

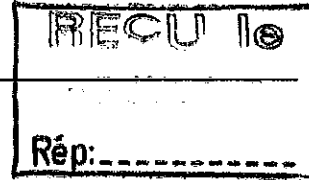
# **EXHIBIT 5-3**



**IPR information statement and licensing declaration**

**IPR Holder/Organisation**

Legal Name: SAMSUNG ELECTRONICS CO., LTD. \_\_\_\_\_



**Signatory**

Name: Seung Gun, Park \_\_\_\_\_

Position: Vice President \_\_\_\_\_

Department: Telecommunication R&D Center \_\_\_\_\_

Address: Dong Suwon P.O.BOX 105, 416, Maetan-3Dong, Yeongtong-Gu, \_\_\_\_\_  
 Suwon-City, Gyeonggi-Do, Korea 442-600 \_\_\_\_\_

Tel.: 82-31-279-5067 \_\_\_\_\_ Fax: 82-31-279-4560 \_\_\_\_\_

E-mail: jh1.jung@samsung.com \_\_\_\_\_

**IPR information statement**

In accordance with the ETSI IPR Policy, Clause 4.1, I hereby inform ETSI that,  
 with reference to the technical proposal identified as 3GPP \_\_\_\_\_  
 and/or  
 in relation to Work Item No. \_\_\_\_\_  
 and/or

with reference to ETSI Standard No. TS 23.272, TS 23.401, TS 25.211, TS 25.212, TS 25.213, TS 25.214, TS 25.309, TS 25.321, TS 25.331, TS 25.346, TS 25.423, TS 25.430, TS 26.114, TS 36.211, TS 36.212, TS 36.213, TS 36.304, TS 36.321, TS 36.322, TS 36.331, TS 45.002, TS 45.004

it is my belief that the IPRs listed in the attached IPR information statement annex are, or are likely to become, Essential IPRs in relation to that Standard.

**IPR licensing declaration**

The SIGNATORY has notified ETSI that it is the proprietor of the IPRs listed in the attached *IPR information statement annex* and has informed ETSI that it believes that the IPRs may be considered ESSENTIAL to the Standards listed above.

The SIGNATORY and/or its AFFILIATES hereby declare that they are prepared to grant irrevocable licences under the IPRs on terms and conditions which are in accordance with Clause 6.1 of the ETSI IPR Policy, in respect of the STANDARD, to the extent that the IPRs remain ESSENTIAL.

This undertaking is made subject to the condition that those who seek licences agree to reciprocate the same in respect of the STANDARD in accordance with Clause 6.1 of the ETSI IPR Policy (delete this paragraph if this condition is not required).

The construction, validity and performance of this DECLARATION shall be governed by the laws of France.

**Place, Date:**

2008-12-30  
 (Place, Date)

**Signature:**

S. G. M  
 \_\_\_\_\_  
 (Signed for and on behalf of the SIGNATORY)

Please return this form duly signed to: ETSI Director-General  
 ETSI - 650, route des Lucioles - F-06921 Sophia Antipolis Cedex - FRANCE  
 Fax: +33 (0) 4 93 65 47 16



**IPR information statement annex**

| ETSI Standard, Technical Specification or Work Item |                           |         |                   | Patent Proprietor               | Application No. | Patent No. | Patent Subject/Title   | Country of registration | OPTIONAL INFORMATION: Other Patents/Applications No. in same family* |                    |
|---|---------------------------|---------|-------------------|---------------------------------|-----------------|------------|--|-------------------------|--|--------------------|
| Project or Standard name                            | Work Item or Standard No. | Section | Version (V.X.X.X) |                                 |                 |            |  |                         | Patent/Application No.   | Country Applicable |
| UMTS  | 3GPP TS25.212             | 4.2.3   | V6.0.0            | Samsung Electronics Corporation | 1998-0013957    | 0429506    | CHANNEL ENCODING/DECODING APPARATUS AND METHOD FOR COMMUNICATION SYSTEM  | KOREA (REPUBLIC OF)     | 733641   | AUSTRALLIA         |
|   |                           |         |                   |                                 |                 |            |  |                         | 2292568  | CANADA             |
|   |                           |         |                   |                                 |                 |            |  |                         | ZL99800575.4   | CHINA              |
|   |                           |         |                   |                                 |                 |            |  |                         | 206401   | INDIA              |
|   |                           |         |                   |                                 |                 |            |  |                         | 2212100  | RUSSIAN FEDERATION |
|   |                           |         |                   |                                 |                 |            |  |                         | 6,885,710  | UNITED STATES      |
|   |                           |         |                   |                                 |                 |            |  |                         | 7,372,921  | UNITED STATES      |
| UMTS  | 3GPP TS25.211             | 5.3.2.6 | V3.0.0            | Samsung Electronics Corporation | 1999-0019647    | 0492968    | Apparatus and method for gated transmission in CDMA communication system | KOREA (REPUBLIC OF)     | 766485   | AUSTRALLIA         |
|   |                           |         |                   |                                 |                 |            |  |                         | ZL00818719.3   | CHINA              |
|   |                           |         |                   |                                 |                 |            |  |                         | 1183806  | GERMANY            |
|   |                           |         |                   |                                 |                 |            |  |                         | 1183806  | FILAND             |
|   |                           |         |                   |                                 |                 |            |  |                         | 1183806  | FRANCE             |
|   |                           |         |                   |                                 |                 |            |  |                         | 1183806  | UNITED KINGDOM     |
|   |                           |         |                   |                                 |                 |            |  |                         | 213355   | INDIA              |
|   |                           |         |                   |                                 |                 |            |  |                         | 1183806  | ITALLIA            |
|   |                           |         |                   |                                 |                 |            |  |                         | 1183806  | SWEDEN             |
|   |                           |         |                   |                                 |                 |            |  |                         | 7,085,254  | UNITED STATES      |
| UMTS  | 3GPP                      | 8.5     | V6.0.0            | Samsung                         | 2000-0030497    | 038981     | Method for selecting RACH in a   | KOREA                   | ZL01801560.3   | CHINA              |



European Telecommunication Standards Institute  
IPR information statement and licensing declaration forms  
Page 3 of 26 (version 5)

|      |               |            |        |                                 |               |         |  |                     |              |                    |
|------|---------------|------------|--------|---------------------------------|---------------|---------|--|---------------------|--------------|--------------------|
|      | TS25.211      |            |        | Electronics Corporation         |               | 8       | CDMA mobile communication system   | (REPUBLIC OF)       | 1212853      | GERMANY            |
|      |               |            |        |                                 |               |         |  |                     | 1212853      | FRANCE             |
|      |               |            |        |                                 |               |         |  |                     | 1212853      | UNITED KINGDOM     |
|      |               |            |        |                                 |               |         |  |                     | 1212853      | ITALIA             |
|      |               |            |        |                                 |               |         |  |                     | 3801983      | JAPAN              |
|      |               |            |        |                                 |               |         |  |                     | 7,061,890    | UNITED STATES      |
| UMTS | 3GPP TS25.214 | 5, Annex B | V6.0.0 | Samsung Electronics Corporation | 1997-0036263  | 0274087 | Apparatus and method for calibrating moment-of-inertia and cent-of-gravity                                 | KOREA (REPUBLIC OF) | ZL98117597.X | CHINA              |
|      |               |            |        |                                 |               |         |  |                     | 6,212,364    | UNITED STATES      |
| UMTS | 3GPP TS25.214 | 5.2.11     | V5.6.0 | Samsung Electronics Corporation | 1998-0028975  | 0342525 | Processing packet data in mobile communication system  | KOREA (REPUBLIC OF) | 2302269      | CANADA             |
|      |               |            |        |                                 |               |         |  |                     | ZL99801423.0 | CHINA              |
|      |               |            |        |                                 |               |         |  |                     | 215011       | INDIA              |
|      |               |            |        |                                 |               |         |  |                     | 3449985      | JAPAN              |
|      |               |            |        |                                 |               |         |  |                     | 2183387      | RUSSIAN FEDERATION |
|      |               |            |        |                                 |               |         |  |                     | 6,728,233    | UNITED STATES      |
| UMTS | 3GPP TS25.211 | 7          | V6.0.0 | Samsung Electronics Corporation | P1999-0027166 | 0383603 | Channel assignment apparatus and method for a common packet channel in a WCDMA mobile communication system |                     | 1201040      | AUSTRIA            |
|      |               |            |        |                                 |               |         |  |                     | 1353448      | AUSTRIA            |
|      |               |            |        |                                 |               |         |  |                     | 1443667      | AUSTRIA            |
|      |               |            |        |                                 |               |         |  |                     | 766021       | AUSTRALIA          |
|      |               |            |        |                                 |               |         |  |                     | 1201040      | BELGIUM            |
|      |               |            |        |                                 |               |         |  |                     | 1353448      | BELGIUM            |
|      |               |            |        |                                 |               |         |  |                     | 1443667      | BELGIUM            |
|      |               |            |        |                                 |               |         |  |                     | 2378404      | CANADA             |
|      |               |            |        |                                 |               |         |  |                     | 1201040      | SWISS              |





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**IPR information statement and licensing declaration forms**  
 Page 5 of 26 (version 5)

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|  |  |  |  |  |  |  |  |  | 1201040   | UNITED KINGDOM |
|  |  |  |  |  |  |  |  |  | 1353448   | UNITED KINGDOM |
|  |  |  |  |  |  |  |  |  | 1443667   | UNITED KINGDOM |
|  |  |  |  |  |  |  |  |  | 1353448   | GREECE         |
|  |  |  |  |  |  |  |  |  | 1443667   | GREECE         |
|  |  |  |  |  |  |  |  |  | ID0016794 | INDONESIA      |
|  |  |  |  |  |  |  |  |  | 1201040   | IRELAND        |
|  |  |  |  |  |  |  |  |  | 1353448   | IRELAND        |
|  |  |  |  |  |  |  |  |  | 1443667   | IRELAND        |
|  |  |  |  |  |  |  |  |  | 147347    | ISRAEL         |
|  |  |  |  |  |  |  |  |  | 212570    | INDIA          |
|  |  |  |  |  |  |  |  |  | 1201040   | ITALIA         |
|  |  |  |  |  |  |  |  |  | 1353448   | ITALIA         |
|  |  |  |  |  |  |  |  |  | 1443667   | ITALIA         |
|  |  |  |  |  |  |  |  |  | 3579028   | JAPAN          |
|  |  |  |  |  |  |  |  |  | 3967339   | JAPAN          |
|  |  |  |  |  |  |  |  |  | 1201040   | LIECHTENSTEIN  |
|  |  |  |  |  |  |  |  |  | 1443667   | LIECHTENSTEIN  |
|  |  |  |  |  |  |  |  |  | 1353448   | LIECHTENSTEIN  |
|  |  |  |  |  |  |  |  |  | 1443667   | LUXEMBOURG     |



|      |                   |       |         |                                       |              |             |  |                           |                              |                             |
|------|-------------------|-------|---------|---------------------------------------|--------------|-------------|--|---------------------------|------------------------------|-----------------------------|
|      |                   |       |         |                                       |              |             |  |                           | 1443667                      | LUXEMBOURG                  |
|      |                   |       |         |                                       |              |             |  |                           | 1201040                      | MONACO                      |
|      |                   |       |         |                                       |              |             |  |                           | 1353448                      | NETHERLANDS                 |
|      |                   |       |         |                                       |              |             |  |                           | 1443667                      | NETHERLANDS                 |
|      |                   |       |         |                                       |              |             |  |                           | 1201040                      | PORTUGAL                    |
|      |                   |       |         |                                       |              |             |  |                           | 1353448                      | PORTUGAL                    |
|      |                   |       |         |                                       |              |             |  |                           | 1443667                      | PORTUGAL                    |
|      |                   |       |         |                                       |              |             |  |                           | 2221331                      | RUSSIAN<br>FEDERATION       |
|      |                   |       |         |                                       |              |             |  |                           | 1201040                      | SWEDEN                      |
|      |                   |       |         |                                       |              |             |  |                           | 1353448                      | SWEDEN                      |
|      |                   |       |         |                                       |              |             |  |                           | 1443667                      | SWEDEN                      |
|      |                   |       |         |                                       |              |             |  |                           | 6,859,445                    | UNITED<br>STATES            |
|      |                   |       |         |                                       |              |             |  |                           | 2002/0090                    | REPUBLIC OF<br>SOUTH AFRICA |
| UMTS | 3GPP TS<br>25.212 | 4.2.3 | V.6.0.0 | Samsung<br>Electronics<br>Corporation | 1998-0057959 | 034617<br>0 | Interleaving/deinterleaving device<br>and method for communication<br>system | KOREA<br>(REPUBLIC<br>OF) | 6,668,343                    | UNITED<br>STATES            |
|      |                   |       |         |                                       |              |             |  |                           | 2319726                      | CANADA                      |
|      |                   |       |         |                                       |              |             |  |                           | ZL99803175.5<br>ZL03156666.9 | CHINA                       |
|      |                   |       |         |                                       |              |             |  |                           | 201435                       | INDIA                       |
|      |                   |       |         |                                       |              |             |  |                           | 3961770                      | JAPAN                       |
|      |                   |       |         |                                       |              |             |  |                           | 2217864                      | RUSIA                       |

|           |                   |       |         |                                       |              |             |   |                           |              |                       |
|-----------|-------------------|-------|---------|---------------------------------------|--------------|-------------|---|---------------------------|--------------|-----------------------|
|           |                   |       |         |                                       |              |             |   |                           | 738762       | AUSTRALIA             |
| UMTS      | 3GPP TS<br>25.212 | 4.2.7 | V.6.0.0 | Samsung<br>Electronics<br>Corporation | 1998-0062725 | 031570<br>8 | Puncturing device and method for<br>turbo encoder in mobile<br>communication system | KOREA<br>(REPUBLIC<br>OF) | 2321977      | CANADA                |
|           |                   |       |         |                                       |              |             |   |                           | ZL99803456.8 | CHINA                 |
|           |                   |       |         |                                       |              |             |   |                           | 219535       | INDIA                 |
|           |                   |       |         |                                       |              |             |   |                           | 3359911      | JAPAN                 |
|           |                   |       |         |                                       |              |             |   |                           | 2185025      | RUSSIAN<br>FEDERATION |
|           |                   |       |         |                                       |              |             |   |                           | 6,621,873    | UNITED<br>STATES      |
| UMTS      | 3GPP TS<br>25.212 | 4.2.3 | V.6.0.0 | Samsung<br>Electronics<br>Corporation | 1998-0062709 | 032197<br>8 | Iterative decoder and an iterative<br>decoding method for a<br>communication system | KOREA<br>(REPUBLIC<br>OF) | 761792       | AUSTRALIA             |
|           |                   |       |         |                                       |              |             |   |                           | 2354580      | CANADA                |
|           |                   |       |         |                                       |              |             |   |                           | ZL99815196.3 | CHINA                 |
|           |                   |       |         |                                       |              |             |   |                           | 210879       | INDIA                 |
|           |                   |       |         |                                       |              |             |   |                           | 3449987      | JAPAN                 |
|           |                   |       |         |                                       |              |             |   |                           | 2216851      | RUSIA                 |
| 6,615,385 | UNITED<br>STATES  |       |         |                                       |              |             |   |                           |              |                       |
| UMTS      | 3GPP TS<br>25.212 | 4.2.3 | V.6.0.0 | Samsung<br>Electronics<br>Corporation | 2000-0018037 | 036255<br>7 | 2-dimensional interleaving apparatus<br>and method                                  | KOREA<br>(REPUBLIC<br>OF) | 759580       | AUSTRALIA             |
|           |                   |       |         |                                       |              |             |   |                           | 2368027      | CANADA                |
|           |                   |       |         |                                       |              |             |   |                           | 210935       | INDIA                 |
|           |                   |       |         |                                       |              |             |   |                           | 3574405      | JAPAN                 |
|           |                   |       |         |                                       |              |             |   |                           | 6,591,381    | UNITED<br>STATES      |



|      |                   |                |         |                                       |              |             |  |                           |              |                              |
|------|-------------------|----------------|---------|---------------------------------------|--------------|-------------|--|---------------------------|--------------|------------------------------|
| UMTS | 3GPP TS<br>25.212 | 5.3.2.6        | V.7.5.0 | Samsung<br>Electronics<br>Corporation | 2000-0019301 | 037433<br>6 | Apparatus and method for gated<br>transmission in a CDMA<br>communication system | KOREA<br>(REPUBLIC<br>OF) | 765329       | AUSTRALIA                    |
|      |                   |                |         |                                       |              |             |  |                           | 2371958      | CANADA                       |
|      |                   |                |         |                                       |              |             |  |                           | ZL00806189.0 | CHINA                        |
|      |                   |                |         |                                       |              |             |  |                           | 145548       | ISRAEL                       |
|      |                   |                |         |                                       |              |             |  |                           | 213350       | INDIA                        |
|      |                   |                |         |                                       |              |             |  |                           | 2233543      | RUSSIAN<br>FEDERATION        |
|      |                   |                |         |                                       |              |             |  |                           | 6,747,963    | UNITED<br>STATES             |
| UMTS | 3GPP TS<br>25.214 | Annex<br>C     | V.6.0.0 | Samsung<br>Electronics<br>Corporation | 1999-0014737 | 029067<br>8 | cell search apparatus and method in<br>cdma mobile communication system          | KOREA<br>(REPUBLIC<br>OF) | 764417       | AUSTRALIA                    |
|      |                   |                |         |                                       |              |             |  |                           | 2371205      | CANADA                       |
|      |                   |                |         |                                       |              |             |  |                           | ZL00806632.9 | CHINA                        |
|      |                   |                |         |                                       |              |             |  |                           | 1173931      | GERMANY                      |
|      |                   |                |         |                                       |              |             |  |                           | 1173931      | EUROPEAN<br>PATENT<br>OFFICE |
|      |                   |                |         |                                       |              |             |  |                           | 1173931      | FRANCE                       |
|      |                   |                |         |                                       |              |             |  |                           | 1173931      | UNITED<br>KINGDOM            |
|      |                   |                |         |                                       |              |             |  |                           | 3730125      | JAPAN                        |
|      |                   |                |         |                                       |              |             |  |                           | 7,289,483    | UNITED<br>STATES             |
| UMTS | 3GPP TS<br>25.211 | 5.2.1<br>5.3.2 | V.6.0.0 | Samsung<br>Electronics<br>Corporation | 2000-0039155 | 033024<br>4 | Data rate detection device and<br>method for a mobile communication<br>system    | KOREA<br>(REPUBLIC<br>OF) | 760820       | AUSTRALIA                    |
|      |                   |                |         |                                       |              |             |  |                           | 2341577      | CANADA                       |
|      |                   |                |         |                                       |              |             |  |                           | ZL00801355.1 | CHINA                        |
|      |                   |                |         |                                       |              |             |  |                           | 1114530      | GERMANY                      |



|      |                |           |         |                                 |               |              |   |                     |              |                        |
|------|----------------|-----------|---------|---------------------------------|---------------|--------------|---|---------------------|--------------|------------------------|
|      |                |           |         |                                 |               |              |   |                     | 1114530      | EUROPEAN PATENT OFFICE |
|      |                |           |         |                                 |               |              |   |                     | 1114530      | SPAIN                  |
|      |                |           |         |                                 |               |              |   |                     | 1114530      | FINLAND                |
|      |                |           |         |                                 |               |              |   |                     | 1114530      | FRANCE                 |
|      |                |           |         |                                 |               |              |   |                     | 1114530      | UNITED KINGDOM         |
|      |                |           |         |                                 |               |              |   |                     | 141636       | ISRAEL                 |
|      |                |           |         |                                 |               |              |   |                     | 1114530      | ITALY                  |
|      |                |           |         |                                 |               |              |   |                     | 3553547      | JAPAN                  |
|      |                |           |         |                                 |               |              |   |                     | 2214688      | RUSIA                  |
|      |                |           |         |                                 |               |              |   |                     | 1114530      | SWEDEN                 |
|      |                |           |         |                                 |               |              |   |                     | 6,792,041    | UNITED STATES          |
| UMTS | 3GPP TS 25.321 | 9.2.5.3.2 | V.6.9.0 | Samsung Electronics Corporation | 2000-0071755  | 035763<br>1  | Apparatus and method for assigning a common packet channel in a CDMA communication system | KOREA (REPUBLIC OF) | 760229       | AUSTRALIA              |
|      |                |           |         |                                 |               |              |   |                     | 2392886      | CANADA                 |
|      |                |           |         |                                 |               |              |   |                     | ZL00818399.6 | CHINA                  |
|      |                |           |         |                                 |               |              |   |                     | 149656       | ISRAEL                 |
|      |                |           |         |                                 |               |              |   |                     | 3807982      | JAPAN                  |
|      |                |           |         |                                 |               |              |   |                     | 2262202      | RUSSIAN FEDERATION     |
|      |                |           |         |                                 |               |              |   |                     | 6,963,540    | UNITED STATES          |
|      |                |           |         |                                 |               |              |   |                     | 2002/5150    | SOUTH AFRICA           |
| UMTS | TS 25.211      | 5.2       | v7.5.0  | Samsung Electronics Corporation | P2001-0008037 | P03656<br>13 | Apparatus and method for assigning a common packet channel in a CDMA communication system | KOREA (REPUBLIC OF) | 759898       | AUSTRALIA              |
|      |                |           |         |                                 |               |              |   |                     | 2370670      | CANADA                 |
|      |                |           |         |                                 |               |              |   |                     | ZL01800233.1 | CHINA                  |
|      |                |           |         |                                 |               |              |   |                     | 1190496      | GERMANY                |
|      |                |           |         |                                 |               |              |   |                     | 1313332      | GERMANY                |



|      |           |        |        |                                 |               |           |   |                     |              |                        |
|------|-----------|--------|--------|---------------------------------|---------------|-----------|---|---------------------|--------------|------------------------|
|      |           |        |        |                                 |               |           |   |                     | 1190496      | EUROPEAN PATENT OFFICE |
|      |           |        |        |                                 |               |           |   |                     | 03003595.0   | EUROPEAN PATENT OFFICE |
|      |           |        |        |                                 |               |           |   |                     | 03003596.8   | EUROPEAN PATENT OFFICE |
|      |           |        |        |                                 |               |           |   |                     | 01908412.8   | FINLAND                |
|      |           |        |        |                                 |               |           |   |                     | 01908412.8   | FRANCE                 |
|      |           |        |        |                                 |               |           |   |                     | 01908412.8   | GERMANY                |
|      |           |        |        |                                 |               |           |   |                     | 01908412.8   | ITALIA                 |
|      |           |        |        |                                 |               |           |   |                     | 3512774      | JAPAN                  |
|      |           |        |        |                                 |               |           |   |                     | 01908412.8   | SWEDEN                 |
|      |           |        |        |                                 |               |           |   |                     | 7,113,496    | UNITED STATES          |
|      |           |        |        |                                 |               |           |   |                     | 765694       | AUSTRALIA              |
|      |           |        |        |                                 |               |           |   |                     | 2372557      | CA                     |
|      |           |        |        |                                 |               |           |   |                     | ZL01800858.5 | CHINA                  |
|      |           |        |        |                                 |               |           |   |                     | 1186125      | GERMANY                |
|      |           |        |        |                                 |               |           |   |                     | 1186125      | EUROPEAN PATENT OFFICE |
|      |           |        |        |                                 |               |           |   |                     | 4009579.6    | EUROPEAN PATENT OFFICE |
|      |           |        |        |                                 |               |           |   |                     | 1186125      | FI                     |
|      |           |        |        |                                 |               |           |   |                     | 1186125      | FRANCE                 |
|      |           |        |        |                                 |               |           |   |                     | 1186125      | UNITED KINGDOM         |
|      |           |        |        |                                 |               |           |   |                     | 1186125      | ITALIA                 |
|      |           |        |        |                                 |               |           |   |                     | 3753659      | JAPAN                  |
|      |           |        |        |                                 |               |           |   |                     | 1186125      | SE                     |
|      |           |        |        |                                 |               |           |   |                     | 7233577      | UNITED STATES          |
| UMTS | TS 25.331 | 10.3.6 | v6.0.0 | Samsung Electronics Corporation | P2001-0018925 | P04073 43 | Method for measuring confusion rate of a common packet channel in a CDMA communication system | KOREA (REPUBLIC OF) | ZL03138466.8 | CHINA                  |
| MBMS | TS 25.346 | 11.2   | v7.5.0 | Samsung Electronics             | P2002-0014222 |           | Apparatus and method for controlling packet data to provide                                   | KOREA (REPUBLIC OF) | 10311321.5   | GERMANY                |

|      |                |                      |         |                                 |               |  |  |                     |                |                        |
|------|----------------|----------------------|---------|---------------------------------|---------------|--|--|---------------------|----------------|------------------------|
|      |                |                      |         | Corporation                     |               |  | multimedia broadcast/multicast services in a CDMA mobile communication system  | OF)                 | 303183         | FRANCE                 |
|      |                |                      |         |                                 |               |  |  |                     | 2387748        | UNITED KINGDOM         |
|      |                |                      |         |                                 |               |  |  |                     | MI2003A000495  | ITALIA                 |
|      |                |                      |         |                                 |               |  |  |                     | 3753700        | JAPAN                  |
|      |                |                      |         |                                 |               |  |  |                     | 387029         | UNITED STATES          |
|      |                |                      |         |                                 |               |  |  |                     | ZL03127284.3   | CHINA                  |
|      |                |                      |         |                                 |               |  |  |                     | 1372350        | GERMANY                |
| MBMS | TS 25.331      | 8.6.9, 10.2.16, 10.3 | v6.6.0  | Samsung Electronics Corporation | P2002-0033278 |  | Apparatus and method for determining soft handover in a CDMA mobile communication system providing mbms service                              | KOREA (REPUBLIC OF) | 1372350        | EUROPEAN PATENT OFFICE |
|      |                |                      |         |                                 |               |  |  |                     | 1372350        | FRANCE                 |
|      |                |                      |         |                                 |               |  |  |                     | 1372350        | UNITED KINGDOM         |
|      |                |                      |         |                                 |               |  |  |                     | 3830920        | JAPAN                  |
|      |                |                      |         |                                 |               |  |  |                     | 463021         | UNITED STATES          |
| MBMS | TS 25.331      | 10.2.16              | v6.4.0  | Samsung Electronics Corporation | P2004-0026266 |  | Method for transmitting and receiving control information in a mobile communication system supporting multimedia broadcast/multicast service | KOREA (REPUBLIC OF) | 5733399.9      | EUROPEAN PATENT OFFICE |
|      |                |                      |         |                                 |               |  |  |                     | 2007-508281    | JAPAN                  |
|      |                |                      |         |                                 |               |  |  |                     | 108,537        | UNITED STATES          |
| LTE  | TS 36.213      | 9                    | v8.4.0  | Samsung Electronics Corporation | P2004-0064897 |  | Apparatus and method for allocating frequencies in an ofdm mobile communication system supporting high speed downlink packet access service  | KOREA (REPUBLIC OF) | 2005203660     | AUSTRALIA              |
|      |                |                      |         |                                 |               |  |  |                     | 200510113210.2 | CHINA                  |
|      |                |                      |         |                                 |               |  |  |                     | 5017860.7      | EUROPEAN PATENT OFFICE |
|      |                |                      |         |                                 |               |  |  |                     | 751/KOL/05     | INDIA                  |
|      |                |                      |         |                                 |               |  |  |                     | 236148/2005    | JAPAN                  |
|      |                |                      |         |                                 |               |  |  |                     | 202,091        | UNITED STATES          |
| LTE  | 3GPP TS 36.212 | 5.2.2.6              | V.8.3.0 | Samsung Electronics             | 2006-0129696  |  | METHOD AND APPRATUS FOR TRANSMITTING/RECEIVING   | KOREA (REPUBLIC     | 07024493.4     | EUROPEAN PATENT        |



|     |                |       |         |                                 |              |  |   |                     |                           |                                |
|-----|----------------|-------|---------|---------------------------------|--------------|--|---|---------------------|---------------------------|--------------------------------|
|     |                |       |         | Corporation                     |              |  | DATA AND CONTROL INFORMATION THROUGH AN UPLINK IN A WIRELESS COMMUNICATION SYSTEM                                 | OF)                 | 958,709<br>KR20078/006651 | OFFICE<br>UNITED STATES<br>PCT |
| LTE | 3GPP TS 36.211 | 5.3   | V.8.3.0 | Samsung Electronics Corporation | 2007-0002657 |  | APPARATUS AND METHOD FOR ALLOCATING RESOURCES IN A SINGLE CARRIER-FREQUENCY DIVISION MULTIPLE ACCESS SYSTEM       | KOREA (REPUBLIC OF) | 08000317.1                | EUROPEAN PATENT OFFICE         |
|     |                |       |         |                                 |              |  |   |                     | 971,692                   | UNITED STATES                  |
|     |                |       |         |                                 |              |  |   |                     | KR2008/000132             | PCT                            |
| LTE | 3GPP TS 36.212 | 6.9   | V.8.3.0 | Samsung Electronics Corporation | 60/935,300   |  | TRANSMISSION METHODS FOR DOWNLINK ACK/NACK CHANNELS   | UNITED STATES       |                           |                                |
| LTE | 3GPP TS 36.321 | 5.1.2 | V.8.3.0 | Samsung Electronics Corporation | 2006-0103809 |  | METHOD AND APPARATUS FOR ALLOCATING RADIO RESOURCE USING RANDOM ACCESS PROCEDURE IN A MOBILE COMMUNICATION SYSTEM | KOREA (REPUBLIC OF) | 07020911.9                | EUROPEAN PATENT OFFICE         |
|     |                |       |         |                                 |              |  |   |                     | 924,368                   | UNITED STATES                  |
|     |                |       |         |                                 |              |  |   |                     | KR2007/005289             | PCT                            |
| LTE | 3GPP TS 36.211 | 6.8.5 | V.8.3.0 | Samsung Electronics Corporation | 2007-0099537 |  | APPARATUS AND METHOD FOR ALLOCATING CONTROL CHANNEL IN A SINGLE CARRIER FREQUENCY DIVISION MULTIPLE ACCESS SYSTEM | KOREA (REPUBLIC OF) | 08017395.8                | EUROPEAN PATENT OFFICE         |
|     |                |       |         |                                 |              |  |   |                     | PCT/KR200800583           | PCT                            |



|     |                             |                |         |                                       |              |  |   |                           |               |                              |
|-----|-----------------------------|----------------|---------|---------------------------------------|--------------|--|---|---------------------------|---------------|------------------------------|
| LTE | 3GPP TS<br>36.211           | 6.8            | V.8.3.0 | Samsung<br>Electronics<br>Corporation | 2007-0027753 |  | METHOD FOR MAPPING<br>PHYSICAL DOWNLINK<br>CONTROL CHANNEL TO<br>RESOURCES AND APPARATUS<br>FOR<br>TRANSMITTING/RECEIVING<br>THE MAPPED PHYSICAL<br>DOWNLINK CONTROL<br>CHANNEL IN A WIRELESS<br>COMMUNICATION SYSTEM | KOREA<br>(REPUBLIC<br>OF) | 08005496.8    | EUROPEAN<br>PATENT<br>OFFICE |
|     |                             |                |         |                                       |              |  |   |                           | 053,155       | UNITED<br>STATES             |
|     |                             |                |         |                                       |              |  |   |                           | KR2008/001582 | PCT                          |
| LTE | 3GPP TS<br>36.211           | 5.4.2.1        | V.8.3.0 | Samsung<br>Electronics<br>Corporation | 2007-0001329 |  | METHOD AND APPARATUS FOR<br>TRANSMITTING AND RECEIVING<br>CONTROL INFORMATION TO<br>RANDOMIZE INTER-CELL<br>INTERFERENCE IN A MOBILE<br>COMMUNICATION SYSTEM  | KOREA<br>(REPUBLIC<br>OF) | 08000169.6    | EUROPEAN<br>PATENT<br>OFFICE |
|     |                             |                |         |                                       |              |  |   |                           | 08000168.8    | EUROPEAN<br>PATENT<br>OFFICE |
|     |                             |                |         |                                       |              |  |   |                           | 970,358       | UNITED<br>STATES             |
|     |                             |                |         |                                       |              |  |   |                           | 970,234       | UNITED<br>STATES             |
|     |                             |                |         |                                       |              |  |   |                           | KR2008/000077 | PCT                          |
|     |                             |                |         |                                       |              |  |   |                           | KR2007/000076 | PCT                          |
| LTE | 3GPP TS<br>36.213           | 10.1           | V.8.3.0 | Samsung<br>Electronics<br>Corporation | 2007-0003038 |  | METHOD AND APPARATUS FOR<br>ALLOCATING AND SIGNALING<br>ACK/NACK RESOURCES IN A<br>WIRELESS COMMUNICATION<br>SYSTEM   | KOREA<br>(REPUBLIC<br>OF) | 972,372       | UNITED<br>STATES             |
|     |                             |                |         |                                       |              |  |   |                           | KR2008/000168 | PCT                          |
| LTE | 3GPP TS<br>36.211<br>36.213 | 6.9.3<br>9.1.2 | V.8.3.0 | Samsung<br>Electronics<br>Corporation | 2007-0041034 |  | METHOD AND APPARATUS FOR<br>ALLOCATING ACKCH<br>RESOURCES IN A WIRELESS<br>COMMUNICATION SYSTEM   | KOREA<br>(REPUBLIC<br>OF) | 110,649       | UNITED<br>STATES             |
|     |                             |                |         |                                       |              |  |   |                           | KR2008/002372 | PCT                          |

|     |                             |                         |         |                                       |              |  |  |                           |               |                              |
|-----|-----------------------------|-------------------------|---------|---------------------------------------|--------------|--|--|---------------------------|---------------|------------------------------|
| LTE | 3GPP TS<br>36.211<br>36.213 | 5.4.1<br>8.2            | V.8.3.0 | Samsung<br>Electronics<br>Corporation | 2007-0041645 |  | METHOD AND APPARATUS FOR<br>TRANSMITTING AND<br>RECEIVING UPLINK CHANNEL<br>SOUNDING REFERENCE<br>SIGNALS IN A WIRELESS<br>COMMUNICATION SYSTEM                        | KOREA<br>(REPUBLIC<br>OF) | 08008138.3    | EUROPEAN<br>PATENT<br>OFFICE |
|     |                             |                         |         |                                       |              |  |  |                           | 110,828       | UNITED<br>STATES             |
|     |                             |                         |         |                                       |              |  |  |                           | KR2008/002365 | PCT                          |
| LTE | 3GPP TS<br>36.213           | 9.1.1                   | V.3.0.0 | Samsung<br>Electronics<br>Corporation | 2007-0042817 |  | METHOD AND APPARATUS FOR<br>TRANSMITTING AND<br>RECEIVING CONTROL<br>CHANNELS BY RESTRICTING A<br>SET OF THE CONTROL<br>CHANNELS IN A WIRELESS<br>COMMUNICATION SYSTEM | KOREA<br>(REPUBLIC<br>OF) | 08008366.0    | EUROPEAN<br>PATENT<br>OFFICE |
|     |                             |                         |         |                                       |              |  |  |                           | 112,376       | UNITED<br>STATES             |
|     |                             |                         |         |                                       |              |  |  |                           | KR2008/002507 | PCT                          |
| LTE | 3GPP TS<br>23.272           | 6.3                     | V.8.0.0 | Samsung<br>Electronics<br>Corporation | 2008-0044208 |  | PROVIDING METHOD AND<br>APPARATUS FOR PROVIDING<br>VOICE CALL IN MOBILE<br>TELECOMMUNICATION<br>SYSTEM   | KOREA<br>(REPUBLIC<br>OF) |               |                              |
| LTE | 3GPP TS<br>36.211           | 6.9.1<br>6.9.2<br>6.9.3 | V.8.3.0 | Samsung<br>Electronics<br>Corporation | 12/105,176   |  | TRANSMIT DIVERSITY FOR<br>ACKNOWLEDGEMENT AND<br>CATEGORY 0 BITS IN A<br>WIRELESS COMMUNICATION<br>SYSTEM  | UNITED<br>STATES          | KR2008/002336 | PCT                          |



|     |                   |                |         |                                       |              |  |  |                           |                                 |                             |
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| LTE | 3GPP TS<br>36.213 | 7.1.3          | V8.3.0  | Samsung<br>Electronics<br>Corporation | 12/155,097   |  | CDD PRECODING FOR<br>X_X_X_OPEN LOOP SU MIMO   | UNITED<br>STATES          | KR2008/003212                   | PCT                         |
| LTE | 3GPP TS<br>36.212 | 5.3.1.1        | V.8.3.0 | Samsung<br>Electronics<br>Corporation | 60/996,857   |  | PHYSICAL BROADCAST<br>CHANNEL (PBCH)<br>TRANSMISSION FOR RELIABLE<br>DETECTION OF ANTENNA<br>CONFIGURATION | UNITED<br>STATES          | KR2008/007108                   | PCT                         |
| LTE | 3GPP TS<br>36.213 | 7.2.2          | V.8.3.0 | Samsung<br>Electronics<br>Corporation | 12/284,822   |  | SYSTEM AND METHOD FOR<br>MULTIPLEXING ON AN LTE<br>UPLINK CONTROL CHANNEL                                  | UNITED<br>STATES          |                                 |                             |
| LTE | 3GPP TS<br>36.211 | 5.4.1<br>5.4.2 | V.8.3.0 | Samsung<br>Electronics<br>Corporation | 2008-0092278 |  | RESOURCE REMAPPING AND<br>REGROUPING IN A WIRELESS<br>COMMUNICATION SYSTEM                                 | KOREA<br>(REPUBLIC<br>OF) | 12/200,462<br><br>KR2008/005569 | UNITED<br>STATES<br><br>PCT |





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| LTE | 3GPP TS<br>36.211 | 5.4.1,<br>5.4.2             | v8.4.0         | Samsung<br>Electronics<br>Corporation | 12/289,978 |  | Methods of Uplink Channelization<br>in LTE   | UNITED<br>STATES |                 |                              |
| LTE | 3GPP TS<br>36.213 | 5.2                         | v8.3.0         | Samsung<br>Electronics<br>Corporation | 61/006,343 |  | Methods and Apparatus for<br>Downlink PDSCH Power Setting                                | UNITED<br>STATES |                 |                              |
| LTE | 3GPP TS<br>36.212 | 5.3.3.1.                    | V8.3.0         | Samsung<br>Electronics<br>Corporation | 882,316    |  | Precoding Signaling in a MIMO<br>Wireless Communication System                           | UNITED<br>STATES |                 |                              |
| LTE | 3GPP TS<br>36.212 | 5.3.3.1.5                   | V8.3.0         | Samsung<br>Electronics<br>Corporation | 12/222,113 |  | Asynchronous Hybrid ARQ Process<br>Indication in a MIMO Wireless<br>Communication System | UNITED<br>STATES | 08017799.1      | EUROPEAN<br>PATENT<br>OFFICE |
|     |                   |                             |                |                                       |            |  |  |                  | PCT/KR2008/0059 | P C T                        |
| LTE | 3GPP<br>TS36.212  | 5.3.3.1.3<br>,<br>5.3.3.1.5 | V8.3.0(P1<br>4 | Samsung<br>Electronics<br>Corporation | 11/882,313 |  | MIMO Control Signaling in a<br>Wireless Communication System                             | UNITED<br>STATES |                 |                              |



European Telecommunication Standards Institute  
IPR information statement and licensing declaration forms  
Page 17 of 26 (version 5)

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| LTE | 3GPP<br>TS36.213  | 7.2.1         | v8.3.0 | Samsung<br>Electronics<br>Corporation | 11/907,944 |  | Efficient Uplink Feedback in a<br>Wireless Communication System                | UNITED<br>STATES | 08005035.4     | EUROPEAN<br>PATENT<br>OFFICE |
|     |                   |               |        |                                       |            |  |  |                  | KR2008/001421  | P C T                        |
| LTE | 3GPP TS<br>36.211 | 5.4,<br>5.4.3 | v8.3.0 | Samsung<br>Electronics<br>Corporation | 136,461    |  | Transmission of Control Signals in<br>SC-FDMA Communication Systems            | UNITED<br>STATES | 08010607.3     | EUROPEAN<br>PATENT<br>OFFICE |
|     |                   |               |        |                                       |            |  |  |                  | KR2008/003252  | P C T                        |
| LTE | 3GPP TS<br>36.212 | 5.2.2.8       | v8.3.0 | Samsung<br>Electronics<br>Corporation | 133,120    |  | Control and Data Signaling in SC-<br>FDMA Communication Systems                | UNITED<br>STATES | 08010383.1     | EUROPEAN<br>PATENT<br>OFFICE |
|     |                   |               |        |                                       |            |  |  |                  | KR2008/003170  | P C T                        |
| LTE | 3GPP<br>TS36.211  | 5.4,<br>5.4.2 | v8.3.0 | Samsung<br>Electronics<br>Corporation | 174,098    |  | Transmission of CQI and<br>Acknowledgement Signals in SC-<br>FDMA              | UNITED<br>STATES | KR2008/0041010 | P C T                        |
| LTE | 3GPP<br>TS36.212  | 5.2.2.6       | v8.3.0 | Samsung<br>Electronics<br>Corporation | 61/025,925 |  | Multiplexing Control and Data<br>Signaling in SC-FDMA<br>Communication Systems | UNITED<br>STATES |                |                              |



European Telecommunication Standards Institute  
IPR information statement and licensing declaration forms  
Page 18 of 26 (version 5)

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| LTE | 3GPP<br>TS36.212             | 5.1.2         | v8.3.0            | Samsung<br>Electronics<br>Corporation | 12/076,938        |  | Methods and Apparatus for Mapping<br>Modulation Symbols to Resource in<br>OFDM Systems   | UNITED<br>STATES          | KR2008/003018 | P C T                        |
| LTE | 3GPP<br>TS36.212             | 5.1.4.1.2     | v8.3.0            | Samsung<br>Electronics<br>Corporation | 12/155,096        |  | Methods and Apparatus for Channel<br>Interleaving in OFDM Systems  | UNITED<br>STATES          | KR2008/003206 | P C T                        |
| LTE | 3GPP TS<br>36.321            | 5.1.5         | v8.4.0            | Samsung<br>Electronics<br>Corporation | P2008-<br>0092344 |  | APPARATUS AND METHOD FOR<br>PROCESSING INTERRUPT OF<br>UPPER MESSAGE IS HAPPENED<br>BY ADAPTIVE<br>RETRANSMISSION COMMAND<br>DURING RANDOM ACCESS<br>PROCEDURE IN MOBILE<br>COMMUNICATION SYSTEM | KOREA(RE<br>PUBLIC<br>OF) |               |                              |
| LTE | 3GPP TS<br>36.331,<br>36.211 | 6.6.1         | v8.3.0,<br>v8.4.0 | Samsung<br>Electronics<br>Corporation | P2007-<br>0013863 |  | Method and apparatus for<br>transmitting/receiving of system<br>information in mobile<br>communication system  | KOREA(RE<br>PUBLIC<br>OF) | 08002173.6    | EUROPEAN<br>PATENT<br>OFFICE |
|     |                              |               |                   |                                       |                   |  |  |                           | 027,542       | UNITED<br>STATES             |
| LTE | 3GPP TS<br>36.321            | 5.1.5         | v8.3.0            | Samsung<br>Electronics<br>Corporation | P2007-<br>0014024 |  | A method and apparatus for<br>detecting contention at random<br>access procedure in a wireless<br>communications system  | KOREA(RE<br>PUBLIC<br>OF) | 028,508       | UNITED<br>STATES             |
|     |                              |               |                   |                                       |                   |  |  |                           | KR2008/000623 | P C T                        |
| LTE | 3GPP TS<br>36.304 ,          | 3.1,<br>6.2.2 | v8.3.0            | Samsung<br>Electronics                | P2007-<br>0004900 |  | APPARATUS AND METHOD FOR<br>CELL SELECTION   | KOREA(RE<br>PUBLIC        | 08000748.7    | EUROPEAN<br>PATENT           |



European Telecommunication Standards Institute  
IPR information statement and licensing declaration forms  
Page 19 of 26 (version 5)

|       |                                  |          |                   |                                       |                   |  |   |                           |                 |                              |
|-------|----------------------------------|----------|-------------------|---------------------------------------|-------------------|--|---|---------------------------|-----------------|------------------------------|
|       | 36.331                           |          |                   | Corporation                           |                   |  | CONSIDERING HOME CELL/<br>PRIVATE NETWORK IN<br>WIRELESS SYSTEM   | OF)                       |                 | OFFICE                       |
|       |                                  |          |                   |                                       |                   |  |   |                           | 015,182         | UNITED STATES                |
|       |                                  |          |                   |                                       |                   |  |   |                           | KR2008/000276   | P C T                        |
| LTE   | 3GPP TS<br>36.231                | 5.3.1    | v8.1.0            | Samsung<br>Electronics<br>Corporation | P2008-<br>0078918 |  | A method for allocating resources of<br>re-transmission in a wireless<br>communication system and an<br>apparatus thereof | KOREA(RE<br>PUBLIC<br>OF) |                 |                              |
| LTE   | 3GPP TS<br>36.322                | 8.1.0    | v8.1.0            | Samsung<br>Electronics<br>Corporation | P2006-<br>0033964 |  | METHOD AND APPARATUS FOR<br>INFERENCING STATUS REPORT<br>GENERATION TIME IN A<br>MOBILE COMMUNICATION<br>SYSTEM           | KOREA(RE<br>PUBLIC<br>OF) | 2007239212      | AUSTRALIA                    |
|       |                                  |          |                   |                                       |                   |  |   |                           | 07007717.7      | EUROPEAN<br>PATENT<br>OFFICE |
|       |                                  |          |                   |                                       |                   |  |   |                           | 2148/MUMNP/2008 | INDIA                        |
|       |                                  |          |                   |                                       |                   |  |   |                           | 787,425         | UNITED<br>STATES             |
|       |                                  |          |                   |                                       |                   |  |   |                           | KR2007/001835   | P C T                        |
|       |                                  |          |                   |                                       |                   |  |   |                           | 028,493         | UNITED<br>STATES             |
| GERAN | 3GPP TS<br>45.002 ,T<br>S 45.004 | 5.2., 4. | v7.6.0,<br>v7.1.0 | Samsung<br>Electronics<br>Corporation | P2007-<br>0012983 |  | Method for Generating Training<br>Sequence Codes in Communication<br>System   | KOREA(RE<br>PUBLIC<br>OF) | KR2008/000740   | P C T                        |



|       |                   |                 |        |                                       |              |   |   |                           |               |           |
|-------|-------------------|-----------------|--------|---------------------------------------|--------------|---|---|---------------------------|---------------|-----------|
| HSPA+ | 3GPP TS<br>25.214 | 5.1.2.2.2<br>.3 | V8.0.0 | Samsung<br>Electronics<br>Corporation | 976/CHE/2007 | - | A METHOD AND SYSTEM FOR<br>TRANSMIT POWER CONTROL<br>MANAGEMENT IN HSPA                                       | India                     | KR2008/002604 | PCT       |
| UMTS  | 3GPP TS<br>26.114 | 9.3             | V8.0.0 | Samsung<br>Electronics<br>Corporation | 2008-0001775 |   | APPARATUS AND METHOD FOR<br>CONTROLLING OF INTRA-<br>REFRESHING IN VIDEO<br>TELEPHONY COMMUNICATION<br>SYSTEM | KOREA<br>(REPUBLIC<br>OF) | -             | -         |
| LTE   | 3GPP TS<br>36.321 | 5.4.5           | V8.1.0 | Samsung<br>Electronics<br>Corporation | 2006-0113011 | - | METHOD AND APPARATUS FOR<br>BUFFER STATUS REPORT IN<br>MOBILE COMMUNICATION<br>SYSTEM                         | KOREA<br>(REPUBLIC<br>OF) | KR2007/005667 | PCT       |
| LTE   | 3GPP TS<br>36.321 | 5.4.6           | V8.3.0 | Samsung<br>Electronics<br>Corporation | 2008-0003669 |   | Method and apparatus for reporting<br>UE power headroom information in<br>mobile communication system         | KOREA<br>(REPUBLIC<br>OF) |               |           |
| LTE   | 3GPP TS<br>36.321 | 5.7             | V8.1.0 | Samsung<br>Electronics<br>Corporation | 2007-0073705 |   | METHOD AND ARRARTUS FOR<br>DRX MODE UE IN MOBILE<br>TELECOMMUNICATION<br>SYSTEM                               | KOREA<br>(REPUBLIC<br>OF) |               |           |
| LTE   | 3GPP TS           | 5.7             | V8.4.0 | Samsung                               | 2002-0034704 |   | APPARATUS FOR PAGING OF   | KOREA                     | 2003204794    | AUSTRALIA |



European Telecommunication Standards Institute  
 IPR information statement and licensing declaration forms  
 Page 21 of 26 (version 5)

|     |                |         |        |                                 |                |  |   |               |   |  |
|-----|----------------|---------|--------|---------------------------------|----------------|--|---|---------------|---|--|
|     | 36.321         |         |        | Electronics Corporation         |                |  | MULTIMEDIA BROADCAST/MULTICAST SERVICE IN MOBILE COMMUNICATION SYSTEM AND METHOD THEROF | (REPUBLIC OF) | 03125548.5<br>1377099<br>1377099<br>1377099<br>1377099<br>1377099<br>175421/2003<br>7,395,076 | CHINA<br>GERMANY<br>European Patent Office<br>FRANCE<br>UNITED KINGDOM<br>ITALIY<br>JAPAN<br>UNITED STATES |
| LTE | 3GPP TS 36.211 | 5.7     | V8.4.0 | Samsung Electronics Corporation | 200810002412.2 |  | An apparatus and method to transmit random access signal and sounding reference signal  | CHINA         |   |  |
| LTE | 3GPP TS 36.211 | 5.5.3.3 | V8.4.0 | Samsung Electronics Corporation | 200810099452.4 |  | One method and facility to transmit SRS in LTE TDD system                               | CHINA         |   |  |
| LTE | 3GPP TS 36.212 | 5.2     | V8.4.0 | Samsung Electronics Corporation | 200810004863.0 |  | One method to transmit SRS in LTE TDD system  | CHINA         |   |  |



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|-----|-------------------|----------------|--------|---------------------------------------|--------------------|--|---|-------|-----------------|---------------------------|
| LTE | 3GPP TS<br>36.212 | 5.2            | V8.4.0 | Samsung<br>Electronics<br>Corporation | 200710143148.<br>0 |  | An apparatus and method to transmit<br>the segments of transport block                                  | CHINA |                 |                           |
| LTE | 3GPP TS<br>36.211 | 4.2,6.10<br>.1 | V8.3.0 | Samsung<br>Electronics<br>Corporation | 200710097696.<br>4 |  | An Apparatus and Method to<br>Transmit Downlink Reference Signal<br>in Time Division Duplex Systems     | CHINA |                 |                           |
| LTE | 3GPP TS<br>36.211 | 6.9            | V8.4.0 | Samsung<br>Electronics<br>Corporation | 200710090566.<br>8 |  | An Apparatus and Method to<br>Transmit Downlink Control<br>Signaling in Time Division Duplex<br>Systems | CHINA |                 |                           |
| LTE | 3GPP TS<br>36.213 | 7.2            | V8.4.0 | Samsung<br>Electronics<br>Corporation | 200510134076.<br>4 |  | Method and Apparatus for Channel<br>Quality Indicator Report  | CHINA | . 06835375.     | European<br>Patent Office |
|     |                   |                |        |                                       |                    |  |   |       | 3073/CHENP/2008 | INDIA                     |
|     |                   |                |        |                                       |                    |  |   |       | 2008125150      | RUSSIAN<br>FEDERATION     |
|     |                   |                |        |                                       |                    |  |   |       | 158,881         | UNITED<br>STATES          |

|       |                   |                |        |                                       |                    |  |   |       |  |  |
|-------|-------------------|----------------|--------|---------------------------------------|--------------------|--|---|-------|--|--|
| MBMS  | 3GPP TS<br>25.346 | 8.3.3          | V7.4.0 | Samsung<br>Electronics<br>Corporation | 03101605.7         |  | Mobility procedure for UE in RRC<br>connected mode  | CHINA |  |  |
| LTE   | 3GPP TS<br>23.401 | 5.3.3.3        | V8.1.1 | Samsung<br>Electronics<br>Corporation | 200710142522.<br>5 |  | A method to find proper S-GW  | CHINA |  |  |
| MBMS  | 3GPP TS<br>25.423 | 8.3.1          | V7.0.0 | Samsung<br>Electronics<br>Corporation | 02130570.6         |  | MBMS service PtP and PtM channel<br>exchange  | CHINA |  |  |
| HSUPA | 3GPP TS<br>36.213 | 7.2            | v8.4.0 | Samsung<br>Electronics<br>Corporation | 200510096548.<br>1 |  | A method for SRNC to control the<br>serving grant in the new serving cell                       | CHINA |  |  |
| LTE   | 3GPP TS<br>36.300 | 10.1.2.2.<br>1 | v8.1.0 | Samsung<br>Electronics<br>Corporation | 200710088233.<br>1 |  | A method and procedure to release<br>resources at the source enhanced<br>Node-B during handover | CHINA |  |  |





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|-------|-------------------|-------|--------|---------------------------------------|------------|--|---|------------------|-----------------|---------------------------|
| LTE   | 3GPP TS<br>36.213 | 7.2   | v8.1.0 | Samsung<br>Electronics<br>Corporation | 12/232,376 |  | METHODS AND APPARATUS<br>FOR CHANNEL QUALITY<br>INDICATION FEEDBACK IN A<br>COMMUNICATION SYSTEM                        | UNITED<br>STATES |                 | European<br>Patent Office |
|       |                   |       |        |                                       |            |  |   |                  |                 | PCT                       |
| LTE   | 3GPP TS<br>36.213 | 9.1.2 | v8.3.0 | Samsung<br>Electronics<br>Corporation | 12/210,864 |  | METHODS AND APPARATUS TO<br>ALLOCATE<br>ACKNOWLEDGEMENT<br>CHANNELS   | UNITED<br>STATES |                 | European<br>Patent Office |
|       |                   |       |        |                                       |            |  |   |                  |                 | PCT                       |
| LTE   | 3GPP TS<br>36.213 | 7.1.3 | v8.3.0 | Samsung<br>Electronics<br>Corporation | 12/155,319 |  | TRANSMIT METHODS WITH<br>DELAY DIVERSITY AND SPACE-<br>FREQUENCY DIVERSITY  | UNITED<br>STATES | 08011536.3      | European<br>Patent Office |
|       |                   |       |        |                                       |            |  |   |                  | KR2008/003646   | PCT                       |
| LTE   | 3GPP TS<br>36.211 | 5.4.3 | V8.3.0 | Samsung<br>Electronics<br>Corporation | 182,556    |  | TRANSMISSION OF SOUNDING<br>REFERENCE SIGNALS FOR<br>VOLP TYPE SERVICES IN SC-<br>FDMA COMMUNICATION<br>SYSTEMS         | UNITED<br>STATES | 08013689.8      | European<br>Patent Office |
|       |                   |       |        |                                       |            |  |   |                  | KR2008/004442   | PCT                       |
| X LTE | 3GPP TS<br>36.212 | 5.2   | V8.3.0 | Samsung<br>Electronics<br>Corporation |            |  | DETECTING ABSENCE OF<br>ACKNOWLEDGMENT SIGNALS<br>EXPECTED WITH DATA<br>TRANSMISSION IN SC-FDMA<br>COMMUNICATION SYSTEM | KR               |                 |                           |
| LTE   | 3GPP TS<br>36.211 | 6.3.5 | V8.3.0 | Samsung<br>Electronics<br>Corporation | 11/390,125 |  | SYSTEM AND METHOD FOR<br>CHANNEL ESTIMATION IN A<br>DELAY<br>DIVERSITY WIRELESS<br>COMMUNICATION SYSTEM                 | UNITED<br>STATES | 200680014720.7  | CHINA                     |
|       |                   |       |        |                                       |            |  |   |                  | 06732907.8      | European<br>Patent Office |
|       |                   |       |        |                                       |            |  |   |                  | 4209/KOLNP/2007 | INDIA                     |
|       |                   |       |        |                                       |            |  |   |                  | 2006/001718     | PCT                       |
| LTE   | 3GPP TS<br>36.213 | 7.1   | V8.3.0 | Samsung<br>Electronics<br>Corporation | 11/708,177 |  | SYSTEM AND METHOD FOR<br>SUBCARRIER ALLOCATION<br>SIGNALING IN A<br>MULTICARRIER WIRELESS<br>NETWORK                    | UNITED<br>STATES |                 |                           |
| LTE   | 3GPP TS<br>36.211 | 5     | V8.3.0 | Samsung<br>Electronics<br>Corporation | 11/374,928 |  | APPARATUS AND METHOD FOR<br>FT PRE-CODING OF DATA TO<br>REDUCE PAPR IN A MULTI-<br>CARRIER WIRELESS NETWORK             | UNITED<br>STATES |                 |                           |
| LTE   | 3GPP TS           | 6.10  | V8.3.0 | Samsung                               | 11/762,592 |  | APPARATUS AND METHOD FOR  | UNITED           |                 |                           |

|     |                |       |        |                                 |               |  |   |               |  |  |
|-----|----------------|-------|--------|---------------------------------|---------------|--|---|---------------|--|--|
|     | 36.211         |       |        | Electronics Corporation         |               |  | BROADCAST PILOT TRANSMISSION IN A WIRELESS COMMUNICATION NETWORK  | STATES        |  |  |
| LTE | 3GPP TS 36.211 | 6.3.4 | V8.3.0 | Samsung Electronics Corporation | 11/327,799    |  | METHOD AND SYSTEM FOR INTRODUCING FREQUENCY SELECTIVITY INTO TRANSMISSIONS IN AN ORTHOGONAL FREQUENCY DIVISION MULTIPLEXING NETWORK     | UNITED STATES |  |  |
| LTE | 3GPP TS 36.211 | 6.3.4 | V8.3.0 | Samsung Electronics Corporation | 11/824,832    |  | SYSTEM AND METHOD FOR PERFORMING PRECODING IN A WIRELESS COMMUNICATION SYSTEM   | UNITED STATES |  | GERMANY<br>European Patent Office<br>SPAIN<br>FINLAND<br>FRANCE<br>UNITED KINGDOM<br>INDIA<br>ITALIA<br>NETHERLAND<br>SWEDEN<br>PCT<br>CHINA |
| LTE | 3GPP TS 36.211 | 5.4.2 | V8.1.0 | Samsung Electronics Corporation | P2006-0023756 |  | HYBRID AUTOMATIC REPEAT REQUEST METHOD IN A MOBILE COMMUNICATION SYSTEM, AND TRANSMISSION/RECEPTION METHOD AND APPARATUS USING THE SAME | KR            |  | European Patent Office<br>INDIA<br>JAPAN<br>UNITED STATES<br>PCT   |
| LTE | 3GPP TS 36.211 | 5.4.1 | V8.3.0 | Samsung Electronics Corporation | P2007-0080943 |  | APPARATUS AND METHOD FOR ALLOCATING CODE RESOURCES TO UPLINK ACK-NACK CHANNELS IN A CELLULAR WIRELESS COMMUNICATION SYSTEM              | KR            |  | UNITED STATES<br>PCT   |



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 Page 26 of 26 (version 5)

|               |                   |     |        |                                       |                   |  |   |                  |                 |                           |
|---------------|-------------------|-----|--------|---------------------------------------|-------------------|--|---|------------------|-----------------|---------------------------|
| LTE           | 3GPP TS<br>36.211 | 5   | V8.1.0 | Samsung<br>Electronics<br>Corporation | P2004-<br>0099562 |  | APPARATUS AND METHOD FOR<br>RETRANSMITTING DATA IN<br>MOBILE COMMUNICATION<br>SYSTEM                                | KR               | 05026151.0      | European<br>Patent Office |
|               |                   |     |        |                                       |                   |  |   |                  | 291,031         | UNITED<br>STATES          |
| LTE           | 3GPP TS<br>36.211 | 6.1 | V8.1.0 | Samsung<br>Electronics<br>Corporation | P2005-<br>0113193 |  | METHOD AND APPARATUS FOR<br>INITIATING COMMUNICATIONS<br>ON A SHARED CHANNEL IN A<br>MOBILE COMMUNICATION<br>SYSTEM | KR               | 200680044204.9  | CHINA                     |
|               |                   |     |        |                                       |                   |  |   |                  | 06124674.0      | European<br>Patent Office |
|               |                   |     |        |                                       |                   |  |   |                  | 4371/DELNP/2008 | INDIA                     |
|               |                   |     |        |                                       |                   |  |   |                  |                 | JAPAN                     |
|               |                   |     |        |                                       |                   |  |   |                  | 2008120643      | RUSSIA                    |
|               |                   |     |        |                                       |                   |  |   |                  | 603,237         | UNITED<br>STATES          |
| KR2006/004977 | PCT               |     |        |                                       |                   |  |   |                  |                 |                           |
| LTE           | 3GPP TS<br>36.211 | 6.9 | V8.3.0 | Samsung<br>Electronics<br>Corporation | 12/219,438        |  | Transmission Methods for Downlink<br>ACK/NACK Channels  | UNITED<br>STATES |                 |                           |

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