Voice of America Coverage Analysis Program (VOACAP) Steps

o Program at the very bottom – VOACAP is all we are interested in

o METHOD = 20 Complete System Performance

o CCIR = Committee Consultative for Ionospheric Radiowave

o Where does SSN come from?

o Go to WWV to retrieve the Solar Flux then go back to Power Budget worksheet and type in the solar Flux, it will do a conversion to produce SSN

o Take the SSN and enter it into the Group's SSN

o FOT is typically 80% of MUF, i.e., 20% down

- VOACAP PROPAGTION MODEL
- • RadioDept of Commerce
- • VOACAP is found at https://its.ntia.gov/research-topics/radio-propagation software/high-frequency/voacap-propagation-model
- • VOACAP SOFTWARE
- • VOACAP Point-to-Point data input
- • Coefficients: we use CCIR (Oslo)
- • Time: UT = UTC
- • Groups: input Sunspot Number SSN for that day
- • Transmitter site: click on and lookup by state
- • Receiver site: same
- • Path: SHORT path direction you point your antenna to. LONG path is the path direction the distant end is pointing to you
- • Then go back to Power Budget Worksheet and enter those in.
- • Back to VOACAP
- • Freq (MHz) already has a pre-set bands for the plots but we can change them
- • System stuff we leave blank, we'll enter our SNR required ourselves in the Power Budget worksheet
- • Eprob – don't use but make sure VOACAP default = 0
- • TX antenna – set to Isotrope because in the Power Budget worksheet we'll input the TX antenna gain and receive antenna gain, etc.
- • RX antenna – same default = isotrope
- • Go to top title bar and Select Run, select Graph – it provides long list of graphs – we select LOSS
- • See graph: VOACAP system LOSS median dB, Path LOSS is dB from one point to another
- • FOT = frequency of optimal transmission
- • Note, the blue line FOT is usually below the MUF, @2000Z MUF = 18 MHz but FOT = 15.5 MHz
- • The FOT is a more stable frequency than working right up at edge of MUF
- • CLICK ON THE BLUE LINE FOT AT THE CURRENT UTC THE TOP LINE WILL SHOW THE PATH LOSS AND THE FOT