



BOLD ACTION BY THE FCC IS REQUIRED TO PROMOTE DEPLOYMENT OF EFFICIENT MOBILE BROADBAND SERVICES

SUBMITTED BY: ARRAYCOMM, INC.

ArrayComm, Inc., is a leading proponent of the allocation of unpaired spectrum for commercial use, in the U.S. and globally, to promote TDD-based technologies to deliver mobile broadband services. Only TDD-based technologies in combination with unpaired spectrum can provide mobile broadband services that will far exceed the data rate of any third generation mobile service currently envisioned and at a cost that is competitive with today's fixed dial-up data services. A wireless enclave within the 90 MHz under consideration at the FCC would jump-starting the mobile broadband market. ArrayComm urges the FCC to take that courageous step.

The FCC must not ignore the potential public interest and consumer benefits of mobile broadband services offered over unpaired "TDD spectrum." FDD proponents tout "flexible allocations" and "technology neutrality" as well as "marketplace forces" to support their concept of the broadest potential use of new spectrum. In reality, given today's auction-based approach to spectrum and the political and economic influence of FDD proponents, these [concepts] can only lead to more paired spectrum for more of the same "mostly voice and a little data" service. ArrayComm has urged the FCC to expeditiously identify and allocate appropriate spectrum for TDD technologies and services, consistent with the "Good Neighbor" Incentive recommendation of the Spectrum Policy Task Force. Such specific action, instead of leaving mobile data technologies to subsist on tiny slivers of spectrum or the uncertain landscape of unlicensed spectrum, is a necessary and important step toward the deployment of competitive mobile broadband services.

Further, ArrayComm urges the FCC to recognize that the adoption of more efficient technologies is driven either by spectrum starvation, *i.e.*, the inability of spectrum users to acquire additional spectrum, or government mandate. Neither of those forces is at work in today's mobile wireless market. ArrayComm's recommendation that the FCC impose greater requirements and responsibilities on licensees as they acquire more spectrum may not be a popular one. And ArrayComm acknowledges the difficulty of determining where to draw the line between the rules and additional, perhaps more stringent, requirements as to spectral efficiency. Should the FCC require greater spectral efficiency of a carrier that amasses, for example, 35% of the AWS spectrum in a geographic area? Or is 50 % the correct trigger? And how should spectral efficiency be defined and measured? These are complex questions. However, can they be any more difficult than the development of performance specifications for radio receivers, which the FCC has decided to consider? Can development of spectral efficiency metrics be any more complex than the development of techniques and measures to implement the "interference temperature" concept promoted by the FCC's Spectrum Policy Task Force?

It is true that a single metric and a single performance level will not be appropriate for all services. One metric may be required for voice systems, *e.g.*, simultaneous calls/Hz/cell. Another may be required for data services, *e.g.*, bits/second/Hz/cell or bits/second/Hertz/km². All two-way commercial and consumer services could certainly be organized into a small number of categories for which meaningful spectral efficiency metrics could be created and used to determine not only the baseline performance of today's systems, but achievable targets for future systems. In fact, in its inquiry into radio receiver standards the FCC is expected to consider different requirements for different service categories, *i.e.*, public safety, satellite, mobile, fixed terrestrial and broadcasting. ArrayComm believes reasonable and appropriate spectral efficiency metrics can and should be developed for AWS, and other mobile services. The FCC, as well as the industry, must simply acknowledge that this issue warrants serious consideration. Like mobile voice service before it, mobile broadband has great promise and merits policies and actions to promote its success. ArrayComm urges the FCC to embark on such policies and action now.

Conclusion: Mobile broadband services offered over unpaired "TDD spectrum" will bring services that far exceed the data rate of any third generation mobile service envisioned for the foreseeable future and at a cost competitive with today's fixed dial-up data services. Spectral efficiency metrics and targets must not be ignored or put off simply because their development will be complex. Particularly as large industry players are permitted to amass spectrum without limit, greater emphasis must be placed on its efficient use. Efficiency metrics and targets will create incentives for service providers to more quickly adopt innovative transmission techniques and technologies. And ultimately, the consumer will reap the benefits of efficient spectrum use in higher quality and lower prices.