

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	}	
	}	
Office of Engineering and Technology	}	ET Docket No. 15-105
And Wireless Telecommunications	}	
Bureau Seek Information on Current	}	
Trends in LTE-U and LAA Technology	}	

**REPLY COMMENTS OF UC SANTA CRUZ IT DEPT**

UCSC is the Santa Cruz campus of the University of California, a public tax supported R-1 institution. Enrollment is 15,645 undergraduates and 1,555 graduate students. The campus' financial stake in Wi-Fi services exceeds \$250,000 per year, covering staff dedicated to Wi-Fi support, expansion to fill out campus coverage, equipment replacement and maintenance.

Cisco pointed out in their comments filed in this docket that Wi-Fi installations range from single access point radios to deployments with thousands of access points under central management and coordination. The campus Wi-Fi design will, when completed, be on this scale of *large*. On the scale at which we are providing services, we have not heard of trials or computer simulations that indicate LTE co-existence is a solved objective. We have read about small scale simulations that claim to demonstrate fairness. We have also seen work that indicates the water is much deeper than it looks [Google's comments, this docket].

It seems from our vantage that the 3GPP is working on a schedule tied to their software release cycle and not completion of full development and testing. As we understand it,

eschewing “Listen Before Talk” in favor of a different access control method will likely raise an effective noise floor at all Wi-Fi radios of intermediate distance beyond -62 dBm signal strength. That would drive our network to lower transmission rates and greatly dilute the value of our investment.

We suspect as property owners we might be able to block carriers that lease our roofs from implementing technology that is harmful to our programs. The geography of the campus is such that LTE radiators operating under ISM band power limits looking into the campus from our property line would not reach our networks. We would rather not have to do that. We would welcome peaceful co-existence with Wi-Fi in the 5 GHz bands that would enhance cellular performance for our students, faculty and guests.

In agreement with Cisco, we are certain that we do not have the answer to how best to bring LTE as good neighbors into dense and complex Wi-Fi environments. We think that the default behavior should be to follow a “Listen Before Talk” access method until some alternative can be shown to be demonstrably better without diluting the effectiveness of installed Wi-Fi systems.

There are examples of previous questions where the Commission has encouraged parties to meet and confer in an earnest dialog to resolve technical disputes. Of recent memory is Docket 10-4 on BDA Cellular Boosters. We believe that is the sort of dialog that the Commission should encourage here. We understand that negotiations between the IEEE and 3GPP will not meet the schedule 3GPP is hoping for. But more dialog is needed to enhance cellular while protecting Wi-Fi.