

S-38.042 Seminar on Networking Business Fall 20004

Klaus Nieminen commenting Aki Silvennoinen's paper and presentation slides

Unlicensed reuse of licensed spectrum: case UWB

Relevance

The topic of this paper is very relevant as the use of UWB radio is currently being discussed around the world. The case is not easy, due to the need to minimise UWB's effect on the existing radio systems but also to increase the common good by enhancing the spectrum utilisation. This was nicely pointed out in the paper.

However the paper presents a narrow scope to UWB discussion as it defines UWB only as a PAN technology to be used in 3.1 to 10.6 GHz band mostly for home multimedia applications. This is only a part of the whole issue (even though maybe the most important one) and the author should also have mentioned the other UWB application, such as imaging and short range radar applications (24 GHz later 77-81 GHz).

Form

The paper and slides are clear and well structured. The paper is giving the reader a good background to UWB technology and applications to motivate importance of this topic. After that the European and USA regulatory statuses are described. The substance is pointed out nicely.

The text contains a few grammatical errors that should be corrected. In some parts language could also be enhanced. Also some additional references would have made the reading more informative. Especially I was hoping to find a clear reference on what system the technical characteristics chapter is describing.

However, the paper was good and nice to read.

Substance

The author has clearly good knowledge on the topic and the main problems were clearly stated. Especially the UWB technology was well described and the main regulatory decisions and papers were also presented.

The paper contained one factual error: spectrum mask is defined by ECC, not FCC as presented in the paper. The author has also copied some chapters directly from other sources and one of them contains an annoying inconsistency: 500 MHz band that is actually 528 MHz

Also at least a short description of the international regulatory status would have been nice to have, because it would have pointed that only US has made any decisions on this matter yet. UWB is not in the scope of WR-07, so the deployment of UWB technology will be a national matter that is unfortunate for the global market perspective.

In addition I was hoping to find more arguments on the FCC and ECC decisions and their reasons, because the differences in mask definition are rather large. It would have been nice to have some clarification on are there real technical problems or are most reasons mostly commercial?