

1) Family number: 55663266 (US2014022120A)

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Title: GROUND ASSISTED SATELLITE ANTENNA POINTING SYSTEM

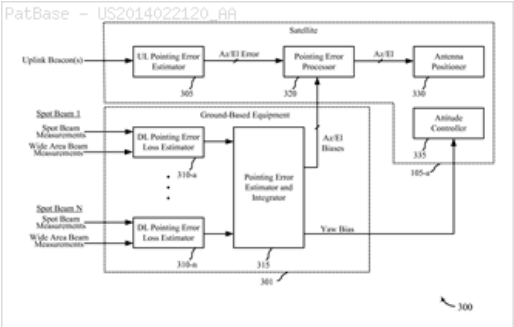
Abstract: Methods, systems, and devices are described for orienting a satellite antenna. In the methods, systems, and devices of the present disclosure, a satellite may provide multiple spot beams, each of the spot beams associated with a specific coverage area. The satellite may also transmit a wide beam downlink signal over a wide area beam having a coverage area that includes each of the spot beams. The satellite may receive an uplink beacon signal. The satellite antenna may be positioned according to azimuth and elevation determined from ground measurements of the spot beams and the satellite measurements of the uplink beacon signal.

Classifications:

International (IPC 8-9): H04B7/185 H04B7/204 (Advanced/Invention)

CPC: H04B7/18515 H04B7/2041 H04B7/18513

US: 342/354 342/355 342/367



Family:

Publication number	Publication date	Application number	Application date
AU2013292531 AA	20141204	AU20130292531	20130718
AU2013292531 BB	20170511	AU20130292531	20130718
BR112015000756 A2	20170627	BR20151100756	20130718
DE602013036890 D1	20180530	DE201360036890T	20130718
DE602013065878 D1	20200305	DE201360065878T	20130718
EP2875592 A1	20150527	EP20130742372	20130718
EP2875592 B1	20180502	EP20130742372	20130718
EP3379741 A1	20180926	EP20180164440	20130718
EP3379741 B1	20200212	EP20180164440	20130718
ES2677716 T3	20180806	ES20130742372T	20130718
US2014022120 AA	20140123	US20130842346	20130315
US8723724 BB	20140513	US20130842346	20130315
WO14015169 A1	20140123	WO2013US51129	20130718

Priority:

US20120673150P 20120718	US20130842346 20130315	EP20130742372 20130718
EP20180164440 20130718	WO2013US51129 20130718	

Probable Assignee: VIASAT INC

Assignee(s): (std): MENDELSON AARON ; MILLER MARK ; VIASAT INC

Assignee(s): VIASAT INC CARLSBAD ; WILMINGTON TRUST NATIONAL ASSOCIATION COLLATERAL TRUSTEE AS ; UNION BANK NA AGENT FOR SECURED PARTIES AS

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Inventor(s): MILLER MARK CARLSBAD ; MENDELSON AARON CARLSBAD

Agent(s): ADAMS PLUCK; SMITH JEREMY ROBERT; DEL VALLE SONIA; HOLLAND AND HART LLP; RALSTON WILLIAM

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 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 IS IT JP KE KG KM KN KP KR 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 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: 13355336 (US6321065B)

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Title: PERFORMANCE ENHANCEMENT OF OPEN-LOOP POWER CONTROL FOR SATELLITE COMMUNICATION SYSTEMS

Abstract: The present invention provides an open-loop method for determining uplink transmission power in a satellite communication system 200 that compensates for antenna pointing error attenuation and for rain attenuation. Satellite downlink signal 208 attenuation is measured. Antenna pointing information is then used in conjunction with antenna gain pattern information 400 to determine antenna pointing error attenuation. The measured downlink attenuation and antenna pointing error attenuation are then used to determine the amount of rain attenuation on the downlink 208. The downlink attenuation information is then used to determine the amount of uplink 216 attenuation to be expected. Uplink transmission power levels are then

adjusted accordingly to overcome the expected uplink 216 attenuation.

Classifications:

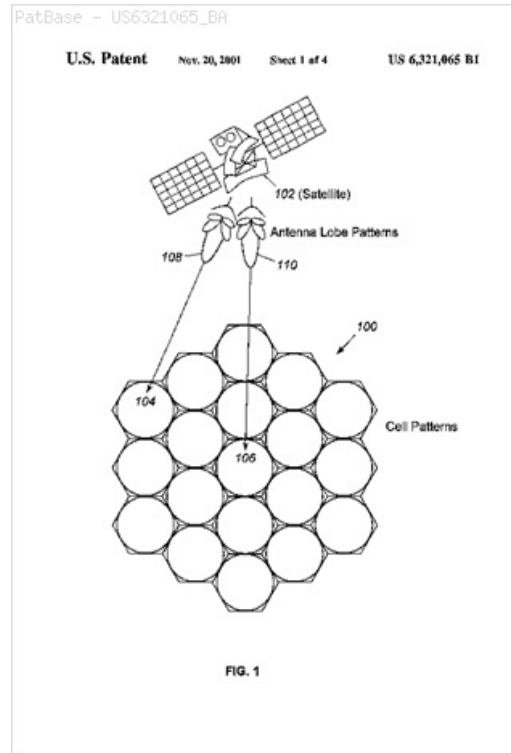
International (IPC 8-9): H04B7/185 (Advanced/Invention);
H04B7/185 (Core/Invention)

International (IPC 1-7): H01Q3/00 H04B1/60 H04B1/702 H04B17/02
H04B7/005 H04B7/015 H04B7/185

CPC: H04B7/18543

European: H04B7/185M6D

US: 342/358 342/359 455/10 455/12.1 455/121 455/504 455/505



Family:

Publication number	Publication date	Application number	Application date
EP0998060 A2	20000503	EP19990117935	19990914
EP0998060 A3	20030226	EP19990117935	19990914
US6321065 BA	20011120	US19980183406	19981030

Priority:

US19980183406 19981030

Probable Assignee: NORTHROP GRUMMAN SYSTEMS CORP

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Assignee(s): NORTHROP GRUMMAN CORP ; NORTHROP GRUMMAN SPACE AND MISSION SYSTEMS CORP ; NORTHROP GRUMMAN SYSTEMS CORP

Inventor(s): (std): PERAHIA ELDAD ; WILCOXSON DONALD C

Inventor(s): DONALD C WILCOXSON ; ELDAD PERAHIA

Agent(s): MCANDREWS HELD AND MALLOY LTD

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

3) Family number: 10815435 (US5754139A)

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Title: METHOD AND INTELLIGENT DIGITAL BEAM FORMING SYSTEM RESPONSIVE TO TRAFFIC DEMAND

Abstract: An intelligent digital beam former (10) in conjunction with a satellite based array antenna (20) provides a plurality of dynamically controllable antenna beams (52) for communication with subscriber units (90) in response to demand for communication services. Geographic portions within the satellite's footprint that have a higher-demand for communication services are dynamically provided additional antenna beams while geographic portions having a lower demand for communication services are provided less antenna beams. When used on a non-geostationary satellite, the digital beam forming coefficients are dynamically adjusted to steer the antenna beams to maintain their ground location. The antenna beams are also shaped to help optimized geographic coverage.!

Classifications:

International (IPC 8-9): H01Q3/00 H01Q3/26 H01Q3/40 H04B7/00
H04B7/15 H04B7/185 H04B7/204 H04B7/216 (Advanced/Invention);
H01Q3/26 H01Q3/30 H04B7/15 H04B7/185 H04B7/204 (Core/Invention)

International (IPC 1-7): H01Q1/28 H01Q21/00 H01Q3/00 H01Q3/22
H01Q3/26 H01Q3/40 H04B7/00 H04B7/15 H04B7/185 H04B7/204
H04B7/216 H04Q7/36

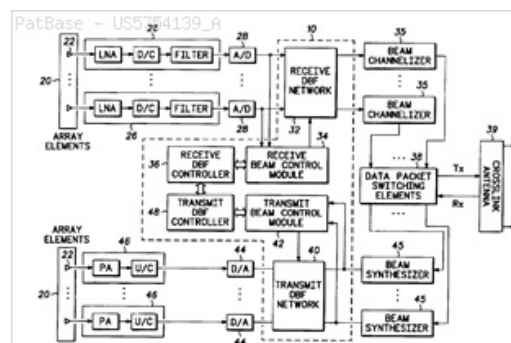
CPC: H04B7/18541 H04B7/2041

European: H04B7/204B

US: 342/372 342/373 342/374

JP F-Term: 5J021 5J021/AA05 5J021/AA09 5J021/AB06 5J021/DB03
5J021/EA02 5J021/GA02 5J021/HA07 5J021/HA10 5K072 5K072/AA04
5K072/BB03 5K072/BB13 5K072/BB22 5K072/CC25 5K072/DD02
5K072/DD03 5K072/DD04 5K072/DD11 5K072/DD17 5K072/DD19
5K072/GG02 5K072/GG15

JP F-Index: H01Q3/26/C H04B7/15/Z



Family:

Publication number	Publication date	Application number	Application date
CA2217805 AA	19980430	CA19972217805	19971007
CA2217805 C	20040511	CA19972217805	19971007
DE19747065 A1	19980507	DE19971047065	19971024
DE19747065 B4	20100408	DE19971047065	19971024
FR2755329 A1	19980430	FR19970013622	19971030
FR2755329 B1	20070608	FR19970013622	19971030
GB2318947 A1	19980506	GB19970019332	19970912
GB2318947 B2	20010815	GB19970019332	19970912
GB9719332 A0	19971112	GB19970019332	19970912
JP10145275 A2	19980529	JP19970314317	19971029
US5754139 A	19980519	US19960739529	19961030

Priority:

US19960739529 19961030 CA19972217805 19971007

Probable Assignee: CDC PROPRIETE INTELLECTUELLE

Assignee(s): (std): MA STEPHEN CHIH HUNG ; MOTOROLA INC ; TURCOTTE RANDY LEE ; TORSAL TECHNOLOGY GROUP LTD LL
: AGUIRRE SERGIO

Assignee(s): CDC PROPRIETE INTELLECTUELLE ; MOTOROLA INC N D GES D STAATES DELAWARE SCHAUMBURG ILL US ; MOTOROLA SOLUTIONS INC ; MOTOROLA INC NDGEDS STAATES DELAWARE SCHAUMBURG ILL ; TORSAL TECHNOLOGY GROUP LTDLLC ; MOTOROLA INC N D GES D STAATES DELAWARE SCHAUMBU ; MOTOROLA INC N D GES D STAATES DELAWARE ; TORSAL TECHNOLOGY GROUP LTD ; TORSAL TECHNOLOGY GROUP LTD LLC

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Inventor(s): TURCOTTE RANDY LEE TEMPE ARIZ ; AGUIRRE SERGIO PHOENIX ARIZ ; MA STEPHEN CHIH HUNG MESA ARIZ ; TURCOTTE RANDY LEE TEMPE ARIZ US ; AGUIRRE SERGIO PHOENIX ARIZ US ; MA STEPHEN CHIH HUNG MESA ARIZ US ; RANDY LEE TURCOTTE ; SERGIO AGUIRRE ; STEPHEN CHIH HUNG MA

Agent(s): GOWLING LAFLEUR HENDERSON LLP; CABINET BEAU DE LOMENIE; MARKS AND CLERK FRANCE; OHNUKI SHINSUKE

4) Family number: 63913526 (US2016323032A)

Title: HANDOFF FOR NON-GEOSYNCHRONOUS SATELLITE COMMUNICATION

Abstract: Various aspects of the disclosure relate to handoff of a user terminal in communication with a gateway through a satellite in a non-geosynchronous satellite communication system. In some aspects, a gateway and a user terminal use a satellite and beam transition table to determine when to handoff the user terminal from one beam to another and/or from one satellite to another. In some aspects, a user terminal sends capability information, location information, or other information to a gateway whereby, based on this information, the gateway generates a satellite and beam transition table and/or selects a handoff procedure for the user terminal. In some aspects, handoff of a user terminal to a different satellite involves the user terminal conducting satellite signal measurements and sending a measurement message to the gateway. In some aspects, the gateway generates a new satellite and beam transition table as a result of receiving a measurement message.

Classifications:

International (IPC 8-9): H04B H04B7/02 H04B7/185 H04B7/204
H04L29/02 H04W36/00 H04W36/18 H04W36/30 H04W36/32 H04W36/38
H04W4/02 H04W64/00 H04W72/04 H04W84/00

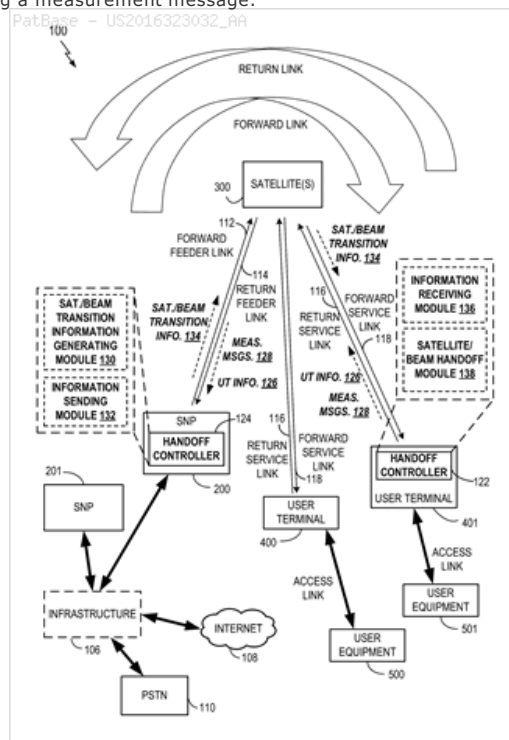
H04W84/06 (Advanced/Invention);
H04L12/64 H04W84/06 H04W88/16 (Advanced/Non-invention)

CPC: H04W84/06 H04W36/0083 H04W64/00 H04W48/20 H04W36/00837
H04L2012/6421 H04W72/048 H04B7/1851 H04B7/2041 H04B7/18517
H04B7/18558 H04B7/18582 H04W36/38 H04B7/18541 H04W36/32
H04W88/16

US: 1/1 455/427 455/428

JP F-Term: 5K067/ 5K067/DD20 5K067/DD43 5K067/EE07 5K067/HH24
5K067/JJ39 5K067/AA21 5K067/DD11 5K067/EE02 5K067/EE10
5K067/KK02 5K072 5K072/AA15 5K072/AA29 5K072/BB13 5K072/BB22
5K072/DD02 5K072/DD03 5K072/DD06 5K072/DD07 5K072/DD11
5K072/DD16 5K072/DD19 5K072/EE02 5K072/EE04 5K072/GG02
5K072/GG12 5K072/GG13 5K072/GG14

JP F-Index: H04W36/30 H04W36/32 H04W84/06 H04B7/185



Family:

Publication number	Publication date	Application number	Application date
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BR112017023570 A2	20180724	BR20171123570	20160429
CN108112281 A	20180601	CN201680024999	20160429
CN108112281 B	20190705	CN201680024999	20160429
CN109075853 A	20181221	CN201780025669	20170427
CN109075853 B	20190910	CN201780025669	20170427
EP3289699 A1	20180307	EP20160724528	20160429
EP3289699 B1	20200408	EP20160724528	20160429
EP3449583 A1	20190306	EP20170722614	20170427
HK1255191 A1	20190809	HK20180114313	20181108
IN201747032443 A	20170922	IN201747032443	20170913
IN201847034551 A	20181102	IN201847034551	20180913
JP2018520536 T2	20180726	JP20170556636T	20160429
JP2019517186 T2	20190620	JP20180555768T	20170427
JP6469255 B2	20190213	JP20170556636T	20160429
JP6595124 B2	20191023	JP20180555768T	20170427
KR1019111197 B1	20181228	KR20177031282	20160429
KR20170141700 A	20171226	KR20177031282	20160429
SG11201707386S A1	20171129	SG20171107386	20160429
TW201642598 A	20161201	TW20160113510	20160429
TWI653849 B	20190311	TW20160113510	20160429
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US2016323800 AA	20161103	US20160141641	20160428
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US9762314 BB	20170912	US20150856933	20150917
US9888426 BB	20180206	US20160141641	20160428
US10009093 BB	20180626	US20170498388	20170426
WO16178838 A1	20161110	WO2016US29050	20160422
WO16179037 A1	20161110	WO2016US30263	20160429
WO17189862 A1	20171102	WO2017US29871	20170427

Priority:

US20150156063P 20150501	US20150856933 20150917	US20160141641 20160428
WO2016US30263 20160429	US20160409289P 20161017	US20170498388 20170426
WO2017US29871 20170427		

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Agent(s): DUNLOP HUGH CHRISTOPHER; NTD PATENT AND TRADE MARK AGENCY LTD; LOZA AND LOZA LLP; BURGESS JEFFREY; BURBACH STEPHEN

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 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