

## ABSTRACT

Patriot Candrabhaga Stadium is an international football stadium that can accommodate audiences of up to 30,000 people. With large viewership, the stadium must also support the very active characteristics of mobile network users in Indonesia. Building structure and stadium location in the city center dampen telecommunication signal from outside the building, need to do network planning in the stadium so that customers who come in the stadium can still service with the good quality of technology already exists.

At the end of this task, planning an indoor LTE network at Patriot Candrabhaga Stadium. LTE is the 4th generation of telecommunications with better technology than the previous generation. To obtain the calculation result with good accuracy is used modeling propagation Cost-231 Multiwall. The modelling is used because the condition of the stadium is semi indoor and semi-outdoor. The LTE network simulation then uses RPS software. The parameters used in the simulation are the receiving power level signals that carry the reference (RSRP) and the SIR (Signal Interference Ratio).

In the planning results obtained the number of antennas needed as many as 8 pieces. The RSRP is obtained for each tribune and the entire area of -80.14 dBm, -74.69 dBm, -78.12 dBm, -74.68 dBm, -77.21 dBm so that it complies with the KPI standard with  $\geq -90$  dBm (90% area). While SIR value of 11.6, 10.7, 12.71, 12.94, 6.1 by using the benchmark operator KPI is for the SIR parameter must be  $\geq 0$  dB (90% area).

**Key words :** *LTE, Covarage Planning, Capacity Planning, RSRP, SIR*