication numbers with kind code & date**

US8711758	B2	2014-04-29	US8711758
US8634768	B2	2014-01-21	US8634768
US20120147812	A1	2012-06-14	US20120147812
US8149761	B2	2012-04-03	US8149761
US20100255776	A1	2010-10-07	US20100255776
US7773942	B2	2010-08-10	US7773942
EP2060024	A2	2009-05-20	EP2060024
WO2008/027974	A3	2008-09-18	WO200827974
US20080055151	A1	2008-03-06	US20080055151



US20080055152	A1	2008-03-06	US20080055152				
US20080055153	A1	2008-03-06	US20080055153				
US20080056176	A1	2008-03-06	US20080056176				
US20080056189	A1	2008-03-06	US20080056189				
WO2008/027974	A2	2008-03-06	WO200827974				

Abstract

(EP2060024)

A network access satellite communication system may provide improved upstream and/or downstream communications between end user terminals and gateway antenna systems through the use of components within the satellite payload. Example improvements may include one or more systems and methods for providing incremental capacity; distributing beams across multiple non-contiguous regions; supporting utility gateways to mitigate signal loss, facilitating network management, or evaluating system performance; providing power control based on beacon signals or distortion sensing. Certain embodiments may provide all, some, or none of these improvements and may utilize analog, digital, or a combination of analog and digital components.

Inventors

HUDSON ERWIN C

MARTIN REMBERTO L

Latest standardized assignees - inventors removed

VIASAT

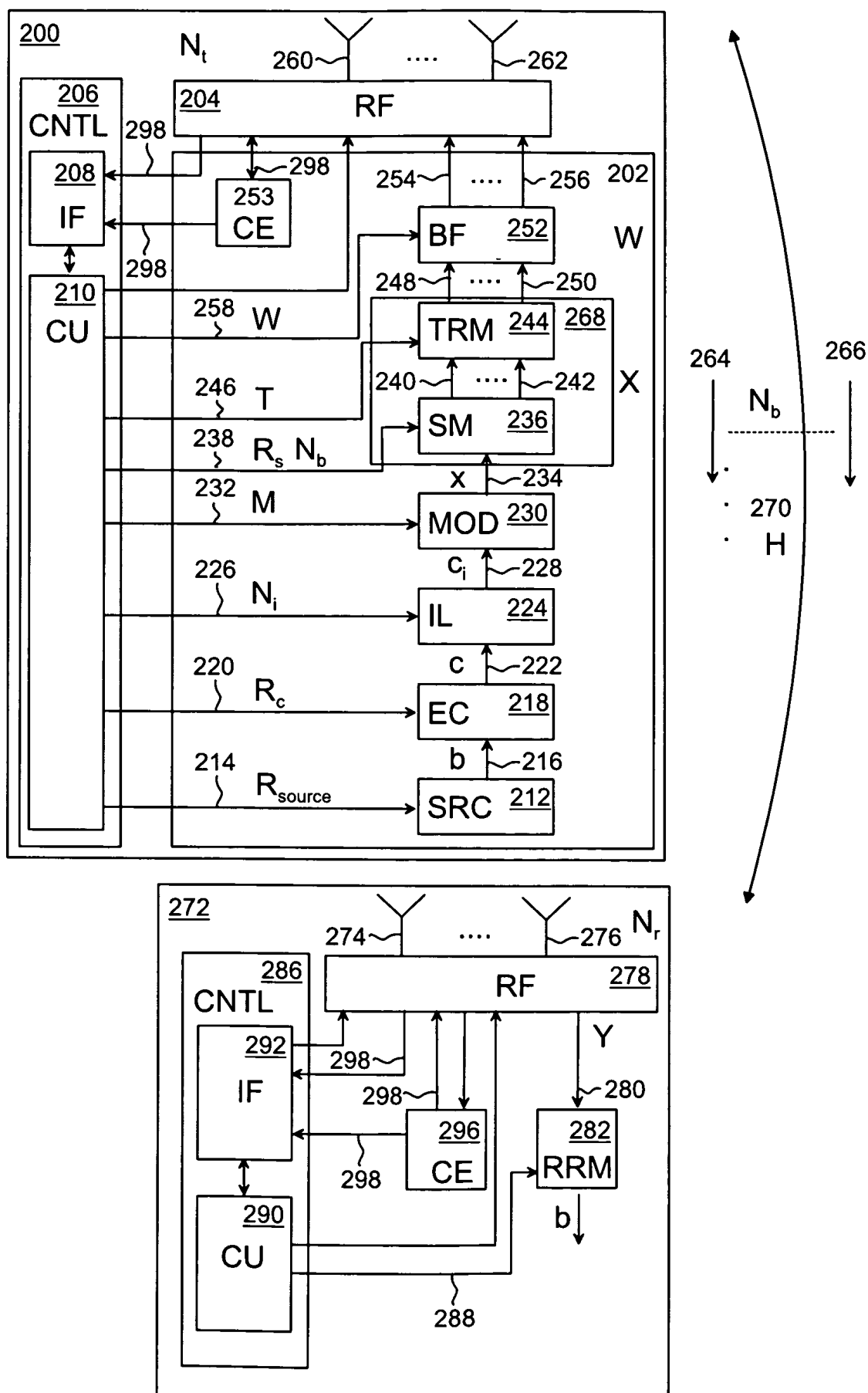
Family 40/50 - FAMPAT - ©Questel

Title

(EP1938642)

Data transmission in communication system

Images



Publication numbers with kind code & date

CN101300878 B 2013-03-06 CN101300878B

US7864877 B2 2011-01-04 US7864877

CN101300878 A 2008-11-05 CN101300878



EP1938642

A1 2008-07-02 EP1938642

WO2007/036609

A1 2007-04-05 WO200736609

US20070070939

A1 2007-03-29 US20070070939

FI20055516

A0 2005-09-28 FI200505516

**Abstract**

(EP1938642)

A transmitter for a communication system, the transmitter being configured to transmit a signal including symbols to a receiver using at least two transmit radiation patterns so that information content of a symbol of temporal length T is transmitted using at least two transmit radiation patterns, realize that the receiver, using N_r receive radiation patterns, disables N receive radiation patterns, wherein $1 \leq N < N_r$ so that $N_r - N$ effective receive radiation patterns are formed for receiving the transmitted signal, adapt transmit radiation patterns or the number of symbols so that the number of transmitted symbols in a time interval of length T when receiving with $N_r - N$ receive radiation patterns is less or equal to the number of symbols transmitted in a time interval of length T when the receiver is receiving with N_r receive radiation patterns.

Inventors

HOTTINEN ARI

Latest standardized assignees - inventors removed

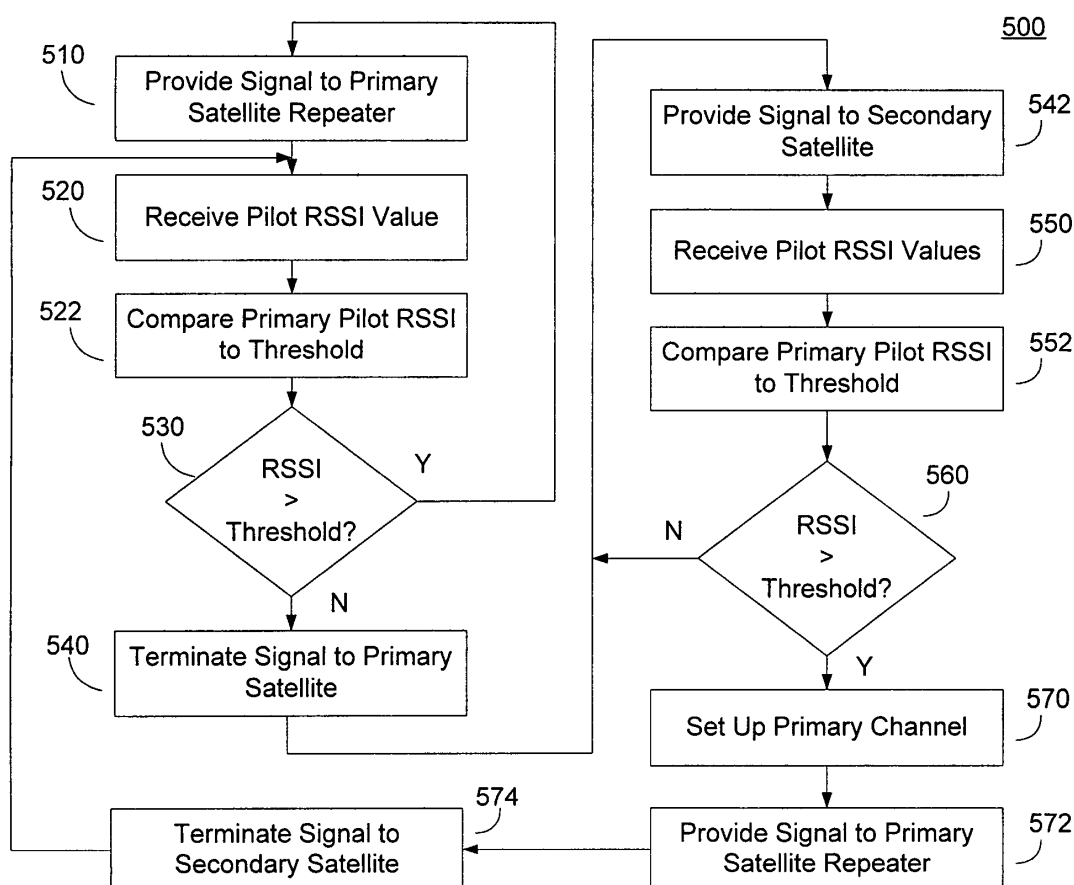
NOKIA

Family 41/50 - FAMPAT - ©Questel

Title

(EP1738490)

Satellite diversity system, apparatus and method

Images

US8107436	B2	2012-01-31	US8107436				
CN1954518	B	2010-10-27	CN1954518B				
JP4554673	B2	2010-07-23	JP4554673				
KR100956875	B1	2010-05-11	KR100956875				
US20100061293	A1	2010-03-11	US20100061293				
US7639646	B2	2009-12-29	US7639646				
AU2005223266	B2	2009-08-27	AU2005223266				
RU2348108	C2	2009-02-27	RU2348108				
RU2006136424	A	2008-04-27	RU2006136424				
JP2007529964	A	2007-10-25	JP2007529964				
IN5494/DELNP/2006	A	2007-08-17	IN2006DN05494				
CN1954518	A	2007-04-25	CN1954518				
EP1738490	A1	2007-01-03	EP1738490				
KR20060125919	A	2006-12-06	KR20060125919				
AU2005223266	A1	2005-09-29	AU2005223266				
CA2560549	A1	2005-09-29	CA2560549				
WO2005/091528	A1	2005-09-29	WO200591528				
US20050207375	A1	2005-09-22	US20050207375				

Abstract

(EP1738490)

Communication diversity using a plurality of satellites is disclosed. The satellites can support multiple regions corresponding to multiple satellite beams. Each satellite can support all regions in the reverse direction and each satellite can be designated as a primary satellite for one of the multiple regions corresponding to one of the multiple satellite beams. Each satellite can receive from any of the regions reverse link signals broadcast by, for example, a mobile station. Each satellite can communicate the received reverse link signals to, for example, a base station or gateway where the signals can be combined to increase signal quality. A mobile station receives forward link signals from the primary satellite and monitors a signal quality from the primary satellite and from a secondary satellite. If the signal quality from the primary satellite drops below a threshold value, the communication signal is transferred to the secondary satellite.

Inventors

SCHIFF LEONARD N

Latest standardized assignees - inventors removed

QUALCOMM

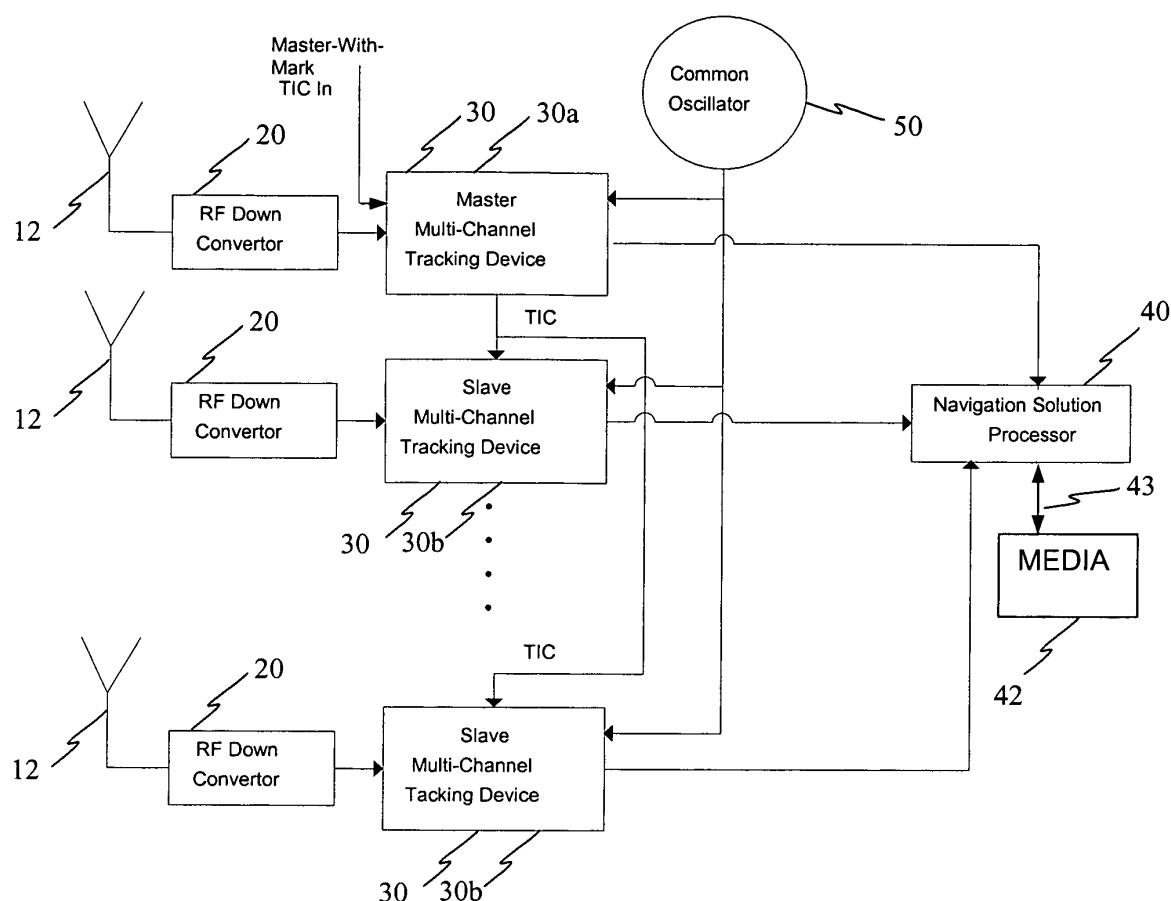
Family 42/50 - FAMPAT - ©Questel

Title

(US20040212533)

Method and system for satellite based phase measurements for relative positioning of fixed or slow moving points in close proximity

Images



Publication numbers with kind code & date

US8686900	B2	2014-04-01	US8686900
US20090121932	A1	2009-05-14	US20090121932
US7292186	B2	2007-11-06	US7292186
US20050116859	A1	2005-06-02	US20050116859
US20040212533	A1	2004-10-28	US20040212533



Abstract

(US20040212533)

A method for measuring relative position of fixed or slow-moving points in close proximity comprising: receiving a set of satellite signals with a first receiver corresponding to a first position; receiving a related set of satellite signals with a second receiver corresponding to a second position; and computing a position of the second position based on at least one of code phase and carrier phase differencing techniques. At least one of: a clock used in the first receiver and a clock used in the second receiver are synchronized to eliminate clock variation between the first receiver and the second receiver; and the first receiver and the second receiver share a common clock.

Inventors

WHITEHEAD MICHAEL L

FELLER WALTER

Latest standardized assignees - inventors removed

HEMISPHERE GNSS

Family 43/50 - FAMPAT - ©Questel

Title

(EP1523062)

Omnidirectional antenna for transmitting and receiving audio/video signals

Images

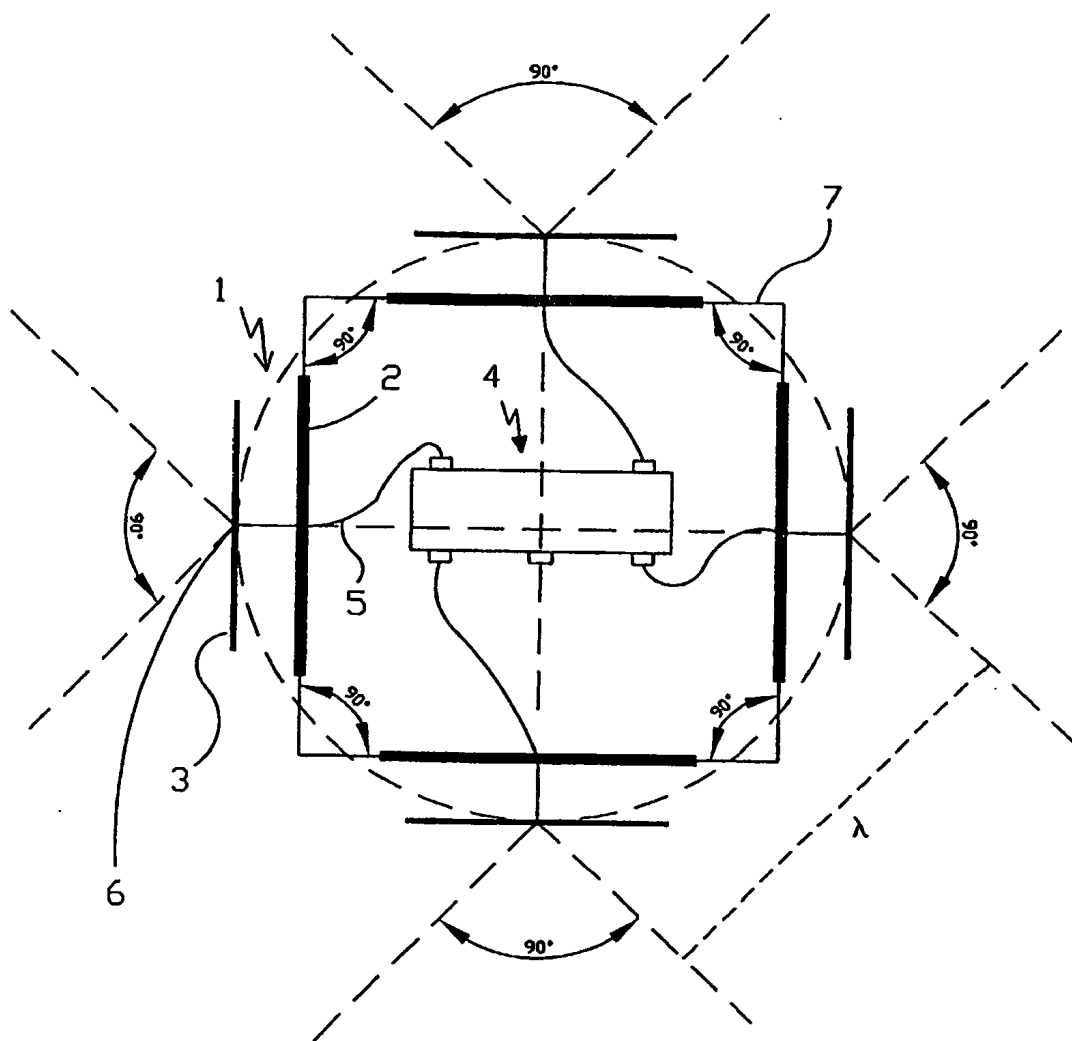
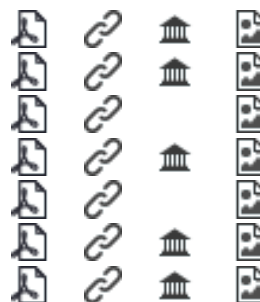


Fig.1

Publication numbers with kind code & date

DE60304710	T2	2007-04-05	DE60304710
ES2263942	T3	2006-12-16	ES2263942
SI1523062	T1	2006-08-31	SI1523062T
DE60304710	D1	2006-05-24	DE60304710
AT323954	T	2006-05-15	ATE323954
EP1523062	B1	2006-04-19	EP1523062
EP1523062	A1	2005-04-13	EP1523062

**Abstract**

(EP1523062)

The antenna has a set of biquad antenna units (1), spaced uniformly in a same plane. Main radiation lobe of each unit is separated from an adjacent lobe to maximum by a wave-length in the direction of wave propagation. Each unit has a reflector (2) and a biquad connected to a coupler (4) by a coaxial cable (5). Feed centers of the units are separated by a length, where points are situated at their respective centers. The antenna units are in vertical rectilinear polarization and are fed wirelessly by currents of same phase and of same amplitude.

Inventors

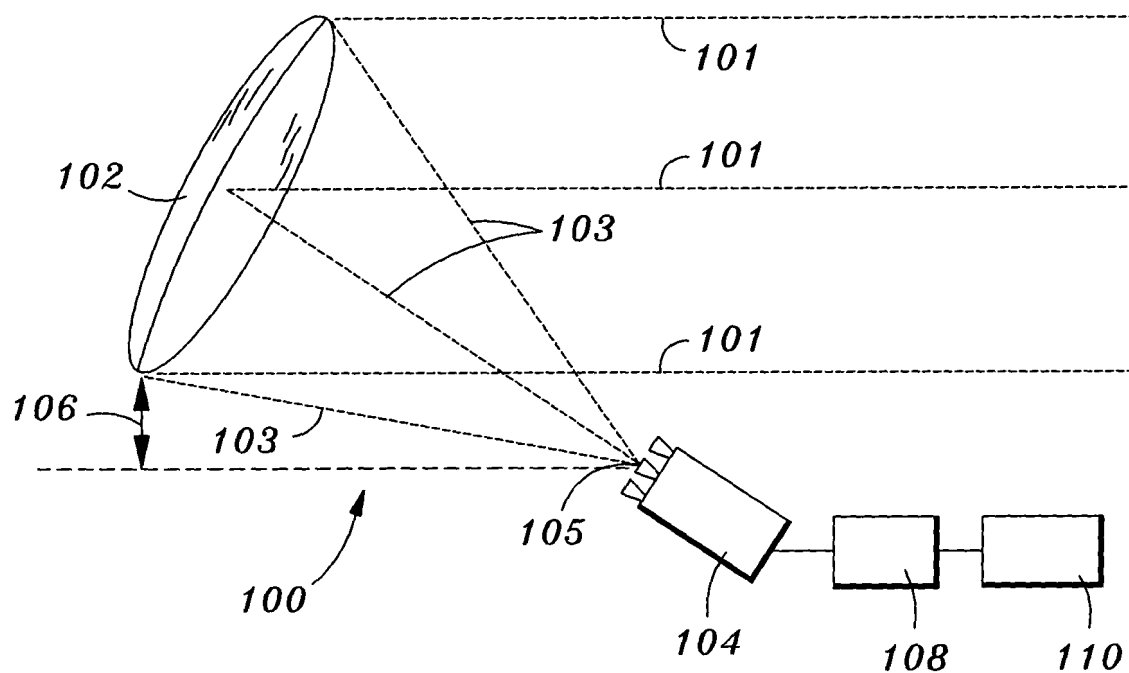
HERMAN PHILIPPE

Family 44/50 - FAMPAT - ©Questel

Title

(US7034771)

Multi-beam and multi-band antenna system for communication satellites

Images**Publication numbers with kind code & date**

US7868840	B2	2011-01-11	US7868840
US20080278397	A1	2008-11-13	US20080278397
US7394436	B2	2008-07-01	US7394436
US20070018900	A1	2007-01-25	US20070018900
US7034771	B2	2006-04-25	US7034771
US20050052333	A1	2005-03-10	US20050052333

**Abstract**

(US20050052333)

An antenna system includes a reflector having a modified-paraboloid shape; and a multi-beam, multi-band feed array located at a focal point of the reflector so that the antenna system forms a multiple congruent beams that are contiguous. The system has a single reflector with non-frequency selective surface. The reflector is sized to produce a required beam size at K-band frequencies and is oversized at EHF-band frequencies. The synthesized reflector surface is moderately shaped and disproportionately broadens EHF-band and Ka-band beams compared to K-band beams. The synthesized reflector surface forms multiple beams each having a 0.5-degree diameter at K-band, Ka-band, and EHF band. The multi-beam, multi-band feed array includes a number of high-efficiency, multi-mode circular horns that operate in focused mode at K-band and defocused mode at Ka-band and EHF-band by employing "frequency-dependent" design for the horns.

Inventors

RAO SUDHAKAR K

BRESSLER DAVID

Latest standardized assignees - inventors removed

BOEING

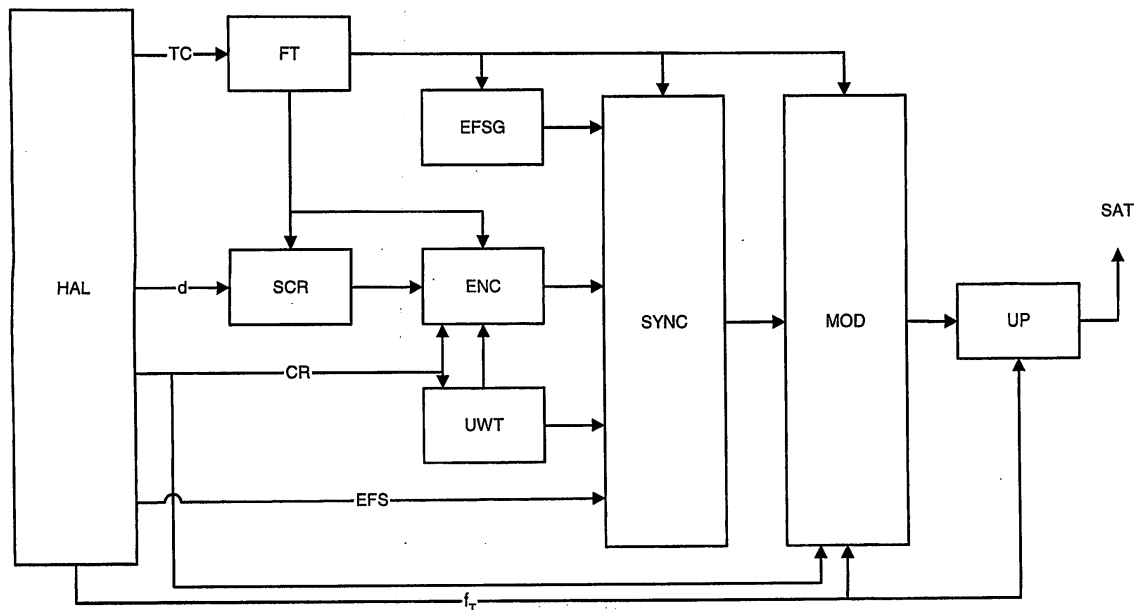
Family 45/50 - FAMPAT - ©Questel

Title

(EP1468516)

Wireless transmission with variable code rates

Images



Publication numbers with kind code & date

CA2473382	C	2014-08-05	CA2473382
HK1070507	A1	2011-04-01	HK1070507
ES2349629	T3	2011-01-07	ES2349629
DK1468516	T3	2010-11-22	DK1468516T
DE60333543	D1	2010-09-09	DE60333543
AT476025	T	2010-08-15	ATE476025
EP1468516	B1	2010-07-28	EP1468516
AU2003201696	B2	2007-08-30	AU2003201696
US20060023717	A1	2006-02-02	US20060023717
EP1468516	A1	2004-10-20	EP1468516
NO20043403	L	2004-09-23	NO20043403
CA2473382	A1	2003-07-31	CA2473382
WO03/63405	A1	2003-07-31	WO200363405
GB2384394	A	2003-07-23	GB2384394
GB0201139	D0	2002-03-06	GB200201139



Abstract

(EP1468516)

A wireless communication system uses an adaptive air interface in which burst parameters are variable on a burst-by-burst basis, based on the reception quality of previous bursts and/or properties of the receiver or receivers of the burst. The parameter values are selected as sets which represent only some of the possible combinations of parameter values, to avoid redundancy in performance characteristics. Coding rates are selected to give a substantially constant increment in gain. Each burst may contain multiple FEC blocks with different coding rates. A unique word indicates the FEC coding rate of the first block and the first block identifies the coding rate of each of the subsequent blocks.

Inventors

TRACHTMAN EYAL

PLESSY-GOURDON CAROLE

FEBVRE PAUL

FINES PANAGIOTIS

Latest standardized assignees - inventors removed

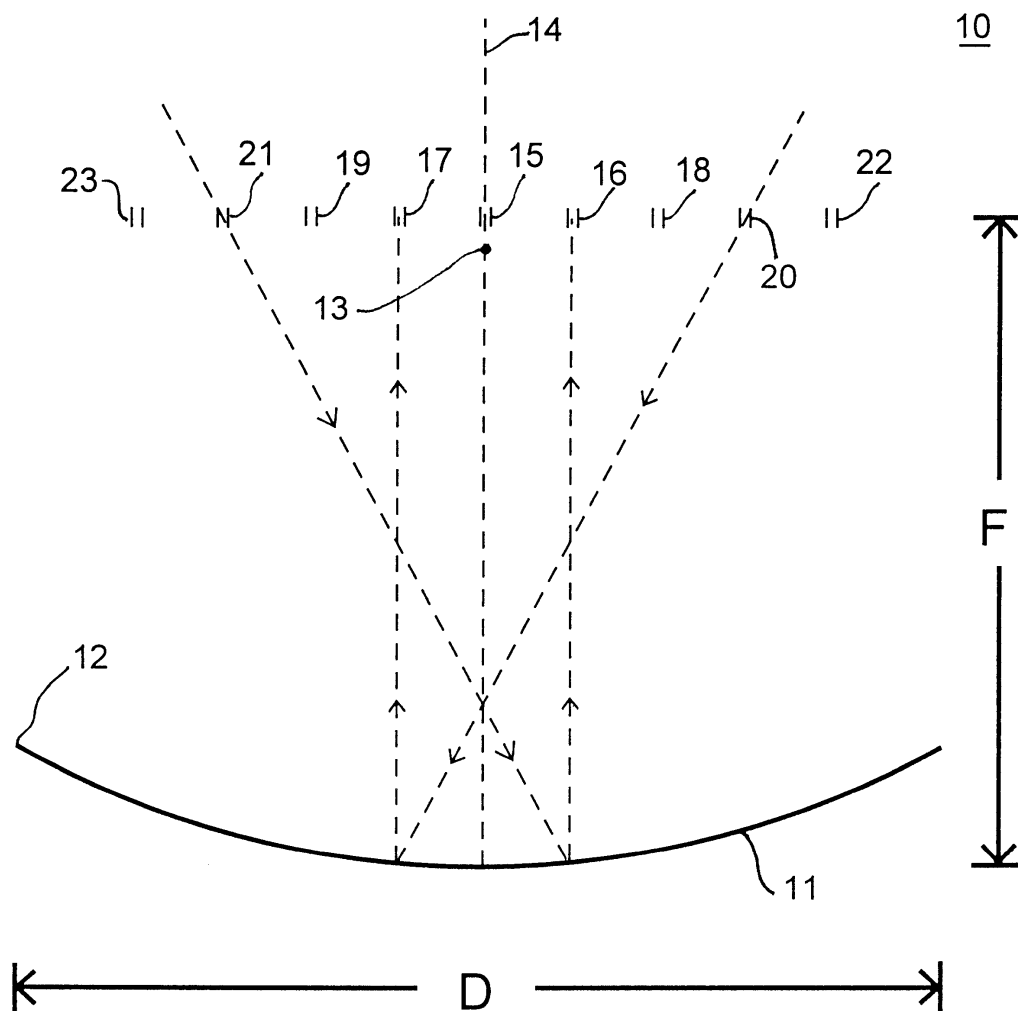
INMARSAT

Family 46/50 - FAMPAT - ©Questel

Title

(US6208312)

Multi-feed multi-band antenna

Images**Publication numbers with kind code & date**[US6208312](#)

B1 2001-03-27 US6208312

**Abstract**

(US6208312)

A multi-feed, multi-band antenna includes a parabolic dish reflector, a plurality of four-port feeds, and may also include one or more orthomode two-port feeds. Each four-port feed is constructed to conduct multiple frequency bands and multiple polarized RF signals within each of the bands. A mounting structure mounts each of the feeds at a different position in a line and in a plane parallel to the rim of the reflector. The four-port feeds are of a size which allows them to be mounted adjacent each other and two degrees apart. The mounting structure positions the feeds at a distance F from the reflector. The diameter D of the reflector and the distance F have a relationship such that F/D is less than approximately 0.5.

Inventors

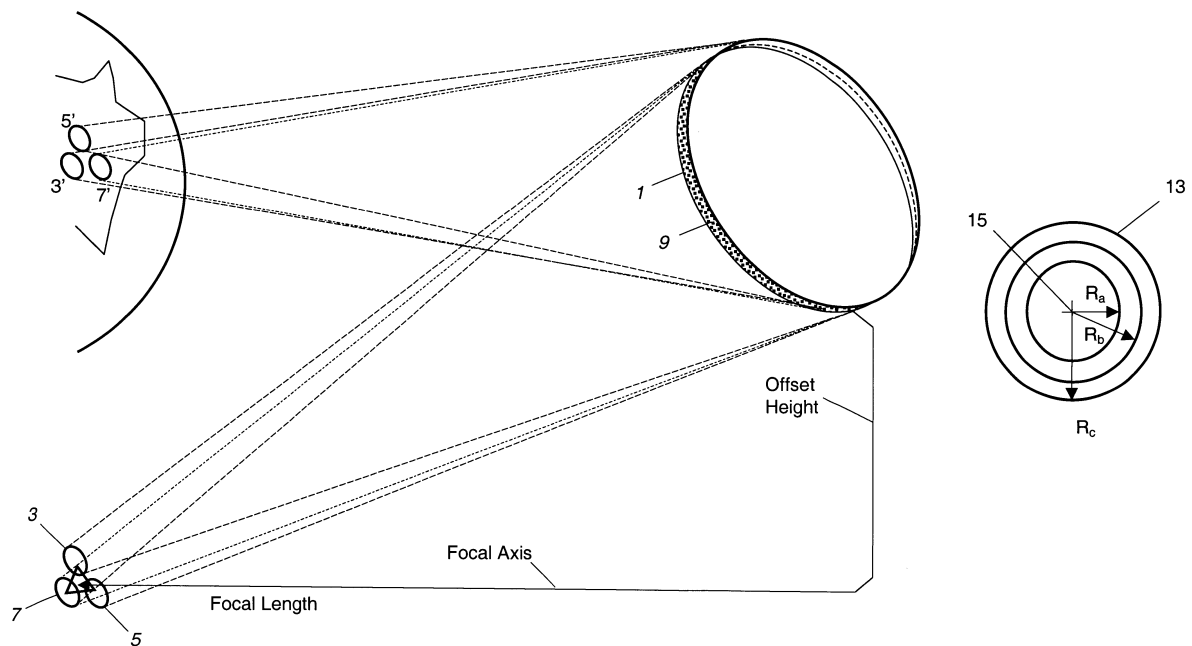
GOULD HARRY J

Family 47/50 - FAMPAT - ©Questel

Title

(EP1067630)

Reflector with resistive taper in connection with dense packed feeds for cellular spot beam satellite coverage

Images**Publication numbers with kind code & date**

DE60022137	T2	2006-03-30	DE60022137
DE60022137	D1	2005-09-29	DE60022137
EP1067630	B1	2005-08-24	EP1067630
EP1067630	A3	2004-01-02	EP1067630
CA2311010	C	2003-10-14	CA2311010
JP3452870	B2	2003-10-06	JP3452870
US6219003	B1	2001-04-17	US6219003
JP2001060825	A	2001-03-06	JP2001060825
EP1067630	A2	2001-01-10	EP1067630
CA2311010	A1	2001-01-01	CA2311010

**Abstract**

(EP1067630)

Providing a tapered surface reflectivity to the reflecting surface of the parabolic reflector in a parabolic antenna using resistive material reduces side lobes and produces steeper roll off in the principal lobe, permitting use in the antenna of a smaller diameter microwave feed than required by an antenna without that tapered surface resistivity and, effectively, emulates the latter antenna. As a consequence of the smaller feed diameter, multiple feeds may be positioned contiguously to form multi-beam antennas that produce contiguous beam patterns. A satellite cellular communications multi-beam antenna incorporating the invention achieves greater regional coverage of the Earth.

Inventors

CHANDLER CHARLES W

Latest standardized assignees - inventors removed

NORTHROP GRUMMAN

NORTHROP GRUMMAN SYSTEMS

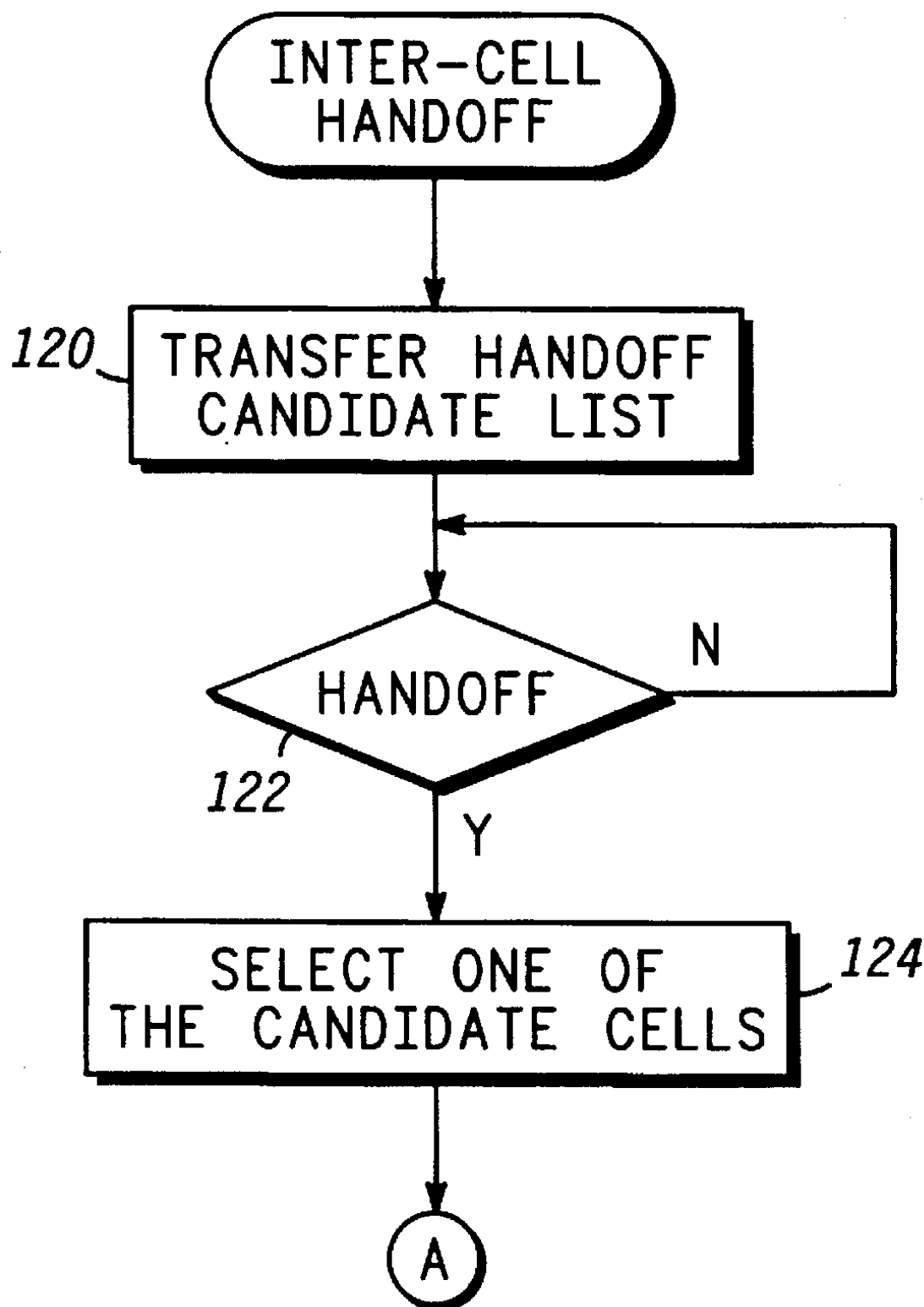
Family 48/50 - FAMPAT - ©Questel

Title

(US5574968)

Satellite cellular communication methods for performing cell-to-cell handoff

Images



Publication numbers with kind code & date

FR2720887	B1	2000-02-04	FR2720887
RU2144732	C1	2000-01-20	RU2144732
RU95108862	A	1997-02-10	RU95108862
RU95108862	A1	1997-02-10	RU95108862
US5574968	A	1996-11-12	US5574968
FR2720887	A1	1995-12-08	FR2720887



Abstract

(US5574968)

Handoff methods perform cell-to-cell handoff between cells of the same satellite and between cells of different satellites. Handoff is initiated by an individual subscriber unit (ISU) based on local conditions. Once handoff is needed, the ISU chooses a candidate cell to transfer its communication based on a dynamic handoff candidate list provided by the satellite. After selecting a candidate cell, the ISU requests handoff, the satellite or satellites perform the handoff and communication begins over a new channel in the candidate cell.

Inventors

OLDS KEITH A

REDDEN JAMES P

KURBY CHRISTOPHER

Latest standardized assignees - inventors removed

CDC PROPRIÉTÉ INTELLECTUELLE

Family 49/50 - FAMPAT - ©Questel

Title

(EP-673833)

Optimal transfer orbit trajectory using electric propulsion

Images

FIG. 1.

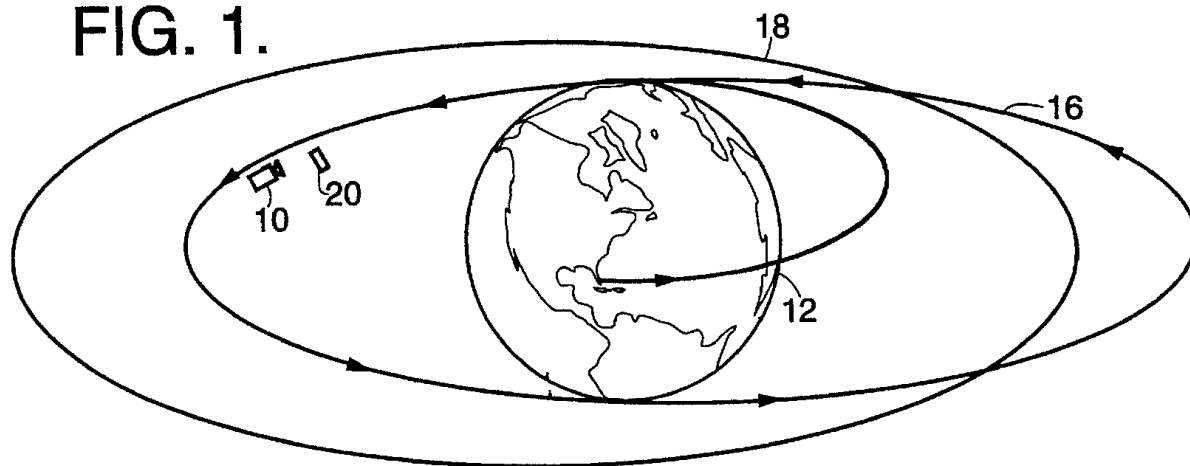


FIG. 3.

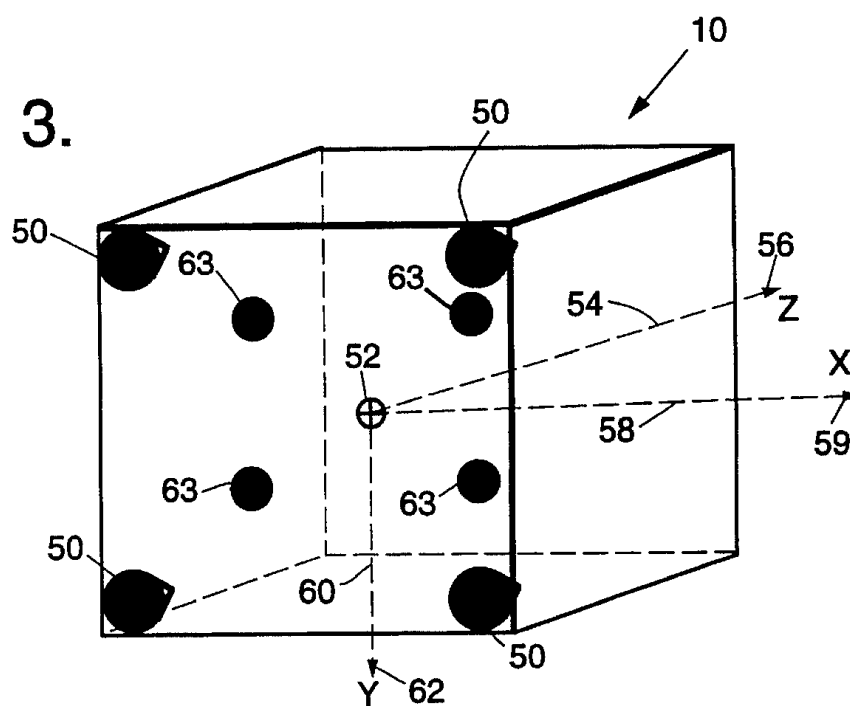
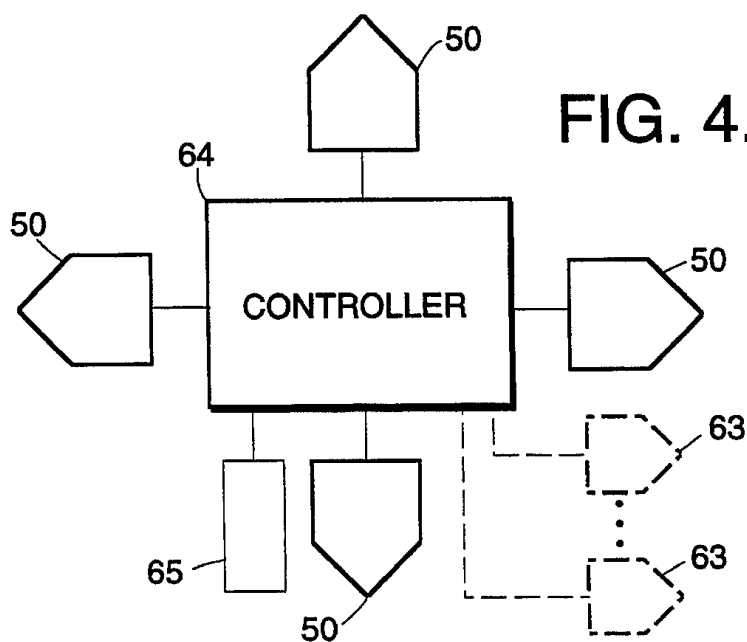


FIG. 4.



DE69423094	T2	2000-06-21	DE69423094
DE69423094	D1	2000-03-30	DE69423094
EP0673833	B1	2000-02-23	EP-673833
US5716029	A	1998-02-10	US5716029
US5595360	A	1997-01-21	US5595360
CN1131291	A	1996-09-18	CN1131291
EP0673833	A1	1995-09-27	EP-673833



Abstract

(EP0673833)

An apparatus and method for translating a spacecraft (10) from an injection orbit (16) about a central body (12) to geosynchronous orbit (18) in a time efficient manner. The spacecraft (10) includes propulsion thrusters (50) which are fired in predetermined timing sequences controlled by a controller (64) in relation to the apogee (66) and perigee (72) of the injection orbit (16) and successive transfer orbits (74, 76).

Inventors

SPITZER ARNON

Latest standardized assignees - inventors removed

HUGHES AIRCRAFT

HUGHES ELECTRONICS

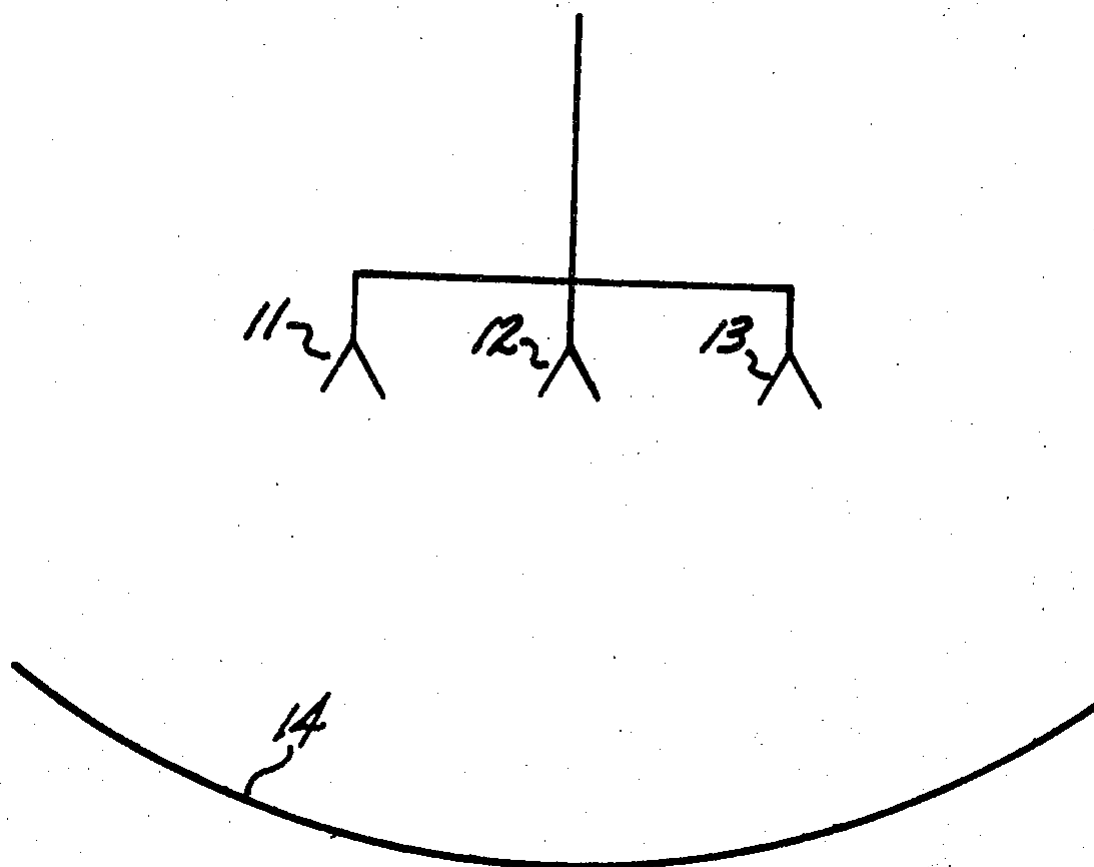
Family 50/50 - FAMPAT - ©Questel

Title

(US3815140)

Multiple feed for microwave parabolic antennas

Images



Publication numbers with kind code & date

[US3815140](#) A 1974-06-04 US3815140



Abstract

(US3815140)

A multiple feed microwave antenna. Individually fed illuminators are placed in a predetermined configuration with respect to each other and to a single parabolic reflector and are fed with predetermined current values so as to produce a highly directional microwave radiation pattern. The radiation pattern is relatively broad and contains a plurality of discrete areas of information, distinguished by different carrier and modulating frequencies. By varying the number of illuminators and their separation, fine control over the beamwidth and the shape of the directional radiation pattern may be obtained.

Inventors

BUEHLER W

LUNDEN C

Latest standardized assignees - inventors removed

BOEING