ABSTRACT

The use of dual play and triple play services for resident customers who still use MSAN

technology is considered unable to provide sufficient bandwidth due to increased access of the

services and the use of cooper cable in its secondary segment. This forces network migration

to customers and FTTH is the best solution for this problem.

In this Final Project, will focuses on 2 active MSANs and still has customers who have

not turned to FTTH yet, at Baturaden and Buana Citra Ciwastra Housing, as well as following

the closest cable route as a reference starting from STO to customers. The design process will

follow the design flow of PT. Telkom Akses, starting from Desktop Survey, High Level

Design, Field Survey, Low Level Design, Design Approval, Field Build Out and As-Built

Recording using Google Earth Pro and GE Smallworld softwares for design completion and

also OptiSystem 7.0 for design simulation as well as analysis using manual calculation of PLB

and RTB in accordance with ITU-T G.984 and PT. Telkom Akses that the distance between

OLT and ONT is not more than 20 km and the receiving power is not less than -28 dBm.

In the design of Baturaden obtained power value –20.632 for downstream side, and –

5.581 for upstream side, whereas in designing Buana Citra Ciwastra got power value –21.772

for downstream side and -6.721 for upstream side. While for RTB standard of feasibility value

obtained 0.282 ns on the downstream side and 0.564 on the upstream side and still pass the

feasibility of both system designs for Baturaden and Buana Citra Ciwastra which obtained

0.254 ns and 0.2535 ns. This value is still below the encoding value limit, so the designs are

considered feasible to be implemented.

**Keywords**: Dual Play, Triple Play, Migration, MSAN, FTTH, PLB, RTB.

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