



A Brief Overview of the Upcoming Spectrum Auction and the Repacking Problems

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The rising demand of mobile data and an oncoming wave of new mobile technology means that radio spectrum will continue to be a much needed commodity. Since 1994, the Federal Communications Commission (FCC) has satiated this growing need by conducting 98 spectrum auctions, selling over 41,000 spectrum licenses for a total value of over \$120 billion. Currently the agency is gearing up for another auction, which will kick off at the end of this month. But this auction is unlike any before it. In the past, buyers would bid for spectrum, but this time around both buyers and sellers will be coming to the table at the same time. Now that some of the details have been worked out, what is becoming clear is that one of the most important parts of the sale, the repacking process, might be a little more complex than first thought.

How will this auction work?

For the first time, the FCC is conducting two auctions. In all other auctions that have been conducted, the sale focused on buyers, as the spectrum to be sold had already been singled out. This time around, both sellers and buyers will be coming to the table. In the reverse auction, broadcasters, who currently use a part of the spectrum, will offer up to voluntarily relinquish their spectrum rights for a specific price. On the forward side of the auction, wireless carriers and other interested parties will bid for that spectrum.

What are some of the complexities of this sale?

The FCC set a target of 126 MHz to be made available for sale, however, it isn't clear if this high water mark will be met because no one has formally committed. Most [estimates](#) place the real range that will come up for sale between 60 and 80 MHz. The dynamic nature to this sale adds on a layer of complexity.

As the FCC has [noted](#), “The lynchpin joining the reverse and the forward auctions is the ‘repacking’ process,” which reorganizes channels for the remaining broadcasters, and then sells off those free chunks of spectrum to be used by carriers and others. Shifting around channel placement from say channel 11 to channel 9 allows for a contiguous chunk of spectrum to be sold off.

While this reorganization seems relatively simple, about [800 broadcasters](#) will have to alter their antennas and equipment. Practically, crews will have to be hired to change out the infrastructure, but there is a dwindling supply of these workers. By [one estimate](#) of an industry insider, only 16 qualified crews currently exist because most of the tower workers have transitioned away from broadcast towards cellular work. Especially from broadcasters, worries abound that the 39-month repacking window that the FCC is holding to might not work in practice.

Repacking will need to be conducted efficiently as to minimize interference. Part of the trick in this two sided deal is ensuring that certain kinds of broadcasters come to the table in specific regions, so that contiguous blocks

of spectrum within a region can be sold off for a higher value. Otherwise, some parts of the spectrum put up for sale will have interference, and thus won't give carriers the ability to fully utilize the space. Impaired spectrum, as it is known, is another piece to this complex dance. More interference in a band translates into a lower value, and thus fewer proceeds overall.

Of course, for those companies that are planning to shell out billions for spectrum, the waiting game will be costly. T-Mobile, especially, has been eager to put this highly sought after spectrum into use, and their parent company, Deutsche Telekom, has [put on hold](#) their efforts to sell their American brand. So there is a balance here between deployment of new technologies and redeployment of current technologies that will only get resolved as the auction proceeds.

Repacking is just one piece of the puzzle. For the sake of everyone involved, let's hope that the FCC gets it right.