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**The FCC's C-Band Plan Will Accelerate and Expand 5G Benefits**

by

**Randolph J. May\* and Andrew Long\*\***

**Introduction and Summary**

Much is at stake in the race to deploy 5G. The achievement of national security objectives, America's continued global technological leadership, and the realization of potential consumer welfare gains all hinge, to a significant extent, on our ability to deploy next-generation wireless technology more quickly than our rivals.

A recent speech by Attorney General William Barr at the Center for Strategic and International Studies is useful in understanding the importance of 5G to America's citizens and consumers. In his February 6, 2020, address, Attorney General Barr explained:

5G technology lies at the center of the technological and industrial world that is taking shape. In essence, communications networks are not just for communications anymore. They are evolving into the central nervous system of the next generation of internet, the industrial internet, and the next generation of the industrial systems that will depend on that infrastructure.

China has built up a lead in 5G, capturing 40 percent of the global infrastructure market. And for the first time in history, the United States is not leading the next technological era.

Now, much of the discussion on the dangers of allowing China to establish dominance in 5G have been focused on the immediate security concern of using communications networks that China can monitor and surveil. That is, in fact, a monumental danger, and for that reason alone we should mobilize to surmount China's drive to dominate 5G. But the stakes are far higher than this.

It has been estimated that the industrial internet powered by 5G could generate new economic opportunities in the range of 23 trillion (dollars) by 2025. If China establishes sole dominance over 5G, it will be able to dominate the opportunities arising from a stunning range of emerging technologies that will be dependent on and interwoven with the 5G platform.<sup>1</sup>

In his address, Attorney General Barr recognized that the key to success with regard to 5G is the timely availability of additional mid-band spectrum. The same day that Attorney General Barr spoke, Federal Communications Commission Chairman Ajit Pai took a major step in that direction when he announced his proposal repurposing the C-band. Specifically, his plan includes not only a public auction of 280 MHz of beachfront spectrum, but also – and critically – targeted measures (*i.e.*, accelerated payments) that will quickly put that spectrum to use.

According to the February 12<sup>th</sup> edition of *Communications Daily*, reacting to Chairman Pai's proposal, Senator John Kennedy (R-LA), Chairman of the Senate Appropriations Committee's Subcommittee on Financial Services and General Government, stated that "[b]efore we start giving away taxpayer money, I want to know the basis for it." This *Perspectives* explains the basis for it.

With due respect to Senator Kennedy and others who have expressed the same view, a narrow focus on "taxpayer money" is misplaced and unsound as a matter of public policy. It misses the larger picture that properly takes into account not just auction revenues the federal government receives but also overall consumer welfare gains to the American public. In this context, "consumer welfare gains" refers to the net increase in overall consumer well-being and satisfaction resulting from pertinent public policy action or actions.

Under the plan proposed by Chairman Pai, auction proceeds make up but one component of the overall consumer welfare gains that members of the American public – who, by the way, for the most part overlap with America's taxpayers – will enjoy as a result of the rapid repurposing of the C-band. More to the point, those overall benefits will not be realized fully unless wireless carriers in fact are able to deploy 5G within that spectrum quickly.

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<sup>1</sup> Keynote Address of Attorney General William Barr, China Initiative Conference, Center of Strategic and International Studies (February 6, 2020), available at <https://www.csis.org/analysis/attorney-general-william-barrs-keynote-address-china-initiative-conference>.

By providing incumbent satellite operator licensees with what are hoped to be sufficient incentives to clear the lower C-band on an expedited basis – and to do so willingly – Chairman Pai's proposal should go a long way towards making sure that such clearing occurs. So, in response to Senator Kennedy's inquiry, we assert that the basis for Chairman Pai's proposal is properly the maximization of overall consumer welfare, not a sole focus on maximizing "taxpayer money."

### **Expedited Repurposing of the Lower C-Band Will Occur Only With the Willing Participation of Incumbent Licensees**

A number of Fixed-Service Satellite ("FSS") operators currently are authorized to use the entire 500 MHz of spectrum included within the C-band. Their licenses have fifteen-year terms and, like spectrum licenses generally, include a legitimate expectation of renewal. C-band satellite operators utilize that capacity to perform a vital role in the content-delivery ecosystem, distributing audio and video programming to broadcast stations, cable headends, and other receive sites throughout the United States.

Nevertheless, there is widespread agreement that, presently, this is not the highest and best use of this entire spectrum band. The rapid deployment of 5G is a major national priority, and the successful achievement of that objective requires additional spectrum capacity. Specifically, "Goldilocks" mid-band spectrum – such as the C-band – that strikes the just-right balance between coverage and capacity. As a result, quickly reallocating some of this bandwidth to 5G without question would expand overall consumer welfare.

Recently, C-band satellite operators announced that, using advanced compression and other technological solutions, they could relocate to the upper 200 MHz of the C-band. This would free up 280 MHz for flexible use, including 5G, along with a 20 MHz guard band. However, doing so would entail substantial cost and risk. It also would require these licensees to relinquish some of their spectrum rights. The accelerated payments announced by Chairman Pai are intended to provide a sufficient incentive for them to do so voluntarily.

While the Commission perhaps ultimately could repurpose this spectrum without the willing participation of the C-band satellite operators, it is highly probable that such an approach would result in unacceptable delay. For example, the FCC likely could modify their licenses unilaterally pursuant to Section 316 of the Communications Act,<sup>2</sup> but should the licensees object – as one reasonably would expect – then lengthy administrative and judicial challenges could result. Likewise, the agency could relocate them involuntarily under its existing *Emerging Technologies* framework, but such an approach typically requires multi-year, post-auction negotiations between new and incumbent licensees before that involuntary relocation takes place.<sup>3</sup>

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<sup>2</sup> See 47 U.S.C. § 316(a)(1) (stating that "[a]ny station license or construction permit may be modified by the Commission either for a limited time or for the duration of the term thereof, if in the judgment of the Commission such action will promote the public interest, convenience, and necessity").

<sup>3</sup> See, e.g., *Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies*, Third Report and Order and Memorandum Opinion and Order, ET Docket No. 92-9, 8 FCC Rcd 6589 (1993), at ¶ 15 (concluding that two negotiation periods, two years and one year in length, "must expire before an emerging technology licensee may proceed to request involuntary relocation").

Other factors unique to the nature of the C-band licenses counsel against the use of the traditional *Emerging Technologies* framework here. For one, FSS operators are authorized to operate in the C-band on a non-exclusive, non-rivalrous basis. This shared-use reality creates ideal conditions for a single holdout to impede the successful post-auction negotiation of early clearing in order to reap an outsized reward. Similarly, FSS licenses cover the entire continental U.S., while terrestrial licenses will be geographically limited in scope. As a consequence, there is the potential that some auction winners may attempt to "free ride" on the spectrum-clearing efforts of others, thereby introducing inefficiencies and delay.

Chairman Pai's draft plan addresses these hurdles by making modifications to the *Emerging Technologies* framework. At the center of his proposal are the predetermined, mandatory accelerated payments that auction participants must agree to provide to incumbent licensees. Such payments are intended to motivate C-band satellite operators to clear spectrum voluntarily and on an expedited basis: 100 MHz within 18 months (four years earlier than otherwise required) and the remaining 180 MHz within 36 months (two years more quickly). Reinforced by substantial penalties should C-band providers fail to meet their deadlines, these acceleration payments could total as much as \$9.7 billion.<sup>4</sup> (This is in addition to the payment of relocation expenses, which are expected to fall between \$3.3 billion and \$5.2 billion.<sup>5</sup>)

According to the draft proposal, these accelerated payments likely will ensure the voluntary participation of incumbent licensees. In addition, they should not serve as a significant drag on total bid amounts. To the contrary, by providing potential bidders *ex ante* certainty regarding both the early availability of this spectrum and the amount of non-auction-specific costs, the accelerated payments actually could increase total proceeds. At a minimum, that certainty could offset (at least in part) any impact that the obligation to make accelerated payments may have on bid levels. On the other hand, costs associated with the delayed repurposing of this C-band spectrum would be significant, as much as \$15 billion in consumer welfare losses per year.<sup>6</sup>

Chairman Pai's plan also likely would enhance the value of spectrum licenses generally. C-band satellite operators are responsible licensees; the license modifications proposed seek solely to reallocate limited capacity to its highest and best use, not to punish "bad actors." By attempting to provide incentives sufficient to secure the willing participation of these incumbent licensees, the FCC sends a strong and positive signal to other authorized spectrum users that – should at some point in the future their holdings similarly be subject to repurposing proceedings – they, too, will be treated in a way that takes account of overall consumer welfare gains.<sup>7</sup> Likewise, participants in subsequent auctions can bid confidently in light of this reassuring precedent.

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<sup>4</sup> See *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, Report and Order and Proposed Modification, GN Docket No. 18-122, FCC-CIRC2002-01 (released February 7, 2020), available at <https://docs.fcc.gov/public/attachments/DOC-362358A1.pdf> (*Draft Order*), at ¶ 219 (setting forth the Phase I and Phase II accelerated payments that Intelsat, SES, Eutelsat, Telesat, and Star One will receive for early clearance of the lower C-band).

<sup>5</sup> See *Draft Order* at ¶ 208.

<sup>6</sup> See *id.* at ¶ 184.

<sup>7</sup> FCC Commissioner Michael O'Rielly has been an articulate exponent of the need, as a matter of proper public policy, to provide sufficient incentive payments to the incumbents in order to achieve a speedier repurposing than otherwise likely would occur. See, e.g., Statement of Commissioner Michael O'Rielly on Circulation of the C-Band Order, available at <https://docs.fcc.gov/public/attachments/DOC-362339A1.pdf>.

## A Narrow Focus on Auction Proceeds Overlooks Broader Consumer Benefits

Some, however, object to the accelerated payments that Chairman Pai has proposed. In particular, Senator John Kennedy, Chairman of the Senate Appropriations Committee's Subcommittee on Financial Services and General Government, stated in a recent speech on the chamber floor that he does not "agree with [Chairman Pai] that he made a good deal to give \$10 billion away to these foreign satellite companies – \$10 billion of American taxpayer money."<sup>8</sup> Senator Kennedy also tweeted on February 6, 2020, that his "duty, and the FCC's duty, is to the American taxpayers."<sup>9</sup>

Putting aside here the precise parameters of Section 309(j) of the Communications Act's auction requirements,<sup>10</sup> with due respect, Senator Kennedy appears to be focusing on just one tree while ignoring the forest. As an initial matter, accelerated payments are distinct from auction payments; the former will not be deducted from the latter. And as noted above, expedited and certain access to C-band spectrum may well increase its value, thereby counteracting any downward pressure on bid amounts that the required accelerated payments may produce.

In addition, auction proceeds are neither the only nor the most significant financial benefit that U.S. consumers will realize from the timely repurposing of C-band spectrum for 5G. To the contrary, consumer surplus gains are expected to equal total bid values – and to do so on a recurring annual basis.<sup>11</sup>

Moreover, the expedited rollout of 5G services will expand overall consumer welfare substantially in a number of other ways. For example, data rates will increase, driving innovative new use cases such as 4K video streaming and telemedicine. Latency will decrease, improving augmented reality/virtual reality and online gaming experiences. Coverage will become more ubiquitous, reaching currently unserved (*e.g.*, rural) areas and delivering on the promise of the Internet of Things. Current markets parameters will change, enabling mobile broadband and fixed wireline offerings to compete for the same customers. And employment opportunities will grow, both directly (through network buildout demands) and indirectly (via the new business models that 5G makes possible). Indeed, one economic analysis found that the reallocation of 400 MHz of mid-band spectrum (rather than the 280 MHz contemplated here) would lead to over \$154 billion in infrastructure investment over seven years, generating \$274 billion in additional GDP and 1.3 million new jobs.<sup>12</sup>

It is imperative to keep in mind, though, that none of these benefits will be realized unless and until wireless carriers actually launch 5G services using C-band spectrum. Incumbent licensees

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<sup>8</sup> Press Release, "ICYMI: Kennedy delivers speech on FCC's C-band proposal" (February 13, 2020), available at <https://www.kennedy.senate.gov/public/press-releases?ID=84E4958F-7DBF-4447-982A-C388C5D599FF>.

<sup>9</sup> John Kennedy (@SenJohnKennedy), *Twitter* (February 6, 2020, 11:13 AM), <https://twitter.com/SenJohnKennedy/status/1225482677886820353>.

<sup>10</sup> See 47 U.S.C. § 309(j).

<sup>11</sup> See *Draft Order* at ¶ 184.

<sup>12</sup> See David W. Sosa & Greg Rafert, "The Economic Impacts of Reallocating Mid-Band Spectrum to 5G in the United States," *Analysis Group* (February 2019), available at [https://www.analysisgroup.com/globalassets/uploadedfiles/content/news\\_and\\_events/news/sosa-rafert-economic-impacts-of-reallocating-mid-band-spectrum-to-5g-1.pdf](https://www.analysisgroup.com/globalassets/uploadedfiles/content/news_and_events/news/sosa-rafert-economic-impacts-of-reallocating-mid-band-spectrum-to-5g-1.pdf), at 1.

may be able to delay the realization of that goal. Accelerated payments are a proper means to incentivize them not to do so.

## **Conclusion**

As Attorney General William Barr explained in his February 6<sup>th</sup> address at the Center for Strategic and International Studies, "5G technology lies at the center of the technological and industrial world that is taking shape." It therefore would be difficult to overstate the national importance of the timely deployment of 5G. Chairman Pai's C-band proposal appears to be an important step in freeing up additional mid-band spectrum required by wireless carriers to execute on their overall 5G strategy. And it appears that it would do so quickly and with certainty. A misplaced narrow focus on "taxpayer money," rather than overall consumer welfare, ignores the numerous other ways that America's citizens and consumers will benefit from a plan like Chairman Pai's.

\* Randolph J. May is President of the Free State Foundation, an independent, nonpartisan free market-oriented think tank located in Rockville, Maryland.

\*\* Andrew Long is a Senior Fellow of the Free State Foundation.