**Annex 3.4.**

 **Countermeasures against harmful interference – Mitigation Techniques**

1. **Introduction:**

The incorporation of appropriate countermeasures against harmful interference shall be part of the detailed link planning process facilitating successful coordination and fulfilling all requirements for FWS systems. Countermeasures against harmful interference by taking use of concrete mitigation techniques play an important role in communications networks. Mitigation techniques can be applied at the radio equipment side and/or at the antenna system side, at the interference source and/or at the location of the victim receiver. Required additional investment is depending on the necessary degree of additional effort for avoiding harmful interference It is important for planners to decide on the most efficient t kind of countermeasure necessary to be taken against harmful interference..

Mitigation techniques as countermeasures against harmful interference may be implemented at the interference source and/or at the location of the victim receiver as follows:

* 1. Taking advantage of antenna cross-polar discrimination, by choosing the optimal polarization.
	2. Increasing the system gain of the victim transmitter , by installing antennas with higher on-axis gain e.g. parabolic antennas with larger diameter,
	3. Increasing antenna discrimination in the azimuth for the victim receiver by utilization of higher performance antennas and/or by deliberately exploiting clearance of the interfering signal into advantage by e.g. taking use of : antenna location shielding at a slightly different location,
	4. Reducing transmitter power at the interference source e.g. by placing a fixed attenuator between the transmitter output port and the antenna feed/branching network, and/or taking use of ATPCs far as system performance allows such reductions.