Patents – 39 granted (last update: 12 Oct 2021) Halim Yanikomeroglu

**[I26]** Vision Assisted User Clustering in mmWave/THz-NOMA Systems

Aditya Sriram Rajasekaran, Halim Yanikomeroglu, Hamza Sokun, Omar Maraqa, Saad Al-Ahmadi

* **USA**

Provisional application no: 63/231597, application date: 10 August 2021

* **WIPO | PCT**

Application no: PCT/IB2021/057455, application date: 12 August 2021

**[I25]** Detector for Faster than Nyquist Transmitted Data Symbols

Ahmed Mohamed Ali Ibrahim, Ebrahim Bedeer Mohamed, Halim Yanikomeroglu.

* **USA**

Provisional application no: 63/150,798, application date: 18 Feb 2021

**[I24]** Deep Learning-based User Clustering in Millimeter Wave Non-Orthogonal Multiple Access Communications

Hamza Sokun, Aditya Sriram Rajasekaran, Omar Maraqa, Halim Yanikomeroglu, Saad Al-Ahmadi

* **WIPO | PCT**

Application no: PCT/IB2020/062488, application date: 28 December 2020

**[I23]** Enabling Wireless Network Personalization using Zone of Tolerance Modeling and Predictive Analytics

Rawan Alkurd, Halim Yanikomeroglu, Ibrahim Abualhaol

* **USA**

Publication no: [US2021/0266781 A1](https://patents.google.com/patent/US20210266781A1/en), publication date: 26 August 2021 [[pdf](https://patentimages.storage.googleapis.com/55/ba/7c/11cb25b42d6121/US20210266781A1.pdf)]

Application no: 17/188,683, application date: 01 March 2021

US provisional patent application no: 63/057,560, application date: 28 July 2020

US provisional patent application no: 62/724,195, application date: 29 August 2018

* **EP**

Publication no: [EP3845023 A1](https://patents.google.com/patent/EP3845023A1/en), publication date: 07 July 2021

Application no: EP19856044.3A, application date: 29 August 2019

* **CA**

Publication no: [CA3111030 A1](https://patents.google.com/patent/CA3111030A1/en), Publication date: 05 March 2020

Application no: CA3111030A, application date: 29 August 2019

* **WIPO | PCT**: [WO2020/041883 A1](https://patents.google.com/patent/WO2020041883A1/en) Publication date: 05 March 2020 [pdf]

Application no: PCT/CA2019/051197, application date: 29 August 2019

**[I22]** System and Method for Providing Adaptive Synchronization of LTE Communications Systems

Amr El-Keyi, Halim Yanikomeroglu, Oktay Ureten, Trevor Noel Yensen

* **[P26]**[US 10,219,234 B2](https://patents.google.com/patent/US10219234B2/en) – Patent date: 26 February 2019 [[pdf](https://patentimages.storage.googleapis.com/3b/07/b2/1f4deed6eff5e5/US10219234.pdf)]

Publication no: US2018/0054787 A1, publication date: 22 February 2018

Application no: 15/680,164, application date: 17 August 2017

US provisional patent application no: 62/376,477, application date: 18 August 2016

* **[P24]** [CA 2,976,563 C](https://patents.google.com/patent/CA2976563C/en) – Patent date: 04 September 2018 [[pdf](https://patentimages.storage.googleapis.com/14/df/69/76b824528e6fc6/CA2976563C.pdf)]

Publication no: CA2976563 A1, publication date: 18 February 2018

Application no: CA2976563, application date: 17 August 2017

* **[P38]** [GB 2,555,205 B](https://patents.google.com/patent/GB2555205B/en) – Patent date: 21 July 2021 [[pdf](https://patentimages.storage.googleapis.com/64/b9/0a/50dae75a560629/GB2555205B.pdf)]

Publication no: GB2555205 A, publication date: 25 April 2018

Publication no: GB2017/13198 D0, publication date: 04 October 2017

Application no: GB2017/13198 A, application date: 17 August 2017

* **[P39]** [AU 2017 216551 B2](https://patents.google.com/patent/AU2017216551B2/en) – Patent date: 09 September 2021 [[pdf](https://patentimages.storage.googleapis.com/9d/d4/b3/008ea5cda2963b/AU2017216551B2.pdf)]

Publication no: AU2017216551 A1, publication date: 08 March 2018

Application no: AU2017/216551, application date: 18 August 2017

**[I21]** Method for Determining an Encoding Scheme and Symbol Mapping

Ian Marsland, Reinhard Balogun, Ramy Gohary, Halim Yanikomeroglu, Ngoc Dung Dao, Nimal Gamini Senarath

* **[P37]** [US 10,623,142 B2](https://patents.google.com/patent/US10623142)**–** Date of patent: 14 April 2020 [[pdf](https://patentimages.storage.googleapis.com/4d/53/59/003cf24203e4e2/US10623142.pdf)]

Publication no: US2017/0126354 A1, publication date: 04 May 2017

Application no: 15/175,675, application date: 07 June 2016

Provisional application no: 62/248,974, application date: 30 October 2015

* **WIPO | PCT**: [WO 2017/072597 A1](https://patents.google.com/patent/WO2017072597A1/en) – Publication date: 04 May 2017 [[pdf](https://patentimages.storage.googleapis.com/b4/1f/bc/a13033979c019c/WO2017072597A1.pdf)]

Application no: PCT/IB2016/053413, application date: 09 June 2016

**[I20]** System and Method for Utilizing Multidimensional Constellations

Hossein Khoshnevis, Ian Marsland, Halim Yanikomeroglu, Ngoc Dung Dao, Nimal Gamini Senarath

* **[P34]**[US 10,433,187 B2](https://patents.google.com/patent/US10433187B2/en) – Date of patent: 01 October 2019 [[pdf](https://patentimages.storage.googleapis.com/56/db/e5/ade84a9a4a6094/US10433187.pdf)]

Publication no: US2016/0309344 A1, publication date: 20 October 2016

Application no: 15/097,784, application date: 13 April 2016

Provisional application no: 62/149,222, application date: 17 April 2015

* **WIPO | PCT**: [WO2016/166706 A1](https://www.google.com/patents/WO2016166706A1) – Publication date: 20 October 2016 [[pdf](https://patentimages.storage.googleapis.com/1a/0d/d2/e5a36e3a5ce9d0/WO2016166706A1.pdf)]

Application no: PCT/IB2016/052140, application date: 14 April 2016

**[I19]** System and Method for User Terminal-Aware Cell Switch-Off

Ibrahim Aydin, Ngoc Dung Dao, Nimal Gamini Senarath, Halim Yanikomeroglu

* **[P23]**[US 9,980,218 B2](https://patents.google.com/patent/US20160255581) **–** Granted on 22 May 2018 [[pdf](https://patentimages.storage.googleapis.com/95/5d/b1/6a14b8d3990f9b/US20160255581A1.pdf)]

Publication no: US2016/0255581 A1, publication date: 01 September 2016

Application no: 15/052,261, application date: 24 February 2016

Provisional application no: 62/121,692, application date: 27 February 2015

* **WIPO | PCT**: [WO2016/134676 A1](https://www.google.com/patents/WO2016134676) – Publication date: 01 September 2016 [[pdf](https://patentimages.storage.googleapis.com/f5/ff/92/6e8ffd489681fe/WO2016134676A1.pdf)]

Application no: PCT/CN2016/074738, application date: 27 February 2016

**[I18]** System and Method for Wireless Load Balancing

Rainer Schoenen, Ziyang Wang, Halim Yanikomeroglu, Nimal Gamini Senarath, Ngoc-Dung Dao

* **[P17]**[US 9,642,039 B2](https://patents.google.com/patent/US9642039) – Patent date:02 May 2017 [[pdf](https://patentimages.storage.googleapis.com/dd/69/0d/eea4265f0ffb3a/US9642039.pdf)]

Publication no: US2016/0050588 A1, publication date: 18 February 2016

Application no: 14/643,636, application date: 10 March 2015

Provisional patent application no: 62/036,801, application date: 13 August 2014

* **[P30]**[US 10,306,515 B2](https://patents.google.com/patent/US10306515B2/en)**–** Patent date:28 May 2019 [[pdf](https://patentimages.storage.googleapis.com/38/a3/85/acbda01e617185/US10306515.pdf)]

Publication no: US2017/0230866 A1, publication date: 10 August 2017

Application no: 15/497,402, application date: 26 April 2017

Provisional patent application no: 62/036,801, application date: 13 August 2014

* **WIPO | PCT**: [WO2016/023411 A1](http://www.google.com/patents/WO2016023411), publication date: 18 February 2016 [[pdf](https://patentimages.storage.googleapis.com/1c/c5/76/13d68e748c9025/WO2016023411A1.pdf)]

Aplication no: PCT/CN2015/084929, application date: 23 July 2015

**[I17]** System and Method for Multiple-Input Multiple-Output Communication

Ramy Gohary, Halim Yanikomeroglu

* **[P16]** [US 9,467,212 B2](https://patents.google.com/patent/US9467212) – Patent date: 11 October 2016 [[pdf](https://patentimages.storage.googleapis.com/cc/0c/78/e6c3a60684b323/US9467212.pdf)]

Publication no: US2015/0326284 A1, publication date: 12 November 2015

Application no: 14/706,591, application date: 07 May 2015

Provisional application no: 61/991,399, application date: 09 May 2014

* **[P29]** [CN 106,233,652 B](https://patents.google.com/patent/CN106233652B/en) – Patent date: 28 May 2019 [[pdf](https://patentimages.storage.googleapis.com/77/78/aa/b898aae19e387b/CN106233652B.pdf)]

Publication no: CN 106233652 A, publication date: 14 December 2016

Application no: CN2015/80021970, application date: 08 May 2015

* **[P31]** [EP 3,103,209 B1](https://patents.google.com/patent/EP3103209B1/en) – Patent date: 26 June 2019 [[pdf](https://patentimages.storage.googleapis.com/dc/04/77/621320b2efd678/EP3103209B1.pdf)]

Publication no: EP 3103209 A4, publication date: 22 March 2017

Publication no: EP 3103209 A1, publication date: 14 December 2016

Application number: EP2015/0788996, application date: 08 May 2015

* **WIPO | PCT**: [WO2015/169247 A1](http://www.google.com/patents/WO2015169247A1), publication date: 12 November 2015 [[pdf](https://patentimages.storage.googleapis.com/3d/eb/3c/34a64110ca12f3/WO2015169247A1.pdf)]

Application no: PCT/CN2015/078505, application date: 08 May 2015

**[I16]** System and Method for Grassmannian Signaling in a Broadband Network

Yaser Fouad, Ramy Gohary, Halim Yanikomeroglu, Hosein Nikopour

* **[P18]** [US 9,654,324 B2](https://patents.google.com/patent/US9654324)**–** Patent date: 16 May 2017 [[pdf](https://patentimages.storage.googleapis.com/4e/fe/75/c3811883649442/US9654324.pdf)]

Publication no: US2015/0318970 A1, publication date: 05 November 2015

Application no: 14/702,220, application date: 01 May 2015

Provisional application no: 61/987,995, application date: 02 May 2014

* **WIPO | PCT**: [WO2015/168628 A1](http://www.google.com/patents/WO2015168628), publication date: 05 November 2015 [[pdf](https://patentimages.storage.googleapis.com/7f/91/7b/da6518d7055667/WO2015168628A1.pdf)]

Application no: PCT/US2015/028904, application date: 01 May 2015

**[I15]** System and Method for Random Access

Jing Dang, Halim Yanikomeroglu, Nimal Gamini Senarath

* **[P35]**[US 10,476,834 B2](https://patents.google.com/patent/US10476834B2/en) – Date of patent:12 November 2019 [[pdf](https://patentimages.storage.googleapis.com/34/84/09/9a73908b9ee7c6/US10476834.pdf)]

Publication no: US2015/0264132 A1, publication date: 17 September 2015

Application no: 14/644,959, application date: 11 March 2015

Provisional application no: 61/951,371, application date: 11 March 2014

* **WIPO | PCT**: [WO 2015/138614 A1](https://www.google.ca/patents/WO2015138614A1) – Publication date: 17 September 2015 [[pdf](https://patentimages.storage.googleapis.com/37/a0/8e/fa0d7ff64b17be/WO2015138614A1.pdf)]

Application no: PCT/US2015/019982, application date: 11 March 2015

**[I14]** System and Method for Greedy-based Autonomous Resource Block Assignment Scheme for Cellular Networks with Self-Organizing Relaying Terminals

Yaser Fouad, Ramy Gohary, Halim Yanikomeroglu, Gamini Senarath

* **[P13]** [US 9,288,679 B2](https://patents.google.com/patent/US9288679B2) – Patent date: 15 March 2016 [[pdf](https://patentimages.storage.googleapis.com/ac/de/23/c5f3072383b826/US9288679.pdf)]

Publication no: US2015/0031406 A1, publication date: 29 January 2015

Application no: 14/340,322, application date: 24 July 2014

Provisional application no: 61/858,480, application date: 25 July 2013

* **[P25]** [CN 105,359,605 B](https://patents.google.com/patent/CN105359605B/en) – Patent date: 19 February 2019 [[pdf](https://patentimages.storage.googleapis.com/d1/e3/0e/a8340c3d5e536d/CN105359605B.pdf)]

Publication no: CN 105359605 A, publication date: 24 February 2016

Application no: CN2014/80036844, application date: 24 July 2014

* **WIPO | PCT**: [WO2015/013540 A1](http://www.google.com/patents/WO2015013540A1), publication date: 29 January 2015 [[pdf](https://patentimages.storage.googleapis.com/c2/ab/72/bf745735a5fde8/WO2015013540A1.pdf)]
* **WIPO | PCT**: [WO2015/013540 A8](https://www.google.com/patents/WO2015013540A8?hl=en), publication date: 11 February 2016

International application no: PCT/US2014/48069, application date: 24 July 2014

**[I13]** System and Method for Multi-Objective Cell Switch-Off in Wireless Networks

David G. Gonzalez, Halim Yanikomeroglu, Nimal Gamini Senarath

* **[P19]**[US 9,730,153 B2](https://patents.google.com/patent/US9730153)**–**Patent date: 08 August 2017 [[pdf](https://patentimages.storage.googleapis.com/36/5d/4b/df428c56f326e4/US9730153.pdf)]

Publication no: US 2015/0023163 A1, publication date: 22 January 2015

Application no: 14/334,134, application date: 17 July 2014

Provisional application no: 61/847,403, application date: 17 July 2013

* **[P22]** [EP 3,000,204 B1](https://patents.google.com/patent/EP3000204B1/en) – Patent date: 02 May 2018 [[pdf](https://patentimages.storage.googleapis.com/b9/75/b3/2b53d4b755ef48/EP3000204B1.pdf)]

Publication no: EP3000204 A1, publication date: 30 Mar 2016

Publication no: EP3000204 A4, publication date: 28 September 2016

Application no: EP2014/0826725, application date: 17 July 2014

* **[P32]**[CN 105,531,963 B](https://patents.google.com/patent/CN105531963B/en) – Patent date: 13 August 2019 [[pdf](https://patentimages.storage.googleapis.com/d6/67/88/cf9b71db1b5c0d/CN105531963B.pdf)]

Publication no: CN 105531963 A, publication date: 27 April 2016

Application no: CN2014/80037924, application date: 17 July 2014

* **WIPO | PCT**: [WO2015/009937 A1](https://www.google.com/patents/WO2015009937A1) – Publication date: 22 January 2015 [[pdf](https://patentimages.storage.googleapis.com/a6/f9/0c/5b89d97db57d1f/WO2015009937A1.pdf)]

Application no: PCT/US2014/047041, application date: 17 July 2014

**[I12]** System and Method for Controlling Multiple Wireless Access Nodes

Yegui Cai, Fei Richard Yu, Gamini Senarath, Halim Yanikomeroglu

* **[P15]** [US 9,451,611 B2](https://patents.google.com/patent/US9451611) – Patent date: 20 September 2016 [[pdf](https://patentimages.storage.googleapis.com/c0/b0/dd/79bfe2b36404b1/US9451611.pdf)]

Publication no: US2014/0355535 A1, publication date: 04 December 2014

Application no: 14/292,483, application date: 30 May 2014

Provisional application no: 61/829,469, application date: 31 May 2013

* **[P33]** [CN 105,379,412 B](https://patents.google.com/patent/CN105379412B/en) – Patent date: 16 August 2019 [[pdf](https://patentimages.storage.googleapis.com/13/61/71/4b4d47d445f0ee/CN105379412B.pdf)]

Publication no: CN 105379412 A, publication date: 02 March 2016

Application no: CN2014/80030416, application date: 30 May 2014

* **WIPO | PCT**: [WO2014/194283 A1](http://www.google.com/patents/WO2014194283), publication date: 04 December 2014 [[pdf](https://patentimages.storage.googleapis.com/2d/5b/9c/5b12c7cfe6e865/WO2014194283A1.pdf)]

Application no: PCT/US2014/040373, application date: 30 May 2014

**[I11]** System and Method for Network Resource Allocation Considering User Experience, Satisfaction and Operator Interest

Alireza Sharifian, Rainer Schoenen, Halim Yanikomeroglu, Gamini Senarath, Ho Ting Cheng, Petar Djukic

* **USA** – abandoned

Publication no: [US2014/0229210 A1](http://www.google.com/patents/US20140229210), publication date: 14 August 2014 [[pdf](https://patentimages.storage.googleapis.com/a1/d3/76/1dc69806cea3c2/US20140229210A1.pdf)]

Application no: 14/181,160, application date: 14 February 2014

Provisional application no: 61/764,903, application date: 14 February 2013

Provisional application no: 61/764,895, application date: 14 February 2013

* **WIPO | PCT**: [WO2014/127280 A2](https://www.google.com/patents/WO2014127280A2?cl=en&hl=fr), publication date: 21 August 2014 [[pdf](https://patentimages.storage.googleapis.com/18/c6/b9/27f94b45bd9251/WO2014127280A2.pdf)]
* **WIPO | PCT**: [WO2014/127280 A3](https://www.google.com/patents/WO2014127280A3), publication date: 09 October 2014

Application no: PCT/US2014/016575, application date: 14 February 2014

**[I10]** System and Method for Charging Services Using Effective Quanta Units

Rainer Schoenen, Halim Yanikomeroglu

* **[P21]**[US 9,911,106 B2](https://patents.google.com/patent/US9911106)**–**Patent date: 06 March 2018 [[pdf](https://patentimages.storage.googleapis.com/29/c8/b2/1dd3f720699840/US9911106.pdf)]

Publication no: US2014/0195394 A1, publication date: 10 July 2014

Application no: 14/141,143, application date: 26 December 2013

Provisional application no: 61/749,584, application date: 07 January 2013

* **[P20]** [EP 2,941,845 B1](https://patents.google.com/patent/EP2941845B1/en) – Patent date: 28 February 2018 [[pdf](https://patentimages.storage.googleapis.com/ac/33/af/1ed5c6a2c06c09/EP2941845B1.pdf)]

Publication no: EP 2941845 A4, publication date: 09 December 2015

Publication no: EP 2941845 A1, publication date: 11 November 2015

Application no: EP2014/0735233, application date: 03 January 2014

* **[P28]**[CN 104,956,622 B](https://patents.google.com/patent/CN104956622B/en) –Patent date: 12 April 2019 [[pdf](https://patentimages.storage.googleapis.com/70/e2/da/bc8e9f351d7d88/CN104956622B.pdf)]

Publication no: CN 104956622 A, publication date: 30 September 2015

Application no: CN2014/80004160, application date: 03 January 2014

* **WIPO | PCT**: [WO 2014/106476 A1](https://www.google.com/patents/WO2014106476A1) – Publications date: 10 July 2014 [[pdf](https://patentimages.storage.googleapis.com/1a/f6/3c/c042ad0cff0c60/WO2014106476A1.pdf)]

Application no: PCT/CN2014/070095, application date: 03 January 2014

**[I09]** System and Methods to Achieve Optimum Efficiency-Jain Fairness in Wireless Systems

Akram Bin Sediq, Ramy Gohary, Halim Yanikomeroglu, Gamini Senarath, Ho Ting Cheng

* **[P14]** [US 9,369,925 B2](https://www.google.com/patents/US9369925)**–**Patent date: 14 June 2016 [[pdf](https://patentimages.storage.googleapis.com/d2/f8/bb/9fe1db41fc9655/US9369925.pdf)]

Publication no: US2014/0120974 A1, publication date: 01 May 2014

Patent application no: 14/067,542, application date: 30 October 2013

Provisional application no: 61/720,230, application date: 30 October 2012

* **[P27]** [CN 104,770, 036 B](https://patents.google.com/patent/CN104770036B/en) **–** Patent date: 08 March 2019 [[pdf](https://patentimages.storage.googleapis.com/40/dc/37/4abfd0afce19ea/CN104770036B.pdf)]

Publication no: CN 104770036 A, publication date: 08 July 2015

Application no: CN2013/80056529, application date: 30 October 2013

* **WIPO | PCT**: [WO2014/070937 A1](https://www.google.ca/patents/WO2014070937A1), publication date: 08 May 2014 [[pdf](https://patentimages.storage.googleapis.com/af/b1/23/b0a8f94d65420a/WO2014070937A1.pdf)]

Application no: PCT/US2013/067589, application date: 30 October 2013

**[I08]** Inter-cell Interference Coordination for Wireless Communication Systems

Akram Bin Sediq, Rainer Schoenen, Halim Yanikomeroglu, Gamini Senarath, Zhijun Chao, Ho Ting Cheng, Peiying Zhu

* **[P10]** [US 9,042,933 B2](https://patents.google.com/patent/US9042933B2) – Patent date: 26 May 2015 [[pdf](https://patentimages.storage.googleapis.com/1b/7d/a2/7c369426486913/US9042933.pdf)]

Publication no: US2013/0095872 A1, publication date: 18 April 2013

Application no: 13/438,624, application date: 03 April 2012

Provisional application no: 61/547,506, application date: 14 October 2011

**[I07]** Resource Allocation Method and Device for Amplify-and-Forward Relay Network

Alireza Sharifian, Petar Djukic, Halim Yanikomeroglu, Jietao Zhang

* **[P03]** [US 8,477,679 B2](https://patents.google.com/patent/US8477679) – Patent date: 02 July 2013 [[pdf](https://patentimages.storage.googleapis.com/13/25/3c/1ce1d20d0ec5eb/US8477679.pdf)]

Publication no: US2013/0028171 A1, publication date: 31 January 2013

Application no: 13/633,498, application date: 02 October 2012

* **[P07]** [CN 102,244,930 B](https://patents.google.com/patent/CN102244930B/en) – Patent date: 30 April 2014 [[pdf](https://patentimages.storage.googleapis.com/a6/94/c3/34b3bd0e066757/CN102244930B.pdf)]

Publication no: CN 102244930 A, publication date: 16 November 2011

Application no: CN2010/10175925, application date: 13 May 2010

* **WIPO | PCT**:  [WO2011/140851](http://patentscope.wipo.int/search/en/WO2011140851), publication date: 17 November 2011 [[pdf](https://patentimages.storage.googleapis.com/e5/d5/5c/5fc811a6321291/WO2011140851A1.pdf)]

Application no: PCT/CN2011/071416, application date: 01 March 2011

**[I06]** Data Transmission Method and System in Cooperative Relay Network, Intermediate Node and Source Node

Akram Salem Bin Sediq, Petar Djukic, Halim Yanikomeroglu, Jietao Zhang

* **[P05]** [CN 102,237,988 B](https://patents.google.com/patent/CN102237988B/en) – Patent date: 01 January 2014 [[pdf](https://patentimages.storage.googleapis.com/f1/d1/62/ae96c9095bc90f/CN102237988B.pdf)]

Publication no: CN 102237988 A, publication date: 09 November 2011

Application no: CN2010/10159054.4, application date: 26 April 2010

* **WIPO | PCT**: [WO2011/134305 A1](https://www.google.com/patents/WO2011134305A1), publication date: 03 November 2011 [[pdf](https://patentimages.storage.googleapis.com/79/45/c1/438c7893fc1aec/WO2011134305A1.pdf)]

Application no: PCT/CN2011/071286, application date: 25 February 2011

**[I05]** Method for Relaying Data in Wireless Network and Personal Relay of Enabling the Method, and Mobile Device for Communicating with the Personal Relay

Young-Doo Kim, Mohamed Salem, Abdulkareem Adinoyi, Halim Yanikomeroglu

* **[P11]** [KR 101,537,736 B1](https://patents.google.com/patent/KR101537736/en) – Patent date: 17 July 2015 [[pdf](https://patentimages.storage.googleapis.com/7e/1f/c7/0e566e57a3a4d4/KR101537736B1.pdf)]

Publication no: KR2011/0026222 A, publication date: 15 March 2011

Application no: KR2009/0084026, application date: 07 September 2009

**[I04]** Scheduling Apparatus and Method of Relay-Based Network

Young-Doo Kim, Mohamed Rashad Salem, Abdulkareem Adinoyi, Halim Yanikomeroglu, David Falconer

* **[P04]** [US 8,565,144 B2](https://patents.google.com/patent/US8565144) – Patent date: 23 October 2013 [[pdf](https://patentimages.storage.googleapis.com/d5/f7/98/dcf9bfe342aa00/US8565144.pdf)]

Publication no: US2010/0232344 A1, publication date: 16 September 2010

Application no: 12/567,776, application date: 27 September 2009

* **[P12]** [KR 101,542,152 B1](https://patents.google.com/patent/KR101542152B1/en) Patent date: 05 August 2015 [[pdf](https://patentimages.storage.googleapis.com/2d/39/0b/e6806d523a251a/KR101542152B1.pdf)]

Publication no: KR2010/0104010 A, publication date: 29 September 2010

Application no: KR2009/0022132, application date: 16 March 2009

**[I03]** Apparatus and Method for Allocating Subchannels and Controlling Interference in OFDMA Systems

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* **[P01]** [US 8,339,975 B2](https://patents.google.com/patent/US8339975) – Patent date: 25 December 2012 [[pdf](https://patentimages.storage.googleapis.com/ba/c5/ea/e87bd9aa7b86cc/US8339975.pdf)]

Publication number: US2009/0310478 A1, publication date: 17 December 2009

Application no: 12/341,933, application date: 22 December 2008

* **[P09]** [JP 5,691,103 B2](https://patents.google.com/patent/JP5691103B2/en) – Patent date: 01 April 2015 [[pdf](https://patentimages.storage.googleapis.com/71/09/3b/99cd8418cb6d7f/JP5691103B2.pdf)]

Publication no: JP2013/258780 A, publication date: 26 December 2013

Application no: ?, application date: 19 September 2013

* **[P06]** [JP 5,419,182 B2](https://patents.google.com/patent/JP5419182B2/en) – Patent date: 19 February 2014 [[pdf](https://patentimages.storage.googleapis.com/16/2e/a4/37c1984d8f4123/JP5419182B2.pdf)]

Publication no: JP2012/504876 A, publication date: 23 February 2012

Application no: ?, application date: 23 April 2009

* **[P08]** [KR 101,469,143 B1](https://patents.google.com/patent/KR101469143B1/en) – Patent Date: 04 December 2014 [[pdf](https://patentimages.storage.googleapis.com/e7/fb/82/e29435d8770933/KR101469143B1.pdf)]

Publication no: KR2009/0128789 A, publication date: 16 December 2009

Application no: KR2008/0054726, application date: 11 June 2008

* **[P36]** [EP 2,289,277 B1](https://patents.google.com/patent/EP2289277B1/en) – Patent date: 08 April 2020 [[pdf](https://patentimages.storage.googleapis.com/88/3c/a9/a7dfb6cd141a38/EP2289277B1.pdf)]

Publication no: EP 2289277 A4, publication date: 28 September 2016

Publication no: EP 2289277 A2, publication date: 02 March 2011

Application number: EP 20090762597, application date: 23 April 2009

* **WIPO | PCT**: [WO2009/151210 A2](https://www.google.com/patents/WO2009151210A2), publication date: 17 December 2009 [[pdf](https://patentimages.storage.googleapis.com/06/18/d2/b60e3d82c0dd93/WO2009151210A2.pdf)]

Publication no: WO2009/151210 A3; publication date: 17 November 2011

Application no: PCT/KR2009/002119, application date: 23 April 2009

**[I02]** Method and Device for Estimating Channel Parameters (Verfahren und Vorrichtung zur Schätzung von Kanalparametern)

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Publication no: [DE 102008007113 A1](https://www.google.com/patents/DE102008007113A1?hl=en), publication date: 06 August 2009 [[pdf](https://patentimages.storage.googleapis.com/b1/70/ed/ff1e593e8f309c/DE102008007113A1.pdf)]

Application no: DE2008/10007113, application date: 31 January 2008

* **WIPO | PCT**: [WO2009/095001 A2](https://www.google.com/patents/WO2009095001A2), publication date: 06 August 2009 [[pdf](https://patentimages.storage.googleapis.com/d3/0c/56/07743f8cfce395/WO2009095001A2.pdf)]
* **WIPO | PCT**: [WO2009/095001 A3](https://www.google.com/patents/WO2009095001A3?hl=en), publication date: 15 October 2009
* **WIPO | PCT**: [WO2009/095001 A8](https://www.google.com/patents/WO2009095001A8?cl=en), publication date: 03 December 2009

Application no: PCT/DE2009/00126, application date: 30 January 2009

**[I01]** Method and System for Capacity and Coverage Enhancement in Wireless Networks with Relays

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* **[P02]** [US 8,478,283 B2](https://patents.google.com/patent/US8478283) – Patent date: 02 July 2013 [[pdf](https://patentimages.storage.googleapis.com/13/6c/dd/405039c694bae0/US8478283.pdf)]

Publication no: US2008/0260000 A1, publication date: 23 October 2008

Application no: 11/664,135, application date: 29 March 2005

Provisional application no: 61/421,704, application date: 29 September 2004

* **WIPO | PCT**: [WO2006/034578 A1](https://www.google.com/patents/WO2006034578A1), publication date: 06 April 2006 [[pdf](https://patentimages.storage.googleapis.com/78/59/84/4fe11340b129fa/WO2006034578A1.pdf)]

Application no: PCT/CA2005/001475, application date: 29 September 2005