

United States Court of Appeals  
FOR THE DISTRICT OF COLUMBIA CIRCUIT

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Argued January 25, 2022

Decided August 12, 2022

No. 21-1130

INTELLIGENT TRANSPORTATION SOCIETY OF AMERICA AND  
AMERICAN ASSOCIATION OF STATE HIGHWAY AND  
TRANSPORTATION OFFICIALS,  
PETITIONERS

v.

FEDERAL COMMUNICATIONS COMMISSION AND UNITED  
STATES OF AMERICA,  
RESPONDENTS

CONTINENTAL AUTOMOTIVE SYSTEMS, INC., D/B/A  
CONTINENTAL AUTOMOTIVE SYSTEMS, ET AL.,  
INTERVENORS

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Consolidated with 21-1131, 21-1141

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On Petitions for Review and Appeal of an Order  
of the Federal Communications Commission

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*Joshua S. Turner* and *Julian Gehman* argued the causes for  
petitioners. With them on the joint briefs were *Scott D.*  
*Delacourt* and *Sara M. Baxenberg*.

*Alan Fishel* and *Jeffrey Rummel* were on the briefs for petitioner-intervenor Continental Automotive Systems, Inc.

*Julie B. Kulovits* was on the brief for *amici curiae* the American Traffic Safety Services Association, et al. in support of petitioners.

*Scott M. Noveck*, Counsel, Federal Communications Commission, argued the cause for respondents. With him on the brief were *Robert B. Nicholson* and *Bryan J. Leitch*, Attorneys, U.S. Department of Justice, and *Jacob M. Lewis*, Associate General Counsel, Federal Communications Commission.

*Russell H. Fox*, *Thomas Scott Thompson*, *Timothy J. Simeone*, *Paul J. Caritj*, *Jason Neal*, *Rick C. Chessen*, and *Neal M. Goldberg* were on the joint brief for intervenors NCTA - The Internet & Television Association and Wi-Fi Alliance in support of respondents.

*Suzanne M. Tetreault* and *Sean Conway* were on the brief for intervenor 5G Automotive Association in support of respondents. *Jennifer B. Tatel* entered an appearance.

*Peter Karanjia* was on the brief for *amicus curiae* CTIA - The Wireless Association in support of respondents.

*Kathleen Burke* was on the brief for *amicus curiae* Public Knowledge in support of respondents.

Before: PILLARD and WALKER, *Circuit Judges*, and SILBERMAN, *Senior Circuit Judge*.

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

WALKER, *Circuit Judge*: Intelligent transportation systems make driving safer by allowing vehicles to communicate with each other on the road. In 2020, the Federal Communications Commission reallocated a part of the radio spectrum from use by intelligent transportation systems to use by unlicensed devices such as Wi-Fi routers.

Several groups that want to retain their old use of the reallocated spectrum argue that the FCC's reallocation was arbitrary and capricious.

It was not.

## I

Car crashes cause thousands of deaths and millions of injuries every year in the United States. *Amendment of the Commission's Rules*, 19 FCC Rcd. 2,458, 2,460 (Feb. 10, 2004). To combat that, Congress has long passed laws aimed at enhancing vehicle safety. *See, e.g.*, National Traffic and Motor Vehicle Safety Act of 1966, Pub. L. No. 89-563, 80 Stat. 718. One such law was the 1998 Transportation Equity Act for the 21st Century. Pub. L. No. 105-178, 112 Stat. 107.

That act instructed the Department of Transportation to “develop and maintain a national” intelligent transportation system to decrease accidents and improve overall travel efficiency. 23 U.S.C. § 517(a)(1). The theory was that cars would be equipped with intelligent transportation systems that allow them to communicate with each other and avoid accidents. 23 U.S.C. § 501(5) (defining an “intelligent transportation system” as “electronics, photonics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system”).

But much like a cell phone or a Wi-Fi router, those intelligent transportation systems need an available section of the radio spectrum in which to operate. So part of the Transportation Equity Act required the Federal Communications Commission to “consider, in consultation with the Secretary [of Transportation], spectrum needs for the operation of intelligent transportation systems” by January 1, 2000. 23 U.S.C. § 502 note § 5206(f).<sup>1</sup>

The FCC allocated that spectrum in 1999. *Amendment of Parts 2 & 90 of the Commission’s Rules to Allocate the 5.850-5.925 GHz Band*, 14 FCC Rcd. 18,221 (Oct. 22, 1999). It assigned a 75-megahertz band of the spectrum, from 5.850 to 5.925 gigahertz, for use by intelligent transportation systems. *Id.* ¶ 1. Various other services, such as amateur radios, are also allowed to use that band, which is often called the 5.9 GHz band. *Id.* ¶ 6.

For the next twenty years, intelligent transportation systems did not develop as the FCC had hoped they would. *Use of the 5.850-5.925 GHz Band*, 35 FCC Rcd. 13,440, ¶¶ 3, 7, 31 (Nov. 20, 2020). As of 2020, “no commercially-marketed vehicles” used the 5.9 GHz band to provide vehicle safety features. *Id.* ¶ 31. Instead, “many automotive safety

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<sup>1</sup> “Radio spectrum is the part of the electromagnetic spectrum ranging from 1 Hz to 3000 GHz (3 THz). Electromagnetic waves in this frequency range, called radio waves, have become widely used in modern technology, particularly in telecommunication. The spectrum is divided into different frequency bands, and each band has been allocated for a specific application ranging from aeronautical and maritime communication to AM and FM radio stations.” *What Is Radio Spectrum*, U.S. Department of Transportation (Sept. 21, 2017), <https://www.transportation.gov/pnt/what-radio-spectrum>.

functions . . . such as alerting drivers to vehicles or other objects, lane-merging alerts, and emergency braking” have been “met by other technologies like radar, LiDAR, cameras, and sensors.” *Id.* ¶¶ 32-33, 38.

So in 2019, the FCC began a new rulemaking process to ensure that the 5.9 GHz band was put to its best use. *5.9 GHz Band NPRM*, 34 FCC Rcd. 12,603 (Dec. 17, 2019). The FCC proposed keeping the upper 30 megahertz of the 5.9 GHz band (5.895 to 5.925 GHz) for use by intelligent transportation systems and repurposing the lower 45 megahertz for use by unlicensed devices such as Wi-Fi routers. *Id.* ¶¶ 2, 13. The FCC also proposed changing the technology that would be used by intelligent transportation systems; vehicles would need to start using “vehicle-to-everything” communications (in which they send communications to cell towers and other devices) rather than the “dedicated short-range” communications originally permitted in 1999 (in which they do not send communications to cell towers). *Id.* ¶¶ 24-31.

The proposal received mixed reactions. Some commenters agreed that the FCC should repurpose part of the 5.9 GHz band to meet the ever-increasing spectrum demands of Wi-Fi routers and other unlicensed devices. *See Use of the 5.850-5.925 GHz Band*, 36 FCC Rcd. 1,444, ¶¶ 19, 21-24, 33, 45, 126-127, 132. But the Department of Transportation and many other commenters objected that the proposed reallocation would not provide an adequate spectrum band for intelligent transportation systems. *Id.* ¶ 44. In particular, commenters said that the reallocation would not provide a sufficient spectrum band for future technologies that are still developing. *Id.* And they worried that the unlicensed devices in the lower 45 megahertz of the 5.9 GHz band would interfere with the communications in the upper 30 megahertz. *See id.* ¶ 60.

In 2020, the FCC approved the proposed rule. *Id.* ¶ 1.

The Intelligent Transportation Society of America and the American Association of State Highway and Transportation Officials (“Transportation Petitioners”) now petition for review, *see* 47 U.S.C. § 402(a), and appeal the FCC’s order to us, *see* 47 U.S.C. § 402(b). They argue that we should vacate the part of the order reallocating the lower 45 megahertz of spectrum but leave in place the rest of the order dealing with what technology intelligent transportation systems use. The Amateur Radio Emergency Data Network (“Radio Petitioner”) filed a separate petition for review. It argues that we should vacate the whole order.

We consider the petitions and appeal together.<sup>2</sup>

## II

Under the Administrative Procedure Act, we overturn agency action when it is arbitrary, capricious, or otherwise contrary to law. 5 U.S.C. § 706(2). That “deferential” standard requires courts to ensure “that the agency has acted within a zone of reasonableness and, in particular, has reasonably considered the relevant issues and reasonably explained the decision.” *FCC v. Prometheus Radio Project*, 141 S. Ct. 1150, 1158 (2021). In doing so, we must accept agencies’ “findings of fact so long as they are supported by substantial evidence on the record as a whole.” *PSSI Global Services, LLC v. FCC*, 983 F.3d 1, 7 (D.C. Cir. 2020) (quoting *Neustar, Inc. v. FCC*, 857 F.3d 886, 896 (D.C. Cir. 2017)).

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<sup>2</sup> We need not decide whether 47 U.S.C. § 402(a) or (b) “is the proper vehicle for our review if we have jurisdiction by the one procedural route or the other,” as we do here. *PSSI Global Services, LLC v. FCC*, 983 F.3d 1, 6 (D.C. Cir. 2020) (cleaned up).

All the Petitioners argue that the FCC’s order was arbitrary and capricious because it violated the Transportation Equity Act. The Transportation Petitioners also argue that the FCC failed to adequately explain its decision and unlawfully revoked or modified FCC licenses. We disagree on all fronts.

#### A

The FCC’s order did not violate the Transportation Equity Act.

The FCC has “broad authority to oversee wire and radio communication in the United States” and must promote “effective use of radio in the public interest.” *Cellco Partnership v. FCC*, 700 F.3d 534, 537, 542 (D.C. Cir. 2012); *see also* 47 U.S.C. §§ 151, 303. Part of that task is assigning “bands of frequencies to the various classes of stations” that will make use of the spectrum. 47 U.S.C. § 303(c).

To effectively assign frequency bands, the FCC “must predict the effect and growth rate of technological newcomers on the spectrum, while striking a balance between protecting valuable existing uses and making room for these sweeping new technologies.” *Teledesic LLC v. FCC*, 275 F.3d 75, 84 (D.C. Cir. 2001). That is a difficult, highly technical task. So when the FCC “is fostering innovative methods of exploiting the spectrum, it functions as a policymaker and is accorded the greatest deference by a reviewing court.” *Mobile Relay Associates v. FCC*, 457 F.3d 1, 8 (D.C. Cir. 2006) (cleaned up).

All parties agree that the FCC’s broad authority over the nation’s airwaves initially allowed it to allocate 75 megahertz of the spectrum for intelligent transportation systems in 1999. Then, in 2020, the FCC relied on that same broad authority to

update the 1999 allocation. *Use of the 5.850-5.925 GHz Band*, 36 FCC Rcd. 1,444, ¶ 123 (Nov. 20, 2020). At least as a general matter, that action was well within bounds. See *National Cable & Telecommunications Association v. Brand X Internet Services*, 545 U.S. 967, 981 (2005) (an agency “must consider . . . the wisdom of its policy on a continuing basis, for example, in response to changed factual circumstances” (cleaned up)).

The Transportation Petitioners respond that although the FCC normally has broad authority to manage the use of the spectrum, the Transportation Equity Act curbed that authority by directing the FCC to “consider, in consultation with the Secretary [of Transportation], spectrum needs for the operation of intelligent transportation systems” and to complete “a rulemaking considering the allocation of spectrum” by 2000. 23 U.S.C. § 502 note § 5206(f). According to the Transportation Petitioners, the FCC here went beyond its power as narrowed by the Transportation Equity Act.

But the Transportation Equity Act did not transfer away from the FCC its broad authority to manage the spectrum related to intelligent transportation systems. Instead, as the FCC noted, it simply required the FCC to account for the Department of Transportation’s views and the needs of intelligent transportation systems when it does so. *Use of the 5.850-5.925 GHz Band*, 36 FCC Rcd. 1,444, ¶ 123.

The FCC did that here. It devoted at least twenty paragraphs of its order to carefully considering the needs of intelligent transportation systems and to thoroughly explaining



that the remaining 30 megahertz of the spectrum will support such systems. *Id.* ¶¶ 27-46.<sup>3</sup>

That is not to say that the FCC could have allocated 75 megahertz for intelligent transportation systems on December 31, 1999, and then turned around the next day and arbitrarily taken it all away based on its broad authority to manage the spectrum. Regardless of whether that action would have violated the Transportation Equity Act, it would have violated the Administrative Procedure Act. *See* 5 U.S.C. § 706(2); *see also FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009) (when an agency departs from a prior policy, it “must show that there are good reasons for the new policy”). But that scenario is quite different from today’s — where much has changed in the two decades since the original allocation and where the FCC’s final order adequately addressed the Department of Transportation’s concerns.

Finally, the Radio Petitioner argues that the Transportation Equity Act gives the Department of Transportation a veto power over the FCC’s spectrum-allocation authority. That is a turbocharged version of the Transportation Petitioners’ “consider” and “consultation” argument, which we have already rejected.

Plus, if the Radio Petitioner were right, the Department of Transportation could step into any rulemaking in which the FCC is allocating part of the spectrum and demand that the

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<sup>3</sup> In addition, we are told that the FCC consulted with the Department of Transportation by sharing a prerelease of its proposal to reallocate part of the 5.9 GHz band and later a prerelease of its final order. In both instances, the Department of Transportation replied with a letter expressing concerns about the proposal similar to those it made during the public notice-and-comment period. *See* JA 386-414, 563-76.

FCC put the spectrum band in question to intelligent transportation uses. It is far-fetched to think that Congress would so indirectly strip the FCC of its broad power to manage the spectrum. *Cf. Whitman v. American Trucking Associations*, 531 U.S. 457, 468 (2001) (Congress “does not alter the fundamental details of a regulatory scheme in vague terms or ancillary provisions”).

## B

The FCC adequately explained its conclusion that “30 megahertz is sufficient for the provision of core vehicle safety-related [intelligent transportation system] functions.” *Use of the 5.850-5.925 GHz Band*, 36 FCC Rcd. 1,444, ¶ 35.

To reach that conclusion, the FCC relied on many comments explaining why the remaining 30 megahertz of spectrum would sufficiently support intelligent transportation systems. *Id.* ¶ 33. The FCC also noted that the original 5.9 GHz band allocated only 20 of the initial 75 megahertz of spectrum “for vehicle-to-vehicle safety communications for accident avoidance and mitigation” and “for public safety applications involving safety of life and property, including road intersection collision mitigation.” *Id.* ¶ 35. The 30 megahertz of the spectrum preserved by the FCC’s 2020 order is thus a larger band than was allocated for traffic-safety purposes under the original rulemaking. Finally, the FCC explained that other technologies have alleviated the need for all 75 megahertz of the spectrum to remain dedicated to intelligent transportation systems. *Id.* ¶¶ 32-33, 38. Those other technologies include “radar, LiDAR, cameras, and sensors.” *Id.* ¶ 33.

In response, the Transportation Petitioners make five arguments.

First, because the FCC lacks the Department of Transportation's traffic-safety expertise, the Transportation Petitioners argue that we should not defer to the FCC's judgment that the remaining 30 megahertz will support intelligent transportation systems. They specifically take issue with the fact that the FCC said the remaining 30 megahertz was sufficient to support "core" or "basic" intelligent transportation systems. *Id.* ¶ 35. They say that the FCC's labeling of "core" or "basic" intelligent transportation systems is tantamount to the FCC deciding which intelligent transportation systems matter and which do not.

We agree that the FCC does not control intelligent transportation systems. But it has a statutory duty to allocate the spectrum to its best use. 47 U.S.C. §§ 151, 303. And figuring out how much of the spectrum is needed to support a particular activity is exactly what the FCC does. Sometimes that involves analyzing the technical features of a spectrum use to figure out what range is actually needed, as the FCC did here. *See Teledesic*, 275 F.3d at 84 (the FCC "must predict the effect and growth rate of technological newcomers on the spectrum").

In addition, the FCC addressed the Department of Transportation's objections by noting that in 2017, the Department of Transportation produced an analysis showing that "safety applications that could eliminate a large proportion of crashes may require" only 10 megahertz of the spectrum. *Use of the 5.850-5.925 GHz Band*, 36 FCC Rcd. 1,444, ¶ 140 (citing *Federal Motor Vehicle Safety Standards; V2V Communications*, 82 Fed. Reg. 3,854, 3,885, 3,969, 3,986 (Jan. 12, 2017)). So according to the Department's past analysis, nothing near 75 megahertz of the spectrum is necessary for intelligent transportation systems that could greatly reduce car accidents.

Moreover, the Department of Transportation's concerns with the FCC's order are no longer espoused by the Executive Branch. Instead, the Executive Branch assessed the case's merits and considered the federal interests. Response of the United States 2. Then through the Department of Justice, the Executive Branch — which of course includes the Department of Transportation — joined the FCC's brief defending the FCC's order. See *Sierra Club v. Costle*, 657 F.2d 298, 405 (D.C. Cir. 1981) (“The executive power under our Constitution, after all, is not shared—it rests exclusively with the President.”); *id.* at 406 (“Single mission agencies do not always have the answers to complex regulatory problems.”).

Second, the Transportation Petitioners — as well as the Petitioner-Intervenor Continental Automotive Systems — argue that intelligent transportation systems need more than 30 megahertz of spectrum for yet-to-arrive technologies. But the FCC is entitled to great deference when predicting the likelihood of those developments. See *Teledesic*, 275 F.3d at 84. Here, the FCC exercised its discretion and reasonably concluded “that the potential deployment of future . . . services that may or may not develop years into the future are too uncertain and remote to warrant the further reservation of spectrum for their deployment.” *Use of the 5.850-5.925 GHz Band*, 36 FCC Rcd. 1,444, ¶ 120. And with regard to the record before the FCC, the Petitioners have directed us to no significant developments in the field of yet-to-arrive technologies.

Third, the Transportation Petitioners argue that the FCC did not address a proposal from the auto industry that the FCC should require the industry to commit to building five million intelligent transportation devices in five years. The Petitioners argue that this five-year plan was a reasonable alternative to

reducing the spectrum allocation for vehicular communications because the commitment would have ensured that the 5.9 GHz band was put to good use. But the five-year plan did not address the FCC's concern that even if intelligent transportation systems are fully developed, they still will not need the entire 5.9 GHz band. So the plan was not a reasonable alternative that the FCC had to address. *District Hospital Partners, LP v. Burwell*, 786 F.3d 46, 59 (D.C. Cir. 2015) (an agency need only consider "significant and viable" alternatives) (quoting *National Shooting Sports Foundation, Inc. v. Jones*, 716 F.3d 200, 215 (D.C. Cir. 2013)).

Fourth, the Transportation Petitioners argue that, given the FCC's new factual findings since the 1999 rulemaking and the regulated parties' reliance interests, the FCC did not adequately explain its change of policy.

We again disagree. When changing policies, an agency must show "that the new policy is permissible under the statute, that there are good reasons for it, and that the agency *believes* it to be better." *Fox Television*, 556 U.S. at 515. Here, the FCC explained that the use of the spectrum changed greatly in the last twenty years (specifically, demand by unlicensed devices such as Wi-Fi routers has grown) and that intelligent transportation systems have not developed as anticipated. *Use of the 5.850-5.925 GHz Band*, 36 FCC Rcd. 1,444, ¶¶ 7, 14-25, 31, 38-39. The FCC thus reasonably determined that "reserving the entire 5.9 GHz band for [intelligent transportation systems] is not the most efficient or effective use of that band" and that "changes to the band plan [the FCC] adopted over 20 years ago are essential to maximize the use of this valuable spectrum for the public's greatest well-being." *Id.* ¶ 27.

Fifth, the Transportation Petitioners argue that the FCC failed to consider the possibility that unlicensed devices in the lower 45 megahertz would interfere with communications in the upper 30 megahertz. The FCC, however, addressed that issue at length. *See id.* ¶ 58-94. It even put restrictions on unlicensed devices using the lower 45 megahertz — such as emissions limits and indoor-use-only rules — to keep those devices from interfering with intelligent transportation systems in the upper 30 megahertz. *Id.* The Transportation Petitioners offer no reason to conclude that the FCC was arbitrary and capricious when it determined that those restrictions allay any interference concerns. *Mobile Relay Associates v. FCC*, 457 F.3d 1, 8 (D.C. Cir. 2006) (“We uphold the Commission if it makes a technical judgment that is supported with even a modicum of reasoned analysis, absent highly persuasive evidence to the contrary.” (cleaned up)).

### C

The FCC’s order did not unlawfully revoke or fundamentally change existing licenses to use the 5.9 GHz band.

The FCC may modify the licenses it issues when such modifications “promote the public interest.” 47 U.S.C. § 316(a)(1). That said, Section 312 of the Communications Act forbids the FCC from “revoking” FCC-issued licenses outside limited circumstances that are not present here, and Section 316 does not permit the FCC to “fundamentally” modify licenses. *See* 47 U.S.C. §§ 312, 316; *PSSI Global Services*, 983 F.3d at 7. But a license is not revoked or fundamentally modified as long as the licensee can “provide essentially the same services” after the change, even if those services require new technology. *PSSI Global Services*, 983 F.3d at 8 (quoting *Community Television, Inc. v. FCC*, 216 F.3d 1133, 1141 (D.C. Cir. 2000));

*id.* at 9 (“Unless it harms the services ultimately provided, the need to make such technological adjustments does not impose any impermissibly fundamental change.”). And “a reduction in spectrum that leaves licensees with enough capacity to meet current and future needs does not remotely constitute a revocation.” *Id.* at 9.

As the FCC explained in its order, that’s the case here. The FCC left the Transportation Petitioners with 30 megahertz of the spectrum in which to use their licenses. And it reasonably determined that that reallocation “will not meaningfully interfere with the ability of incumbents to provide the same types of safety-related services that they are currently offering.” *Use of the 5.850-5.925 GHz Band*, 36 FCC Rcd. 1444, ¶ 118. Nor will it disrupt any reasonably foreseeable “concrete business plans” of licensees because licensees can shift their communications to the remaining 30 megahertz. *Id.* ¶ 120.

The Transportation Petitioners argue that the upper 30 megahertz is not in fact sufficient to support their intelligent transportation systems. But we’ve already explained at length that the FCC reasonably disagreed with the Transportation Petitioners on that front. *Supra* Section II.B.

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We dismiss the appeal and deny the petitions for review.

*So ordered.*