

United States Court of Appeals
FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued October 28, 2020

Decided December 18, 2020

No. 20-1142

PSSI GLOBAL SERVICES, L.L.C., A STATE OF NEVADA LIMITED
LIABILITY COMPANY,
APPELLANT

v.

FEDERAL COMMUNICATIONS COMMISSION,
APPELLEE

AT&T SERVICES, INC., ET AL.,
INTERVENORS

Consolidated with 20-1143, 20-1146, 20-1147, 20-1165,
20-1166, 20-1349

On Appeals from and Petitions for Review of Orders of
the Federal Communications Commission

Stephen Diaz Gavin and *Christopher J. Wright* argued the
causes for appellants. With them on the joint briefs were *Scott
Blake Harris*, *V. Shiva Goel*, and *Daniel Tingley*.

Ashley S. Boizelle, Acting General Counsel, Federal
Communications Commission, argued the cause for appellee.

With her on the brief were *Michael F. Murray*, Deputy Assistant Attorney General, U.S. Department of Justice, *Daniel E. Haar* and *Robert J. Wiggers*, Attorneys, *Jacob M. Lewis*, Associate General Counsel, Federal Communications Commission, and *Scott M. Noveck*, Counsel. *Richard K. Welch*, Deputy Associate General Counsel, entered an appearance.

Peter Karanjia argued the cause for Wireless intervenors. With him on the brief were *James P. Young*, *Christopher T. Shenk*, *Scott H. Angstreich*, and *Joseph L. Wenner*. *William H. Johnson* entered an appearance.

Paul A. Werner argued the cause for intervenor SES Americom, Inc. With him on the brief were *Helgi C. Walker*, *Russell B. Balikian*, *Max E. Schulman*, and *Brian D. Weimer*.

Joshua S. Turner, *Scott D. Delacourt*, and *Sara M. Baxenberg* were on the brief for *amicus curiae* the Alliance for Automotive Innovation.

Before: WILKINS, KATSAS and WALKER, *Circuit Judges*.

Opinion of the Court filed by *Circuit Judge KATSAS*.

KATSAS, *Circuit Judge*: To make room for the emerging fifth generation of mobile cellular technology, the Federal Communications Commission significantly narrowed a frequency band dedicated to fixed satellite transmissions. We consider whether this change permissibly modified the existing station licenses of three satellite operators and one company that broadcasts live events through satellites.

To reduce interference among different kinds of telecommunication signals, the FCC may “[a]ssign bands of frequencies” within the electromagnetic spectrum to specific uses, and then license companies to operate within each band. 47 U.S.C. § 303(c). An FCC station license permits the “use” of specific frequency channels for a limited time, “but not the ownership thereof.” *Id.* § 301. The FCC may modify station licenses as necessary to “promote the public interest, convenience, and necessity.” *Id.* § 316(a)(1).

Until recently, the frequency band between 3.7 and 4.2 gigahertz (GHz)—referred to as the “C-band” or “C-band downlink”—was assigned to “fixed satellite service.” 47 C.F.R. § 2.106 (2019). Bases on the ground called “earth stations” transmit signals to satellites at frequencies between 5.925 GHz and 6.425 GHz, a frequency band referred to as the “C-band uplink.” Satellites, also called “space stations,” receive these signals, apply a fixed frequency shift of –2.225 GHz, and transmit the signals back to different earth stations at frequencies within the C-band downlink.

In March 2018, Congress passed the MOBILE NOW Act, which sought to make spectrum available for the emerging fifth generation of mobile cellular technology (5G). Pub. L. No. 115-141, § 603(a)(1), 132 Stat. 1097, 1098 (2018). The Act identified the C-band as a promising candidate, and it instructed the FCC to provide notice and an opportunity for comment on “the feasibility of allowing commercial wireless services, licensed or unlicensed, to use or share use of the frequencies between 3700 megahertz and 4200 megahertz.” *Id.* § 605(b).

Four months later, the FCC solicited public comment on proposals to convert all or part of the C-band to 5G terrestrial

wireless use. *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, 83 Fed. Reg. 44,128 (proposed July 12, 2018) (*NPRM*). At that time, eight companies operated satellites authorized to transmit signals within the United States over the C-band. Seven of them told the FCC that they could, through data compression and other technological upgrades, provide all their services within 200 megahertz (MHz) of the C-band. The eighth declined to participate in the rulemaking.

On March 3, 2020, the FCC released a final rule that reallocated the lower 280 MHz of the C-band (3.7–3.98 GHz) to 5G terrestrial wireless use, maintained the upper 200 MHz (4.0–4.2 GHz) for fixed satellite service, and designated the intervening 20 MHz (3.98–4.0 GHz) as an unusable “guard band” to minimize cross-interference. *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, 85 Fed. Reg. 22,804, 22,804–05 (April 23, 2020) (*Order*). The FCC found that the lower portion of the C-band is ideal for 5G use “due to its favorable propagation and capacity characteristics,” *id.* at 22,811, and its adjacency to spectrum already dedicated to terrestrial wireless use, *id.* at 22,806. The Commission concluded that this spectrum reallocation would lead to “substantial economic gains,” yet would leave satellite operators “able to maintain the same services in the upper 200 megahertz as they [were] providing across the full 500 megahertz.” *Id.* at 22,807.

To implement the transition, the FCC will auction off licenses to provide 5G services within the lower portion of the C-band. *Order* at 22,807. The auction winners, in addition to paying the auction price, will be required to reimburse existing satellite operators for all reasonable costs of transitioning their services to the upper 200 MHz of the C-band. *Id.* at 22,826. The Commission estimated these transition costs will be about \$3.3 billion to \$5.2 billion. *Id.* at 22,830.

The FCC required satellite operators to relocate their transmissions by December 2025. *Order* at 22,823. But it also incentivized satellite operators to complete the transition more quickly, based on a finding that a faster transition would increase consumer welfare by about \$15 billion per year. *Id.* at 22,827. If satellite operators fully transition by December 2023, the new 5G licensees must pay them an “accelerated relocation payment” of \$9.7 billion, *id.* at 22,825, 22,831, to be divided among eligible operators under a set schedule, *id.* at 22,833–34. The five satellite operators eligible to receive these payments have chosen to transition by the accelerated deadline and have begun to relocate their services.

II

Three self-described small satellite operators (SSOs) seek review of the Order. Each SSO operates one fixed, foreign-licensed satellite authorized to transmit into the United States by an FCC market access grant. *See* 47 C.F.R. § 25.137(c). The SSOs provide “little to no service” in the United States. *Order* at 22,820. Hispasat S.A. contracted all its capacity to foreign service through the end of 2019. ABS Global Ltd. provides no United States service, and its satellite can reach only the Nation’s eastern edge. Empresa Argentina de Soluciones Satelitales S.A. (ARSAT) did not participate in the rulemaking and provides no United States service. The FCC concluded that these SSOs provided no services requiring relocation and thus were ineligible to receive compensation for relocation expenses. *Id.* at 22,829.

PSSI Global Services, LLC also challenges the Order. PSSI operates mobile earth stations that broadcast live events by satellite. By modifying the C-band downlink, the FCC has arguably modified PSSI’s license to transmit over the C-band uplink: Given the fixed frequency shift, PSSI may no longer

transmit signals to satellites at frequencies between 5.925 GHz and 6.225 GHz, because the satellites would retransmit the signals at frequencies between 3.7 GHz and 4.0 GHz.

The SSOs and PSSI each filed an appeal under 47 U.S.C. § 402(b) and a petition for review under 47 U.S.C. § 402(a). These provisions are “mutually exclusive channels for the review of FCC decisions.” *Vernal Enters., Inc. v. FCC*, 355 F.3d 650, 655 (D.C. Cir. 2004). Section 402(b) permits appeals to this Court from ten categories of FCC orders, including appeals by “the holder of any ... station license which has been modified or revoked.” 47 U.S.C. § 402(b)(5). Section 402(a) authorizes petitions for review of FCC orders “except those appealable under subsection (b) of this section.” We need not decide which of these is the proper vehicle for our review if we have jurisdiction “by the one procedural route or the other.” *Cellco P’ship v. FCC*, 700 F.3d 534, 541 (D.C. Cir. 2012). There is no dispute that either § 402(b)(5) or § 402(a) permits us to hear the SSOs’ claims.

The FCC contends that we lack jurisdiction over PSSI’s claims. Although PSSI timely filed its petition for review within 60 days of the Order’s “entry,” see 28 U.S.C. § 2344, the Commission argues that PSSI must proceed through a § 402(b)(5) appeal, which the agency says is untimely. Under 47 U.S.C. § 402(c), such an appeal must be filed within 30 days of “public notice” of the decision at issue. The Order was released on March 3, 2020 and published in the Federal Register on April 23. PSSI filed its appeal on April 28. The appeal is thus timely if the § 402(c) deadline runs from the date of publication in the Federal Register, but not if it runs from the release date.

An FCC regulation addresses what constitutes “public notice” under § 402(c). It equates such notice to “publication

in the Federal Register” for “documents in notice and comment and non-notice and comment rulemaking proceedings required by the Administrative Procedure Act.” 47 C.F.R. § 1.4(b)(1). In contrast, it equates public notice to the “release date” for “non-rulemaking documents.” *Id.* § 1.4(b)(2). The action at issue here—a final rule—plainly falls within the first category. The FCC invokes a note in § 1.4(b)(1), which keys public notice to the release date for “[l]icensing and other adjudicatory decisions with respect to specific parties that may be associated with or contained in rulemaking documents.” Yet the Order, which modified thousands of earth station licenses at once, cannot reasonably be described as a decision “with respect to specific parties.” PSSI’s claims thus were timely regardless of whether they were properly brought as an appeal under § 402(b)(5) or as a petition for review under § 402(a).¹

After filing their appeals and petitions for review, the SSOs and PSSI unsuccessfully asked the FCC to stay its Order. The SSOs then sought a stay from this Court, which we denied. We nevertheless expedited oral argument to permit review before the FCC’s auction of 5G spectrum, which began on December 8, 2020. On that date, we issued our judgment.

On review, we consider whether the Order is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 5 U.S.C. § 706(2). The FCC therefore must articulate a “rational connection between the facts found and the choice made.” *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Ins. Co.*, 463 U.S. 29, 43 (1983). We review the FCC’s legal determinations under *Chevron U.S.A. Inc. v. NRDC*, 467

¹ The satellite operator SES Americom, Inc. also protectively filed an appeal and a petition for review. But since SES does not challenge any provision of the Order, it is properly before us only as an intervenor supporting the FCC. See *Deposit Guar. Nat’l Bank v. Roper*, 445 U.S. 326, 333 (1980).

U.S. 837, 842–43 (1984), and we “accept the Commission’s findings of fact so long as they are supported by substantial evidence on the record as a whole,” *Neustar, Inc. v. FCC*, 857 F.3d 886, 896 (D.C. Cir. 2017) (cleaned up).

III

The principal argument advanced by the SSOs and PSSI is that the Order exceeds the FCC’s statutory authority to modify existing station licenses. Although the governing statutes by their terms speak only of licenses, the FCC gives market access grants the same protection that it gives to full Commission licenses. *Order* at 22,820.

A

Section 316(a)(1) of the Communications Act of 1934 gives the FCC authority to modify station licenses. It provides: “Any station license ... may be modified by the Commission ... if in the judgment of the Commission such action will promote the public interest, convenience, and necessity.” 47 U.S.C. § 316(a)(1). This provision enables the FCC to “maintain the control of the United States over all the channels of radio transmission,” *id.* § 301, and to manage spectrum assignments “as public convenience, interest, or necessity requires,” *id.* § 303. Although broad, the modification power has limits. The word *modify* connotes “moderate” but not “fundamental” changes. *MCI Telecomms. Corp v. AT&T*, 512 U.S. 218, 227–29 (1994). In *MCI*, the Supreme Court applied that understanding to limit the scope of § 203(b)(2) of the Communications Act, which authorizes the FCC to “modify” any statutory requirement to file rate schedules. *See id.* We have applied the same understanding to address the scope of

the FCC's power to modify station licenses. *See Cellco*, 700 F.3d at 543.

One example of a permissible modification is instructive here. In *Community Television, Inc. v. FCC*, 216 F.3d 1133 (D.C. Cir. 2000), the FCC ordered all television broadcasters to migrate their services from analog to digital technology. To ease this transition, it allowed broadcasters to use a digital channel free of charge for ten years and to retain access to their analog channels over that same period. *Id.* at 1136. We held that this order, which required broadcasters to entirely transform their operations, permissibly modified their station licenses. We reasoned that the licenses were not fundamentally changed because broadcasters would “begin and end the transition ... under very similar terms” and would “provide essentially the same services” before, during, and after the transition. *Id.* at 1141.

B

The FCC concluded that reallocating spectrum from satellite to 5G use would promote the public interest by creating billions of dollars of economic growth. *Order* at 22,807. The SSOs do not dispute that determination. Instead, they contend that the change to their market access grants was too fundamental to qualify as a modification under § 316(a)(1). Further, they argue that the FCC arbitrarily restricted their future business opportunities and excluded them from receiving compensation from the future 5G providers. Finally, they claim that the FCC impermissibly sanctioned them without prior notice. We disagree with all of this.

The SSOs argue that reducing their available spectrum by sixty percent works a fundamental change in their grants of market access. But the FCC found that the remaining spectrum “exceeds any reasonable estimate of [the SSOs'] needs,” *Order*

at 22,820, so “any opportunities [the SSOs] might be losing as a result of the Commission’s actions are, on a practical level, *de minimis*,” *id.* at 22,821. The SSOs object that the FCC considered only how much spectrum satellite operators would need to continue servicing *existing* customers. In fact, the FCC determined that the remaining spectrum would allow all operators—including the SSOs—to serve their likely *future* customers as well. *See id.* at 22,820–21, 22,829, 22,836.

Substantial evidence supports this critical finding. In a declining market for satellite transmission, *Order* at 22,821, the SSOs currently provide “little to no service” in the C-band within the United States, *id.* at 22,820. Moreover, they have made few efforts to develop such services, *id.* at 22,836, and they have failed to show an “ability to lure existing customers away from their contracts with other providers or to explain how they had planned to obtain new customers,” *id.* at 22,821. During the rulemaking, two SSOs affirmatively supported the reallocation. They commented that “300 megahertz of C-band spectrum could be made available for 5G ... through the use of non-proprietary, readily available compression technology” without impairing the SSOs’ operations. *Id.* at 22,824.

The SSOs cite no persuasive contrary evidence. Hispasat, which sold all its transmission capacity to foreign customers through the end of 2019, *Order* at 22,835, offers only a bare assertion that it plans to develop future business in the United States. ABS, whose satellite can reach only the eastern edge of the United States, asserts that it has made reasonable efforts to provide service in the United States. But it waited a year and a half after launching its satellite to apply for a grant of market access, then waited another year to apply for an earth station construction permit. *Id.* at 22,836. And ARSAT, which neither responded to the FCC’s request for information nor otherwise participated in the rulemaking, can point to no evidence

undermining the FCC's evaluation of its needs. The SSOs claim a unique ability to transmit content into the United States from abroad, which they say gives them a competitive advantage over domestic satellite providers. But the SSOs have not shown that any market for such services exists, much less that such a market would be large enough to require 500 MHz of spectrum.

The FCC's finding that 200 MHz will support the SSOs' present and likely future transmission needs forecloses any claim that the agency exceeded its authority to modify existing station licenses. This finding establishes that the SSOs will be able to provide essentially the same services after the transition as before. They will just be required to do so through different means—by utilizing the upper 200 MHz of the C-band rather than the entire 500 MHz. In this respect, the SSOs are like the broadcasters in *Community Television*, who could continue providing the same service to viewers, but only through new digital technology. Unless it harms the services ultimately provided, the need to make such technological adjustments does not impose any impermissibly fundamental change. See *Community Television*, 216 F.3d at 1141.

The SSOs briefly invoke three other provisions of the Communications Act, but none helps their case. Section 312(a) restricts the FCC's ability to revoke licenses, but a reduction in spectrum that leaves licensees with enough capacity to meet current and future needs does not remotely constitute a revocation. Section 303(y)(2)(C) requires the FCC to ensure that its spectrum allocation does not “result in harmful interference among users.” But nothing in that provision bars the FCC from reducing harmful interference by reconfiguring the frequency band assigned to incumbent licensees. Section 309(j)(8)(G) permits the FCC to hold a reverse auction and share a portion of its proceeds with licensees to “encourage a

licensee to relinquish voluntarily some or all of its licensed spectrum usage rights.” The SSOs contend that this provision, by its negative implication, requires the FCC to provide compensation if it takes away any spectrum from existing licensees. But § 309(j)(6)(C) forecloses that inference, by stating that nothing in § 309(j) shall “diminish the authority of the Commission under the other provisions of this chapter to regulate or reclaim spectrum licenses.” As explained above, § 316(a)(1) permits the license modifications at issue.

Our analysis above all but forecloses the SSOs’ related contentions that the FCC arbitrarily modified their market access grants and denied them compensation. The SSOs contend that the FCC unreasonably limited their potential for future growth in the United States. But the SSOs hold “no vested right to any specific terms” of their market access grants. *Celtronix Telemetry, Inc. v. FCC*, 272 F.3d 585, 589 (D.C. Cir. 2001). And in any event, the FCC took account of their likely future needs as well as their (minimal) current domestic business. In sum, it was entirely reasonable for the FCC to conclude that C-band spectrum would better serve the public interest if actively used by state-of-the-art 5G technology than if held in reserve by satellite operators unlikely to need it. And the FCC reasonably declined to require successful 5G bidders to compensate the SSOs for a reduction in spectrum that imposed on them at most “speculative claims of future loss.” *Order* at 22,829.

Finally, the SSOs object that the FCC declined to provide adequate advance notice for adopting what they describe as the “sanction” of assessing their spectrum needs by reference to existing customers. But as we have shown, the FCC considered all satellite operators’ future as well as current needs, which was more than enough to protect the SSOs’ interests under these circumstances.

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C

PSSI claims that its licenses to transmit within the C-band uplink have been fundamentally changed. But the FCC concluded that earth stations—including PSSI’s mobile ones—will be able to “provide the same services” to their customers after the license modification. *Order* at 22,823. That finding was supported by substantial evidence.

PSSI contends that the reduction in spectrum prevents it from transmitting from certain major event venues. For example, PSSI claims that its stations, when positioned at Hard Rock Stadium in Miami, have sufficient “line of sight” to transmit only to satellites operating in the lower 300 MHz of the C-band. But PSSI did not raise this argument before the FCC. There, PSSI argued that the proposed reallocation would leave insufficient overall capacity to meet its transmission needs. The FCC addressed that concern at length, explaining why data compression and other technology—which PSSI may install and be reimbursed for—would ensure that the remaining spectrum is adequate for satellite operators and their customers. PSSI’s line-of-sight concern is distinct; it concerns the elimination of specific frequencies, not the reduction of overall capacity. Because PSSI gave the FCC no “opportunity to pass” on its line-of-sight concern, we may not address it. 47 U.S.C. § 405(a); see *FiberTower Spectrum Holdings, LLC v. FCC*, 782 F.3d 692, 697 (D.C. Cir. 2015).

PSSI further claims that the Order will allow 5G base stations to operate at high power levels, which will increase interference with its own return reception from the satellites to which it is transmitting. But it is unclear whether PSSI’s return reception will indeed suffer. PSSI relies primarily on its recent experience at an Iowa State football game, where it lost return reception because a nearby cell phone tower was operating

within the C-band under an experimental license. But after that incident, the FCC adopted many new protections against interference. Among other things, it created a 20 MHz guard band between satellite and 5G transmissions, *Order* at 22,811; limited the allowable level of spillover transmissions extending beyond the edge of the frequency band assigned for 5G use, *id.* at 22,848; and required satellite operators to provide earth stations with passband filters, *id.* at 22,825. Moreover, any incidental interference with PSSI's return reception would not cause the kind of fundamental change that might exceed the FCC's modification power. At the Iowa State game, PSSI admits that its outgoing transmissions were not affected. Although its return reception was disrupted, PSSI fails to explain why it must monitor the return signal on-site rather than remotely. Finally, PSSI acknowledged before the FCC that simply being able to coordinate with nearby 5G base stations would substantially reduce any potential disruption. And it seems likely that PSSI will be able to locate base station operators with help from the hosts of its events or a third-party service. Because the potential for new interference reflects at most a minor disruption to PSSI's business, the FCC did not impermissibly modify its licenses.

IV

The parties' other challenges to the Order lack merit.

A

The SSOs contend that the relocation payments to be made to the large satellite operators (LSOs) are arbitrarily high and inflict a competitive injury on the SSOs. The FCC did not contest the SSOs' constitutional standing to challenge these payments to third parties, but we have an independent duty to

consider the issue. *See Steel Co. v. Citizens for a Better Env't*, 523 U.S. 83, 94 (1998).

We have held that parties may establish standing by showing that the challenged agency action “allow[s] increased competition against them.” *Sherley v. Sebelius*, 610 F.3d 69, 72 (D.C. Cir. 2010) (cleaned up). Examples include orders permitting a new entrant into a fixed market, *see, e.g., FCC v. Sanders Bros. Radio Station*, 309 U.S. 470, 477 (1940), or allowing a rival to sell a fungible good at a lower price, *see, e.g., La. Energy & Power Auth. v. FERC*, 141 F.3d 364, 367 (D.C. Cir. 1998). These orders increase competition—and thus harm competitors—as a matter of “economic logic.” *Sherley*, 610 F.3d at 72 (cleaned up). But a party cannot establish competitor standing merely by claiming that a rival’s favorable tax treatment has created an “unfair competitive atmosphere.” *Am. Soc. of Travel Agents, Inc. v. Blumenthal*, 566 F.2d 145, 149 (D.C. Cir. 1977). Nor is it enough to claim that a rival’s favorable regulatory treatment has created a “skewed playing field.” *See Mobile Relay Assocs. v. FCC*, 457 F.3d 1, 13 (D.C. Cir. 2006). Rather, a party asserting competitor standing must “make a concrete showing that it is in fact likely to suffer financial injury as a result of the challenged action.” *KERM, Inc. v. FCC*, 353 F.3d 57, 60–61 (D.C. Cir. 2004).

To make such a showing, the party claiming standing must be a “*direct and current* competitor whose bottom line may be adversely affected by the challenged government action.” *New World Radio, Inc. v. FCC*, 294 F.3d 164, 170 (D.C. Cir. 2002). If the competitors serve distinct geographic markets, the risk of harm is too speculative. *Id.* at 170–71; *see also DEK Energy Co. v. FERC*, 248 F.3d 1192, 1196 (D.C. Cir. 2001).

Here, the SSOs do not directly and currently compete with the LSOs. As detailed above, the SSOs provide services almost

exclusively abroad and have taken few steps to develop any United States markets. We recognize that it may take time to develop new business, but competitor standing requires actual participation in the relevant market. *See New World Radio*, 294 F.3d at 170. Hispasat's bare assertion that it plans to compete in the United States in the future, and ABS's single application for an earth station construction permit over three years, both fall well short.²

Moreover, even if the SSOs did directly compete with the LSOs, they made no concrete showing that the Order is likely to cause them a financial injury. In support of standing, the SSOs declare that payments to the LSOs will "make the already strongest competitors even stronger," give them "much more flexibility when competing," and allow them to "corner niche markets." J.A. 759, 773–74. These statements are akin to claims that the favorable regulatory treatment of a competitor has caused a skewed playing field, which we have rejected as insufficient. They do not, as our cases require, identify any specific harm to the SSOs that will result as a matter of economic logic. To be sure, the SSOs have alleged that they will be less attractive investments if the LSOs become more profitable. But if that sufficed to establish competitor standing, the doctrine would have no limit on the ability of one competitor to challenge the good fortunes of another.

² After repeatedly telling the FCC that all its current capacity had been contracted for foreign service, Hispasat belatedly claimed to provide service to nine unregistered earth stations in the United States. The FCC rejected what it described as "Hispasat's revisions to history," *Order* at 22,835–36, and we find no reversible error in its treatment of this factual dispute.

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B

PSSI's further claims also lack merit.

First, PSSI contends that the 5G auction violates the ORBIT Act, which prohibits the FCC from using competitive bidding to assign “spectrum used for the provision of international or global satellite communications services.” 47 U.S.C. § 765f. PSSI asserts that this provision governs auctions for spectrum *currently* used for international satellite communications, rather than auctions for spectrum that *will be* so used after the auction. We have rejected this precise argument, in upholding the FCC’s interpretation of § 765f to cover only spectrum that “is *to be used* for the provision” of international satellite services. *Northpoint Tech., Ltd. v. FCC*, 414 F.3d 61, 73 (D.C. Cir. 2005) (emphasis added) (cleaned up). That holding binds us here.

Second, PSSI argues that the Order was not a logical outgrowth of the NPRM. As PSSI notes, the NPRM stated that the FCC would evaluate only whether the C-band downlink was suitable for 5G use, but might later “address other mid-band spectrum bands” such as the C-band uplink. *NPRM* at 44,129–30. PSSI frames this statement as a commitment to leave the C-band uplink entirely unaffected. In fact, the FCC simply announced that the rulemaking would address whether the C-band downlink should be reallocated to 5G use, which is precisely what the Order did. Nor did it commit to leaving the C-band uplink unaltered. To the contrary, the NPRM noted that reallocating spectrum within the C-band downlink would necessarily impact the C-band uplink. *Id.* at 44,154. PSSI itself understood this point, as confirmed by its active participation in the rulemaking. The logical outgrowth doctrine—which applies only where a final rule substantially

“differs from a proposed rule,” *Allina Health Servs. v. Sebelius*, 746 F.3d 1102, 1107 (D.C. Cir. 2014)—does not apply.

Finally, PSSI argues that the FCC did not consider the potential for 5G base stations to interfere with its nearby mobile stations. But as explained above, the FCC did reasonably respond to the concern about interference by establishing several significant protections against it. PSSI objects that the Commission failed to separately address its proposal to order a national registry listing the identity, location, and power levels of all 5G base stations. But doing so would impose significant administrative burdens and would save PSSI only the comparably minimal cost of locating nearby base stations on its own. The FCC did not act arbitrarily by failing to address a proposal that was neither “significant” nor “viable.” *City of Brookings Mun. Tel. Co. v. FCC*, 822 F.2d 1153, 1169 (D.C. Cir. 1987).

V

For these reasons, we uphold the Order under review, and we dismiss the appeal and petition for review of SES.

So ordered.