

## ABSTRACT

The improvement of information technology especially in multimedia service such as *video*, *voice* and data and also the improvement of telecommunication technology based on *fiber optic network* that support multimedia service that can be provided interactively to user using *broadband fiber optic access*. This service can give many kinds of data communication service including internet and *audio-video* service. The HFC (*Hybrid Fiber Coax*) would be able to support that improvement of services.

*Basic design* of HFC planning is area surveying that describes the space of network so that can be known the number of users, services that provided and also the allocation of *bandwidth* used. And then tools surveying to sketch the network planned.

Based on the calculation, allocation of *bandwidth* needed shows that the *downstream* width is actually 742 MHz, that can provide some of multimedia services, such as *broadcast tv* and *fast internet*. For *broadcast tv* is available 70 channels, and the rest of *bandwidth* 342 MHz can be used for another services. For internet service needs 8 MHz (*downstream*) and 3,2 MHz (*Upstream*).

And the result of this HFC Network planning (*Hybrid Fiber Coax*) in Villa Bintaro Regency shows that the planning has been matched with the performance standard of PT. TELKOM that for  $CNR \geq 43$  dB, and for CSO, CTB, Xmod  $\geq 50$  dB. The result of HFC Planning can be used to transmit signal to each user with the equal quality.