Search Strategy - MIMO

Search strategy (Micropat)

S.no	Scope	Timeline	Databases	Concept	Query	No of hits
1	Full spec	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	MIMO	(MIMO OR (Multiple adj input* adj multiple adj output*) OR (Distributed adj transmission adj directional adj reception) OR (transmission adj2 diversit*) OR (Space adj2 frequency adj2 block adj cod*3) OR (SU adj2 MIMO) OR (MU adj2 MIMO) OR (space adj2 time adj2 cod*) OR (multiple adj antenna*) OR (multi adj antenna*) OR (multiple adj transmit* adj2 receive*) OR (plural* adj2 antenna*) OR (atleast adj2 two adj2 antenna*) OR (layer adj map*4) OR (beam adj2 steer*) OR (smart adj antenna*1) OR (spatial adj multiplex*3) OR (multiple adj transmit* adj antenna*1) OR (multiple adj receive* adj antenna*1) OR (Adaptive adj2 antenna adj2 steer*) OR (beam adj2 forming) OR (eigenmode adj2 multiplex*))	**112290 hits**
2	Full spec	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	OFDMA	OFDM or ((orthogonal adj frequency adj division) near2 multiplex*) or ofdma or ((orthogonal adj frequency adj division) near2 (multiple adj access)) or SOFDM or (discrete ADJ multi ADJ tone) or (adaptive ADJ modulation*)	**66762 hits**
3	Full spec	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	SCFDMA	scfdma or (SINGLE adj CARRIER adj FREQUENCY adj DIVISION adj MULTIPLE adj ACCESS*) or scfdm or (single adj carrier adj frequency adj division adj multiplex*) or ("SC-FDMA") or (DFT-spread adj OFDM) or ("DFT-S-OFDMA ") or (Interleaved adj FDMA) or (Interleaved adj Frequency adj Division adj Multiple adj Access) or ("IFDMA") or (" Discrete adj Fourier adj Transform adj Spread adj Orthogonal adj Frequency adj Multiple adj Access ") or (" DFT- SOFDM ")	**5701 hits**
4	Full spec	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	Interference	(interference near3 mitigate*) or (interference near3 cancel*) or (interference near3 reduc*) or (interference near3 null*)	**93407 hits**
5	Full spec	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	SDMA	(Space adj2 time adj2 transmit adj2 diversity) or (antenna adj2 multiplex*) or SDMA or (Space adj2 division adj2 multiple adj2 access) or (Space adj2 domain adj2 multiple adj2 access) or (plural* near2 (spatial adj streams)) or (spatial adj2 adaptation) or (adaptive adj2 transmi*) or (Bell adj2 Labs adj2 Layer adj2 Space adj2 Time) or (spatial adj2 multiplex*)	**14886 hits**
6	Full spec	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	HARQ	HARQ or (Hybrid adj automatic adj repeat adj request) or (Hybrid adj2 ARQ) or (ARQ) or (automatic adj repeat adj request) or (Automatic adj Repeat adj Query) or (feedback adj2 mechani*)	**54419 hits**
7	Full spec	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	Multipath	Multipath near2 (effect* or propagati* or phenomenon) or interference near3 (mitigate* or reduc* or cancel* or null*)	**103119 hits**
8	Full spec	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	LTE Synonyms	(LTE OR (long ADJ term ADJ evolution) OR (evolved ADJ packet ADJ system) OR (system ADJ architecture ADJ evolution) OR (E ADJ UTRA*) OR EUTRA*1 OR (evolved ADJ UMTS ADJ terrestrial ADJ radio ADJ access))	**29270 hits**
9	Full spec	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	Others	(channel adj2 quality adj2 indicat*3 adj2 channel*) or (CQICH) or (Downlink adj2 Channel adj2 Descriptor adj2 message*) or (adaptive adj2 modulation adj2 coding) or (pre adj coding*3) or (per adj2 antenna adj2 rate adj2 control) or (permutation adj2 mode adj2 selection)	**8917 hits**
10	Combined Query				2 or 3 or 4 or 5 or 6 or 7 or 8 or 9	**225024 hits**
11	Combined Query				1 and 10	**35704 hits**
12	**Final result in Full spec**				**No of unique records**	**15233 Relevancy = 45%**
13	IPC and ECLA class	1836-date	USG USA EPA EPB WO JP DEG DEA DET	MIMO	H04B0007* OR H04L000102 OR H04L000106 OR H01Q0001* OR H01Q0003* OR H01Q0005* OR H01Q0021* OR H01Q0025* OR H01Q0009* OR H04B000702M OR H04B000704B OR H04B000704M OR H04B000704M3B OR H04B000704M3M OR	**330557 hits**

			DEU GBA FRA		H04B000704M5 OR H04B000704S OR H04B000706B OR H04B000706B1 OR H04B000706B1R OR H04B000706B2 OR H04B000706B2F OR H04B000706C OR H04B000706C1 OR H04B000706C1B OR H04B000706C1D OR H04B000706C1F3C OR H04B000706C1F5R OR H04B000706C1F5T OR H04B000706C2 OR H04B000706C2C OR H04B000706C2D OR H04B000706C3 OR H04B000706C4 OR H04B000706H OR H04B000706H1 OR H04B000706H2 OR H04B000706H3 OR H04B000706M OR H04B000708B OR H04B000708B2 OR H04B000708B2C OR H04B000708B2R OR H04B000708B4* OR H04B000708C OR H04B000708H* OR H04B000708P* OR H04B000708S* OR H04L000100B7* OR H04L000100B7B1 OR H04L000106F*	
14	IPC and ECLA class	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	OFDMA	H04J000104 OR H03D0000100 OR H04B0007204 OR H04B0007208 OR H04J000105 OR H04J000900 OR H04J001100 OR H04J001100 OR H04J001318 OR H04K000100 OR H04L000500 OR H04L002500 OR H04W007200 OR H04L000500A2A1 OR H04B000706C1F7C OR H04B0007204B OR H04B0007204D OR H04L000106T7A OR H04L000500A OR H04L000500A2A1 OR H04L0027227A3	**84933 hits**
15	IPC and ECLA class	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	SCFDMA	H04J000100 OR H03D0000100 OR H04B0007204 OR H04B0007208 OR H04J000900 OR H04K000100 OR H04L000500 OR H04L002500 OR H04W007200 OR H04L002736A OR H04B000706C1F7C OR H04B0007204B OR H04B0007204D OR H04L000106T7A OR H04L000500A OR H04L000500A2A1 OR H04L000500A2A1 OR H04L002720D1 OR H04L0027227A3	**79709 hits**
16	IPC and ECLA class	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	Interference	H04B001500 OR H04B00110 OR H04B001500 OR H04W005202 OR H04W007204 OR H04W009200 OR H04W007208B OR H04B000169U7 OR H04L002503B OR H04L000100B5E3 OR H04W005202E6	**42592 hits**
17	IPC and ECLA class	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	SDMA	H04L000106 OR H04L000106T* OR H04L000106T7K	**8715 hits**
18	IPC and ECLA class	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	HARQ	H04L000118 OR H04L000118C OR H04L000118D* OR H04L000118H OR H04L000118P OR H04L000100B	**16574 hits**
19	IPC and ECLA class	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	Multipath	H04B000702 OR G01S001922 OR H04B000110 OR H04B000702 OR H04W005224 OR H04W007208 OR H04B000110M OR H04W007208B OR G01S000100S1A3 OR G01S000100S2C4 OR G01S001344C OR H04W005224J	**46753 hits**
20	IPC and ECLA class	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	LTE Synonyms	H04L001256 OR H04L001240F3 OR H04L001256C	**163607 hits**
21	Claims	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	MIMO	(MIMO OR (Multiple adj input* adj multiple adj output*) OR (Distributed adj transmission adj directional adj reception) OR (transmission adj2 diversit*) OR (Space adj2 frequency adj2 block adj cod*3) OR (SU adj2 MIMO) OR (MU adj2 MIMO) OR (space adj2 time adj2 cod*) OR (multiple adj antenna*) OR (multi adj antenna*) OR (multiple adj transmit* adj2 receive*) OR (plural* adj2 antenna*) OR (atleast adj2 two adj2 antenna*) OR (layer adj map*4) OR (beam adj2 steer*) OR (smart adj antenna*1) OR (spatial adj multiplex*3) OR (multiple adj transmit* adj antenna*1) OR (multiple adj receive* adj antenna*1) OR (Adaptive adj2 antenna adj2 steer*) OR (beam adj2 forming) OR (eigenmode adj2 multiplex*))	**31273 hits**
22	Claims	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	OFDMA	OFDM or ((orthogonal adj frequency adj division) near2 multiplex*) or ofdma or ((orthogonal adj frequency adj division) near2 (multiple adj access)) or SOFDM or (discrete ADJ multi ADJ tone) or (adaptive ADJ modulation*)	**16525 hits**
23	Claims	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	SCFDMA	scfdma or (SINGLE adj CARRIER adj FREQUENCY adj DIVISION adj MULTIPLE adj ACCESS*) or scfdm or (single adj carrier adj frequency adj division adj multiplex*) or ("SC-FDMA") or (DFT-spread adj OFDM) or ("DFT-S-OFDMA ") or (Interleaved adj FDMA) or (Interleaved adj Frequency adj Division adj Multiple adj Access) or ("IFDMA") or (" Discrete adj Fourier adj Transform adj Spread adj Orthogonal adj Frequency adj Multiple adj Access ") or (" DFT- SOFDM ")	**482 hits**

24	Claims	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	Interference	(interference near3 mitigate*) or (interference near3 cancel*) or (interference near3 reduc*) or (interference near3 null*)	**9937 hits**
25	Claims	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	SDMA	(Space adj2 time adj2 transmit adj2 diversity) or (antenna adj2 multiplex*) or SDMA or (Space adj2 division adj2 multiple adj2 access) or (Space adj2 domain adj2 multiple adj2 access) or (plural* near2 (spatial adj streams)) or (spatial adj2 adaptation) or (adaptive adj2 transmi*) or (Bell adj2 Labs adj2 Layer adj2 Space adj2 Time) or (spatial adj2 multiplex*)	**2096 hits**
26	Claims	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	HARQ	HARQ or (Hybrid adj automatic adj repeat adj request) or (Hybrid adj2 ARQ) or (ARQ) or (automatic adj repeat adj request) or (Automatic adj Repeat adj Query) or (feedback adj2 mechani*)	**6601 hits**
27	Claims	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	Multipath	Multipath near2 (effect* or propagati* or phenomenon) or interference near3 (mitigate* or reduc* or cancel* or null*)	**10409 hits**
28	Claims	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	LTE Synonyms	(LTE OR (long ADJ term ADJ evolution) OR (evolved ADJ packet ADJ system) OR (system ADJ architecture ADJ evolution) OR (E ADJ UTRA*) OR EUTRA*1 OR (evolved ADJ UMTS ADJ terrestrial ADJ radio ADJ access))	**3584 hits**
29	Claims	1836-date	USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA	Others	(channel adj2 quality adj2 indicat*3 adj2 channel*) or (CQICH) or (Downlink adj2 Channel adj2 Descriptor adj2 message*) or (adaptive adj2 modulation adj2 coding) or (pre adj coding*3) or (per adj2 antenna adj2 rate adj2 control) or (permutation adj2 mode adj2 selection)	**1236 hits**
30	Combined Query				22 or 23 or 24 or 25 or 26 or 27 or 28 or 29	**37953 hits**
31	Combined Query				21 and 30	**4760 hits**
32	MIMO with OFDMA				(21 and 13) and (22 or 14)	**2994 hits**
33	MIMO with SCFDMA				(21 and 13) and (23 or 15)	**1219 hits**
34	MIMO with Interference				(21 and 13) and (24 or 16)	**1178 hits**
35	MIMO with SDMA				(21 and 13) and (25 or 17)	**3033 hits**
36	MIMO with HARQ				(21 and 13) and (26 or 18)	**365 hits**
37	MIMO with Multipath				(21 and 13) and (27 or 19)	**3433 hits**
38	MIMO with LTE Synonyms				(21 and 13) and (28 or 20)	**462 hits**
39	MIMO with Others				(21 and 13) and 29	**259 hits**
40	Combined query				32 or 33 or 34 or 35 or 36 or 37 or 38 or 39	**7288 hits**
41	Combined query				40 Not 11	**1393 hits**
42					**No of unique records of Query 41**	**761**
43	Final Query				12 or 42	**15994 Relevancy = 44%**

Disclaimer: As there is a restriction of 20000 patents in micropat for creating the worksheet. The patents were divided into two groups based on the earliest priority date and then reduced to a single member family. Therefore there could be some patent family overlap.

Search strategy (Thomson Innovation)

S.no	Scope	Timeline	Databases	Concept	Query	No of hits
1	Full spec	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications,	MIMO	(MIMO OR (Multiple adj input* adj multiple adj output*) OR (Distributed adj transmission adj directional adj reception) OR (transmission adj2 diversit*) OR (Space adj2 frequency adj2 block adj cod*3) OR (SU adj2 MIMO) OR (MU adj2 MIMO) OR (space adj2 time adj2	**156834 hits**

			Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications		cod*) OR (multiple adj antenna*) OR (multi adj antenna*) OR (multiple adj transmit* adj2 receive*) OR (plural* adj2 antenna*) OR (atleast adj2 two adj2 antenna*) OR (layer adj map*4) OR (beam adj2 steer*) OR (smart adj antenna*1) OR (spatial adj multiplex*3) OR (multiple adj transmit* adj antenna*1) OR (multiple adj receive* adj antenna*1) OR (Adaptive adj2 antenna adj2 steer*) OR (beam adj2 forming) OR (eigenmode adj2 multiplex*))	
2	Full spec	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	OFDM	OFDM or ((orthogonal adj frequency adj division) near2 multiplex*) or ofdma or ((orthogonal adj frequency adj division) near2 (multiple adj access)) or SOFDM or (discrete ADJ multi ADJ tone) or (adaptive ADJ modulation*)	**115047 hits**
3	Full spec	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	SCFDMA	scfdma or (SINGLE adj CARRIER adj FREQUENCY adj DIVISION adj MULTIPLE adj ACCESS*) or scfdm or (single adj carrier adj frequency adj division adj multiplex*) or (SC-FDMA) or (DFT-spread adj OFDM) or (DFT-S-OFDMA) or (Interleaved adj FDMA) or (Interleaved adj Frequency adj Division adj Multiple adj Access) or (IFDMA) or (Discrete adj Fourier adj Transform adj Spread adj Orthogonal adj Frequency adj Multiple adj Access) or (DFT- SOFDM)	**9897 hits**
4	Full spec	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	Interference	(interference near3 mitigate*) or (interference near3 cancel*) or (interference near3 reduc*) or (interference near3 null*)	**139479 hits**
5	Full spec	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	SDMA	(Space adj2 time adj2 transmit adj2 diversity) or (antenna adj2 multiplex*) or SDMA or (Space adj2 division adj2 multiple adj2 access) or (Space adj2 domain adj2 multiple adj2 access) or (plural* near2 (spatial adj streams)) or (spatial adj2 adaptation) or (adaptive adj2 transmi*) or (Bell adj2 Labs adj2 Layer adj2 Space adj2 Time) or (spatial adj2 multiplex*)	**21381 hits**
6	Full spec	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	HARQ	HARQ or (Hybrid adj automatic adj repeat adj request) or (Hybrid adj2 ARQ) or (ARQ) or (automatic adj repeat adj request) or (Automatic adj Repeat adj Query) or (feedback adj2 mechani*)	**68710 hits**
7	Full spec	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	Multipath	Multipath near2 (effect* or propagati* or phenomenon) or interference near3 (mitigate* or reduc* or cancel* or null*)	**151714 hits**
8	Full spec	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	LTE Synonyms	(LTE OR (long ADJ term ADJ evolution) OR (evolved ADJ packet ADJ system) OR (system ADJ architecture ADJ evolution) OR (E ADJ UTRA*) OR EUTRA*1 OR (evolved ADJ UMTS ADJ terrestrial ADJ radio ADJ access))	**40642 hits**
9	Full spec	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA	Others	(channel adj2 quality adj2 indicat*3 adj2 channel*) or (CQICH) or (Downlink adj2 Channel adj2 Descriptor adj2	**13853 hits**

			FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications		message*) or (adaptive adj2 modulation adj2 coding) or (pre adj coding*3) or (per adj2 antenna adj2 rate adj2 control) or (permutation adj2 mode adj2 selection)	
10	Combined Query				2 or 3 or 4 or 5 or 6 or 7 or 8 or 9	**336636 hits**
11	Combined Query				1 and 10	**50421 hits**
12	**Final result in Full spec**				**No of unique INPADOC families**	**12684 Relevancy = 46%**
13	IPC and ECLA class	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	MIMO	H04B0007* OR H04L000102 OR H04L000106 OR H01Q0001* OR H01Q0003* OR H01Q0005* OR H01Q0021* OR H01Q0025* OR H01Q0009* OR H04B000702M OR H04B000704B OR H04B000704M OR H04B000704M3B OR H04B000704M3M OR H04B000704M5 OR H04B000704S OR H04B000706B OR H04B000706B1 OR H04B000706B1R OR H04B000706B2 OR H04B000706B2F OR H04B000706C OR H04B000706C1 OR H04B000706C1B OR H04B000706C1D OR H04B000706C1F3C OR H04B000706C1F5R OR H04B000706C1F5T OR H04B000706C2 OR H04B000706C2C OR H04B000706C2D OR H04B000706C3 OR H04B000706C4 OR H04B000706H OR H04B000706H1 OR H04B000706H2 OR H04B000706H3 OR H04B000706M OR H04B000708B OR H04B000708B2 OR H04B000708B2C OR H04B000708B2R OR H04B000708B4* OR H04B000708C OR H04B000708H* OR H04B000708P* OR H04B000708S* OR H04L000100B7* OR H04L000100B7B1 OR H04L000106F*	**770144 hits**
14	IPC and ECLA class	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	OFDMA	H04J000104 OR H03D0000100 OR H04B0007204 OR H04B0007208 OR H04J000105 OR H04J000900 OR H04J001100 OR H04J001100 OR H04J001318 OR H04K000100 OR H04L000500 OR H04L002500 OR H04W007200 OR H04L000500A2A1 OR H04B000706C1F7C OR H04B0007204B OR H04B0007204D OR H04L000106T7A OR H04L000500A OR H04L000500A2A1 OR H04L0027227A3	**229099 hits**
15	IPC and ECLA class	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	SCFDMA	H04J000100 OR H03D0000100 OR H04B0007204 OR H04B0007208 OR H04J000900 OR H04K000100 OR H04L000500 OR H04L002500 OR H04W007200 OR H04L002736A OR H04B000706C1F7C OR H04B0007204B OR H04B0007204D OR H04L000106T7A OR H04L000500A OR H04L000500A2A1 OR H04L000500A2A1 OR H04L002720D1 OR H04L0027227A3	**220007 hits**
16	IPC and ECLA class	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	Interference	H04B001500 OR H04B00110 OR H04B001500 OR H04W005202 OR H04W007204 OR H04W009200 OR H04W007208B OR H04B000169U7 OR H04L002503B OR H04L000100B5E3 OR H04W005202E6	**117952 hits**
17	IPC and ECLA class	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	SDMA	H04L000106 OR H04L000106T* OR H04L000106T7K	**18726 hits**
18	IPC and ECLA class	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models,	HARQ	H04L000118 OR H04L000118C OR H04L000118D* OR H04L000118H OR H04L000118P OR H04L000100B	**38973 hits**

			Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications			
19	IPC and ECLA class	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	Multipath	H04B000702 OR G01S001922 OR H04B000110 OR H04B000702 OR H04W005224 OR H04W007208 OR H04B000110M OR H04W007208B OR G01S000100S1A3 OR G01S000100S2C4 OR G01S001344C OR H04W005224J	**122203 hits**
20	IPC and ECLA class	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	LTE Synonyms	H04L001256 OR H04L001240F3 OR H04L001256C	**358633 hits**
21	Claims	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	MIMO	(MIMO OR (Multiple adj input* adj multiple adj output*) OR (Distributed adj transmission adj directional adj reception) OR (transmission adj2 diversit*) OR (Space adj2 frequency adj2 block adj cod*3) OR (SU adj2 MIMO) OR (MU adj2 MIMO) OR (space adj2 time adj2 cod*) OR (multiple adj antenna*) OR (multi adj antenna*) OR (multiple adj transmit* adj2 receive*) OR (plural* adj2 antenna*) OR (atleast adj2 two adj2 antenna*) OR (layer adj map*4) OR (beam adj2 steer*) OR (smart adj antenna*1) OR (spatial adj multiplex*3) OR (multiple adj transmit* adj antenna*1) OR (multiple adj receive* adj antenna*1) OR (Adaptive adj2 antenna adj2 steer*) OR (beam adj2 forming) OR (eigenmode adj2 multiplex*))	**39213 hits**
22	Claims	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	OFDMA	OFDM or ((orthogonal adj frequency adj division) near2 multiplex*) or ofdma or ((orthogonal adj frequency adj division) near2 (multiple adj access)) or SOFDM or (discrete ADJ multi ADJ tone) or (adaptive ADJ modulation*)	**25885 hits**
23	Claims	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	SCFDMA	scfdma or (SINGLE adj CARRIER adj FREQUENCY adj DIVISION adj MULTIPLE adj ACCESS*) or scfdm or (single adj carrier adj frequency adj division adj multiplex*) or (SC-FDMA) or (DFT-spread adj OFDM) or (DFT-S-OFDMA) or (Interleaved adj FDMA) or (Interleaved adj Frequency adj Division adj Multiple adj Access) or (IFDMA) or (Discrete adj Fourier adj Transform adj Spread adj Orthogonal adj Frequency adj Multiple adj Access) or (DFT- SOFDM)	**836 hits**
24	Claims	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	Interference	(interference near3 mitigate*) or (interference near3 cancel*) or (interference near3 reduc*) or (interference near3 null*)	**11741 hits**
25	Claims	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	SDMA	(Space adj2 time adj2 transmit adj2 diversity) or (antenna adj2 multiplex*) or SDMA or (Space adj2 division adj2 multiple adj2 access) or (Space adj2 domain adj2 multiple adj2 access) or (plural* near2 (spatial adj streams)) or (spatial adj2 adaptation) or (adaptive adj2 transmi*) or (Bell adj2 Labs adj2 Layer adj2 Space adj2 Time) or (spatial adj2 multiplex*)	**3007 hits**
26	Claims	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility	HARQ	HARQ or (Hybrid adj automatic adj repeat adj request) or (Hybrid adj2 ARQ) or (ARQ) or (automatic adj repeat adj request) or (Automatic adj Repeat adj Query) or	**8964 hits**

			Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications		(feedback adj2 mechani*)	
27	Claims	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	Multipath	Multipath near2 (effect* or propagati* or phenomenon) or interference near3 (mitigate* or reduc* or cancel* or null*)	**12281 hits**
28	Claims	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	LTE Synonyms	(LTE OR (long ADJ term ADJ evolution) OR (evolved ADJ packet ADJ system) OR (system ADJ architecture ADJ evolution) OR (E ADJ UTRA*) OR EUTRA*1 OR (evolved ADJ UMTS ADJ terrestrial ADJ radio ADJ access))	**4976 hits**
29	Claims	1836-date	USG USA EPA EPB WO DEG DEA DET DEU GBA FRA Japanese Utility Models, Japanese Granted, Japanese Applications, Chinese Utility Models, Chinese Applications, Korean Utility Models, Korean Granted/Examined, Korean Applications	Others	(channel adj2 quality adj2 indicat*3 adj2 channel*) or (CQICH) or (Downlink adj2 Channel adj2 Descriptor adj2 message*) or (adaptive adj2 modulation adj2 coding) or (pre adj coding*3) or (per adj2 antenna adj2 rate adj2 control) or (permutation adj2 mode adj2 selection)	**2167 hits**
30	Combined Query				22 or 23 or 24 or 25 or 26 or 27 or 28 or 29	**53692 hits**
31	Combined Query				21 and 30	**6969 hits**
32	MIMO with OFDMA				(21 and 13) and (22 or 14)	**3921 hits**
33	MIMO with SCFDMA				(21 and 13) and (23 or 15)	**1513 hits**
34	MIMO with Interference				(21 and 13) and (24 or 16)	**1603 hits**
35	MIMO with SDMA				(21 and 13) and (25 or 17)	**2946 hits**
36	MIMO with HARQ				(21 and 13) and (26 or 18)	**503 hits**
37	MIMO with Multipath				(21 and 13) and (27 or 19)	**2946 hits**
38	MIMO with LTE Synonyms				(21 and 13) and (28 or 20)	**428 hits**
39	MIMO with Others				(21 and 13) and 29	**582 hits**
40	Combined query				32 or 33 or 34 or 35 or 36 or 37 or 38 or 39	**5798 hits**
41	Combined query				40 Not 11	**0 hits**
42					**No of unique INPADOC families of Query 41**	**0**
43	**Final Query**				12 or 42	**12684 Relevancy = 46%**

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