

HF Experimental stations in support of NC3 network, and HF Wideband Waveform Studies

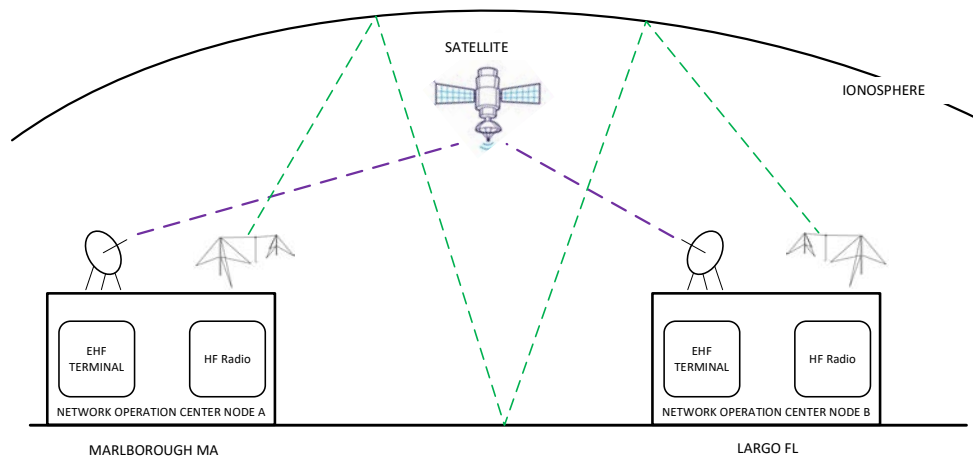


Figure 1 NC3 NETWORK SIMULATION

HF Stations in Marlborough and Largo will be used to study Wide Band HF (WBHF) waveforms in support of NC3 network failover experiments. SATCOM circuits can support high bandwidth, high speed data. When a satellite circuit fails there are few BLOS options to fall back on. HF is one option, but HF has always been bandwidth limited. Typical legacy HF signals are constrained to 3 or 6 KHZ Channels and until recently data throughput topped out at 19.2 KBS. With the advent of WBHF data rates are substantially higher. Raytheon is studying various network topologies and techniques for BLOS communications in a SATCOM denied environment. To that end, questions arise regarding failover to newly defined WBHF waveforms whose channel characteristics present challenges far different than SATCOM circuits. How do we prioritize the data, what frequency and modulation mode is best, can we use Wideband Automatic Link Establishment (WALE), can we split traffic to various media and reconstruct at the destination, questions Raytheon will study. End goal is failover to robust circuits of varying media including WBHF in support of a higher level NC3 network strategy.