

ABSTRACT

A robust communication is needed as a support to territory control patrol. The demand of robust, mobile, secure, terrain independent, all weather communication can be answered by MUBLCOM. MUBLCOM is satellite project sponsored by DARPA (US Department Of Defence) that make possible to communicate point to multipoint beyond line of sight. Although the system was designed to use LEO satellite relays, MUBLCOM will operate even without deployment of the space segment. Relay mounted on airborne, land-mobile or fixed site platforms operate exactly the same as space based repeaters, except they have shorter range. The terminal can also communicate between them in a range about 5 km.

The coded frequency hopping spread spectrum signal provides secure communication as needed. Using UHF band is more suitable for mobile communication because of less attenuation and shadowing compare to other frequency band such as K-band, L-band, etc. This MUBLCOM terminal is also integrated with Global Positioning System (GPS) and shows high performance in handling multipath over the communication channel by using some receiver. Moreover, the presence of multipath signals can provide redundant of signal source.

The MUBLCOM analysis in this final project shows high reliability of this system. With max EIRP 5 Watt from terminal produces enough C/N to communicate over multipath channel. Using of Reed-Solomon can improve system performance that degrade because of collision hit between simultaneous users.

Although this system is belong to US government, this system is also sold for government or military purpose. A MUBLCOM communication is studied in this final project. The performance of this system is also analysed. As result, this system, with all advantages, is feasible to be implemented in Indonesia .