Analisis regulasi dan perumusan skema penyelenggaraan unlicensed (LTE-U) dan licensed assisted access (LAA) pada frekuensi 5 GHz dengan metode regulator impact analysis = Analysis regulatory and formulation implementation scheme unlicensed (LTE-U) dan licensed assisted access (LAA) in frequency 5 GHz with regulator impact analysis method

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Abstrak

Long Term Evolution (LTE) merupakan evolusi dari teknologi Global System for Mobile Communications (GSM) menuju Wideband Code Division Multiple Access (WCDMA) kemudian High Speed Downlink Packet Access (HSDPA) dengan peningkatan kecepatan dari Kbps menuju Mbps. Kebutuhan akan kecepatan tinggi dan sifat konsumtif akan paket data yang terus meningkat, sehingga diperlukanlah kesiapan regulasi. Dalam memperbesar kapasitas diperlukan teknologi LTE dengan frekuensi yang lebih tinggi seperti frekuensi 5GHz.
Di Indonesia, PM no 35/2015 dan PM no 28/ 2015 mengenai aturan untuk teknologi Short Range Distance di frekuensi 5 GHz dan batasan band. Di Indonesia, LTE memerlukan penyusunan skema baru di frekuensi tidak berlisensi dan lisensi di frekuensi 5 GHz. Dengan menggunakan metode Regulator Impact Analysis yaitu analisis hasil ujicoba pada frekuensi 5GHz, indepth interview stakeholder dan tekno ekonomi untuk mengukur kelayakan implementasi teknologi ini.
Tesis ini merumuskan skema baru pada frekuensi 5-5,3 GHz dengan bandwidth 40 Mhz, teknik time division duplexing (TDD), modulasi 256 QAM, antenna 4T4R berdasarkan hasil uji coba yang menggunakan teknologi Listen Before Talk dan indepth interview stakeholder, dan teknologi ini layak dilanjutkan dengan nilai NPV 247 Milyar, IRR sebesar 48% dan payback period selama 2.69 tahun.
.....Long Term Evolution (LTE) is an evolution from technology Global System for Mobile Communications (GSM) then Wideband Code Division Multiple Access (WCDMA) and then High Speed Downlink Packet Access (HSDPA), which is enhancement of speed from just a few Kbps to Mbps. Necessity of the high speed and consumption of the data packets always continue increasing, so it requires readiness of regulation. Enlarge capacity requires new LTE with higher frequency such as frequency at 5 GHz.
In Indonesia, PM no. 35/2015 and PM no. 28/2015 is regulated technology Short Range Distance in frequency 5 GHz and limitation band. In Indonesia, LTE need new scheme Unlisenced and licensed at Frequency 5 GHz. New scheme with Regulatory Impact Analysis method is analysis result of trial at frequency 5Ghz, indepth interview of stakeholders and techno economy for measuring the feasibility of this implementation.
This thesis formulates a new scheme at frequencies from 5-5.3 GHz with bandwidth of 40 MHz, TDD duplexing technique, 256 QAM modulation, antenna 4T4R based on performance of the trial, which is use Listen Before Talk technology and indepth interview stakeholders, and the new scheme feasible for implementating with 247 billion NPV, IRR of 48% and the payback period being 2.69 years.