

SpectrumTalk

The independent blog on spectrum policy issues that welcomes your input on the key policy issues of the day.

Our focus is the relationship between spectrum policy and technical innovation.

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"Aux Armes" Netoyens:

End the War on Millimeter Wave Technology

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The chorus of the [Marseillaise](#), the French national anthem begins with:

*Aux armes, citoyens,
Formez vos bataillons,
Marchons, marchons !*

Which translate to

To arms, citizens,
Form your battalions,
Let's march, let's march!

(While I lived in Paris, I often walked by Eugène Delacroix's masterpiece [Liberty Leading the People](#) [*La Liberté guidant le peuple*] while visiting the Louvre. [Oddly, the painting also made a rare overseas trip to [Tokyo](#) in 1999 when I was living there and was the hit of the town during its visit.] The words of the Marseillaise and the picture describe events and the initial idealism of the French Revolution. But while the "armes"/"arms" in the above lyrics means weapons, what is needed in the context of this post is the use of [human arms](#) to write to FCC and advocate constructive action.)

The commentators of Fox News repeatedly comment on the "[war on coal](#)" and the "[war on religion](#)". Well, the "war on millimeter (mmW) wave technology" at FCC is just as real and easier to document, although it is no doubt unintentional. There are 3 proceedings at FCC that document FCC's present disinterest/apathy towards commercial use of cutting edge microwave technology, even as our national competitors advance in this area.

While not exactly an issue comparable to the causes of the French Revolution, the current situation of US regulation >95 GHz needs the urgent attention of "*netoyens*", especially researchers and firms dealing with [millimeter wave](#) technology. While the FCC Rules have spectrum allocations up to 275 GHz, the lack of "service rules" beyond 95 GHz (with the minor exception of certain amateur radio and ISM bands) makes regular commercial licensed *or* unlicensed mmW use **impossible**. This in turn greatly complicates capital formation for such technology because VCs can easily find other technology to invest in that does not involve making a prominent FCBA member a member of your family for several years and paying his children's college tuition while at the same time the entrepreneur has no access to market and bleeds red ink.

Sadly, with the exception of the [IEEE 802 LAN/MAN Standards Committee](#) (the techies behind Wi-Fi standards), [Boeing](#), and the more obscure (at least in FCC circles) [Battelle Memorial Institute](#) and the rather obscure [Radio Physics Solutions, Inc.](#), no commercial interests have filed comments with FCC on 3 key issues blocking capital formation for technology above 95 GHz and by extension hindering US competitiveness in advanced radio technology.

The 3 dockets involved are:

- [Docket 10-236](#) which as [previously reported here](#) was supposed to encourage experimentation had the apparently unintended effect of complicating millimeter waver research by forbidding, for the first time and without an explanation, all experimental licenses in bands with only passive allocations independent of whether there was any impact. Many mmW bands have only passive allocations and it is difficult a and expensive to avoid them in initial experiments with new technology and

it is not important if there is no passive use near the experiment than could get interference. Since the text of the [Report and Order](#) contradicts itself on this issue, the simplest explanation is that a sentence was put in the wrong section. Your blogger filed a [timely reconsideration petition](#) when he noticed this 2 days before the deadline and that had been supported by [Battelle](#) and [Boeing](#) and [has been opposed by none](#). But FCC doesn't necessarily react in a timely way, specially when incentive auctions are very distracting and staffing is low, unless there are multiple expressions of concerns, preferably from corporate America.

- [Docket 13-259](#) deals with the [IEEE-USA petition](#) seeking timely treatment of new technology proposals for this green field spectrum >95 GHz under the terms of [47 USC 157](#), although any clear statement from FCC on how to get timely decisions on such spectrum would be useful.
- [Docket 13-84](#) has proposed updating the Commission's RF safety rules. The rules currently only have numeric limits up to 100 GHz - the upper limit of the standard they were based on when they were last updated almost 2 decade ago - but the new proposals are silent on numeric limits above 100 GHz even though the standard that is now the base of the regulations now goes to 300 GHz! This lack of a specific safety standard above 100 GHz adds even more to the regulatory uncertainty of those interested in mmW technology. With today's mmW technology, the specific numeric standard doesn't really matter much because exposures will be low. But this proposal to leave ambiguity for mmW systems can be very damaging. Battelle has [proposed](#) one way to deal with a specific standard. Others interested in mmW technology should either support it or propose an alternative.

So *netoyens*, **Aux armes!** The time has come to take your arms (and the attached hands) and write to FCC urging timely action on these three dockets to level the playing field for mmW technology and help US competitiveness.

As a public service, Marcus Spectrum Solutions LLC will draft comments in these 3 dockets for any US manufacturer of mmW equipment dealing with the issues above at no charge to reflect whatever your viewpoints are.

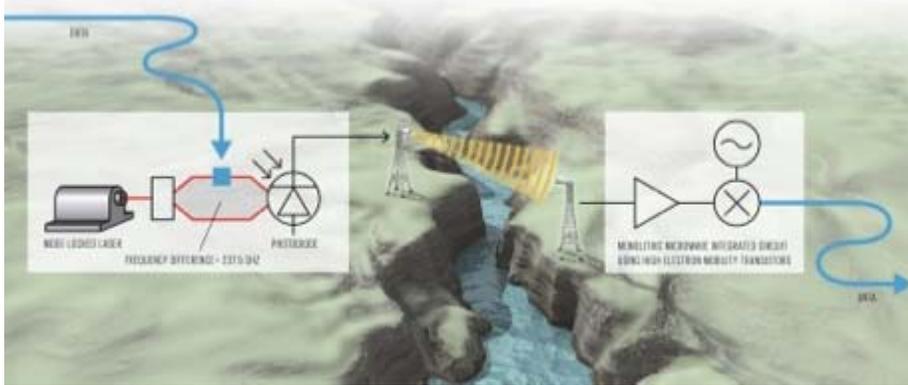
(Note MSS is not licensed to practice law so this offer does not involve the practice of law. Let's discuss what your viewpoints are and we will draft a document for review by your legal staff.)

Japanese 120 GHz system used at 2008 Beijing Olympics



German 237 GHz System exceeding 100 Gbits/s

(An experiment probably not permitted under the terms of the recently revised §5.85(a))



Chrysler Superbowl Ad on "American Pride" - MSS believes that advanced wireless technology is just as American as automobile production in Detroit. US *can* compete if FCC doesn't slow innovation!

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