(U//FOUO) EMI Quiet = SIGINT Friendly

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(U//FOUO) How NSA keeps electromagnetic interference from hindering its collection mission.

(U//FOUO) Have you ever been in a meeting in your office when a group of people start an impromptu meeting outside of your door, and all of a sudden you can't hear yourself think? Well, that's the equivalent of what happens to a collection system in the presence of Electromagnetic Interference (EMI).

(U//FOUO) So what do you do in those situations? Do you ask everyone in your meeting to speak louder? Do you close your door? Do you ask the people in the hall to keep the noise down? Do you ask them to move further away from your office so that you can't hear them? With any of these choices, if you have been taking these corrective actions all your life, you have been practicing EMI mitigation techniques that can also be used to protect the success of the SIGINT Mission.

(C) Obviously, you won't be able to ask the target to transmit at an increased signal level or have the target move closer in order to improve your collection. You can, however, increase the probability of collection by:

1. adding shielding to reduce the impact of local noise sources,
2. specify a limit for the noise that can be generated in the area of your equipment, or
3. establish a minimum separation distance from the collection antenna, thus creating a SIGINT-friendly EMI environment.

(C) The Secretary of Defense has delegated to the Director, NSA, responsibility for the electromagnetic protection of all intelligence, surveillance, and reconnaissance (ISR) sites and platforms. DIRNSA implements those responsibilities via NSA/CSS Policy 2-5 , the *NSA/CSS Electromagnetic Environmental Effects (E3) Management Program for Signals Intelligence Sites* . Day-to-day management of these responsibilities is assigned to Antenna & Spectrum Engineering (S3315), a division within the Office of Radio Frequency Operations (RFO/S331).

(C) The program consists of a team of Electromagnetic Compatibility (EMC) technical experts who provide engineering and technical support to resolve interference problems that have the potential to impact NSA missions worldwide. EMC is the condition that prevails when radio communications equipment, electronic systems, and SIGINT collection resources all operate in a common electromagnetic environment without interfering or degrading each other's capabilities. For example, at several worldwide High Frequency Direction Finding (HFDF) sites, the systems' uninterruptible power source (UPS) has been found to be the primary source of EMI. The E3 Program has developed a methodology for modifying UPS units, using EMI filtering, to eliminate this source of interference.

(U/FOUO) Now I know you're saying "What in the world does all that mean?" Ok, to decode that for you, **the purpose of the E3 Program is to make sure that the RF noise level is not so high that the SIGINT system can't hear itself think.** And that, my friends, is why EMI QUIET = SIGINT FRIENDLY!

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