

LTE Essential Patents Data 3Q 2011

LTE Essential Patent Candidates Data 3Q 2011 is a product of TechIPm, LLC (www.techipm.com) based on LTE patents research for US market leader among LTE UE (cellular phones, smart phones, PDAs, mobile PCs, etc.) and base station (eNB) product manufactures. LTE Essential Patent Candidates Data provides assignee, patent number, related 3GPP TS36 specifications, and the key technology components for an implementation of the products.

Methodology

1. Search for LTE related patents.

- Search the current USPTO database for published and issued patents as of Aug. 31, 2011
- Search the ETSI database for LTE standard specifications
- 3GPP Release 8 technical specifications for the LTE RAN (Radio Access Network):
- PHY: TS 36.211, 212, 213
- L2/L3 Protocols: TS 36.321, 322, 323, 331, 304
- * LTE RAN products: LTE UE (cellular phones, smart phones, PDAs, mobile PCs, etc.) and base station (eNB) baseband modem and radio SW products

2. Review the searched patents for essential patent candidates.

- Review the patents in portfolio
- Categorize the identified patents through the evaluation process by technology in the standard specifications
Key technology components for an implementation of the LTE baseband modem: OFDM/OFDMA (Frame & Slot Structure, Modulation), SC-FDMA (PUSCH, PUCCH), Channel Estimation (UL RS, DL RS, CQI), Cell Search & Connection (PRACH, DL SS), MIMO (Transmit Diversity, Spatial Multiplexing), Resource Management (Resource Allocation, Scheduling), Coding (Convolution, Turbo), Power Control, and HARQ.
Key technology components for an implementation of the LTE radio protocol: Random Access, HARQ, Channel Prioritization, Scheduling (Dynamic, SPS), Protocol Format (PDUs, SDUs), Radio Link Control (ARQ), PDCP Process (SRB, DRB, ROHC), Security (Ciphering, Integrity), System Information, Connection Control, and Mobility (Handover, Inter-RAT, Measurements).
- Evaluate the level of essentiality
Essentiality Index (EI):
E1 : Patent disclosure is weakly related to LTE technical specifications
E2 : Patent disclosure is partially related to LTE technical specifications
E3 : Patent disclosure is related to LTE technical specifications overall
E4 : Patent disclosure is strongly related to LTE technical specifications
*To be a potential essential patent candidate, EI should be E3 or E4.

Deliverables

MS excel file for essential patent candidates (patent number, standard specification section number, technology category, for essentiality level E3 or E4).

Sample:

	A	B	C	D	E
1	Assignee	Patent No.	TS36	Section	Tech Class
2	Ericsson				
3			211	6.11 DL SS	Cell Search & Connection
4			213		Power Control
5					
6					
7					
8	ETRI				
9			321	5.7 DRX	Scheduling
10			211	5.7 PRACH	
11			211	6.11 DL SS	
12			213		
13	Huawei			10. PUCCH Proc	
14					
15					
16	InterDigital			5.3 DL-SCH Data Tr	
17			331		

For more information, please contact Alex Lee at alexglee@techipm.com .