

FCC FACT SHEET***Advanced Methods to Target and Eliminate Unlawful Robocalls**
Report and Order - CG Docket No. 17-59

Background: Robocalls and telemarketing calls are consistently the top source of consumer complaints received by the FCC. It is estimated that U.S. consumers received approximately 2.4 billion robocalls per month in 2016. One particularly pernicious category of robocalls is spoofed robocalls – i.e., robocalls where the caller ID is faked, hiding the caller’s true identity. Fraudsters bombard consumers’ phones at all hours of the day with spoofed robocalls, which in some cases lure consumers into scams or lead to identity theft.

The Chairman has proposed a *Report and Order (R&O)* that would expressly authorize voice service providers to block certain types of robocalls that falsely appear to be from telephone numbers that do not or cannot make outgoing calls. These calls are very likely to be illegal or fraudulent – for example, robocalls from fraudsters claiming to be collecting money owed to the Internal Revenue Service. These callers spoof their Caller ID to appear to be an IRS telephone number that the IRS does not use to call taxpayers. Authorizing voice service providers to block these calls would help protect consumers from these scams and annoyances.

What the Report and Order Would Do:

- Adopt rules authorizing voice service providers to block calls when the subscriber to a particular telephone number requests blocking of calls appearing to be from that number. These are commonly called “Do-Not-Originate” or “DNO” requests.
- Adopt rules authorizing voice service providers to block calls when the Caller ID can’t be valid. Specifically, providers may block calls appearing to be from:
 - invalid numbers (for example, numbers with area codes that don’t exist);
 - numbers that have not been allocated to a provider; and
 - numbers allocated to a provider but not currently in use.
- Adopt rules prohibiting voice service providers from including 911 emergency calls in their blocking.
- Encourage voice service providers that block calls to establish a simple way to identify and fix blocking errors.

* This document is being released as part of a “permit-but-disclose” proceeding. Any presentations or views on the subject expressed to the Commission or its staff, including by email, must be filed in CG Docket No. 17-59, which may be accessed via the Electronic Comment Filing System (<https://www.fcc.gov/ecfs/>). Before filing, participants should familiarize themselves with the Commission’s *ex parte* rules, including the general prohibition on presentations (written and oral) on matters listed on the Sunshine Agenda, which is typically released a week prior to the Commission’s meeting. *See* 47 CFR § 1.1200 *et seq.*

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of
Advanced Methods to Target and Eliminate
Unlawful Robocalls
CG Docket No. 17-59

REPORT AND ORDER*

Adopted: []

Released: []

By the Commission:

I. INTRODUCTION

1. In this Report and Order, we take another important step in combatting illegal robocalls by enabling voice service providers to block certain calls before they reach consumers' phones. Specifically, we adopt rules allowing providers to block calls from phone numbers on a Do-Not-Originate (DNO) list and those that purport to be from invalid, unallocated, or unused numbers. Providers have been active in identifying these calls and there is broad support for these rules. At the same time, we establish safeguards to mitigate the possibility of blocking desired calls.

* This document has been circulated for tentative consideration by the Commission at its November 2017 open meeting. The issues referenced in this document and the Commission's ultimate resolutions of those issues remain under consideration and subject to change. This document does not constitute any official action by the Commission. However, the Chairman has determined that, in the interest of promoting the public's ability to understand the nature and scope of issues under consideration, the public interest would be served by making this document publicly available. The Commission's ex parte rules apply and presentations are subject to "permit-but-disclose" ex parte rules. See, e.g., 47 CFR §§ 1.1206, 1.1200(a). Participants in this proceeding should familiarize themselves with the Commission's ex parte rules, including the general prohibition on presentations (written and oral) on matters listed on the Sunshine Agenda, which is typically released a week prior to the Commission's meeting. See 47 CFR §§ 1.1200(a), 1.1203.

1 We do not apply these rules to text messages.

2 The number the call "purports" to be from is the number displayed in the Caller ID.

3 See, e.g., Letter from Senator Robert P. Casey, Jr. and Pennsylvania Attorney General Josh Shapiro, U.S. Senate Special Committee on Aging, to Chairman Ajit Pai and Commissioners Mignon L. Clyburn, Michael O'Rielly, Brendan Carr, and Jessica Rosenworcel, FCC (Oct. 4, 2017) (encouraging the Commission to move forward quickly to implement these rules); Letter from Senators Susan M. Collins and Robert P. Casey, Jr., U.S. Senate Special Committee on Aging, to Chairman Ajit Pai and Commissioners Mignon L. Clyburn and Michael O'Rielly, FCC (Mar. 22, 2017) (expressing support for the Commission's efforts to permit telecommunications providers to block spoofed robocalls); FCC Consumer Advisory Committee, Recommendation Regarding Unwanted Call Blocking (2017) (supporting blocking of these types of calls) (CAC Recommendation). Nearly 200 individuals filed comments expressing a general dislike for robocalls, while Citizens Utility Board submitted a petition containing 2,903 signatures urging the FCC to enact rules to prevent spoofed robocalls. Providers generally are also in favor of being allowed to block these types of calls.

II. BACKGROUND

2. Illegal robocalls can take many forms, but perhaps the most pernicious are those that try to lure consumers into scams, including identity theft. One example is the “IRS scam,”⁴ in which callers pretend to be representing the IRS and claim the called party owes back taxes, with the goal of obtaining money or personal information from the victim.⁵ These calls can be particularly deceptive if the illegal robocaller is able to “spoof” the number so that it appears in the victim’s Caller ID display as being from the IRS.⁶ Another scam involves fraudsters tricking consumers by claiming a young family member is in jail and needs bail money.⁷ In the year since August 1, 2016, we have received nearly 185,000 complaints about calls that consumers did not want. Stopping illegal robocalls and the problems they cause has united industry, government, and consumer groups.⁸

3. Caller ID spoofing is often the key to making robocall scams work. Generally, Caller ID services permit the recipient of an incoming call to know the telephone number of the calling party, and in some cases a name associated with the number, before the recipient answers the call.⁹ But Caller ID information can be altered or manipulated, *i.e.*, spoofed, so that the name or number displayed to the called party does not match that of the actual subscriber or the actual originating number. Though callers can use spoofing to mislead or even defraud the called party, there are legitimate uses for spoofing.¹⁰

4. Congress passed the 2009 Truth in Caller ID Act to “address the growing problem of Caller ID spoofing done for fraudulent or harmful purposes.”¹¹ Congress limited the spoofing prohibition to the knowing transmission of misleading or inaccurate Caller ID information “with the intent to defraud,

⁴ *FCC and TIGTA Warn Consumers of IRS Impersonation Phone Scam: Scam Has Cost Victims Tens of Millions of Dollars*, DA 16-1392, Enforcement Advisory, 31 FCC Rcd 13184 (EB 2016) (*FCC/TIGTA Enforcement Advisory*); see also *Advanced Methods to Target and Eliminate Unlawful Robocalls*, Notice of Proposed Rulemaking and Notice of Inquiry, 32 FCC Rcd 2306 at 2306-07 (2017) (*Advanced Methods NPRM and NOI*). “IRS” refers to the Internal Revenue Service.

⁵ Internal Revenue Service, *Phone Scams a Serious Threat; Remain on the IRS “Dirty Dozen” List of Tax Scams for 2017* (Feb. 2, 2017), <https://www.irs.gov/uac/newsroom/phone-scams-remain-serious-threat-no-2-on-the-irs-dirty-dozen-list-of-tax-scams-for-2017>. Victims have collectively paid more than \$54 million as a result of these scams. See also *FCC/TIGTA Enforcement Advisory*, 31 FCC Rcd 13184 (2016).

⁶ See discussion of Caller ID spoofing, *infra* para. 3.

⁷ See Richard Stolley, *AARP Bulletin: How to Beat the Grandparent Scam* (Jan./Feb. 2017), <http://www.aarp.org/money/scams-fraud/info-2016/how-to-beat-grandparent-scam.html>.

⁸ The FCC website contains information about common telephone scams such as the “Mexico Collect Call Scam” and the “‘One Ring’ Wireless Phone Scam.” See Federal Communications Commission, *Frauds, Scams and Alerts* (Aug. 14, 2017), <https://www.fcc.gov/general/frauds-scams-and-alerts-guides>. The Federal Trade Commission (FTC) routinely provides consumer information about scams and periodically issues scam alerts describing the most recent schemes to defraud consumers. See Federal Trade Commission, *Scam Alerts: What to Know and Do About Scams in the News*, <https://www.consumer.ftc.gov/scam-alerts> (last visited Feb. 18, 2017).

⁹ *Caller Identification Information in Successor or Replacement Technologies*, Report to Congress, 26 FCC Rcd 8643, 8646, para. 4 (2011).

¹⁰ Examples include doctors displaying their main office number and call centers displaying the number of the business for which they are calling. In passing the Truth in Caller ID Act, Congress noted the beneficial uses of Caller ID spoofing. For example, because many phones are set to refuse private or blocked calls, domestic violence shelters need another way to allow a call to go through those settings without violating the safety of domestic violence victims. To do so, it may be necessary to alter Caller ID information. S. Rep. 111-96.

¹¹ 47 U.S.C. § 227(e). On August 3, 2017, the Senate passed the Spoofing Prevention Act of 2017, S. Rep. 115-91, a proposed amendment to the Truth in Caller ID Act that would expand the prohibition on misleading or inaccurate caller identification information.

cause harm, or wrongfully obtain anything of value,” except where such transmission is determined to be exempt by the Commission.¹²

5. Despite these protections, consumers still receive an unacceptably high volume of illegal robocalls. To combat the robocall problem in a coordinated way, industry established the Robocall Strike Force (Strike Force) in 2016.¹³ The Strike Force includes representatives from providers of traditional landline, mobile, and Voice over Internet Protocol (VoIP) services, handset manufacturers, operating system developers, and VoIP gateway providers.¹⁴ The Strike Force has said that “robocalls are best addressed in a holistic manner through deployment of a wide variety of tools by a broad range of stakeholders” that includes industry blocking of calls.¹⁵ On October 26, 2016, it published the Robocall Strike Force Report (Strike Force Report).¹⁶ The Strike Force specifically asked the Commission to provide guidance on when providers may block a call that the provider believes is illegal.¹⁷

6. The Consumer and Governmental Affairs Bureau (Bureau) addressed one of the Strike Force’s requests in 2016 by clarifying that voice service providers may block calls using a spoofed Caller ID number if the number’s subscriber requests that they do so.¹⁸ Following that initial guidance, the Strike Force Report sought additional clarification regarding the legality of certain provider-initiated call blocking.¹⁹ Specifically, it sought clarification that: (1) providers may block calls where the Caller ID shows an unassigned number; and (2) providers may block calls that the provider has determined to be illegal robocalls, so long as the provider takes reasonable steps to confirm that the calls are illegal.²⁰

7. In the March 2017 *Advanced Methods NPRM and NOI*, the Commission sought comment on whether to take certain steps to facilitate voice service providers’ blocking of illegal robocalls.²¹ In the *NPRM*, the Commission proposed rules to allow voice service providers to block telephone calls when the subscriber of a phone number requests that calls purporting to originate from that number be blocked, and when calls purport to originate from three categories of phone numbers: invalid numbers, valid numbers that are not allocated to a voice service provider, and valid numbers that are allocated but not assigned to a subscriber.²²

¹² *Id.* In July 2017, the Commission adopted a Notice of Inquiry seeking comment on a number of issues related to the development and implementation of the Secure Telephony Identity Revisited (STIR) and Signature-based Handling of Asserted information using toKENs (SHAKEN) authentication standards for voice calls, which would validate calls and ultimately mitigate unlawful spoofing by helping to confirm that the caller indicated in the Caller ID is accurate. See *Call Authentication Trust Anchor*, Notice of Inquiry, 32 FCC Rcd 5988 (2017).

¹³ See Robocall Strike Force, Robocall Strike Force Report at 1 (2016), <https://transition.fcc.gov/cgb/Robocall-Strike-Force-Final-Report.pdf> (Strike Force Report).

¹⁴ *Id.* at 2.

¹⁵ *Id.* at 25.

¹⁶ *Id.*

¹⁷ See *id.* Attach. 2 at 39-40.

¹⁸ *Consumer and Governmental Affairs Bureau Clarification on Blocking Unwanted Robocalls*, Public Notice, 31 FCC Rcd 10961 (CGB 2016) (2016 Guidance Public Notice).

¹⁹ Strike Force Report Attach. 2 at 40.

²⁰ *Id.*

²¹ *Advanced Methods NPRM and NOI*, 32 FCC Rcd at 2306.

²² *Id.* at 2310. The Commission will address the *NOI* questions in a separate proceeding.

8. *Call Completion Considerations.* The Commission has generally found call blocking by voice service providers to be unlawful.²³ The Commission also made clear that it is unlawful for providers to block VoIP-Public Switched Telephone Network (PSTN) traffic, and for interconnected and one-way VoIP providers to block voice traffic to or from the PSTN.²⁴ The Commission has allowed call blocking only in “rare and limited circumstances.”²⁵

III. DISCUSSION

9. In this *Report and Order*, we adopt rules to give voice service providers the option of blocking illegal robocalls in certain, well-defined circumstances.²⁶ By doing so, we further our goal of removing regulatory roadblocks and give industry the flexibility to block illegal calls.²⁷ At the same time, we affirm our commitment to protect the reliability of the nation’s communications network and ensure that provider-initiated blocking helps, rather than harms, consumers. The rules we adopt today outline specific, well-defined circumstances in which voice service providers may block calls that are highly likely to be illegitimate because there is no lawful reason to spoof certain kinds of numbers. A provider that blocks calls that do not fall within the scope of these rules may be liable for violating the Commission’s call completion rules.

A. Blocking at the Request of the Subscriber to the Originating Number

10. First, we codify the Bureau’s earlier clarification that providers may block calls when they receive a request from the subscriber to which the originating number is assigned, *i.e.*, a DNO request. The *2016 Guidance Public Notice* made clear that voice service providers—whether providing such service through TDM, VoIP, or CMRS²⁸—may block calls²⁹ purporting to be from a telephone

²³ The Commission has previously found call blocking, with limited exceptions, is an unjust and unreasonable practice under section 201(b) of the Act. *See Blocking Interstate Traffic in Iowa*, Memorandum Opinion and Order, 2 FCC Rcd 2692 (1987); *Access Charge Reform*, CC Docket No. 96-262, Seventh Report and Order and Further Notice of Proposed Rulemaking, 16 FCC Rcd 9923, 9932-33, para. 24 (2001); *Connect America Fund, A National Broadband Plan for Our Future, Establishing Just and Reasonable Rates for Local Exchange Carriers, High-Cost Universal Service Support, Developing an Unified Intercarrier Compensation Regime, Federal-State Joint Board on Universal Service, Lifeline and Link-Up, Universal Service Reform-Mobility Fund*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 17903, para. 734 (2011) (*USF/ICC Transformation Order*); *Rural Call Completion*, WC Docket No. 13-39, Notice of Proposed Rulemaking, 28 FCC Rcd 1569, 1572-73, paras. 7-11 (2013). *But see Total Communications Services, Inc., and Atlas Tel. Co., Inc., v. AT&T*, Memorandum Opinion and Order, 16 FCC Rcd 5726 (2001) (finding that the Act did not prohibit carrier from blocking calls from its customers to a sham entity designed to impose increased access charges).

²⁴ *See USF/ICC Transformation Order*, 26 FCC Rcd at. at 17903, 18028-29, paras. 734, 973-74.

²⁵ *Establishing Just and Reasonable Rates for Local Exchange Carriers*, WC Docket No. 07-135, Declaratory Ruling and Order, 22 FCC Rcd 11629, 11629, para. 1 (WCB 2007); *see USF/ICC Transformation Order*, 26 FCC Rcd at 17903, para. 734.

²⁶ We limit this *Report and Order* to the four specific types of call blocking enumerated here, although we recognize there are also many other kinds of call-blocking services. *See, e.g.*, John Adler Comments at 1-2; ACT | The App Association Comments at 3-5 (ACT); First Orion, Corp. Comments at 3-4 (First Orion). Nor do we address specific Caller ID management solutions, *see generally* NobelBiz, Inc. Comments, or clarify the requirements of the Telephone Consumer Protection Act (TCPA). *See* The Electronic Transactions Association Comments at 3-7 (ETA); Encore Capital Group, Inc. Comments at 2.

²⁷ Strike Force Report at 4. *But see* ZipDX LLC Comments at 3 (“Robocallers will quickly adapt [to these solutions], obviating any initial success.”) (ZipDX).

²⁸ For purposes of this *Report and Order* and the rules we adopt today, we similarly define “voice service providers” as those providing such service through TDM, VoIP, or CMRS. We clarify that VoIP includes both interconnected and one-way VoIP, both of which are subject to the call completion rules. *See* 47 CFR §§ 64.2100 *et seq.* “TDM” refers to time-division multiplexing. “CMRS” refers to commercial mobile radio service.

number if the subscriber to that number requests such blocking in order to prevent its number from being spoofed.³⁰ The Bureau concluded that where the subscriber did not consent to the number being used, the call was very likely made to annoy and defraud, and therefore, no reasonable consumer would wish to receive such a call.³¹ We agree and find such DNO calls to be highly likely to be illegal and to violate the Commission's anti-spoofing rule,³² with the potential to cause harm, defraud, or wrongfully obtain something of value.³³

11. The record shows broad support among consumer groups, providers, government, and callers for blocking DNO calls.³⁴ Consumers Union *et al.* emphasize the urgent need for providers to take action against spoofed calls, stating, "DNO is one of several promising tools that they should implement to help address the problem."³⁵ Several commenters note the positive results of DNO trials conducted by members of the Strike Force.³⁶

12. ZipDX and others claim that gains from blocking DNO numbers will be temporary, because those making illegal robocalls will simply choose other numbers to spoof when their calls are blocked.³⁷ We disagree that this possibility negates the demonstrated benefits of such blocking. Allowing providers to block spoofed calls from high-profile numbers, such as IRS phone numbers, that are among those most likely to lure consumers into scams will substantially benefit consumers and help entities that make DNO requests control the integrity of their phone numbers. We believe that codifying the Bureau's 2016 guidance in the form of a rule gives providers greater certainty that blocking calls at

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²⁹ For our purposes, call blocking includes instances where the provider takes affirmative action to prevent particular calls from reaching the subscriber.

³⁰ 2016 Guidance Public Notice.

³¹ *Id.* For example, the IRS has telephone numbers it does not use for outgoing calls; accordingly, calls from those numbers assigned to the IRS are clearly an indication that the calling party is using a spoofed number.

³² 47 CFR § 64.1604.

³³ Not only does spoofing potentially cause harm to the called party, but it can also harm the subscriber of the spoofed number in the form of damaged reputation through association with a spoofed call.

³⁴ *See, e.g.*, NCTA – The Internet & Television Association Comments at 3 (NCTA); T-Mobile USA, Inc. Comments at 3 (T-Mobile); 30 State Attorneys General Comments at 2-3 (30 State AGs); Microsoft Corporation Comments at 9-10 (Microsoft); The Professional Association for Customer Engagement Comments at 6 (PACE); Voice on the Net Coalition Comments at 3-4 (VON); CAC Recommendation at 1; Federal Trade Commission Comments at 5 (FTC) (“[W]here the subscriber to the originating number did not consent to their number being spoofed to make outgoing calls, there is a high likelihood both that the call is made with the intent to defraud and that no reasonable consumer would want to receive such a call.”). The FTC also suggested an additional, more complex version of DNO, allowing for short-term blocking of spoofed calls from targeted numbers while allowing legal calls to go through. FTC Comments at 6. We plan to address that and other suggestions for additional techniques to combat illegal robocalls in a separate item.

³⁵ Consumers Union *et al.* Comments at 3; *see also* INCOMPAS Comments at 8.

³⁶ *See, e.g.*, FTC Comments at 5-6, Consumers Union *et al.* Comments at 3-4. ZipDX suggests that these reductions were the result of an enforcement action that took place on October 5, 2016, shutting down a call center making illegal robocalls with the spoofed IRS number. ZipDX Comments at 10. Consumers Union *et al.*, however, minimize the effect of shutting down a single call center on the overall call volume. Consumers Union *et al.* Comments at 5. Comcast reports on trials of blocking inbound-only numbers provided by IRS: “During the two-month period in 2016 in which the trial was active, the IRS reported a ‘90% reduction in IRS scam call complaints, . . . from a high of 43,000 complaints in late August to only 3,700 complaints in mid-October.’” Comcast Corporation Comments at 12-13 (Comcast). Comcast also “noted a significant reduction in IRS spoofed calls crossing its network, from 8,000 per day to 1,000 per day since the initiation of the trial.” *Id.*

³⁷ ZipDX Comments at 8-11; *see also* Consumers Union *et al.* Comments at 5.

the request of the subscriber is lawful and provides an incentive to engage in this kind of beneficial blocking.

13. *Criteria for Blocking DNO Numbers.* In its comments, USTelecom suggests five criteria used by the Industry Traceback Group (ITB) to evaluate numbers to determine whether they should be blocked, namely:

a candidate number must: 1) be inbound-only; 2) be currently spoofed by a robocaller in order to perpetrate impersonation-focused fraud; 3) be the source of a substantial volume of calls; 4) have authorization for participation in the DNO effort from the party to which the telephone number is assigned; and/or 5) be recognized by consumers as belonging to a legitimate entity, lending credence to the impersonators and influencing successful execution of the scam.³⁸

We find that for purposes of our rule, only two of these criteria are necessary. The number must be used for inbound calls only, and the subscriber to the number must authorize it to be blocked.³⁹ We agree with the ITB recommendation that both the subscriber making the request and the provider receiving the request validate that the number is used for inbound calls only.⁴⁰ We will not require the subscriber or the provider to determine whether the number is currently being spoofed, is the source of a substantial volume of calls, or is recognized by consumers. While we believe the additional criteria may be helpful in some circumstances, they would impose too high a barrier for inclusion in the DNO list. In addition, we do not want to impose a potentially burdensome analysis requirement on providers that might discourage them from blocking inbound-only numbers at the request of the subscriber.⁴¹

14. *Coordination of Effort.* We agree with Consumers Union *et al.* that “[m]uch responsibility rests with the providers to ensure that DNO works as well as possible” through broad industry participation.⁴² While full industry participation is not required to achieve positive results, having more providers block a number will allow fewer calls purporting to be from that number to go

³⁸ USTelecom Association Comments at 8 n.14 (USTelecom).

³⁹ “Allowing blocking at the request of the subscriber can be particularly useful for inbound only numbers such as the IRS telephone numbers that were being spoofed.” FTC Comments at 6. “Providers will need to ensure subscriber consent is legitimate and outbound calling for a number is not blocked at the request of a party without authorization to make that request.” Neustar, Inc. Comments at 6 (Neustar). INCOMPAS suggests “the Commission should consider seeking the assistance of the North American Numbering Council (‘NANC’) to ensure that a ‘Do-Not-Originate’ policy does not interfere with number portability.” INCOMPAS Comments at 9. Blocking these calls, however, presents a very low risk, and NANC participation is not required to move forward at this time.

⁴⁰ For example, “due diligence is the responsibility of both the user of the number (who must ensure that the number for which it is seeking a DNO is inbound-only), as well as the carrier provisioning service to the user of the number (who should scan its network to ensure no outbound calls are identified using the number at issue).” USTelecom Comments at 8.

⁴¹ Because the rule is permissive, rather than mandatory, providers may establish their own criteria that are more restrictive than those set forth in the rule. Thus, a provider wishing to use the five criteria set forth by USTelecom would be able to do so without violating the rule. But we encourage providers to make full use of the rule by honoring all legitimate subscriber requests that calls purporting to be from an inbound-only number be blocked.

⁴² Consumers Union *et al.* Comments at 5 (quoting USTelecom Comments at 9). “Calls from numbers that have been placed on a DNO list are rejected by the first service provider in the call path that has implemented DNO based on the originating telephone number and thus blocked from entering the phone system.” USTelecom Comments at 7. “Because there are potentially multiple paths for any call to take, the effectiveness of any given DNO effort will rely on the participation rate of carriers. In other words, the more carriers that are instituting a DNO on a given number, the more effective that particular DNO undertaking will be.” USTelecom Comments at 7 n.13.

through.⁴³ Commenters note that providers must coordinate their efforts for this type of call blocking to be used effectively.⁴⁴ For example, Sprint comments that, while it supports this type of blocking and participated in the collaborative effort to block spoofed IRS numbers, “there are currently no automated systems in place to expand the scale of such projects industry-wide or to accommodate much larger numbers of customers requesting blocking.”⁴⁵ USTelecom points out the inefficiency of requiring subscribers “requesting DNOs to be forced to make individual requests to multiple providers.”⁴⁶ ZipDX suggests that the originating provider is in the best position to block these kinds of calls.⁴⁷

15. Other commenters, however, suggest that providers expand their existing ways of sharing information from the test cases and other initiatives to support this effort. As Comcast comments, “[p]articipants in the Strike Force have set up an ad hoc shared list of numbers that should not be originated and can add more for review.”⁴⁸ USTelecom comments that its “Industry Traceback Group has been facilitating a targeted, centralized, and coordinated DNO trial and stands ready to continue to evolve industry efforts on this front going forward.”⁴⁹

16. We strongly encourage providers to continue to work cooperatively to share information about any inbound-only numbers for which the subscriber has requested that the number be blocked. At this time, we decline to prescribe a sharing mechanism, especially in light of industry’s existing efforts at coordination. We emphasize that safeguards must be put in place to prevent numbers used for outbound calls from being wrongly added to the DNO list, whether from hacking, honest mistakes, or some other cause, especially for calls made to emergency services. We encourage industry to continue developing its methods for implementing DNO⁵⁰ and encourage providers that choose to do such blocking to establish a mechanism for timely removal of erroneous blocks.⁵¹

⁴³ For example, Comcast comments that having nine providers participate was sufficient to make a significant reduction in calls, but not to eliminate them entirely. “Another trial implemented a DNO list among nine provider networks for a number assigned to a commercial entity whose number was being spoofed with call volumes ranging between just under 400,000 per day to more than one million per day. After all nine providers implemented the DNO list, call volumes dropped to approximately 400 per day.” Comcast Comments at 13.

⁴⁴ See, e.g., FTC Comments at 6; The Alliance for Telecommunications Industry Solutions Comments at 5 (ATIS); INCOMPAS Comments at 8-9.

⁴⁵ Sprint Corporation Comments at 6 (Sprint). “For the IRS trial, carriers exchanged information though ad hoc communications, but for this proposal to be implemented, someone must create a system to allow the addition—and equally important—the deletion of numbers from the blocked list and distribute that information to carriers in real time.” *Id.*

⁴⁶ USTelecom Comments at 9.

⁴⁷ ZipDX Comments at 12.

⁴⁸ Comcast Comments at 13.

⁴⁹ USTelecom Comments at 9.

⁵⁰ The record reflects several good ideas about the type of provider coordination that may be useful for effective DNO blocking. TNS comments that there should be a centralized database, with “responsibilities and liabilities of the registry” clearly defined, that an experienced entity be chosen to operate the registry, that there be “a mechanism for businesses and other entities” to be authenticated and be made aware of the registry, that there be a process defined for adding and removing numbers from the registry so it is kept current,” that processes and APIs be defined for accessing the data, and that rules for participation be defined. Transaction Network Services, Inc. Comments at 4-5 (TNS). INCOMPAS suggests that the database be administered “on a technology-neutral basis—in other words, regardless of whether a provider offers its service via wireline or wireless, or TDM or IP”—and that “the database must be updated if a new subscriber is assigned a number that was previously blocked but has been returned to a providers’ allocation of numbers.” INCOMPAS Comments at 9. Microsoft agrees that coordination is needed and suggests reaching an understanding on “who would have access to such database, who pays for it, who is responsible for correcting erroneous block orders, how that correction would occur, and within what period of time

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17. *Resellers.* Finally, we agree with TracFone that wireless resellers may pass along subscriber requests to the underlying carrier that the subscriber's inbound-only number be blocked.⁵² We see no reason on this record to not allow wireless reseller subscribers to participate in the DNO effort.

B. Calls Purporting to Originate from Unassigned Numbers

18. We next find that providers may initiate blocking where the call purports to originate from a number that is unassigned. Use of an unassigned number provides a strong indication that the calling party is spoofing the Caller ID to potentially defraud and harm a voice service subscriber.⁵³ Such calls are therefore highly likely to be illegal. We identify three categories of unassigned numbers that we determine can be reasonably subject to blocking: (1) numbers that are invalid under the North American Numbering Plan (NANP); (2) numbers that have not been allocated by the North American Numbering Plan Administrator (NANPA) or the Pooling Administrator (PA) to any provider; and (3) numbers that the NANPA or PA has allocated to a provider, but are not currently used. Providers may block calls purporting to be from numbers that fall into any one of these three categories.

1. Calls Purporting to Originate from Invalid Numbers

19. Providers may block calls purportedly originating from numbers that are not valid NANP numbers. Examples of such numbers include those that use an unassigned area code; that use an abbreviated dialing code, such as 911⁵⁴ or 411, in place of an area code; that do not contain the requisite number of digits; and that are a single digit repeated, such as 000-000-0000, with the exception of 888-888-8888, which is an assignable number.⁵⁵ With a few important exceptions detailed below, the record generally supports our assumption that, because these numbers are not valid, a subscriber could not lawfully originate calls from such numbers and these calls should be blocked.⁵⁶ Providers, however, must

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the correction must be completed to enable a legitimate user to make outgoing calls using the number.” Microsoft Comments at 10 n.11. ITTA cautions that security protocols are needed around any data repository “to ensure that would-be Caller ID spoofers do not gain access and render these laudable call blocking measures for naught.” ITTA – The Voice of America’s Broadband Providers Comments at 5 (ITTA). Because our goal is to deter fraudulent calls from spoofed numbers that consumers recognize as belonging to legitimate organizations, that goal would still be met if illegal callers gain access to the list of blocked numbers and refrain from using them. Although we do not mandate any of these measures, we encourage the industry to consider them and any others that may assist in developing a reliable DNO blocking process.

⁵¹ See *infra* Section III. C. para. 54.

⁵² TracFone Wireless, Inc. Comments at 5 (TracFone) (“the Commission should require that underlying carriers treat wireless resellers’ customers the same as their own customers for purposes of call blocking.”); see also *id.* at 6.

⁵³ See, e.g., *Best Insurance Contracts, Inc., and Philip Roesel, dba Wilmington Insurance Quotes*, Notice of Apparent Liability for Forfeiture, 31 FCC Rcd 6403 (2017) (*Best Notice*).

⁵⁴ Some Enhanced 911 systems may use “911” as a prefix and must not be blocked. See *infra* para. 41.

⁵⁵ *Advanced Methods NPRM and NOI*, 32 FCC Rcd at 2312. The so-called “All Eights Number,” 888-888-8888, has been the subject of proceedings before the Commission and the Court of Appeals for the D.C. Circuit. See *Staton Holdings, Inc. v. FCC*, No. 10-1116 (D.C. Cir. Mar. 22, 2011) (per curiam). Should any other phone numbers that only repeat a single digit become assignable, they shall also be subject to this blocking exception.

⁵⁶ See, e.g., Centurylink, Inc. Comments at 5 (“CenturyLink agrees there is little risk that legitimate calls will be blocked.”) (CenturyLink); CAC Recommendation at 2; 30 State AGs Comments at 2-3; Neustar Comments at 7; T-Mobile Comments at 3; Electronic Privacy Information Center Comments at 6 (EPIC); NCTA Comments at 3; INCOMPAS Comments at 3. *But see* ZipDX at 12 (“Calls with calling-party ID’s in the categories identified in the NPRM make up only a tiny fraction of all robocalls; these blocks will have no measurable impact on robocalling volume. Robocallers will easily work around this type of blocking, quickly rendering it ineffective. The unintended consequences of these blocks (false positives) are potentially quite troublesome and far outweigh any good that would result from successful robocall blocks.”).

take care that they do not block calls that purportedly originate from valid numbers, especially emergency calls.

20. The record supports our proposal that no caller would spoof an invalid number for any lawful purpose; for example, unlike a business spoofing Caller ID on outgoing calls to show its main call-back number, invalid numbers cannot be called back.⁵⁷ Thus, we do not see a significant risk to network reliability in allowing providers to block this category of calls. ATIS suggests that benefits will be temporary because “widespread blocking of invalid and unallocated numbers could have an unintended negative consequence by driving bad actors to focus their efforts on spoofing assigned/valid numbers.”⁵⁸ Consumers Union *et al.*, however, comment that blocking such calls is imperative, because “[c]onsumers do not expect that their phone service would be the means through which illegal and fraudulent scams enter their homes, and providers should not be obligated to deliver illegal messages that could cause consumers harm.”⁵⁹ In addition, blocking calls purporting to be from invalid numbers “holds the greatest potential for success in the short term and likely would be the easiest to implement.”⁶⁰

21. We reject suggestions that blocking calls purporting to originate from invalid numbers creates “significant possibilities of false positives.”⁶¹ Although ZipDX claims that “a significant number” of private branch exchanges (PBXs) “are not properly configured” to display an accurate Caller ID⁶² and that Caller ID information could theoretically be “unintentionally altered” during a call’s transmission,⁶³ the record belies such claims. Instead, the record demonstrates that the risk of erroneously blocking such calls is very low and should not be a barrier to allowing providers to block calls purporting to be from invalid numbers.⁶⁴ Indeed, we agree with USTelecom that this small risk simply requires providers to exercise “caution when instituting blocking in the network.”⁶⁵ And we reiterate that caution to businesses with PBXs: The responsibility to properly configure PBX equipment lies with the owner, and those spoofing invalid numbers (whether intentionally or not) have the ability to ensure that their calls go through by properly reconfiguring that equipment.

22. *Identifying Invalid Numbers.* Neustar, which currently is the NANPA and PA, comments that “information for invalid numbers [is maintained] within the [NANP], and the industry has other

⁵⁷ PACE Comments at 6; EPIC Comments at 6.

⁵⁸ ATIS Comments at 6.

⁵⁹ Consumers Union *et al.* Comments at 6.

⁶⁰ Comcast Comments at 18; *see also* ATIS Comments at 6; Noble Systems Corporation Comments at 7 (Noble Systems); CTIA Reply Comments at 4; USTelecom Comments at 9; NCTA Comments at 3-4; CTIA Comments at 9.

⁶¹ ZipDX Comments at 14.

⁶² *Id.* at 13; *see also* ZipDX Reply Comments at 11. PBX systems are on-site telephone systems that provide connections between staff at organizational sites and between staff and people outside of the system. PBX systems are located on the customers’ premises. *See generally* A. Dodd, *The Essential Guide to Telecommunications* 109 (1998).

⁶³ ZipDX Ex Parte at 6; ZipDX Reply Comments at 12 (suggesting there may be “connections between two providers in the call path, which due to technical limitations or misconfiguration cause the Caller-ID to be incomplete (such as just an area code) or to be invalid (such as 0000000000)”).

⁶⁴ CenturyLink Reply Comments at 5 (“With respect to . . . blocking of invalid numbers, CenturyLink agrees there is little risk that legitimate calls will be blocked.”); Sprint Comments at 5 (“The first category of calls identified by the Commission—invalid numbers—does lend itself to relatively easy processes to block such calls.”); Comcast Comments at 18 (“Voice providers generally have ‘intimate knowledge of the [NANP]’ and can ‘easily identify numbers that fall into this category,’ including numbers that use an N11 code in place of an area code or that repeat a single digit.”).

⁶⁵ USTelecom Comments at 10.

sources to identify invalid numbers such as ATIS's Industry Numbering Committee Thus, service providers already have access to the information they need" for this kind of blocking.⁶⁶ Comcast similarly states that "[v]oice providers generally have 'intimate knowledge of the [NANP]' and can 'easily identify numbers that fall into this category,' including numbers that use an N11 code in place of an area code or that repeat a single digit."⁶⁷ In light of the industry's assurance that it can confidently identify invalid numbers, we see no need to further define or limit what is meant by "a number that is not a valid [NANP] number."⁶⁸ We encourage providers to conduct tests or simulations before blocking calls purporting to originate from invalid numbers to verify their methods.

2. Calls Purporting to Originate From Numbers Not Allocated to Any Provider

23. We find that providers may block calls purportedly originating from numbers that are valid but have not yet been allocated by the NANPA or the PA to any provider.⁶⁹ Though these numbers are valid under the NANP, we find that calls purporting to use unallocated numbers are similar to calls purporting to use invalid numbers in that no subscriber can actually originate a call from any of these numbers, and we see no lawful reason to spoof such numbers because they cannot be called back. Calls purporting to originate from such numbers therefore are highly likely to be illegal.

24. Here, the provider must have knowledge that a certain block of numbers has not been allocated to any provider and therefore that the number being blocked could not have been assigned to a subscriber. The record generally supports allowing permissive blocking of calls purporting to be from unallocated numbers.⁷⁰ For example, ATIS points out that "no subscriber can actually originate a call from these unallocated central office codes and it is unlikely that there is any legitimate, lawful reason to."⁷¹

25. Parties opposing this type of call blocking generally do so based on implementation difficulties and the risk of blocking legal calls. For example, NCTA warns that the proposal "could unintentionally result in harm to consumers and should not be adopted at this time,"⁷² and ZipDX cautions that "[t]he unintended consequences of these blocks (false positives) are potentially quite troublesome and far outweigh any good that would result from successful robocall blocks."⁷³ Several

⁶⁶ Neustar Comments at 7.

⁶⁷ Comcast Comments at 18; *see also* CenturyLink Reply Comments at 5 ("With respect to . . . blocking of invalid numbers, CenturyLink agrees there is little risk that legitimate calls will be blocked."); Sprint Comments at 5 ("The first category of calls identified by the Commission—invalid numbers—does lend itself to relatively easy processes to block such calls.").

⁶⁸ *See infra* Appendix A, Final Rules; *see also* CTIA Comments at 9 ("[T]he Commission should not define 'invalid numbers' more specifically than what is proposed in the NPRM. Expanding the definition is premature, as industry has not had an opportunity to block invalid numbers as currently defined or to observe the universe of ways bad actors use invalid numbers. In addition, a more specific definition may limit the ability for providers to combat new approaches used by bad actors to evade the Commission's rules.").

⁶⁹ We use the term "unallocated" as synonymous with "not allocated to any provider."

⁷⁰ *See, e.g.,* CTIA Comments at 9 ("CTIA agrees with the Commission that voluntary blocking of valid numbers that have not yet been allocated to carriers should be authorized."); CAC Recommendation at 2; VON Comments at 4; INCOMPAS Comments at 3; Comcast Comments at 19; ACT Comments at 5-6; EPIC Comments at 6-7; 30 State AGs Comments at 2-3; Neustar Comments at 8; ETA Comments at 3.

⁷¹ ATIS Comments at 6-7.

⁷² NCTA Comments at 5.

⁷³ ZipDX Comments at 12; *see also* CenturyLink Reply Comments at 5.

commenters also note that, if providers block unallocated numbers, then “illegal robocallers could simply shift to spoofing assigned numbers.”⁷⁴

26. Commenters do not agree on the potential volume of calls that might be blocked under this rule. While ZipDX says the “fraction of complaints” from unassigned numbers is “miniscule,”⁷⁵ USTelecom states that “the scale of numbers at issue in the Commission’s latter two proposals [blocking calls from unallocated and unassigned numbers] are potentially enormous—encompassing 3 billion telephone numbers.”⁷⁶ Transaction Network Services (TNS) attempts to strike a middle ground, suggesting that “[w]hile there is a large number of unallocated telephone numbers (over 33 million) that have been flagged as making calls, the volume of call activity from these numbers relative to all negative robocalling is very small.”⁷⁷ TNS concludes that blocking “this subset of numbers has significant, but limited value.”⁷⁸ In contrast, a recent Commission enforcement action found that one robocaller made a staggering 21,582,771 spoofed robocalls in a three month period; the caller ID for each of the robocalls examined by the FCC falsely identified a phone number that was not assigned to any carrier or subscriber at the time the calls were made.⁷⁹ Although the number of complaints about calls from unassigned numbers may be small, we agree with USTelecom that the potential value of blocking such calls is enormous. Consumers will benefit from this type of blocking because the calls are highly likely to annoy or defraud.

27. *Defining Unallocated Numbers Subject to Blocking.* Some commenters emphasize that a permissive rule does not require providers to identify and block every unallocated number, but rather simply allows a provider to block calls purporting to be from those numbers it can verify are unallocated.⁸⁰ We agree. Providers may block calls purporting to be from unallocated numbers and should limit themselves to blocking only those numbers that they can verify are unallocated. Providers may not be able to identify the complete set of all unallocated numbers for purposes of call blocking. Accordingly, voice service providers might be unable to block calls purporting to originate from every unallocated number, but this shortcoming would not result in the blocking of legal calls.

28. *Obtaining Unallocated Number Information.* We do not prescribe a technical solution for identifying and communicating information about unallocated numbers at this time. The record shows consensus that, while information on unallocated numbers is available to providers, no currently available source identifies all unallocated numbers in real time⁸¹ and that “the NANPA does not administer codes outside the United States, specifically in Canada and Caribbean countries, or toll-free numbers.”⁸² Many

⁷⁴ CenturyLink Reply Comments at 6; *see also* USTelecom Comments at 13; ATIS Comments at 6; TNS Comments at 7; CTIA Comments at 8.

⁷⁵ ZipDX Reply Comments at 9.

⁷⁶ USTelecom Comments at 11.

⁷⁷ TNS Comments at 7.

⁷⁸ *Id.*

⁷⁹ *See Best Notice*, 31 FCC Rcd, 6407.

⁸⁰ *See, e.g.*, CTIA Comments at 8 (“[T]o the extent a carrier can readily identify these types of numbers, the FCC should authorize that carrier to use its ability to help in voluntary blocking efforts.”); PACE Comments at 6.

⁸¹ *See, e.g.*, Neustar Comments at 8 (“It is the proper function of the numbering administrator to provide unallocated number information. While this information is currently available through various public reports on the NANPA and PA websites, it should be more comprehensive and updated daily.”); USTelecom Comments at 12; Comcast Comments at 19; CTIA Comments at 8.

⁸² Neustar Comments at 8 n.15.

commenters suggest that providers should use a new, centralized database as a resource for identification of unallocated numbers.⁸³

29. Neustar lists categories of unallocated numbers that should not initiate calls, including “telephone numbers in: (1) unallocated area codes in the NANP; (2) unallocated geographic Central Office (“CO”) codes (NPA-NXX) in the United States; and (3) unallocated non-contaminated thousands-blocks (NPA-NXX-X) in the United States.”⁸⁴ ATIS elaborates on the issue of contaminated thousands-blocks, stating that available thousands-blocks “publicly posted on the PA website . . . could contain up to 100 assigned numbers within those blocks.”⁸⁵ Therefore, providers blocking calls from contaminated blocks could erroneously block calls purporting to originate from assigned numbers.⁸⁶ Providers that block calls purporting to originate from assigned numbers may be liable for violating the call completion rules.

30. Several commenters propose enhancements to the information provided by the NANPA and the PA. Neustar suggests that the NANPA and the PA “provide on their websites: (1) ‘Blacklists’ of unallocated numbers that should not be making calls; and (2) ‘Whitelists’ of allocated area codes in the NANP, allocated geographic CO codes in the United States, and allocated thousands-blocks in the United States.”⁸⁷ Comcast takes a similar approach, suggesting that the databases “(1) more clearly identify which numbers have not yet been allocated and (2) are updated immediately to reflect any new allocations as they occur.”⁸⁸

31. We believe that providers, the NANPA, and the PA are in the best position to determine how to share information about unallocated numbers. We encourage these parties to work together on whether and how to improve the availability of this information for blocking purposes. At the same time, we caution against blocking calls purporting to originate from allocated numbers and encourage providers to examine their practices carefully to verify that they are not inadvertently doing so.⁸⁹ A provider that erroneously blocks calls purporting to originate from allocated numbers may be liable for violating the call completion rules.

⁸³ See, e.g., CenturyLink Reply Comments at 5 (“[A] centralized database resource would be needed to track whether numbers are allocated to a provider or assigned to a subscriber so any blocking could be properly applied and not affect legitimate calls.”); ITTA Comments at 6; Noble Systems Comments at 7; Consumers Union *et al.* Comments at 6.

⁸⁴ Neustar Comments at 8.

⁸⁵ ATIS Comments at 7.

⁸⁶ *Id.* ATIS further clarifies that “[t]he ‘Assigned, Retained & Available Blocks Report’ is publicly available on the PA’s website and is updated in real-time. However, while some may assume that a service provider could consult this report to determine whether a call is from a number within a particular thousands-block available for assignment in the pool, there are ‘contaminated’ thousands-blocks available in the pool that makes reliance on this report to identify unallocated numbers inappropriate. Because up to 100 numbers in each ‘available’ block could actually be assigned to subscribers (Commission rules allow donation of thousands-block to the pool that are 10% or less contaminated), reliance on this report could result in providers erroneously blocking calls from a ‘legitimate’ customer. If all service providers begin to block calls that appear to originate from contaminated available blocks, then subscribers with numbers from those blocks could have all of their calls blocked.” *Id.* at 7 n.10.

⁸⁷ Neustar Comments at 8, adding “In its capacity as the NANPA and the PA, Neustar commits to working collaboratively with the Commission and the industry to develop a process that will meet service provider and subscriber needs in implementing any rule permitting the blocking of calls from valid but unallocated telephone numbers.” *Id.*

⁸⁸ Comcast Comments at 19 (also requesting a safe harbor for those who use the database).

⁸⁹ See ZipDX Comments at 14 (Suggesting “that prior to implementing the block, the carrier [should] analyze recent traffic to assess the likelihood of blocking legitimate traffic”).

3. Calls Purporting to Originate From Numbers That Are Allocated But Unused

32. We find that providers may block calls purportedly originating from numbers that are allocated to a provider by the NANPA or PA, but are unused, so long as the provider blocking the calls is the allocatee of the number or has obtained verification from the allocatee that the number is unused at the time of the blocking. For these purposes, an “unused” number is a number that is not assigned⁹⁰ to a subscriber or otherwise set aside for outbound call use.⁹¹ As with invalid numbers and unallocated numbers, calls cannot originate from such a number, and we foresee no lawful purpose for intentionally spoofing a number that is unused and thus cannot be called back.

33. The record shows mixed support for allowing providers to block these kinds of calls.⁹² For example, EPIC points out that “because they are not assigned anyone using them without the provider’s knowledge is almost certainly engaging in unlawful activity.”⁹³ Many commenters, however, express concerns about legal calls being blocked, similar to the concerns about unallocated number call blocking, because “the status of numbers is always changing.”⁹⁴ The record also shows “potentially thorny implementation issues” for blocking calls from unused numbers, similar to but greater in scale than those identified for unallocated numbers.⁹⁵ In addition, the argument concerning the likely reaction of robocallers to the blocking of unallocated numbers detailed above applies here as well.⁹⁶

34. *Obtaining Unused Number Information.* The record clearly shows “an industry-wide recognition that there is currently no technical solution that allows providers to accurately and promptly identify numbers that have been allocated to a carrier but not yet assigned to a subscriber.”⁹⁷ Commenters assert that without such a database, providers cannot be certain of the status of numbers not assigned to them.⁹⁸ The Number Portability Administration Center (NPAC) and other existing databases do not show

⁹⁰ “Assigned numbers are numbers working in the Public Switched Telephone Network, or numbers that are not yet working but that have a customer service order pending.” CTIA Comments at 10.

⁹¹ As we explain more fully below, this includes Intermediate Numbers, Administrative Numbers, Proxy Numbers, and other numbers that the provider is aware may be used legitimately for outbound calls.

⁹² See, e.g., Neustar Comments at 9 (“Neustar does not oppose the Commission’s proposed rule to allow provider-blocking of calls from numbers that have been allocated to a provider but not assigned to a subscriber at the time of the call.”); CAC Recommendation at 2 (supporting the proposal to block these calls); ATIS Comments at 7 (“ATIS also supports allowing a service provider to block these types of calls but notes that there are complexities associated with blocking this category of numbers.”); EPIC Comments at 6 (“[B]y proactively blocking these calls providers can prevent harm to consumers.”).

⁹³ EPIC Comments at 7.

⁹⁴ CenturyLink Reply Comments at 5; see also USTelecom Comments at 11; American Bankers Association Comments at 4; INCOMPAS Comments at 3.

⁹⁵ Comcast Comments at 19-20.

⁹⁶ See *supra* para. 25.

⁹⁷ INCOMPAS Reply Comments at 2; see also Neustar Comments at 9 (“Neustar is unaware of any existing means to implement this well-intentioned proposal. While Neustar as the NANPA collects information from providers on the quantity of numbers assigned to subscribers via Numbering Resources Utilization Forecasting (“NRUF”) data, it does not collect information on the individual numbers that are unassigned. And, to Neustar’s knowledge, no master list of assigned or unassigned numbers exists today.”); ZipDX Reply Comments at 10; ATIS Comments at 7-8; PACE Comments at 7.

⁹⁸ Microsoft Comments at 14; Telcordia Technologies, Inc., doing business as iconectiv Comments at 5 (iconectiv); T-Mobile Comments at 4; INCOMPAS Comments at 11.

the details of provider assignment of numbers and are not capable of identifying reassigned numbers.⁹⁹ Microsoft claims that such blocking, “if not supported by use of a 100 percent reliable real-time database (which does not exist), could prevent outgoing domestic call completion for consumers who are assigned newly-activated telephone numbers.”¹⁰⁰

35. The record reveals that creating such a database would be difficult. Neustar comments that providers “often consider such information to be competitively sensitive.”¹⁰¹ In addition, the information changes very quickly, “as providers are constantly assigning new numbers to subscribers or are de-assigning numbers when a subscriber leaves and decides not to take advantage of number portability.”¹⁰² While the FTC encourages providers to share this information, providers oppose mandatory information sharing.¹⁰³ CTIA cautions that creating a centralized database “is technically challenging and would divert resources away from innovative solutions.”¹⁰⁴

36. We conclude, however, that a narrowly tailored rule could be implemented without a database. Noble Systems makes a distinction between allowing providers to block calls purported to originate from numbers allocated to that provider, which the provider knows to be unused, and requiring providers to share information to block all unused numbers.¹⁰⁵ Regarding their own numbers, “each individual service provider certainly knows which telephone numbers it has been allocated but not yet assigned to subscribers.”¹⁰⁶ As such, our rule permits providers to block on this basis. Should the industry develop more comprehensive information sources that would facilitate broader blocking of calls purported to originate from unused numbers, our rule would also permit that kind of blocking.

37. *Scope of Rule.* The record shows significant obstacles to implementing a rule requiring all providers to pool their information, yet where the allocatee of the number in question is the only provider able to block calls purporting to originate from that number, “the value of the initiative would be significantly diminished and would create a disadvantage for smaller providers.”¹⁰⁷ With fewer providers blocking each number, fewer illegal calls will be blocked overall.

⁹⁹ Neustar Comments at 9-10 (“The NPAC does not have this capability for two reasons. First, the NPAC, with few exceptions, only includes assigned numbers that have been ported. Numbers assigned from a provider’s native inventory are not required to be included in the NPAC. Second, although the NPAC supports a process to remove ported telephone numbers when subscribers disconnect service that allows the number to “snap-back” to the provider originally allocated the number, not all service providers adhere to this process in the same manner. Further, there is no notification to the NPAC when a number that has been snapped back is then reassigned to another subscriber.”); *see also* iconectiv Comments at 5; TNS Comments at 10.

¹⁰⁰ Microsoft Comments at 14.

¹⁰¹ Neustar Comments at 9; *see also* Comcast Comments at 20 (“A voice provider’s assignment of one of its allocated numbers to a subscriber is an internal business decision, and providers typically do not share number assignment information with one another.”); ATIS Comments at 8; PACE Comments at 7; CTIA Comments at 11.

¹⁰² Comcast Comments at 20; *see also* TNS Comments at 10 (“[O]ur experience indicates that it is challenging for providers to keep these lists up to date.”).

¹⁰³ FTC Comments at 7 (“The FTC further supports providers’ sharing information about these ‘unassigned’ numbers to facilitate call blocking . . . [and] to consider methods to encourage maximum provider-participation in such sharing.”).

¹⁰⁴ CTIA Comments at 8.

¹⁰⁵ Noble Systems Reply Comments at 4 (“For example, it is one thing for a carrier to implement a carrier-specific database of its own unassigned numbers but quite another for all carriers to interact with a centralized database of unassigned numbers.”). “A ‘carrier-specific’ scope maintains numbers that the carrier is aware of, while the inter-carrier scope requires multiple carriers to share information, typically with a centralized database.” *Id.*

¹⁰⁶ Neustar Comments at 9.

¹⁰⁷ TNS Comments at 11.

38. We will not require providers to share competitively sensitive information on an industry-wide basis, nor will we limit providers to blocking only unused numbers they have been allocated. We therefore define the scope of this rule to allow providers to block calls purporting to originate from an unused number, so long as the provider blocking the call either (1) is the allocatee of the number and has confirmed the number is unused, or (2) has verified the unused status of the number with the allocatee at the time of the blocking. This gives providers the flexibility to share information if they wish to, and we encourage providers to do so.

39. In addition, this is a permissive rule. CTIA points out that such “[a] voluntary regime will allow carriers that develop the ability to identify these numbers to block calls originating from them without forcing carriers to develop capabilities they do not currently possess.”¹⁰⁸

40. *Types of Used Numbers.* Many commenters indicate that legal calls may be made from what appear to be unassigned numbers.¹⁰⁹ For example, INCOMPAS points out that “many legitimate callers do not originate calls on the [PSTN] and, therefore, do not have telephone numbers.”¹¹⁰ Commenters identify three specific kinds of unassigned numbers that should not be blocked because they are being used to make legal outbound calls: intermediate numbers,¹¹¹ administrative numbers,¹¹² and proxy numbers.¹¹³ We acknowledge this concern and our rule is clear that providers should not block any type of number that, although it is not assigned to a subscriber, is used for these lawful purposes. We encourage providers to examine the status of their numbers before blocking calls that purport to originate

¹⁰⁸ CTIA Comments at 10.

¹⁰⁹ See, e.g., Microsoft Comments at 14 (“Because SkypeOut . . . does not enable the receipt of incoming calls—Skype users employ it without being assigned a corresponding telephone number.”); ZipDX Reply Comments at 10 (“[T]he most troubling aspect of the ‘Unassigned Numbers’ proposal is the huge number of legitimate calls that would be improperly flagged as ‘invalid’ and blocked, and the tremendous (unacceptable) cost associated with such massive improper call blocking.”); VON Comments at 5 (“[I]t currently is technically infeasible to determine if an assigned number is in use or may have been assigned to a subscriber such as a VoIP provider rather than directly to end users.”); VON Comments at 5 n.18 (“If the Commission adopts this proposal, it should also adopt a definition of ‘unassigned’ that minimizes the likelihood of blocking of lawful calls.”).

¹¹⁰ INCOMPAS Comments at 13.

¹¹¹ Intermediate numbers are defined, in part, as “numbers that are made available for use by another telecommunications carrier or non-carrier entity for the purpose of providing telecommunications service to an end user or customer.” 47 CFR § 52.15(f)(1)(v). Thus, while intermediate numbers are not assigned to a specific subscriber, they are not available because they may be used for other purposes. ATIS points out that “telecommunications carriers may allocate [intermediate] numbers to non-carrier voice service providers, such as VoIP providers.” ATIS Comments at 8-9 (Intermediate numbers are “reported by carriers as such on Numbering Resource Utilization and Forecast (NRUF) Form 502 -- rather than ‘assigned.’”); see also VON Comments at 5 n.18; Microsoft Comments at 14. Providers may block some intermediate numbers if they know those numbers are unused, but providers must not block intermediate numbers that are used for legal outgoing calls.

¹¹² Administrative numbers are used “by telecommunications carriers to perform internal administrative or operational functions necessary to maintain reasonable quality of service standards. . . . [S]ervice providers should take care to avoid blocking valid administrative or test calls that the provider’s own employees might be trying to originate.” ATIS Comments at 9. Providers may block some administrative numbers if they know they are unused, but providers must not block administrative numbers that are used for legal outgoing calls.

¹¹³ Proxy numbers are “dynamically assigned rather than assigned to a specific subscriber” and thus may appear to be unassigned numbers. VON Comments at 5. Proxy numbers are used to “to recycle numbers more quickly, thus reducing the numbering resources required and slowing number exhaust.” *Id.* “Without the use of proxy numbers, when a number is no longer being used it would need to be returned to the provider and then cooled for 90 days.” *Id.* Proxy numbers are also used for 911 callback numbers in “the deployment of next-generation 911.” *Id.* Providers may block some proxy numbers if they know they are unused, but providers must not block proxy numbers that are used for legal outgoing calls.

from unused numbers to verify that they are not inadvertently blocking calls that fall outside the scope of this rule,¹¹⁴ which would risk liability for violating the call completion rules.

C. Other Issues

41. *Emergency Calls.* We make clear that our rules we adopt today do not authorize the blocking of calls to 911 under any circumstance. We note that the NANP itself contemplates certain non-standard numbers to facilitate emergency calling; the NANP, for example, “permits the use of ‘911’ as the [Numbering Plan Area code] for emergency calls from non-initialized mobile devices.”¹¹⁵ To make it abundantly clear, nonetheless, that voice providers should not block such calls, we make clear these rules do not permit the blocking of emergency calls except as otherwise expressly permitted by the Commission’s rules.

42. *International Calls.* In the *NPRM*, the Commission sought comment “on whether an internationally originated call purportedly originated from a NANP number should be subject to these rules, whereas an internationally originated call showing an international number would be beyond the scope of this rule.”¹¹⁶ We adopt this proposal. We agree with Neustar that we should apply to international calls purporting to use NANP numbers “the same blocking rules applicable to domestic originated calls.”¹¹⁷ Many illegal robocalls originate from overseas call centers, and excluding such calls that purport to use NANP numbers from the ambit of the rule would create an exception that threatens to swallow the rule. In contrast, international calls from purported non-NANP numbers would not, by definition, follow the NANP numbering scheme and thus are beyond the scope of this proceeding.¹¹⁸

43. We agree with commenters that internationally originated calls may have lawful reasons to use a NANP number.¹¹⁹ VON, for example, suggests “a US-based user of a service may be traveling in Europe but uses their service to make Wi-Fi-based calls (and have their US caller ID shown).”¹²⁰ And we agree with Microsoft that we must “avoid inadvertently authorizing international call blocking.”¹²¹ But we disagree with ZipDX’s apparent suggestion that some possibility of international call blocking means we must abandon our efforts.¹²² Because we authorize blocking only for purported NANP numbers, we see no reason why the actual origination point of the call would bear on whether it is blocked. In other words, we find the likelihood of blocking a legitimate call is minimal—no matter its origin. And we reiterate that the rules we adopt today do not authorize the blocking of any international call purporting to use a valid NANP number assigned to that user.

44. *Subscriber Consent.* We do not require consumer opt-in for providers to block the specific types of calls addressed herein. We believe that no reasonable consumer would want to receive the calls we have determined may be subject to blocking. For call blocking to be most effective, it must be applied throughout the calling network. An opt-in requirement would thwart providers’ efforts.

¹¹⁴ See ZipDX Comments at 14.

¹¹⁵ ATIS Comments at 6 n.6.

¹¹⁶ *Advanced Methods NPRM and NOI*, 32 FCC Rcd at 2314, para. 24.

¹¹⁷ Neustar Comments at 10.

¹¹⁸ Although ZipDX suggests these rules could impact international travelers to the United States who use a mobile phone from their home country, ZipDX Reply Comments at 25, we disagree. To the extent calls from such travelers would purport to use non-NANP numbers, those calls would be beyond the scope of this proceeding and could not be blocked under the rules we adopt today.

¹¹⁹ VON Comments at 6.

¹²⁰ *Id.*

¹²¹ Microsoft Comments at 12-13.

¹²² ZipDX Reply Comments at 12; ZipDX Comments at 13.

45. The record shows support for allowing providers to block these specific types of spoofed calls without requiring consent from the subscriber.¹²³ Some commenters emphasize the limited scope of calls that do not require consent.¹²⁴ ITTA agrees with our reasoning that “obtaining opt-in consent from subscribers would add unnecessary burdens and complexity, . . . may not be technically feasible for some providers” and “would also add unnecessary delays.”¹²⁵ EPIC comments that “proactive blocking” would benefit consumers, “especially those that rely on landlines, [who] may not have or use caller ID.”¹²⁶

46. Consumers Union *et al.* propose that providers should obtain consent from all consumers before blocking calls other than those purporting to originate from DNO numbers,¹²⁷ but, as we state above, we do not believe any reasonable consumer would want to receive these calls.¹²⁸ The administrative burden of tracking individual opt-in responses would likely be a disincentive to blocking.

47. While providers are not required to obtain subscriber consent before blocking these calls, we emphasize that the types of calls that can be blocked are very limited. We agree with the recommendation from the Consumer Advisory Committee (CAC) and encourage providers to inform their customers about the features and risks of their own call blocking programs.¹²⁹

48. *Call Completion Rates.* The Strike Force requested that the Commission amend its call completion rules to ensure that providers can block illegal calls without those blocked calls being held against them in calculating call completion rates.¹³⁰ We agree that providers do not need to count these blocked calls for purposes of calculating their call completion rates on FCC Form 480 and therefore interpret our rules and the form to not require inclusion of calls blocked in accordance with the rules we adopt today. Reporting carriers may exclude these calls to the extent that they are able to identify them.¹³¹

¹²³ See, e.g., EPIC Comments at 7 (“EPIC supports this proposal. No reasonable consumer wants to receive robocalls.”); FTC Comments at 7; AT&T Services, Inc. Reply Comments at 5 (AT&T); Comcast Comments at 12; TNS Comments at 11; T-Mobile Comments at 3; T-Mobile Comments at 3.

¹²⁴ Insights Association Reply Comments at 3 (quoting ACA International Comments at i-ii) (“[O]utside of the bright-line categories of calls identified in the NPRM, individual consumers . . . are better situated to decide which calls should be blocked and already have the authority to do so.”).

¹²⁵ ITTA Comments at 7; see also NCTA Comments at 4 (“Such a task would not be technically feasible for many providers.”); ATIS Comments at 10; Louis Taff Comments at 4.

¹²⁶ EPIC Comments at 6.

¹²⁷ Consumers Union *et al.* Reply Comments at 2 (“call recipients, except in the case of [DNO], should be advised of the risks imposed by provider call-blocking and then be provided with the opportunity to decide whether to accept the service.”). Microsoft and Sprint also support forms of consumer opt in. Microsoft Comments at 10 (“subscriber notice and consent should be required before blocking of already-originated, incoming calls is deemed to be authorized.”); Sprint Comments at 3 (“a flexible framework that allows customers to choose the categories of calls they wish to receive and not have their carrier make broad assumptions for them.”).

¹²⁸ See, e.g., Consumers Union *et al.* Comments at 6 (“Consumers do not expect that their phone service would be the means through which illegal and fraudulent scams enter their homes, and providers should not be obligated to deliver illegal messages that could cause consumers harm.”).

¹²⁹ CAC Recommendation at 2 (“Encourage voice service providers . . . to inform current and potential subscribers through, at minimum, their published terms of service.”).

¹³⁰ Strike Force Report, Attach. 2 at 40; see 47 CFR §§ 64.2103, 64.2105 (requiring provider on whose network a call originates to keep records and to report, among other things, on the number of interstate and intrastate call attempts, answered call attempts, and unanswered call attempts for each rural OCN and the aggregate number across all non-rural OCNs of interstate and intrastate call attempts, answered call attempts, and unanswered call attempts).

¹³¹ We intend to inquire further in a future item about the need, if any, for the kind of amendments requested by the Strike Force.

49. The record shows significant support for excluding these calls from the call completion calculations to “incentivize carriers to participate in voluntary blocking when appropriate and consistent with the rules.”¹³² CenturyLink comments that “[w]ithout this protection, carriers may be unwilling to use any of the tools that may be adopted in the proceeding and the consumer benefits the Commission hopes to achieve may not be realized.”¹³³ Consumers Union *et al.* agree that “the calls that are blocked according to these guidelines should be exempt from call completion rates.”¹³⁴

50. Notwithstanding this support for the concept of excluding blocked calls from call completion rate calculations, it might not currently be possible for all providers to identify blocked calls. Originating providers required to file call completion reports have no standard mechanism to identify calls that are blocked intentionally under these rules by downstream providers and distinguish them from calls that are not completed for other reasons.¹³⁵ Further, NTCA suggests that excluding such calls from call completion would be premature “until the definitions and practical considerations noted above are addressed and standardized by industry and the Commission.”¹³⁶

51. Given the inability of all providers who must file call completion reports to identify blocked calls in every instance and the Commission’s revisiting of the rural call completion requirements in a separate rulemaking proceeding, we do not believe that requiring exclusion of these calls is appropriate at this time.¹³⁷ We instead simply note that providers subject to our call-completion reporting rules may, but are not required to, exclude blocked calls from the recordkeeping and reporting requirements to the extent they can identify such calls.

52. *CPNI Rules.* In the *NPRM*, we sought comment on whether there are concerns about sharing DNO request information and whether any clarifications or rule changes could be helpful.¹³⁸ Some commenters asked us to clarify the applicability of section 222 of the Act, and our implementing rules, in order to allow sharing of robocall information for traceback purposes or sharing of a subscriber’s request to block an inbound-only number.¹³⁹

¹³² NCTA Comments at 4. *See also* Comcast Comments at 10 (“exempting blocked calls from these calculations would avoid penalizing providers that seek to protect their customers from robocalls, and dispel any existing confusion as to whether blocking these calls somehow runs afoul of Commission requirements.”).

¹³³ CenturyLink Reply Comments at 6; *see also* ATIS Comments at 10 (“Service providers should not be penalized under the Commission’s call completion rules as they attempt to mitigate the impacts of illegal caller ID spoofing and robocalling.”); ITTA Comments at 2; CTIA Comments at 13; TNS Comments at 12.

¹³⁴ Consumers Union *et al.* Comments at 6.

¹³⁵ *See, e.g.*, Tele-Town Hall, LLC Comments at 5-6; Letter from Vonda Long-Dillard, Associate Director AT&T, to Marlene H. Dortch, Secretary, FCC, CG Docket No. 17-59, at 2 (filed Sept. 22, 2017).

¹³⁶ NTCA-The Rural Broadband Association Comments at 6.

¹³⁷ We note that the Commission is currently contemplating changes to its call completion rules, including whether to modify or eliminate the recording, retention, and recordkeeping requirements in Sections 64.210 and 64.2105. *See generally Rural Call Completion*, WC Docket No. 13-39, Second Further Notice of Proposed Rulemaking, 32 FCC Rcd 6047 (2017).

¹³⁸ *Advanced Methods NPRM and NOI*, 32 FCC Rcd at 2311-12, para. 15.

¹³⁹ *See, e.g.*, USTelecom Comments at 19-22; CTIA Comments at 15; FTC Comments at 6, CenturyLink Reply Comments at 6-7. In the *2016 Privacy Order*, the Commission stated a view that section 222(d)(2), which allows sharing in order “to protect the rights or property of the carrier, or to protect users of those services and other carriers from fraudulent, abusive, or unlawful use of, or subscription to, such services,” 47 U.S.C. § 222(d)(2), can encompass sharing for the purpose of protecting against robocalls. *Protecting the Privacy of Customers of Broadband and Other Telecommunications Services*, Report and Order, 31 FCC Rcd 13911, 13999-14000, paras. 212-14 (2016) (*2016 Privacy Order*). That order, however, was disapproved by Congress pursuant to the Congressional Review Act, so the interpretation espoused there has no effect. *See* Pub. L. No. 115-22, 131 Stat. 88

(continued....)

53. USTelecom notes that “the sharing of CPNI by telecommunications providers is essential to ensuring accurate and thorough call traceback efforts in multiple providers’ networks related to suspicious calling events.”¹⁴⁰ We note that traceback efforts are aimed at identifying persons who make illegal robocalls, including calls that involve fraud in violation of the Truth in Caller ID Act. The FTC comments that “information sharing by providers at the subscriber’s request appears to be consistent” with our CPNI rules.¹⁴¹ We agree. Section 222 and our implementing rules explicitly allow telecommunications carriers to use, disclose, or permit access to CPNI obtained from its customers, either directly or indirectly through its agents, “to protect the rights or property of the carrier, or to protect users of those services and other carriers from fraudulent, abusive, or unlawful use of, or subscription to, such services.”¹⁴² Furthermore, we agree with the FTC that when a subscriber requests that the carrier block calls purporting to be from the subscriber’s inbound-only number, “the subscriber is almost certainly seeking to have the number blocked by as many providers as possible.”¹⁴³ Therefore, such a request should be understood as authorizing the carrier to share that request with other carriers as permitted by section 222(c)(1).¹⁴⁴ Thus, voice service providers are free to share DNO requests as necessary to block calls in the limited circumstances identified in this *Report and Order*.¹⁴⁵

54. *Removing Blocks on Valid Numbers.* A challenge mechanism may be needed for voice providers that block calls given the small possibility of blocking legitimate calls. AARP suggested “[i]t would seem to be prudent to have the needed procedures to allow consumers to quickly counteract inadvertent blocking in place prior to the commencement of the general robocall blocking program.”¹⁴⁶ The Commission’s Consumer Advisory Committee similarly states that providers and consumers should “work collaboratively to develop processes and solutions whereby unintended blocking of legitimate callers can be remedied in a timely and efficient manner.”¹⁴⁷ We encourage providers who block calls to establish a means for a caller whose number is blocked to contact the provider and remedy the problem. Specifically, we encourage providers that block calls in accordance with these rules provide a way for subscribers to challenge a blocked number using a simple method that is easy for the average subscriber to understand. We also encourage providers to quickly resolve the matter so subscribers making legitimate calls may resume doing so speedily.

55. *Definition of “Illegal Robocall.”* Although the *NPRM* sought comment on the definition of “illegal robocall” for the purposes of this proceeding, we decline to adopt a definition here given that none of the rules we adopt today rely on such a definition.¹⁴⁸ Indeed, the record shows confusion

(Continued from previous page) _____
(2017) (available at <https://www.congress.gov/bill/115th-congress/senate-joint-resolution/34>); *Protecting the Privacy of Customers of Broadband and Other Telecommunications Services*, Order, 32 FCC Rcd 5442 (2017).

¹⁴⁰ USTelecom Comments at 21.

¹⁴¹ FTC Comments at 6.

¹⁴² 47 U.S.C. § 222(d)(2); 47 CFR § 64.2005(d).

¹⁴³ FTC Comments at 6.

¹⁴⁴ 47 U.S.C. § 222(c)(1) (imposing restrictions on use, disclosure, or sharing of CPNI “[e]xcept . . . with the approval of the customer”).

¹⁴⁵ This includes allowing a reseller to share its subscribers’ blocking request with the underlying carrier. See TracFone Comments at 6.

¹⁴⁶ AARP Comments at 3.

¹⁴⁷ CAC Recommendation at 2.

¹⁴⁸ *Advanced Methods NPRM and NOI*, 32 FCC Rcd at 2311 (proposing to define “illegal robocall” as “one that violates the requirements of the Telephone Consumer Protection Act of 1991, the related FCC regulations implementing the Act, or the Telemarketing Sales Rule, as well as any call made for the purpose of defrauding a consumer, as prohibited under a variety of federal and state laws and regulations, including the federal Truth in Caller ID Act”).

regarding how the proposed definition of “illegal robocall” should apply to the call blocking rules.¹⁴⁹ Sprint comments that providers cannot determine whether a call meets the definition of an illegal robocall before blocking it, because “[u]nlike spam prevention in e-mail, the content of a call cannot be determined before the call rings through to the customer’s phone.”¹⁵⁰ First Orion states “the Commission clearly intends to give carriers the flexibility to prevent all illegal calls, regardless of the technology used.”¹⁵¹ Similarly, the FTC suggests that we use the term “illegal call” rather than “illegal robocall,” because “the problematic calls here are not limited to just robocalls, but also abusive, fraudulent, or unlawful calls that are ‘live.’”¹⁵² Because we make clear that providers need not listen to the content of calls or otherwise to determine whether a particular call is expressly illegal before blocking it, we see no reason to define the term at the present moment.¹⁵³

IV. LEGAL AUTHORITY

56. Our legal authority for these rules stems from sections 201 and 202 of the Communications Act, which prohibit unjust and unreasonable practices and unjust and unreasonable discrimination¹⁵⁴—and thus have formed the basis for the Commission’s historic prohibitions on call blocking. Here, we believe that blocking a call from the types of spoofed numbers identified above is not, by definition, an unjust or unreasonable practice or unjustly or unreasonably discriminatory, and we invoke our 201 and 202 authority in making that determination.¹⁵⁵

57. In addition, the Commission is charged with prescribing regulations to implement the Truth in Caller ID Act, which made unlawful the spoofing of Caller IDs “in connection with any telecommunications service or IP-enabled voice service . . . with the intent to defraud, cause harm, or wrongfully obtain anything of value”¹⁵⁶ Given the continuing and ever-evolving schemes by illegitimate callers to harm and defraud consumers using spoofed Caller IDs, the rules we adopt are necessary to allow service providers to help prevent these unlawful acts and protect voice service subscribers.

58. Finally, section 251(e) of the Act gives the Commission authority over the use and allocation of numbering resources in the United States, including the use of the unallocated and unused numbers at issue in the proposed rules.¹⁵⁷ We exercise that authority to make clear that no user has the right to make calls while spoofing another’s NANP number without their consent or spoofing an invalid,

¹⁴⁹ Several commenters proposed alternative definitions of “robocall.” *See, e.g.*, Quicken Loans Comments at 2; National Mortgage Servicing Association Comments at 2.

¹⁵⁰ Sprint Comments at 2; *see also* Comcast Comments at 6 (“It would be impracticable and inappropriate for voice providers to try to determine the legality of a particular call under the TCPA as the call traverses its network.”); ATIS Comments at 5.

¹⁵¹ First Orion Comments at 4.

¹⁵² FTC Comments at 5.

¹⁵³ Although some commenters suggest expanding these rules beyond traditional voice calls, *see, e.g.*, Consumers Union *et al.* Comments at 3, 11; American Financial Services Association Reply Comments at 1-2; Consumers Union *et al.* Reply Comments at 2-3, we note that the Commission has not yet determined that our prohibition on call blocking would even extend to such circumstances (making exceptions to that prohibition unnecessary) and that, in any event, such extensions would not be logical outgrowths of the narrow proposals contained in the *NPRM* and thus are beyond the scope of the present proceeding.

¹⁵⁴ 47 U.S.C. §§ 201, 202.

¹⁵⁵ 47 U.S.C. § 201(b) (stating the Commission “may prescribe such rules and regulations as may be necessary in the public interest to carry out the provisions of this Act.”).

¹⁵⁶ 47 U.S.C. § 227(e); 47 CFR § 64.1604.

¹⁵⁷ 47 U.S.C. § 251(e).

unallocated, or unused number, and that voice providers may block calls as outlined herein without violating our numbering rules.

V. PROCEDURAL MATTERS

1. Regulatory Flexibility Act Analysis

59. Pursuant to the Regulatory Flexibility Act of 1980, as amended,¹⁵⁸ the Commission's Final Regulatory Flexibility Analysis in this *Report and Order* is attached as Appendix C.

2. Paperwork Reduction Act

60. This document contains new or modified information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. It will be submitted to the Office of Management and Budget (OMB) for review under Section 3507(d) of the PRA. OMB, the general public, and other Federal agencies are invited to comment on the new or modified information collection requirements contained in this proceeding. In addition, we note that pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. 3506(c)(4), we previously sought specific comment on how the Commission might further reduce the information collection burden for small business concerns with fewer than 25 employees.

3. Congressional Review Act

61. The Commission will send a copy of this *Report and Order* to Congress and the Government Accountability Office pursuant to the Congressional Review Act, see 5 U.S.C. 801(a)(1)(A).

4. Late-Filed Comments

62. We note that there were comments filed late in this proceeding. In the interest of having as complete and accurate records as possible, and because we would be free to consider the substance of those filings as part of the record in this proceeding in any event,¹⁵⁹ we will accept the late-filed comments and waive the requirements of 47 CFR § 1.46(b), and have considered them in this *Report and Order*.

5. Materials in Accessible Formats

63. To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an email to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty). This *Report and Order* can also be downloaded in Text and ASCII formats at: <https://www.fcc.gov/general/telemarketing-and-robocalls>.

VI. ORDERING CLAUSES

64. **IT IS ORDERED** that, pursuant to sections 201, 202, 222, 251(e), and 403 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 201, 202, 222, 251(e), 403, this *Report and Order* **IS ADOPTED** and that Part 64 of the Commission's rules, 47 CFR 64.1200, is amended as set forth in Appendix A. The requirements of this Report and Order shall become effective 60 days after the Commission's publication of a notice in the Federal Register, which will announce approval of portions of the rules requiring approval by The Office of Management and Budget under the Paperwork Reduction Act.

65. **IT IS FURTHER ORDERED** that the Commission's Consumer & Governmental Affairs Bureau, Reference Information Center, **SHALL SEND** a copy of this *Report and Order* to Congress and the Government Accountability Office pursuant to the Congressional Review Act, see 5 U.S.C. § 801(a)(1)(A).

¹⁵⁸ See 5 U.S.C. § 603.

¹⁵⁹ See 47 CFR § 1.1206 (discussing *ex parte* filings in permit-but-disclose proceedings).

66. **IT IS FURTHER ORDERED** that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, **SHALL SEND** a copy of this *Report and Order*, including the Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX A**Final Rules**

The Federal Communications Commission proposes to amend Part 64 of Title 47 of the Code of Federal Regulations as follows:

PART 64—MISCELLANEOUS RULES RELATING TO COMMON CARRIERS**Subpart L—Restrictions on Telemarketing, Telephone Solicitation, and Facsimile Advertising**

1. Amend § 64.1200 by adding paragraph (k) to read:

§ 64.1200 Delivery restrictions.

(k) Voice service providers may block calls so that they do not reach a called party as follows:

(1) A provider may block a voice call when the subscriber to which the originating number is assigned has requested that calls purporting to originate from that number be blocked because the number is used for inbound calls only.

(2) A provider may block a voice call purporting to originate from any of the following:

(i) a North American Numbering Plan number that is not valid;

(ii) a valid North American Numbering Plan number that is not allocated to a provider by the North American Numbering Plan Administrator or the Pooling Administrator; and

(iii) a valid North American Numbering Plan number that is allocated to a provider by the North American Numbering Plan Administrator or Pooling Administrator, but is unused, so long as the provider blocking the calls is the allocatee of the number and confirms that the number is unused or has obtained verification from the allocatee that the number is unused at the time of the blocking.

(3) A provider may not block a voice call under paragraphs (1) or (2) if the call is an emergency call placed to 911.

(4) For purposes of this subsection, a provider may rely on Caller ID information to determine the purported originating number without regard to whether the call in fact originated from that number.

APPENDIX B
Comments Filed

<u>Commenter</u>	<u>Abbreviation</u>
30 State Attorneys General	30 State AGs
AARP	AARP
ACA International	ACA International
ACT The App Association	ACT
John Adler, CEO Call Control	Adler
The Alliance for Telecommunications Industry Solutions*	ATIS
American Bankers Association	ABA
American Financial Services Association	AFSA
AT&T Services, Inc.	AT&T
CenturyLink, Inc.	CenturyLink
Citizens Utility Board	Citizens Utility Board
Comcast Corporation	Comcast
Consumers Union, Consumer Action, Consumer Federation of America, National Association of Consumer Advocates, National Consumer Law Center on behalf of its low-income clients, Public Citizen, and Public Knowledge*	Consumers Union <i>et al.</i>
CTIA*	CTIA
Electronic Privacy Information Center*	EPIC
The Electronic Transactions Association *	ETA
Encore Capital Group, Inc.	Encore
First Orion, Corp.	First Orion
Federal Trade Commission	FTC
INCOMPAS*	INCOMPAS
Insights Association	Insights Association
ITTA – The Voice of America’s Broadband Providers	ITTA
Vincent Lucas	Lucas
Metaswitch Networks	Metaswitch Networks
Microsoft Corporation	Microsoft
National Mortgage Servicing Association	NMSA
NCTA - The Internet & Television Association	NCTA
Neustar, Inc.	Neustar
NobelBiz, Inc.	NobelBiz
Noble Systems Corporation*	Noble Systems
NTCA-The Rural Broadband Association	NTCA
Professional Association for Customer Engagement*	PACE
Quicken Loans*	Quicken Loans
Joe Shields	Shields
Sprint Corporation	Sprint
Louis Taff	Taff
Telcordia Technologies, Inc., doing business as iconectiv	iconectiv
Tele-Town Hall, LLC	Tele-Town
T-Mobile USA, Inc.	T-Mobile
TracFone Wireless, Inc.	TracFone
Transaction Network Services, Inc.*	TNS
USTelecom Association*	USTelecom
Voice on the Net Coalition	VON
ZipDX LLC*	ZipDX

More than 400 individuals filed comments directly in the record. Nearly 200 of those comments expressed a general dislike for robocalls, while approximately 220 commented on a separate matter not relevant here. In addition to the individual comments, Citizens Utility Board submitted a petition containing 2,903 signatures urging the FCC to enact rules to prevent spoofed robocalls.

* filing both comments and reply comment (bold - reply comments only).

APPENDIX C

Final Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980 (RFA),¹ as amended, an Initial Regulatory Flexibility Analysis (IRFA) was incorporated into the *Notice of Proposed Rule Making and Notice of Inquiry (NPRM and NOI)*.² The Commission sought written public comment on the proposals in the *NPRM*, including comment on the IRFA. The comments received are discussed below. This Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.³

A. Need for, and Objectives of, the Order

2. This *Report and Order* takes another important step in combatting illegal robocalls by enabling voice service providers to block certain calls before they reach consumers' phones.⁴ In the year since August 1, 2016, we have received nearly 185,000 complaints about calls that consumers did not want. Stopping illegal robocalls and the problems they cause has united industry, government, and consumer groups.⁵ Caller ID spoofing is often the key to making robocall scams work. Therefore, the rules outline specific, well-defined circumstances in which voice service providers may block calls that are highly likely to be illegitimate because there is no lawful reason to spoof certain kinds of numbers. Specifically, the *Report and Order* adopts rules allowing providers to block calls from phone numbers on a Do-Not-Originate (DNO) list and those that purport to be from invalid, unallocated, or unused numbers.⁶ By doing so, we further our goal of removing regulatory roadblocks and give industry the flexibility to block illegal calls. At the same time, we affirm our commitment to protect the reliability of the nation's communications network and ensure that provider-initiated blocking helps, rather than harms, consumers. A provider that blocks calls that do not fall within the scope of these rules may be liable for violating the

¹ 5 U.S.C. § 603. The RFA, 5 U.S.C. §§ 601-612 has been amended by the Contract With America Advancement Act of 1996, Public Law No. 104-121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

² *Advanced Methods to Target and Eliminate Unlawful Robocalls*, Notice of Proposed Rulemaking and Notice of Inquiry, 32 FCC Rcd 2306 at 2306-07 (2017) (*Advanced Methods NPRM and NOI*).

³ See 5 U.S.C. § 604.

⁴ For purposes of this *Report and Order* and the rules we adopt today, we similarly define "voice service providers" as those providing such service through TDM, VoIP, or CMRS. We clarify that VoIP includes both interconnected and one-way VoIP, both of which are subject to the call completion rules. See 47 CFR §§ 64.2100 et seq. "TDM" refers to time-division multiplexing. "CMRS" refers to commercial mobile radio service. We do not apply these rules to text messages.

⁵ The FCC website contains information about common telephone scams such as the "Mexico Collect Call Scam" and the "'One Ring' Wireless Phone Scam." See Federal Communications Commission, *Frauds, Scams and Alerts* (Aug. 14, 2017), <https://www.fcc.gov/general/frauds-scams-and-alerts-guides>. The Federal Trade Commission (FTC) routinely provides consumer information about scams and periodically issues scam alerts describing the most recent schemes to defraud consumers. See Federal Trade Commission, *Scam Alerts: What to Know and Do About Scams in the News*, <https://www.consumer.ftc.gov/scam-alerts> (last visited Feb. 18, 2017). The Internal Revenue Service also has warned consumers about scam calls in which callers pretend to be representing the IRS and claim the called party owes back taxes, with the goal of obtaining money or personal information from the victim. These callers often spoof an IRS phone number to add credibility to these calls. Internal Revenue Service, *Phone Scams a Serious Threat; Remain on the IRS "Dirty Dozen" List of Tax Scams for 2017* (Feb. 2, 2017), <https://www.irs.gov/uac/newsroom/phone-scams-remain-serious-threat-no-2-on-the-irs-dirty-dozen-list-of-tax-scams-for-2017>; see also *FCC and TIGTA Warn Consumers of IRS Impersonation Phone Scam: Scam Has Cost Victims Tens of Millions of Dollars*, DA 16-1392, Enforcement Advisory, 31 FCC Rcd 13184 (EB 2016).

⁶ We limit this *Report and Order* to the four specific types of call blocking enumerated here, although we recognize there are also many other kinds of call-blocking services.

Commission's call completion rules.

3. *Blocking at the Request of the Subscriber to the Originating Number.* In the *Report and Order*, we codify the Bureau's earlier clarification that voice service providers may block calls⁷ purporting to be from a telephone number if the subscriber to that number requests such blocking in order to prevent its number from being spoofed.⁸ Where the subscriber did not consent to the number being used, the call was very likely made with the intent to defraud, and therefore no reasonable consumer would wish to receive such a call.

4. *Calls Supposedly Originating from Invalid Numbers.* Similarly, the *Report and Order* allows providers to block calls purportedly originating from numbers that are not valid under the NANP.⁹ Examples of such numbers include those that use an unassigned area code; that use an abbreviated dialing code, such as 411, in place of an area code; that do not contain the requisite number of digits; and that are a single digit repeated, such as 000-000-0000, with the exception of 888-888-8888, which is an assignable number. No caller would spoof an invalid number for any lawful purpose; for example, unlike a business spoofing Caller ID on outgoing calls to show its main call-back number, invalid numbers cannot be called back. Providers, however, must take care that they do not block calls that purportedly originate from valid numbers, especially emergency calls.

5. *Calls Supposedly Originating From Numbers Not Allocated to Any Provider.* The *Report and Order* also allows providers to block calls purportedly originating from numbers that are valid but have not yet been allocated by the NANPA or the PA to any provider.¹⁰ Though these numbers are valid under the North American Numbering Plan, we find that calls purporting to use unallocated numbers are similar to calls purporting to use invalid numbers in that no subscriber can actually originate a call from any of these numbers, and we see no lawful reason to spoof such numbers because they cannot be called back.

6. *Calls Supposedly Originating From Numbers That Are Allocated But Unused.* The *Report and Order* allows providers to block calls purportedly originating from numbers that are allocated to a provider by the North American Numbering Plan Administrator or Pooling Administrator, but are unused, so long as the provider blocking the calls is the allocatee of the number or has obtained verification from the allocatee that the number is unused at the time of the blocking.¹¹ For these purposes, an "unused" number is a number that is not assigned to a subscriber or otherwise set aside for legitimate outbound call use.¹² As with invalid numbers and unallocated numbers, a subscriber cannot originate a call from such a number, and we foresee no lawful purpose for intentionally spoofing a number that is unused and thus cannot be called back.

7. *Other Issues.* The *Report and Order* also clarifies that these rules do not permit the blocking of emergency calls except as otherwise expressly permitted by the Commission's rules,¹³ that all calls purporting to originate from a NANP number, including international calls, are subject to these rules, and that international calls from purported non-NANP numbers would not, by definition, follow the

⁷ For our purposes, call blocking includes instances where the provider takes affirmative action to prevent particular calls from reaching the subscriber.

⁸ *Report and Order* at paras. 10-17.

⁹ *Id.* at paras. 19-22.

¹⁰ *Id.* at paras. 23-31. We use the term "unallocated" as synonymous with "not allocated to any provider."

¹¹ *Id.* at paras. 32-40.

¹² This includes Intermediate Numbers, Administrative Numbers, Proxy Numbers, and other numbers that the provider is aware may be used legitimately for outbound calls.

¹³ *Report and Order* at para. 41.

NANP numbering scheme and thus are beyond the scope of this proceeding.¹⁴ It confirms that we do not require consumer opt-in for providers to block these specific types of calls,¹⁵ clarifies that providers do not need to count these blocked calls for purposes of calculating their call completion rates,¹⁶ clarifies that voice service providers are free to share the CPNI necessary to block calls in the limited circumstances identified in this *Report and Order*,¹⁷ encourages providers to establish a means for a caller whose number is blocked to contact the provider and remedy the problem,¹⁸ and declines to adopt a definition of the term “illegal robocall” at the present moment.¹⁹

B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA

8. In the *NPRM and NOI*, we solicited comments on how to minimize the economic impact of the new rules on small businesses. We received one comment directly addressing the IRFA²⁰ and several comments addressing small business concerns.²¹ Two of the comments requested that the call blocking rules be permissive, rather than mandatory, three pertained to the administration of a database for unassigned numbers, and two addressed other issues. In addition, we received two consumer comments documenting the negative impact of unwanted calls on small businesses.²² None of the other comments pointed out any areas where small businesses would incur a particular hardship in complying with the rules.

9. *Permissive Rules.* Both CTIA and ITTA support permissive rules. CTIA suggests that “blocking of numbers . . . should be authorized, but not required.”²³ ITTA claims that permissive rules give providers “flexibility in how aggressively they choose to block calls.”²⁴ The rules we adopt today are permissive and not mandatory.²⁵

10. *Database Administration.* INCOMPAS, ITTA, and PACE suggest that a centralized database of unused numbers be created, and then suggest ways to minimize disproportionate costs to small businesses in using such a database.²⁶ We considered both the technical and cost issues inherent in the creations of a database and determined not to require one.²⁷ Without a database, concerns about its administration are rendered moot.

11. INCOMPAS requests a mechanism that will “spare smaller providers from using

¹⁴ *Id.* at paras. 42-43.

¹⁵ *Id.* at paras. 44-47.

¹⁶ *Id.* at paras. 48-51.

¹⁷ *Id.* at paras. 52-53.

¹⁸ *Id.* at para. 54.

¹⁹ *Id.* at para. 55.

²⁰ NTCA-The Rural Broadband Association Comments at 5 (NTCA).

²¹ CTIA Comments at 10; INCOMPAS Comments at 6-7; INCOMPAS Reply Comments at 11, 12; ITTA – The Voice of America’s Broadband Providers Comments at 2-3, 4, 6 (ITTA); NTCA Comments at 2, 8; Professional Association for Customer Engagement Reply Comments at 7 (PACE); Transaction Network Services, Inc. Comments at 8, 11 (TNS).

²² Mason Roberts Reply Comments at 1; Rob Ambrose Comments at 1.

²³ CTIA Comments at 10.

²⁴ ITTA Comments at 4.

²⁵ See, e.g., *Report and Order* at paras. 10, 19, 23, 27, 39.

²⁶ INCOMPAS Reply Comments at 11-12; ITTA Comments at 6; PACE Reply Comments at 7.

²⁷ *Report and Order* at paras. 28-31.

additional resources to prove the legitimacy of its call traffic to other providers.”²⁸ In the *Report and Order*, we allow a provider to block unused numbers only if the provider blocking the calls is the allocatee of the number or has obtained verification from the allocatee that the number is unused at the time of the blocking.²⁹ Therefore, if a smaller provider does not give information to other providers, its call traffic will not be blocked.

12. *Other Issues.* Commenters raise three other issues. First, INCOMPAS requests that we require providers to put a mechanism in place to remove blocks on valid numbers, and that in doing so, “providers should be given discretion to adjust their policies according to their size and services.”³⁰ In the *Report and Order*, we urge, but do not require providers to implement such a mechanism, nor do we provide specific requirements for how providers might remove blocks on valid numbers, allowing smaller providers the flexibility they request.³¹ Second, NTCA suggests that the North American Numbering Council (NANC) “may be best positioned to help clarify practical requirements” to “to assess and mitigate the costs of compliance for smaller firms.”³² However, industry has already established the Robocall Strike Force (Strike Force), which has produced significant documentation clarifying the practical requirements for the limited and specific types of call blocking authorized in the *Report and Order*.³³ Blocking these calls presents a very low risk, and NANC participation is not required to move forward at this time.³⁴ Third, TNS suggests that providers be permitted to block unused numbers allocated to other providers to avoid creating “a disadvantage for smaller providers.”³⁵ The record also shows that many providers view their unused number data as competitively sensitive information.³⁶ In the *Report and Order*, we balance these concerns by allowing, but not requiring, providers to block unused numbers allocated to other providers if they have verified the unused status of the number.³⁷

C. Response to Comments by the Chief Counsel for Advocacy of the Small Business Administration

13. Pursuant to the Small Business Jobs Act of 2010, which amended the RFA, the Commission is required to respond to any comments filed by the Chief Counsel for Advocacy of the Small Business Administration (SBA), and to provide a detailed statement of any change made to the proposed rules as a result of those comments.³⁸ The Chief Counsel did not file any comments in response to the proposed rules in this proceeding.

D. Description and Estimate of the Number of Small Entities to Which Rules Will Apply

14. The RFA directs agencies to provide a description of, and where feasible, an estimate of

²⁸ INCOMPAS Reply Comments at 11.

²⁹ *Report and Order* at paras. 32-40.

³⁰ INCOMPAS Comments at 6.

³¹ *Report and Order* at para. 54.

³² NTCA Comments at 5.

³³ See Robocall Strike Force, Robocall Strike Force Report at 1 (2016), <https://transition.fcc.gov/cgb/Robocall-Strike-Force-Final-Report.pdf> (Strike Force Report).

³⁴ *Report and Order* at para. 13, n. 39.

³⁵ TNS Comments at 11.

³⁶ *Report and Order* at para. 35.

³⁷ *Report and Order* at paras. 32-40.

³⁸ 5 U.S.C. sec 604 (a)(3).

the number of small entities that may be affected by the rules adopted herein.³⁹ The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.”⁴⁰ In addition, the term “small business” has the same meaning as the term “small-business concern” under the Small Business Act.⁴¹ A “small-business concern” is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.⁴²

1. Wireline Carriers

15. *Wired Telecommunications Carriers.* The U.S. Census Bureau defines this industry as “establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired communications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services, wired (cable) audio and video programming distribution, and wired broadband internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.”⁴³ The SBA has developed a small business size standard for Wired Telecommunications Carriers, which consists of all such companies having 1,500 or fewer employees.⁴⁴ Census data for 2012 shows that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees.⁴⁵ Thus, under this size standard, the majority of firms in this industry can be considered small.

16. *Local Exchange Carriers (LECs).* Neither the Commission nor the SBA has developed a small business size standard specifically for local exchange services. The closest applicable size standard under SBA rules is for the category Wired Telecommunications Carriers. The U.S. Census Bureau defines this industry as “establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired communications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services, wired (cable) audio and video programming distribution, and wired broadband internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.”⁴⁶ Under that

³⁹ See 5 U.S.C. § 603(b)(3).

⁴⁰ See 5 U.S.C. § 601(6).

⁴¹ See 5 U.S.C. § 601(3) (incorporating by reference the definition of “small-business concern” in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies “unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register.”

⁴² See 15 U.S.C. § 632.

⁴³ U.S. Census Bureau, 2012 NAICS Definitions, “517110 Wired Telecommunications Categories”; <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>.

⁴⁴ See 13 CFR § 120.201, NAICS Code 517110.

⁴⁵ 2012 U.S. Economic Census, NAICs Code 517110, at http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ2&prodT ype=table.

⁴⁶ U.S. Census Bureau, 2012 NAICS Definitions, “517110 Wired Telecommunications Categories”; <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>.

size standard, such a business is small if it has 1,500 or fewer employees.⁴⁷ Census data for 2012 show that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees.⁴⁸ Consequently, the Commission estimates that most providers of local exchange service are small businesses.

17. *Incumbent Local Exchange Carriers (Incumbent LECs)*. Neither the Commission nor the SBA has developed a small business size standard specifically for incumbent local exchange services. The closest applicable size standard under SBA rules is for the category Wired Telecommunications Carriers. The U.S. Census Bureau defines this industry as “establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired communications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services, wired (cable) audio and video programming distribution, and wired broadband internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.”⁴⁹ Under that size standard, such a business is small if it has 1,500 or fewer employees.⁵⁰ Census data for 2012 show that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees.⁵¹ Consequently, the Commission estimates that most providers of incumbent local exchange service are small businesses.

18. *Competitive Local Exchange Carriers (Competitive LECs), Competitive Access Providers (CAPs), Shared-Tenant Service Providers, and Other Local Service Providers*. Neither the Commission nor the SBA has developed a small business size standard specifically for these service providers. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. The U.S. Census Bureau defines this industry as “establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired communications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services, wired (cable) audio and video programming distribution, and wired broadband internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.”⁵² Under that size standard, such a business is small if it has 1,500 or fewer employees.⁵³ Census data for 2012 show that there were 3,117 firms that operated that year. Of this total,

⁴⁷ 13 CFR § 121.201, NAICS code 517110.

⁴⁸ 2012 U.S. Economic Census, NAICS Code 517110, at http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ5&prodTtype=table.

⁴⁹ U.S. Census Bureau, 2012 NAICS Definitions, “517110 Wired Telecommunications Categories”; <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>.

⁵⁰ 13 CFR § 121.201, NAICS code 517110.

⁵¹ 2012 U.S. Economic Census, NAICS Code 517110, at http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ5&prodTtype=table.

⁵² U.S. Census Bureau, 2012 NAICS Definitions, “517110 Wired Telecommunications Categories”; <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>.

⁵³ 13 CFR § 121.201, NAICS code 517110.

3,083 operated with fewer than 1,000 employees.⁵⁴ Consequently, the Commission estimates that most providers of competitive local exchange service, competitive access providers, shared-tenant service providers, and other local service providers are small entities.

19. We have included small incumbent LECs in this present RFA analysis. As noted above, a “small business” under the RFA is one that, *inter alia*, meets the pertinent small business size standard (e.g., a telephone communications business having 1,500 or fewer employees), and “is not dominant in its field of operation.”⁵⁵ The SBA’s Office of Advocacy contends that, for RFA purposes, small incumbent LECs are not dominant in their field of operation because any such dominance is not “national” in scope.⁵⁶ We have therefore included small incumbent LECs in this RFA analysis, although we emphasize that this RFA action has no effect on Commission analyses and determinations in other, non-RFA contexts.

20. *Interexchange Carriers.* Neither the Commission nor the SBA has developed a small business size standard specifically for providers of interexchange services. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. The U.S. Census Bureau defines this industry as “establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired communications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services, wired (cable) audio and video programming distribution, and wired broadband internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.”⁵⁷ Under that size standard, such a business is small if it has 1,500 or fewer employees.⁵⁸ Census data for 2012 show that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees.⁵⁹ Consequently, the Commission estimates that the majority of interexchange carriers are small entities.

21. *Cable System Operators (Telecom Act Standard).* The Communications Act also contains a size standard for small cable system operators, which is “a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1 percent of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed \$250,000,000.”⁶⁰ There are approximately 52,403,705 cable video subscribers in the United States

⁵⁴ 2012 U.S. Economic Census, NAICs Code 517110, at http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ5&prodTtype=table.

⁵⁵ 5 U.S.C. § 601(3).

⁵⁶ Letter from Jere W. Glover, Chief Counsel for Advocacy, SBA, to William E. Kennard, Chairman, Federal Communications Commission (May 27, 1999). The Small Business Act contains a definition of “small business concern,” which the RFA incorporates into its own definition of “small business.” 15 U.S.C. § 632(a); 5 U.S.C. § 601(3). SBA regulations interpret “small business concern” to include the concept of dominance on a national basis. 13 CFR § 121.102(b).

⁵⁷ U.S. Census Bureau, 2012 NAICS Definitions, “517110 Wired Telecommunications Categories”; <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>.

⁵⁸ 13 CFR § 121.201, NAICS code 517110.

⁵⁹ 2012 U.S. Economic Census, NAICs Code 517110, at http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ5&prodTtype=table.

⁶⁰ 47 CFR § 76.901 (f) and notes ff. 1, 2, and 3.

today.⁶¹ Accordingly, an operator serving fewer than 524,037 subscribers shall be deemed a small operator if its annual revenues, when combined with the total annual revenues of all its affiliates, do not exceed \$250 million in the aggregate.⁶² Based on available data, we find that all but nine incumbent cable operators are small entities under this size standard.⁶³ We note that the Commission neither requests nor collects information on whether cable system operators are affiliated with entities whose gross annual revenues exceed \$250 million.⁶⁴ Although it seems certain that some of these cable system operators are affiliated with entities whose gross annual revenues exceed \$250 million, we are unable at this time to estimate with greater precision the number of cable system operators that would qualify as small cable operators under the definition in the Communications Act.

22. *Other Toll Carriers.* Neither the Commission nor the SBA has developed a size standard for small businesses specifically applicable to other toll carriers. This category includes toll carriers that do not fall within the categories of interexchange carriers, operator service providers, prepaid calling card providers, satellite service carriers, or toll resellers. The closest applicable size standard under SBA rules is for Wired Telecommunications Carriers. The U.S. Census Bureau defines this industry as “establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired communications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services, wired (cable) audio and video programming distribution, and wired broadband internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.”⁶⁵ Under that size standard, such a business is small if it has 1,500 or fewer employees.⁶⁶ Census data for 2012 show that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees.⁶⁷ Thus, under this category and the associated small business size standard, the majority of other toll carriers can be considered small.

2. Wireless Carriers

23. *Wireless Telecommunications Carriers (except Satellite).* Since 2007, the Census Bureau has placed wireless firms within this new, broad, economic census category.⁶⁸ Under the present and prior categories, the SBA has deemed a wireless business to be small if it has 1,500 or fewer employees.⁶⁹

⁶¹ See SNL KAGAN at www.snl.com/interactivex/MultichannelIndustryBenchmarks.aspx.

⁶² 47 CFR § 76.901(f) and notes ff. 1, 2, and 3.

⁶³ See SNL KAGAN at <https://www.snl.com/Interactivex/TopCableMSOs.aspx>.

⁶⁴ The Commission does receive such information on a case-by-case basis if a cable operator appeals a local franchise authority’s finding that the operator does not qualify as a small cable operator pursuant to section 76.901(f) of the Commission’s rules. See 47 CFR § 76.901(f).

⁶⁵ U.S. Census Bureau, 2012 NAICS Definitions, “517110 Wired Telecommunications Categories”; <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>.

⁶⁶ 13 CFR § 121.201, NAICS code 517110.

⁶⁷ 2012 U.S. Economic Census, NAICS Code 517110, at http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ5&prodType=table.

⁶⁸ U.S. Census Bureau, 2012 NAICS Definitions, “517210 Wireless Telecommunications Categories (Except Satellite)”; <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517210&search=2012%20NAICS%20Search>.

⁶⁹ 13 CFR § 121.201, NAICS code 517210 (2012 NAICS). The now-superseded, pre-2007 CFR citations were 13 CFR § 121.201, NAICS codes 517211 and 517212 (referring to the 2002 NAICS).

For the category of Wireless Telecommunications Carriers (except Satellite), Census data for 2012 show that there were 967 firms that operated for the entire year. Of this total, 955 firms had fewer than 1,000 employees.⁷⁰ Thus under this category and the associated size standard, the Commission estimates that the majority of wireless telecommunications carriers (except satellite) are small entities. Similarly, according to internally developed Commission data, 413 carriers reported that they were engaged in the provision of wireless telephony, including cellular service, Personal Communications Service (PCS), and Specialized Mobile Radio (SMR) services.⁷¹ Of this total, an estimated 261 have 1,500 or fewer employees.⁷² Thus, using available data, we estimate that the majority of wireless firms can be considered small.

24. *Satellite Telecommunications Providers.* The category of Satellite Telecommunications “comprises establishments primarily engaged in providing telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications.”⁷³ This category has a small business size standard of \$32.5 million or less in average annual receipts, under SBA rules.⁷⁴ For this category, Census Bureau data for 2012 show that there were a total of 333 firms that operated for the entire year.⁷⁵ Of this total, 299 firms had annual receipts of under \$25 million.⁷⁶ Consequently, we estimate that the majority of satellite telecommunications firms are small entities.

25. *All Other Telecommunications.* All other telecommunications comprises, *inter alia*, “establishments primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation. This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems. Establishments providing Internet services or voice over Internet protocol (VoIP) services via client-supplied telecommunications connections are also included in this industry.”⁷⁷ The SBA has developed a small business size standard for the category of All Other Telecommunications.⁷⁸ Under that size standard, such a business is small if it has \$32.5 million in annual receipts.⁷⁹ For this category, Census Bureau data for 2012 show that there were a total of 1,442 firms that operated for the entire year.⁸⁰ Of this total, 1,400 had annual receipts below \$25 million per

⁷⁰ 2012 U.S. Economic Census, NAICs Code 517210, at http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ5&prodType=table.

⁷¹ *Trends in Telephone Service*, tbl. 5.3.

⁷² *Id.*

⁷³ U.S. Census Bureau, 2012 NAICS Definitions, “517410 Satellite Telecommunications,” <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517410&search=2012>.

⁷⁴ 13 CFR § 121.201, NAICS Code 517410.

⁷⁵ U.S. Census Bureau, 2012 Economic Census, Subject Series: Information, “Establishment and Firm Size,” NAICS code 517410.

⁷⁶ *Id.*

⁷⁷ U.S. Census Bureau, 2012 NAICS Definitions, “517919 All Other Telecommunications,” <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517919&search=2012>.

⁷⁸ 13 CFR § 121.201, NAICS code 517919.

⁷⁹ *Id.*

⁸⁰ U.S. Census Bureau, 2012 Economic Census, Subject Series: Information, “Establishment and Firm Size,” NAICS code 517919.

year.⁸¹ Consequently, we estimate that the majority of all other telecommunications firms are small entities.

3. Resellers

26. *Toll Resellers.* The Commission has not developed a definition for toll resellers. The closest NAICS Code Category is Telecommunications Resellers. The Telecommunications Resellers industry comprises establishments engaged in purchasing access and network capacity from owners and operators of telecommunications networks and reselling wired and wireless telecommunications services (except satellite) to businesses and households. Establishments in this industry resell telecommunications; they do not operate transmission facilities and infrastructure. Mobile virtual network operators (MVNOs) are included in this industry.⁸² The SBA has developed a small business size standard for the category of Telecommunications Resellers.⁸³ Under that size standard, such a business is small if it has 1,500 or fewer employees.⁸⁴ Census data for 2012 show that 1,341 firms provided resale services during that year. Of that number, 1,341 operated with fewer than 1,000 employees.⁸⁵ Thus, under this category and the associated small business size standard, the majority of these resellers can be considered small entities. According to Commission data, 881 carriers have reported that they are engaged in the provision of toll resale services.⁸⁶ Of this total, an estimated 857 have 1,500 or fewer employees.⁸⁷ Consequently, the Commission estimates that the majority of toll resellers are small entities.

27. *Local Resellers.* The SBA has developed a small business size standard for the category of Telecommunications Resellers. The Telecommunications Resellers industry comprises establishments engaged in purchasing access and network capacity from owners and operators of telecommunications networks and reselling wired and wireless telecommunications services (except satellite) to businesses and households. Establishments in this industry resell telecommunications; they do not operate transmission facilities and infrastructure. Mobile virtual network operators (MVNOs) are included in this industry.⁸⁸ Under that size standard, such a business is small if it has 1,500 or fewer employees.⁸⁹ Census data for 2012 show that 1,341 firms provided resale services during that year. Of that number, all operated with fewer than 1,000 employees.⁹⁰ Thus, under this category and the associated small business size standard, the majority of these local resellers can be considered small entities.

28. *Prepaid Calling Card Providers.* The SBA has developed a small business size standard for the category of Telecommunications Resellers. The Telecommunications Resellers industry comprises establishments engaged in purchasing access and network capacity from owners and operators of telecommunications networks and reselling wired and wireless telecommunications services (except

⁸¹ *Id.*

⁸² <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=517911&search=2012+NAICS+Search&search=2012>.

⁸³ 13 CFR § 121.201, NAICS code 517911.

⁸⁴ *Id.*

⁸⁵ 2012 U.S. Economic Census, NAICS Code 517911, at https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ2&prodType=table.

⁸⁶ *Trends in Telephone Service*, at tbl. 5.3.

⁸⁷ *Id.*

⁸⁸ <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=517911&search=2012+NAICS+Search&search=2012>.

⁸⁹ 13 CFR § 121.201, NAICS code 517911.

⁹⁰ U.S. Census Bureau, 2012 Economic Census, Subject Series: Information, “Establishment and Firm Size,” NAICS code 517911.

satellite) to businesses and households. Establishments in this industry resell telecommunications; they do not operate transmission facilities and infrastructure. Mobile virtual network operators (MVNOs) are included in this industry.⁹¹ Under that size standard, such a business is small if it has 1,500 or fewer employees.⁹² Census data for 2012 show that 1,341 firms provided resale services during that year. Of that number, all operated with fewer than 1,000 employees.⁹³ Thus, under this category and the associated small business size standard, the majority of these prepaid calling card providers can be considered small entities.

E. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities

29. This *Report and Order* gives voice service providers the option of blocking illegal robocalls in certain, well-defined circumstances. These changes affect small and large companies equally, and apply equally to all of the classes of regulated entities identified above.

30. *Reporting and Recordkeeping Requirements.* The *Report and Order* clarifies the call completion rules by allowing, but not requiring, voice service providers to exclude calls blocked under these new rules from their call completion calculations, to the extent that they are aware of which calls are blocked. To do so, voice service providers who choose to exclude such calls may modify their current reporting and recordkeeping procedures already in place for performing their call completion calculations on existing FCC Form 480. This is a minor modification to an existing process, so we anticipate that the impact will be minimal.

31. *Other Compliance Requirements.* Voice service providers will be permitted, but not required, to block calls purportedly originating from (1) a telephone number if the subscriber to that number requests such blocking in order to prevent its number from being spoofed; (2) numbers that purport to be NANP numbers but are not valid under the NANP; (3) numbers that are valid but have not yet been allocated by the NANPA or the PA to any provider; (4) numbers that are allocated to a provider by the NANPA or PA, but are unused, so long as the provider blocking the calls is the allocatee of the number and or has obtained verification from the allocatee that the number is unused at the time of the blocking.

F. Steps Taken to Minimize the Significant Economic Impact on Small Entities, and Significant Alternatives Considered

32. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its approach, which may include the following four alternatives, among others: (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.⁹⁴

33. The Commission considered feedback from the *NPRM and NOI* in crafting the final order. We evaluated the comments in light of balancing the goal of removing regulatory roadblocks and giving industry the flexibility to block illegal calls with our commitment to protect the reliability of the nation's communications network. Small businesses supported our proposal to make the call blocking rules permissive rather than mandatory.⁹⁵ While we considered mandatory rules, we both proposed and

⁹¹ <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=517911&search=2012+NAICS+Search&search=2012>.

⁹² 13 CFR § 121.201, NAICS code 517911.

⁹³ U.S. Census Bureau, 2012 Economic Census, Subject Series: Information, "Establishment and Firm Size," NAICS code 517911.

⁹⁴ 5 U.S.C. § 603.

⁹⁵ See, e.g., *Report and Order* at paras. 23, 27, 39.

implemented permissive rules to address the concerns of voice service providers, including small businesses, that the cost and burden of complying with mandatory rules could be significant and might require implementation of new technology. We also took small business concerns into consideration in our determination to not require a database of unused numbers.⁹⁶ While we considered mandating the use of a database for providers that choose to block unused numbers, such a database could impose disproportionate costs on small businesses and would be challenging to create and maintain. Similarly, we considered the needs of small businesses in our guidance regarding removing blocks from valid numbers.⁹⁷ While we considered requiring specific processes or dedicated resources, we do not mandate them at this time to allow small providers to scale their efforts in accordance with their businesses and to develop a more robust record on the issue before we address this in a future proceeding.

34. The Commission does not see a need to establish a special timetable for small entities to reach compliance with the modification to the rules. No small business has asked for a delay in implementing the rules. Small businesses may avoid compliance costs entirely by declining to block robocalls, or may delay implementation of call blocking indefinitely to allow for more time to come into compliance with the rules. Similarly, there are no design standards or performance standards to consider in this rulemaking.

G. Report to Congress

35. The Commission will send a copy of the *Report and Order*, including this FRFA, in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act.⁹⁸ In addition, the Commission will send a copy of the *Report and Order*, including this FRFA, to the Chief Counsel for Advocacy of the Small Business Administration. A copy of the *Report and Order* (or summaries thereof) will also be published in the Federal Register.⁹⁹

⁹⁶ *Report and Order* at paras. 34-36.

⁹⁷ *Report and Order* at para. 54.

⁹⁸ 5 U.S.C. § 801(a)(1)(A).

⁹⁹ *See id.* § 604(b).