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

In the Matter of
Reexamination of Roaming Obligations of
Commercial Mobile Radio Service Providers and
Other Providers of Mobile Data Services

WT Docket No. 05-265

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SECOND REPORT AND ORDER

Adopted: April 7, 2011

Released: April 7, 2011

By the Commission: Chairman Genachowski and Commissioners Copps and Clyburn issuing
separate statements; Commissioners McDowell and Baker dissenting and issuing separate
statements.

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I. INTRODUCTION

1. In this Order, we promote consumer access to nationwide mobile broadband service by
adopting a rule that requires facilities-based providers of commercial mobile data services to offer data
roaming arrangements to other such providers on commercially reasonable terms and conditions, subject
to certain limitations. Widespread availability of data roaming capability will allow consumers with
mobile data plans to remain connected when they travel outside their own provider's network coverage
areas by using another provider's network, and thus promote connectivity for and nationwide access to
mobile data services such as e-mail and wireless broadband Internet access. The rule we adopt today also
serves the public interest by promoting investment in and deployment of mobile broadband networks,

consistent with the recommendations of the National Broadband Plan. The deployment of mobile data networks is essential to achieve the goal of making broadband connectivity available everywhere in the United States, and the availability of data roaming will help ensure the viability of new wireless data network deployments and thus promote the development of competitive facilities-based service offerings for the benefit of consumers. Today's actions will therefore advance our goal of ensuring that all Americans have access to competitive broadband mobile data services.

2. We adopt the data roaming rule based on our authority under the Act, including several provisions of Title III, which provides the Commission with authority to manage spectrum and establish and modify license and spectrum usage conditions in the public interest. This rule will apply to all facilities-based providers of commercial mobile data services regardless of whether these entities are also providers of commercial mobile radio service (CMRS).¹ To resolve disputes arising pursuant to the rule we adopt here, we provide that parties may file a petition for declaratory ruling under Section 1.2 of the Commission's rules or file a formal or informal complaint under the rule established herein depending on the circumstances specific to each dispute. Also, in order to facilitate the negotiation of data roaming arrangements, we provide guidance on factors that the Commission could consider when evaluating any data roaming disputes that might be brought before the agency.

II. BACKGROUND

3. Since the early days of commercial mobile services, the Commission has taken a number of actions to promote the availability of roaming to American consumers as mobile services have evolved. The Commission first adopted "manual" roaming requirements in 1981 as part of the original cellular service rules, finding that such requirements would further the public interest in promoting the availability of mobile communications service.² In 1996, the Commission extended the original cellular "manual" roaming rules to the newly established broadband Personal Communications Services (PCS), as well as

¹ For purposes of this proceeding, "commercial mobile data service" is defined as any mobile data service that is not interconnected with the public switched network but is (1) provided for profit; and (2) available to the public or to such classes of eligible users as to be effectively available to the public. 47 C.F.R. § 20.12. The current roaming obligation in Section 20.12 applies to CMRS carriers' provision of mobile voice and data services that are interconnected with the public switched network, as well as their provision of text messaging and push-to-talk services. The data roaming rule adopted herein will cover mobile services that fall outside the scope of the current automatic roaming obligation if provided for profit; and available to the public or to such classes of eligible users as to be effectively available to the public.

² See An Inquiry Into the Use of the Bands 825-845 MHz and 870-890 MHz for Cellular Communications Systems and Amendment of Parts 2 and 22 of the Commission's Rules Relative to Cellular Communications Systems, CC Docket No. 79-318, *Report and Order*, 86 FCC 2d 469 (1981) (*Cellular Report & Order*) (adopting requirement in then Section 22.911(b) of the Commission's rules that base stations render service to properly licensed roamers). Roaming services that subscribers receive are "manual" or "automatic." For manual roaming, the subscriber must establish a relationship directly with the host provider on whose system the subscriber wants to roam in order to make a call. Typically, the roaming subscriber accomplishes this in the course of attempting to originate a call by giving the host provider a valid credit card number. With automatic roaming, the roaming subscriber is able to immediately originate or terminate a call without first taking any actions to establish a relationship with the host provider. Instead, automatic roaming occurs pursuant to a pre-existing contractual agreement between the subscriber's own provider and the host provider.

certain Specialized Mobile Radio (SMR) carriers, provided that the roamers' handsets are "technically capable" of accessing the roamed-on ("host") network.³

4. In the *Report and Order* adopted by the Commission in 2007, the Commission clarified that "automatic" roaming is a common carrier obligation for CMRS carriers generally, requiring them to provide automatic roaming services to other carriers upon reasonable request on a just, reasonable, and non-discriminatory basis pursuant to Sections 201 and 202 of the Communications Act.⁴ The Commission found that the services covered by the automatic roaming obligation include the same services subject to manual roaming and other regulatory obligations – real-time, two-way switched voice or data services, provided by CMRS carriers, that are interconnected with the public switched network and utilize an in-network switching facility that enables the provider to reuse frequencies and accomplish seamless hand-offs of subscriber calls.⁵ The Commission established the presumption that a request for automatic roaming is reasonable under Sections 201 and 202 if the requesting carrier's network is technologically compatible with the host carrier's network.⁶ The Commission also extended the scope of the automatic roaming obligation beyond interconnected voice service to include both push-to-talk and text-messaging provided that certain conditions are met.⁷

5. In our 2010 *Order on Reconsideration*, we took further action to increase consumers' access to roaming services by eliminating the "home roaming exclusion" that had been adopted in the *Report and Order*. In particular, we found that the exclusion in many circumstances had discouraged facilities-based competition.⁸ The revised rule that we adopted provides that "[u]pon a reasonable request, it shall be the duty of each host carrier subject to . . . [Section 20.12(a)(2) of our rules] . . . to provide automatic roaming to any technologically compatible, facilities-based CMRS carrier on reasonable and not unreasonably discriminatory terms and conditions, pursuant to Sections 201 and 202 of the Communications Act, 47 U.S.C. Sections 201 and 202."⁹ We affirmed that carriers must provide push-to-talk roaming upon reasonable request.¹⁰ We also provided additional guidance on various factors

³ See *Interconnection and Resale Obligations Pertaining to Commercial Mobile Radio Service Providers*, CC Docket No. 94-54, *Second Report and Order and Third Notice of Proposed Rulemaking*, 11 FCC Rcd 9462, 9470-71 ¶ 13 (1996) (*Interconnection and Resale Second Report and Order*); 47 C.F.R. § 20.12(c).

⁴ *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers*, WT Docket No. 05-265, *Report and Order and Further Notice of Proposed Rulemaking*, 22 FCC Rcd 15817, 15818 ¶ 1 (2007) (*Report and Order and Further Notice*, respectively).

⁵ *Id.* at 15837 ¶ 54.

⁶ *Id.* at 15831 ¶ 33. The Commission also codified this automatic roaming obligation in section 20.12(d) of its rules. *Id.* at 15840 ¶ 63; 47 C.F.R. §§ 20.3, 20.12(d).

⁷ *Report and Order*, 22 FCC Rcd at 15837 ¶¶ 54-55.

⁸ *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services*, WT Docket No. 05-265, *Order on Reconsideration and Second Further Notice of Proposed Rulemaking*, 25 FCC Rcd 4181, 4190 ¶ 18 (2010) (*Order on Reconsideration and Second Further Notice*, respectively).

⁹ 47 C.F.R. § 20.12(d). That rule also provides that the Commission "shall presume that a request by a technologically compatible CMRS carrier for automatic roaming is reasonable pursuant to Sections 201 and 202 of the Communications Act, 47 U.S.C. Sections 201 and 202." *Id.* The rule states that this "presumption may be rebutted on a case-by-case basis. The Commission will resolve automatic roaming disputes on a case-by-case basis, taking into consideration the totality of the circumstances presented in each case." *Id.*

¹⁰ *Order on Reconsideration*, 25 FCC Rcd at 4204 ¶ 45.

that the Commission could consider when evaluating any roaming disputes that were brought before the agency.

6. *Data Roaming.* In the *Further Notice* issued in 2007, the Commission sought comment on whether it should extend the automatic roaming obligation generally to non-interconnected data services or features, including information services or other non-CMRS services offered by CMRS carriers.¹¹ The Commission also sought comment on the legal bases for imposing a roaming obligation on mobile wireless broadband Internet access services.¹²

7. In the *Second Further Notice* that we adopted in conjunction with the *Order on Reconsideration* in 2010, we sought to refresh and further develop the record by requesting additional comment on whether to extend roaming obligations to mobile data services, including mobile broadband Internet access, that are provided without interconnection to the public switched telephone network.¹³ We also sought comment on whether any such obligations should apply only to service providers that are also CMRS providers or more broadly to facilities-based mobile data service providers whether or not they also provide CMRS.¹⁴ Among other things, we sought comment on the importance of data roaming, the potential impact on incentives for investment and innovation in mobile broadband services if roaming requirements were extended to data roaming, and the appropriate scope of any data roaming requirement, including consideration of the technical issues that data roaming requirements might raise with respect to a provider's network capacity and security.¹⁵ In addition, we sought further comment on our legal authority to establish data roaming obligations to the extent that we concluded that adopting data roaming requirements would serve the public interest.¹⁶ Finally, we sought comment on the appropriate process for dispute resolution, whether we should provide the same process for data roaming requests as for other roaming requests, and whether we should adopt measures to require or encourage parties to employ alternative vehicles for resolving disputes such as arbitration.¹⁷

¹¹ *Further Notice*, 22 FCC Rcd at 15845 ¶ 77. We do not address in this Order "interconnected service," as defined in 47 U.S.C. § 332(d)(2) and our rules.

¹² The Commission noted that it had determined that mobile wireless broadband Internet access service is an information service, and that it is not CMRS. See *Further Notice*, 22 FCC Rcd at 15846 ¶ 81 (citing *Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks*, WT Docket No. 07-53, 22 FCC Rcd 5901 (2007) (*Wireless Broadband Internet Access Classification Order*)).

¹³ The Commission had received several proposals concerning data roaming in response to the *Further Notice*, including a request by SpectrumCo that the Commission reconsider its decision to limit the automatic roaming obligation only to services that use the public switched network. See *Second Further Notice*, 25 FCC Rcd at 4212-13 ¶ 63. The Commission noted that issues in SpectrumCo's petition for reconsideration were being addressed in the *Second Further Notice*. *Id.* at 4185 ¶ 9.

¹⁴ *Second Further Notice*, 25 FCC Rcd at 4212 ¶ 62. The Commission also sought comment on the specific proposals that had been submitted in response to the *Further Notice*, as well as on any other proposals for addressing data roaming obligations. *Id.* at 4212-13 ¶ 63.

¹⁵ *Second Further Notice*, 25 FCC Rcd at 4218-24 ¶¶ 72-91.

¹⁶ *Id.* at 4213-18 ¶¶ 64-71.

¹⁷ *Second Further Notice*, 25 FCC Rcd at 4223-24 ¶ 91. The deadline for comments on the *Second Further Notice* was June 14, 2010, and the deadline for reply comments was July 12, 2010. A list of commenters and reply commenters is in Appendix B of this Order.

III. DISCUSSION

8. In this Second Report and Order, we conclude that it is in the public interest to establish requirements to promote the availability of data roaming arrangements, as set forth below. We first discuss our determination to require that facilities-based providers of commercial mobile data services offer data roaming arrangements to other such providers on commercially reasonable terms and conditions. We then describe in more detail the scope and the limitations of the data roaming rule, taking into account the relevant policy and technical issues. We next provide a full discussion of the legal basis for our adoption of this rule pursuant to our authority under the Act. In order to address disputes relating to the rule we adopt, we also set out a complaint process for such disputes, and also permit disputes to be brought through petitions for declaratory ruling, depending on the circumstances specific to each dispute. We provide that commercial reasonableness will be determined based on the totality of the circumstances, and provide guidance on factors that the Commission may consider in resolving disputes. For example, providers of commercial mobile data services may negotiate commercially reasonable measures to safeguard quality of service against network congestion that may result from data roaming traffic or to prevent harm to their networks.

A. The Public Interest in a Data Roaming Rule

9. Background. In the *Second Further Notice*, we underscored that broadband deployment is a key priority for the Commission. We stated that the policy goals that informed our determinations regarding the scope of roaming obligations for interconnected voice and data would also guide our consideration with respect to commercial mobile data services – that of facilitating the provision of mobile services in a manner that provides the greatest benefit to consumers.¹⁸ Specifically, we sought to ensure that consumers have access to seamless coverage nationwide, to provide the incentives for new entrants and incumbent providers to invest and innovate by using available spectrum and constructing wireless network facilities on a widespread basis, and to promote competition for commercial mobile broadband business by multiple providers.¹⁹

10. In seeking comment on how best to serve our policy goals, we noted the mobile broadband industry is in a critical stage of development, with a rapidly evolving mobile broadband ecosystem and a rapid increase in mobile broadband data use.²⁰ Accordingly, we sought to develop a full record on whether to adopt data roaming requirements. We sought comment on the importance of roaming for commercial mobile data services, and we asked in what ways data roaming arrangements will affect competitive entry and network deployment in the data services marketplace.²¹ We inquired about current roaming arrangements for commercial mobile data services and the extent to which data subscribers make use of such roaming arrangements.²² We sought comment as well on how deployment, competition, and consumer access to services would be affected in the commercial mobile broadband marketplace depending on whether we adopted any data roaming obligations.²³ With respect to investment incentives, we sought comment on the impact that extending roaming requirements to wireless

¹⁸ See *Second Further Notice*, 25 FCC Rcd at 4207 ¶ 50, 4211 ¶ 60.

¹⁹ *Id.*

²⁰ *Id.* at 4207-13 ¶¶ 50-54, 60, 61, 63.

²¹ *Id.* at 4218 ¶ 72.

²² *Id.* at 4218 ¶ 74.

²³ *Id.*

data services would have on the incentives of providers to invest in advanced data networks and fully use available spectrum.²⁴ We also requested comment on how roaming rules for non-interconnected services, if any, should compare to our current automatic roaming rules for voice services.²⁵

11. The overwhelming majority of commenters favor our adoption of roaming rules to promote the availability of commercial mobile data services. These commenters include a wide variety of regional and rural providers and two nationwide mobile service providers,²⁶ as well as consumer interest organizations²⁷ and equipment and software manufacturers.²⁸ They argue that to be competitive in the commercial mobile marketplace and to meet the demand of their customers, it is critical that providers be able to provide data roaming services to their customers, particularly given the transition of mobile wireless to a more data-centric mobile marketplace.²⁹ In this regard, these commenters observe that the volume of traffic for mobile services is shifting away from interconnected services to non-interconnected services,³⁰ and they highlight the fact that data usage has risen sharply over the past few years and will continue to do so as a result of the increased adoption of smartphones and the increased data consumption per device.³¹ These commenters also assert that adoption of a data roaming requirement is necessary to ensure the nationwide seamless connectivity to mobile services that consumers have come to expect.³² They contend that such a requirement is necessary to ensure continued investment and innovation by existing providers to expand and upgrade broadband data networks, as well as by new entrants seeking to

²⁴ *Id.* at 4218-19 ¶ 75.

²⁵ *Id.* at 4212 ¶ 63.

²⁶ *See, e.g.*, Blooston Comments at 1; Bright House Comments at 9; Cellular South Comments at 2; Cincinnati Bell Comments at 4; Clearwire Comments at 2; Leap Comments at 29; MetroPCS Comments at 55; NTCH Comments at 3; NTELOS Comments at 8-9; OPASTCO & NCA Comments at 2; RCA Comments at 1, RTG Comments at 13; SkyTerra Comments at 1; SouthernLINC Comments at 41; Sprint Comments at 1, 5; T-Mobile Comments at 1; US Cellular Comments at 1; BendBroadband Reply Comments at 2-3. *See also* Letter from Leonard Steinberg and Elisabeth H. Ross, ACS Wireless, Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Mar. 22, 2011 (ACSW Mar. 22, 2011 *Ex Parte*).

²⁷ *See, e.g.*, Free Press Comments at 2; Media Access Comments at 9.

²⁸ *See* Letter from Phillip Berenbroick, Computer & Communications Industry Association, to Marlene Dortch, Secretary, FCC, WT Docket No. 05-265, filed Oct. 27, 2010.

²⁹ *See, e.g.*, Cellular South Comments at 19; Cincinnati Bell Comments at 3; Leap Comments at 2; Sprint Comments at 7-9; T-Mobile Comments at 5-6; US Cellular Comments at i, 2-3. *See also* Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, *Fourteenth Report*, WT Docket No. 09-66, FCC 10-81, at 5-6 ¶ 4 (rel. May 20, 2010), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-81A1.pdf (noting the “transition to a data-centric market” where “data traffic has grown significantly, due to the increased adoption of smartphones”) (“*Fourteenth Competition Report*”).

³⁰ *See, e.g.*, T-Mobile Comments at 5-6.

³¹ *See, e.g.*, Sprint Comments at 8, citing *Fourteenth Competition Report*, FCC 10-81, at 5 ¶ 4.

³² *See, e.g.*, Leap Comments at 1-3; Letter from Thomas J. Sugrue, T-Mobile, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Feb. 2, 2011 (T-Mobile Feb. 2, 2011 *Ex Parte*) at 3 & n.8 (asserting that T-Mobile “will continue to require roaming arrangements to achieve a nationwide service footprint in those regions of the country where it does not yet have its own facilities. . . . These markets include areas in virtually every state.”).

provide mobile broadband services.³³ Further, they assert that providers with data roaming arrangements will continue to have the necessary and appropriate incentives to invest in and expand their networks in order to reduce their payments for data roaming,³⁴ to compete more effectively with larger providers in areas where their customers roam substantially,³⁵ and to fulfill regulatory buildout obligations.³⁶ Those favoring a data roaming rule also assert that, given increasing consolidation and other constraints, roaming arrangements for commercial mobile data services at present are often difficult to obtain,³⁷ and when available, are offered on unreasonable terms and conditions.³⁸

12. By contrast, only AT&T and Verizon Wireless oppose the Commission's adoption of a data roaming requirement.³⁹ AT&T and Verizon Wireless argue that providers are already able to obtain nationwide coverage through data roaming arrangements without a regulatory requirement.⁴⁰ They also

³³ See, e.g., BendBroadband Reply Comments at 5; Blooston Reply Comments at 6-8; Cellular South Comments at 2, Declaration of Ben Pace, Chief Financial Officer; MetroPCS Comments at 4-5, 8; Letter from Maria Cattafesta, Senior Counsel, Government Affairs, Sprint to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Sept. 7, 2010 at 2-3 (Sprint and T-Mobile Sept. 7th *Ex Parte*); Letter from Howard J. Symons, Counsel to T-Mobile to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Nov. 10, 2010 at 2; Letter from Daniel L. Brenner, Counsel to Bright House Networks, to Marlene Dortch, FCC, WT Docket No. 05-265, filed Dec. 3, 2010 (Bright House Dec. 3, 2010 *Ex Parte*), Affidavit of Leo Cloutier, Senior VP; T-Mobile Feb. 2, 2011 *Ex Parte* at 2-4; Letter from Charles W. McKee, Vice President, Government Affairs, Sprint to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Feb. 7, 2011 at 2-3 (Sprint Feb. 7, 2011 *Ex Parte*).

³⁴ Leap Comments at 6; MetroPCS Comments at 47; SouthernLINC Comments at 39 (stating that while the initial cost of deploying new facilities and services can be high, the costs of relying on roaming can be significantly higher); Leap Reply Comments at 5-6; T-Mobile Reply Comments at 14.

³⁵ See, e.g., Leap Reply Comments at 4.

³⁶ SouthernLINC Comments at 39-40; NTELOS Reply Comments at 5; T-Mobile Reply Comments at 14.

³⁷ See, e.g., Bright House Comments at 8-9; Cellular South Comments at 21; Cincinnati Bell Comments at 5-6; OPASTCO & NTCA Comments at 2, 4-5; RTG Comments at 9-10; T-Mobile Comments at 7-8; MetroPCS Reply Comments at 11-12; see also ACSW Mar. 22, 2011 *Ex Parte* at 2.

³⁸ See, e.g., Cellular South Comments at 21; T-Mobile Comments at 10; BendBroadband Reply Comments at 4-5.

³⁹ See generally, AT&T Comments, and Verizon Wireless Comments. In its initial comments, ACSW also opposed a data roaming obligation, arguing *inter alia* that "ACSW's experience demonstrates that it is not necessary for the FCC to impose a mandatory data roaming requirement in these market conditions." ACSW Comments at 1-2, 6-7. In its March 22, 2011 *Ex Parte*, however, ACSW changed its position, stating that, "[h]aving evaluated *ex parte* submissions in this docket identifying recurring problems encountered by rural and regional wireless carriers seeking data roaming agreements with the large national carriers and reflecting on our own experiences negotiating agreements with these carriers, ACSW now sees merit in adoption of an automatic data roaming obligation." ACSW Mar. 22, 2011 *Ex Parte*.

⁴⁰ AT&T Comments at 1-2, 32, 37; Verizon Wireless Comments at 3-4, 7-9; Verizon Wireless Reply Comments at 4-7, 10-13. For example, Verizon Wireless asserts that as of January 18, 2011, it has 65 active roaming partners, that approximately 75% of these have requested data roaming arrangements, that approximately 85% of the providers that want data roaming have obtained an agreement, and that most of the rest are currently in negotiations for such an agreement. Letter from Tamara Preiss, Verizon, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Jan. 18, 2011 (Verizon Wireless Jan. 18, 2011 *Ex Parte*). It also indicates that over 60% of those data roaming agreements are for EV-DO roaming, and that between April 2010 and January 2011, it has entered into 16 additional EV-DO roaming agreements. *Id.* See also Letter from Tamara Preiss, Verizon, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Apr. 13, 2010 (Verizon Wireless Apr. 13, 2010 *Ex Parte*), at 4; Letter (continued....)

contend that providers in the commercial mobile wireless marketplace are already making extensive investments in advanced data networks, wireless competition is thriving, and therefore there is no market failure or no consumer harm and, thus, there is no justification for regulatory intervention.⁴¹ AT&T and Verizon Wireless also assert that a roaming obligation will discourage investment and lead to less efficient spectrum use by both roaming providers and host providers, particularly in rural areas.⁴² AT&T argues that mandatory roaming will weaken host providers' incentives to invest because it "impedes" their ability to "'monetize' their enormous investment in broadband networks" by "depriv[ing] them of the ability to compete on the basis of the scope and quality of their network coverage."⁴³ AT&T also argues host providers will be reluctant and less able to make new investments when they will have "no control over the terms and conditions under which they will carry the substantial and unpredictable data traffic of others in addition to their own."⁴⁴

13. **Discussion.** After carefully considering the arguments in the record, we conclude that it will serve the public interest to adopt a data roaming rule. Specifically, we require providers of commercial mobile data services to offer data roaming arrangements on commercially reasonable terms and conditions, subject to specified limitations as set forth below, pursuant to our authority under the Communications Act. We conclude that adopting a roaming rule tailored for mobile data services will best promote consumer access to seamless mobile data coverage nationwide, appropriately balance the incentives for new entrants and incumbent providers to invest in and deploy advanced networks across the country, and foster competition among multiple providers in the industry, consistent with the National Broadband Plan. Broadband deployment is a key priority for the Commission, and the deployment of commercial mobile data networks will be essential to achieve the goal of making broadband connectivity available everywhere in the United States. As discussed above, our determination to adopt a commercial mobile data roaming rule is supported by the overwhelming majority of commenters and evidence in the record.

14. Commercial mobile data services provided over advanced mobile broadband technologies have become an increasingly significant part of the lives of American consumers and the shape of the mobile industry.⁴⁵ Mobile data services increasingly are used for a variety of both personal and business purposes, including back-up communications during emergencies and for accessibility.⁴⁶ (Continued from previous page)

of Tamara Preiss, Vice President, Regulatory Affairs, Verizon Wireless, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Nov. 5, 2010 (Verizon Wireless Nov. 5, 2010 *Ex Parte*), at 2.

⁴¹ See AT&T Comments at 17, 48-53; Verizon Wireless Comments at 3-7, 9-16; AT&T Reply Comments at 37-41. See also Letter from Joan Marsh, AT&T, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Feb. 4, 2011 (AT&T Feb. 4, 2011 *Ex Parte*) at 2 (noting a T-Mobile announcement that it will add approximately 5,000 new cell sites, and that this decision was made "despite the lack of any unwarranted broadband data roaming mandate.").

⁴² See AT&T Comments at 42-48; Verizon Wireless Comments at 9-16; AT&T Reply Comments at 28-31; Verizon Wireless Reply Comments at 20-23.

⁴³ AT&T Reply Comments at 29.

⁴⁴ AT&T Comments at 44-45.

⁴⁵ For purposes of this Order, "mobile broadband" refers to mobile data services provided using Third-Generation (3G) and Fourth-Generation (4G) mobile network technologies, such as CDMA EV-DO (EV-DO), WCDMA/HSPA, HSPA+, LTE, and WiMAX. For a detailed discussion of the different generations of mobile wireless network technologies, see *Fourteenth Competition Report*, at 213, App. B.

⁴⁶ See, e.g., SouthernLINC Comments at 5-9.

Data traffic has risen sharply over the past few years as a result of the increased adoption of smartphones combined with increased data consumption per device. Our data roaming rule will maximize consumers' ability to use and benefit from wireless broadband data services wherever they are by enhancing the ability of all facilities-based providers, including small and regional providers, to provide nearly nationwide data coverage through roaming arrangements.

15. As data services increasingly become the focus of the mobile wireless services, consumers increasingly expect their providers to offer competitive broadband data services,⁴⁷ and the availability of data roaming arrangements can be critical to providers remaining competitive in the mobile services marketplace.⁴⁸ We agree that the availability of roaming capabilities is and will continue to be a critical component to enable consumers to have a competitive choice of facilities-based providers offering nationwide access to commercial mobile data services. As more and more consumers use mobile devices to access a wide array of both personal and business services, they have become more reliant on their devices.⁴⁹ These consumers expect to be able to have access to the full range of services available on their devices wherever they go.⁵⁰ Providers with local or regional service areas need roaming arrangements to offer nationwide coverage, and there may be areas where building another network may be economically infeasible or unrealistic.⁵¹ Even where providers have invested in and built out broadband networks in a regional service territory, a service provider's inability to offer roaming easily can deter customers from subscribing. For example, Cincinnati Bell represents that "[d]ue to the limited availability of nationwide roaming partners for 3G and 4G services, [it] is seeing a steady defection of its customers to the national carriers even though Cincinnati Bell offers a superior network in its operating area."⁵² Availability of such roaming arrangements also may be particularly important for consumers in rural areas -- where mobile data services may be solely available from small rural providers.⁵³ According to BendBroadband, its mobile broadband product is "not commercially viable for most consumers primarily because we cannot offer mobility outside of our service area, due to our inability to secure reasonable rates and terms for data roaming."⁵⁴ A data roaming requirement will therefore help to ensure that, as consumers become increasingly reliant on wireless devices, continuity of spectrum-based services

⁴⁷ BendBroadband Reply at 2; Blooston Rural Carriers Comments at 2; Clearwire Comments at 1; Leap Comments at 7; RCA Comments at 8; SouthernLINC Comments at 4-5, 32; Sprint Comments at 9; T-Mobile Comments at 6.

⁴⁸ See, e.g., Cellular South Comments at 19; Cincinnati Bell Comments at 3-4; Leap Comments at 2; Sprint Comments at 7-12; T-Mobile Comments at 5-7.

⁴⁹ See, e.g., Clearwire Comments at 1; RCA Comments at 13.

⁵⁰ See, e.g., Blooston Comments at 2-3; MetroPCS Comments at 45-46; NTELOS Comments at 6.

⁵¹ See *Order on Reconsideration*, 25 FCC Rcd at 4192 ¶ 23. We have found that, in some areas of the country with very low population densities, it is simply uneconomic for several carriers to build out. Further, we note that it may be significantly more costly to build out when the carrier only has access to higher spectrum frequencies where propagation characteristics are less advantageous. *Id.* See also T-Mobile Reply Comments at 15.

⁵² Cincinnati Bell Comments at 7.

⁵³ OPASTCO & NTCA Comments at 3-4 ("[M]any rural consumers face a difficult choice when choosing a mobile data services provider. They can choose the services of a large nationwide carrier and receive service that is quite often spotty in the rural areas where they live and work. Or, they can choose the mobile data services offered by their local rural wireless carrier and obtain excellent service in the areas where they live and/or work but lose service entirely when they travel outside the small geographic license area of that local provider."); SouthernLINC Comments at 30-31.

⁵⁴ BendBroadband Reply Comments at 2, 5.

is preserved across networks and geographic regions.

16. We also conclude that the data roaming rule that we adopt today will encourage investment in and deployment of broadband networks by multiple service providers, including large nationwide providers, regional providers, and small providers. Given that mobile broadband networks, particularly “fourth-generation” networks, are still at an early stage of development, significant network investment and deployment will also be critical to nationwide broadband access and for the promotion of competitive choice in broadband services.⁵⁵ This data roaming rule will promote mobile broadband network deployment, investment, and competition,⁵⁶ consistent with the goals of the National Broadband Plan, by helping to ensure the viability of new data network deployments.⁵⁷

17. We are persuaded by the evidence that roaming arrangements help encourage investment by ensuring that providers wanting to invest in their networks can offer subscribers a competitive level of mobile network coverage. Roaming arrangements can help provide greater assurance to service providers that, if they make the investment to expand or upgrade their facilities, they will be able to offer competitive service options to their customers through a combination of local or regional facilities-based service and roaming arrangements.⁵⁸ Sprint and T-Mobile state that data roaming arrangements will allow service providers to compete more effectively and thus greater certainty in access to such arrangements will give them “the resources and the confidence to continue to invest in their businesses, including in the construction of new network infrastructure.”⁵⁹ SouthernLINC explains that “when carriers are considering whether to invest in the deployment of new technologies and services, the availability of data roaming assures the carriers that they will be able to meet customers’ expectations of seamless connectivity for these services. This in turn provides carriers with the certainty they need to move forward with these much-needed investments.”⁶⁰ NTELOS reports that its roaming agreement with Sprint led to its ability to upgrade virtually its entire network to EV-DO Revision A.⁶¹ Clearwire asserts

⁵⁵ See, e.g., NTELOS Reply Comments at 5 (“Small and regional carriers like NTELOS are again evaluating upgrades to their networks, this time for 4G . . .”).

⁵⁶ See, e.g., Sprint Comments at 9-11; Letter from Charles W. McKee, Vice President, Government Affairs, Sprint, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Feb. 7, 2011 (Sprint Feb. 7, 2011 *Ex Parte*) at 2-3.

⁵⁷ See, e.g., National Broadband Plan at 3.

⁵⁸ See, e.g., Cincinnati Bell Comments at 6-7 (asserting that, “[d]ue to the limited availability of nationwide roaming partners for 3G and 4G services, Cincinnati Bell is seeing a steady defection of its customers to the national carriers even though Cincinnati Bell offers a superior network in its operating area and attractive rate plans that are available without a long-term contract”); BendBroadband Reply Comments at 2 (“Our mobile broadband product is not commercially viable for most consumers primarily because we cannot offer mobility outside of our service area”). See also MetroPCS Comments at 45-46.

⁵⁹ See Sprint and T-Mobile Sept. 7th *Ex Parte* at 2-3.

⁶⁰ SouthernLINC Reply Comments at 6.

⁶¹ See NTELOS Comments at 7; NTELOS Reply Comments at 4; see also “NTELOS Announces Amended Resale with Sprint - EVDO Rev A Upgrade,” www.evdoinfo.com/content/view/2036/64/. See also, e.g., SouthernLINC Comments at 35-37; NTELOS Reply Comments at 5. An upgrade to CDMA2000 1xRTT (1xRTT) technology, CDMA2000 EV-DO (Evolution-Data Optimized or EV-DO) provides significantly greater maximum data throughput speeds, with 1xRTT delivering peak mobile data rates of 307 kbps, EV-DO Revision 0 (Rev. 0) providing a maximum data throughput speed of 2.4 Mbps, and Revision A (Rev. A) providing a maximum of 3.1 Mbps. See *Fourteenth Competition Report*, at App. B ¶ 4. For purposes of this Order, we refer to both EV-DO technologies collectively as EV-DO.

that a data roaming obligation supports long-term facilities-based entry into new markets, and that once providers enter into new markets they will continue to build out networks to contain business costs associated with roaming.⁶² Further, as argued by several commenters representing rural providers -- Blooston Rural Carriers, OPASTCO and NTCA, RCA, and RTG -- the lack of roaming for commercial mobile wireless services may deter providers from investing in broadband at the exact time such investment is sorely needed.⁶³ The Chief Financial Officer of regional provider Cellular South, for example, states that “investment banks and other sources of investment capital are likely to make the judgment that a small rural or regional carrier that cannot obtain data roaming agreements with the large national carriers will find it more difficult to attract and retain customers” and that “[s]uch a judgment would lead to the withholding of investment capital which, in turn, would hamstring the carrier’s efforts to deploy advanced broadband infrastructure.”⁶⁴ MetroPCS contends that in order to ensure that smaller, rural and mid-tier carriers invest now in LTE, they need to know that they will have access to LTE roaming once they have upgraded.⁶⁵

18. The availability of roaming arrangements can also provide additional incentives to enter a market by allowing network providers without a presence in an area a competitive level of local coverage during the early period of investment and buildout.⁶⁶ We find that encouraging new entry and local or regional deployments serves the public interest, given that such network deployments, particularly when these deployments are coupled with roaming availability beyond the network service area, would provide consumers with greater competitive choices in mobile broadband. Previously, we found that lack of roaming can constitute a significant hurdle to new competition and can delay or deter entry into a market because a provider seeking to provide service in a new geographic area, without the ability to supplement its networks with roaming and whose initial facilities would necessarily be limited, would be required to compete with incumbents that had been developing and expanding their networks for many years.⁶⁷

19. The record in this proceeding supports these findings. Bright House Networks, for example, contends that a data roaming requirement would remove a barrier to entry⁶⁸ and a Senior Vice President of the company states that such a requirement would be key to Bright House investing more.⁶⁹

⁶² Clearwire Comments at 6.

⁶³ See, e.g., Blooston Comments at 2; Cellular South Comments at 20; MetroPCS Reply Comments at 52; OPASTCO & NTCA Comments at 5-6; RCA Comments at 7-9; NTELOS Reply Comments at 5.

⁶⁴ Cellular South Comments, Declaration of Ben Pace, Chief Financial Officer, at 20. See also Cellular South Feb. 9, 2011 *Ex Parte* at 3 (stating that “The capital needed for an extensive deployment of LTE . . . has remained sidelined as a result of the lingering uncertainty surrounding data roaming and interoperability.”).

⁶⁵ MetroPCS Comments at 43-46.

⁶⁶ *Fourteenth Competition Report* at 47 (“To create a customer base, a new facilities-based entrant must provide network coverage that is sufficient to attract new customers, including enticing customers to switch from existing service providers. . . . We note that roaming on competitors’ networks can offer entrants access to greater network coverage while they are deploying their own networks.”).

⁶⁷ See *Order on Reconsideration*, 25 FCC Rcd at 4191 ¶ 21. See also *Resale First Report and Order*, 22 FCC Rcd 18455 18465-66 ¶¶ 17-18.

⁶⁸ Bright House Comments at 12.

⁶⁹ Bright House Dec. 3, 2010 *Ex Parte* (Affidavit of Leo Cloutier, Senior VP) at 5 (Bright House’s entry into data services market would produce several hundred million dollars in capital investment). See also NTELOS Comments at 3-7 (stating that before pursuing a 4G upgrade, with a capital outlay of many millions of dollars, NTELOS must be confident that it will continue to be able to reach agreements on roaming).

T-Mobile notes that the ability to roam has enabled the company to “build a facilities-based footprint over time as its customer base grows,”⁷⁰ and asserts that a roaming rule will enable it to “invest in new facilities in smaller markets that would not be economical to build out unless T-Mobile could use roaming to serve the adjacent more sparsely populated areas,” and thus promote rural investment.⁷¹ In addition, according to US Cellular, new wireless providers entering the wireless marketplace today face far more daunting prospects than did their predecessors of decades ago unless they can offer their customers both voice and data roaming on a seamless nationwide basis.⁷² SkyTerra (now LightSquared) states that the absence of a data roaming obligation can discourage service providers from entering the market and building upon existing networks.⁷³ SkyTerra further states that without a data roaming obligation, its potential customers would likely be discouraged from purchasing terrestrial-based services from SkyTerra, especially in the initial stages of SkyTerra’s network build out.⁷⁴

20. Accordingly, we find that availability of roaming arrangements helps provide consumers with greater competitive choices in mobile broadband by encouraging investment and network deployments and ensuring that providers wanting to invest in their networks or to enter into a new market can offer subscribers a competitive level of mobile network coverage and service. By removing barriers to customer acquisition by providers in smaller or remote areas, the rule we adopt today will encourage greater use of spectrum and additional sustainable investment in broadband networks serving these areas.

21. We find the roaming rule that we adopt, discussed in greater detail below, also will provide incentives for host providers to invest and deploy advanced data networks, and avoid potential disincentives for those providers to invest. We agree with AT&T and Verizon that there are pro-competitive benefits that flow from providers differentiating themselves on the basis of coverage in their licensed service areas, including in rural and remote areas.⁷⁵ We find that the terms and scope of the

⁷⁰ Letter from Howard J. Symons, for T-Mobile USA, Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Nov. 10, 2010, at 2.

⁷¹ Letter from Kathleen O’Brien Ham, T-Mobile USA, Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Dec. 20, 2010, at 3. *See also* T-Mobile Comments at 9-10; Leap Reply Comments at 5 (“Without roaming, carriers, in order to offer service in new areas, would need to invest in building extensive networks before offering service. Roaming enables carriers to continue their investments while serving their customers in the interim.”); Letter from Charles W. McKee, Sprint Nextel Corporation, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Feb. 7, 2011, at 2 (“Sprint is more likely to build additional network facilities in areas where it can supplement its new network with cost-effective data roaming coverage.”); T-Mobile Feb. 2, 2011 *Ex Parte* at 2 (“T-Mobile has been able to build out its network in smaller and rural communities because voice roaming allowed it to provide service in the very sparsely populated areas adjacent to these communities where customers often traveled and therefore expected service.”). T-Mobile asserts that the availability of voice roaming has “played an important role” in enabling it “to locate a call center in the state [of Maine], creating jobs and establishing a presence that attracted a new and growing customer base” and that roaming helped it “to grow to become a facilities-based provider” in other markets. T-Mobile February 2, 2011 *Ex Parte* at 3. T-Mobile states that such other markets include State College, Pennsylvania, Knoxville, Tennessee, and southeastern New Mexico. *Id.*

⁷² US Cellular Reply Comments at 3-4.

⁷³ SkyTerra Comments at 3-4 (as a new entrant, SkyTerra asserts data roaming obligation is necessary as it builds out its network, stating that it has billions of investment dollars on the line).

⁷⁴ *Id.*

⁷⁵ *See Order on Reconsideration*, 25 FCC Rcd at 4197 ¶ 31. *See, e.g.*, AT&T Comments at 8, 33; AT&T Reply Comments at 29; Verizon Wireless Reply Comments at 22.

roaming rule that we adopt will protect these benefits, maintain incentives for host providers to invest and deploy advanced data networks, and avoid potential disincentives for those providers to invest.⁷⁶ First, host providers will be paid for providing data roaming service, and we adopt a general requirement of commercial reasonableness for all roaming terms and conditions, including rates, rather than a more specific prescriptive regulation of rates requested by some commenters. This will give host providers appropriate discretion in the structure and level of such rates that they offer. As we found in the *Order on Reconsideration*, “the relatively high price of roaming compared to providing facilities-based service will often be sufficient to counterbalance the incentive to ‘piggy back’ on another carrier’s network.”⁷⁷ We note that the pro-investment incentives that providers will have as a consequence of the high cost of roaming are reflected in the terms and conditions offered by mobile data service providers, which commonly include authorizing termination of service or other actions if a subscriber’s roaming on other networks becomes too large a part of the subscriber’s service use.⁷⁸ At a minimum, these roaming limitations demonstrate that providers are unlikely to rely on roaming arrangements in place of network deployment as the primary source of their service provision,⁷⁹ nor will such arrangements lead to reduced investment by requesting providers.

22. Finally, as discussed more fully below, we provide that, if providers bring disputes to the Commission, we will take into account factors including the impact on buildout incentives and the extent and nature of providers’ existing build-out in determining the commercial reasonableness of proffered terms.⁸⁰ As we have concluded before, a case-by-case determination of commercial reasonableness in the event of a dispute preserves incentives to invest and protects consumers by facilitating their access to nationwide service.⁸¹

23. The data roaming rule we adopt today also adequately addresses AT&T’s argument that a data roaming requirement would weaken host providers’ investment incentives by leaving them with “no control” over the terms under which they will carry roaming traffic and thus unable to manage the

⁷⁶ See also *Order on Reconsideration*, 25 FCC Rcd at 4197 ¶ 31 (noting that “there are pro-competitive benefits that flow from carriers differentiating themselves on the basis of coverage in their licensed service areas”). For further discussion of the terms and scope of the roaming rules, see *infra* III.B.

⁷⁷ *Order on Reconsideration*, 25 FCC Rcd at 4197-98 ¶ 32.

⁷⁸ See, e.g., T-Mobile Terms and Conditions, http://www.t-mobile.com/Templates/Popup.aspx?WT.z_unav=fr_TC&PAsset=Ftr_Ftr_TermsAndConditions&print=true (permitting suspension or termination if more than 50% of a subscriber’s voice and/or data usage is “Off-Net” for any three billing cycles within any 12 month period); AT&T Wireless Customer Agreement, http://www.wireless.att.com/cell-phone-service/legal/index.jsp?q_termsKey=wirelessCustomerAgreement&q_termsName=Wireless+Customer+Agreement#howDoIGetServOutsideNet (termination or other measures if off-net data usage exceeds the lesser of 24 megabytes or 20% of the kilobytes included with a subscriber’s plan); MetroPCS Terms and Conditions of Service, <http://www.metropcs.com/privacy/terms.aspx> (“Our Services and Rate Plans are designed for you to use your service each month predominantly in our service area. If your usage each month is not predominantly in our service area, we may terminate your Service or restrict your ability to receive Service outside the areas served by our network.”); SouthernLINC Acceptable Use Policy, <http://www.southernlinc.com/privacy/acceptable-use-policy.aspx> (providing roaming usage allowance of 30% of the Anytime minutes in the subscriber’s plan).

⁷⁹ See, e.g., MetroPCS Comments at 47; SouthernLINC Comments at 39; Leap Reply Comments at 5-6.

⁸⁰ See *infra* III.D.

⁸¹ *Order on Reconsideration*, 25 FCC Rcd at 4190 ¶ 18, 4197 ¶ 31.

additional network congestion caused by such traffic.⁸² Under our data roaming rule, providers will have the ability to negotiate commercially reasonable measures to safeguard the quality of service against network congestion that may result from roaming traffic or to prevent harm to the network.⁸³ This rule also includes the ability to offer individualized, commercially reasonable terms, including rates, and to evaluate a number of factors on a case-by-case basis in determining commercial reasonableness. We find that this approach strikes the best balance between concerns over the potential for congestion or other harms from roaming traffic and the significant benefits that data roaming arrangements can provide to consumers.

24. We reject arguments by AT&T and Verizon Wireless that a data roaming rule is unnecessary because data roaming agreements are occurring without regulation.⁸⁴ We find that providers have encountered significant difficulties obtaining data roaming arrangements on advanced “3G” data networks, particularly from the major nationwide providers.⁸⁵ For example, Cellular South states that after constructing its own EVDO facilities in some portions of its service area, its requests for data roaming on large carriers’ compatible networks were “rebuffed” for over a year.⁸⁶ OPASTCO and NTCA state that “rural wireless carriers’ attempts to enter into negotiations with the nationwide wireless providers for data roaming agreements are many times rejected out of hand, with a citation to the lack of a data roaming requirement in the Commission’s rules” and that “[t]his trend has increased as the mobile wireless industry has begun to transition to 3G wireless services.”⁸⁷

25. We observe that AT&T has largely refused to negotiate domestic 3G roaming arrangements until recently,⁸⁸ even though it launched its 3G service in 2005 and was providing coverage to 275 major metropolitan areas in May 2008.⁸⁹ For example, RTG has stated that “collectively, its

⁸² AT&T Comments at 44-45. *See also* AT&T Comments at 2; Verizon Wireless Comments at 47; AT&T Reply Comments at 26-27; Verizon Wireless Reply Comments at 21.

⁸³ *See infra* III.C. As a consequence, we do not agree with Verizon Wireless that host providers could be forced by this requirement to incur significant financial expenditure to expand capacity by adding cell sites, backhaul, network equipment, and spectrum resources. Verizon Wireless Comments at 47.

⁸⁴ *See* AT&T Comments at 2, 32-33, 36-37; Verizon Wireless Comments at 7-9; Verizon Wireless Reply Comments at 10-13; *see also* AT&T Feb. 4, 2011 *Ex Parte* at 2 (“As the record makes clear, such 2G data roaming agreements are now ubiquitous, and were reached widely throughout the industry on mutually agreeable terms without any regulatory oversight.”).

⁸⁵ Letter from Michael H. Pryor, Counsel to Cox Communications, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 09-104, filed Apr. 28, 2010 (Cox Apr. 28, 2010 *Ex Parte*). *See also* NTELOS Reply Comments at 6; OPASTCO & NTCA Comments at 2, 4; RCA Comments at 15; Letter from Thomas J. Sugrue, T-Mobile USA, Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Feb. 9, 2011 (stating that in some cases over the past 36 months, “potential roaming partners were willing to offer 2G and 2.5G roaming, but would not offer access to their 3G network”). *Compare* Letter from Caressa D. Bennet, Counsel to RTG, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Nov. 22, 2010 *with* Letter of Tamara Preiss, Vice President, Regulatory Affairs, Verizon Wireless, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Nov. 5, 2010 (Verizon Wireless Nov. 5, 2010 *Ex Parte*).

⁸⁶ Cellular South Comments at 21.

⁸⁷ OPASTCO & NTCA Comments at 4.

⁸⁸ *See* AT&T Reply Comments at 32-34.

⁸⁹ Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *Eleventh Report*, 21 FCC (continued....)

members have not been able to enter into 3G data roaming agreements with AT&T.”⁹⁰ In addition, according to RCA, AT&T indicated “recently” that “it will not negotiate any 3G data roaming agreements unless it helps to fill-in its nationwide coverage map.”⁹¹ AT&T itself stated in its Reply Comments filed July 12, 2010, that it had just “begun to offer 3G roaming arrangements”⁹² In mid-November, 2010, it stated that it was “actively negotiating” several domestic 3G agreements but did not indicate that it had entered into any such agreements.⁹³ On March 24, 2011, AT&T filed an *ex parte* with the Commission indicating that it had entered into a domestic HSPA+ roaming agreement, with Mosaic Telecommunications⁹⁴ -- apparently, its first roaming agreement for data service above 2.5G.

26. Commenters also assert difficulties reaching agreements with Verizon Wireless. Cox Communications states that obtaining an initial response to a request to negotiate a roaming agreement with Verizon Wireless required nearly four months and that negotiations over the terms of Verizon Wireless’s requirement for a nondisclosure agreement consumed another four months; and thus, actual negotiations over terms and conditions of a roaming agreement did not even begin for eight months after Cox’s initial request.⁹⁵ RTG and RCA assert that Verizon Wireless has “told numerous RTG members

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Rcd 10947, 10993-94 ¶ 113 (2006); Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *Twelfth Report*, 23 FCC Rcd 2241, 2302-2303 ¶ 137 (2008); Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *Thirteenth Report*, 24 FCC Rcd 6185, 6255-6256 ¶ 139 (2009); *Fourteenth Competition Report*, FCC 10-81 at 70 ¶ 115.

⁹⁰ See Letter from Caressa D. Bennet, General Counsel, Rural Telecommunications Group, Inc., to Marlene Dortch, Secretary, FCC, WT Docket No. 05-265, filed Nov. 3, 2010. See also Letter from Rebecca Murphy Thompson, General Counsel, Rural Cellular Association, and Caressa D. Bennet, General Counsel, Rural Telecommunications Group, RTG, to Marlene Dortch, Secretary, FCC, WT Docket No. 05-265, filed Nov. 12, 2010 (RCA & RTG Nov. 12, 2010 *Ex Parte*) (stating that “[a]fter launching service in 2009, Mosaic Telecom attempted to negotiate a 3G data roaming agreement with AT&T but was denied outright”); Letter from Daryl A. Zakov, Attorney for CTC Telcom dba Mosaic Telecom, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Jan. 14, 2011 (stating that Mosaic “proposed including 3G roaming with [a June 2009] roaming agreement but was told AT&T was not interested in a 3G roaming agreement with Mosaic,” that AT&T “did in fact reach out to Mosaic on November 15, 2010 to negotiate a 3G data roaming agreement” but that after Mosaic responded with a particular rate proposal the same day, and following “a short series of e-mail exchanges, AT&T has stopped communicating with Mosaic”). In a January 18, 2011 response, AT&T does not state whether or not it initially refused to negotiate a 3G roaming agreement, but emphasizes that it initiated discussions with Mosaic for such an agreement in 2010, and it disputes Mosaic’s assertion that it has “stopped communicating” with Mosaic, stating that it is “in the process of responding to Mosaic’s rate proposal.” Letter from Jeanine Poltronieri, AT&T, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Jan. 18, 2011, at 1-2. On March 24, 2011, AT&T reported that it had reached a HSPA+ roaming agreement with Mosaic Telecommunications. See *infra* n.94.

⁹¹ See RCA & RTG Nov. 12, 2010 *Ex Parte*.

⁹² AT&T Reply Comments at 32.

⁹³ See Letter from Michael Goggin, AT&T, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Nov. 23, 2011, at 2.

⁹⁴ See Letter from Jeanine Poltronieri, AT&T, to Marlene Dortch, Secretary, FCC, WT Docket No. 05-265, filed Mar. 24, 2011 (AT&T Mar. 24, 2010 *Ex Parte*). See also Letter from Daryl A. Zakov, Attorney for CTC Telcom dba Mosaic Telecom, to Marlene Dortch, Secretary, FCC, WT Docket No. 05-265, filed Mar. 30, 2011 (Mosaic Mar. 30, 2011 *Ex Parte*).

⁹⁵ Cox Reply Comments at 7 (citing Cox Apr. 28, 2010 *Ex Parte*).

that it will not enter into EVDO (3G) roaming agreements in areas where it already has 3G coverage,” and therefore is not open to 3G roaming agreements for customers of smaller providers that serve areas where Verizon Wireless has its own network coverage.⁹⁶ Although Verizon Wireless indicates that it currently has a number of EV-DO roaming arrangements with other providers (including with several providers that it asserts are members of RCA),⁹⁷ it had only nine EV-DO roaming agreements as of April, 2010 even though its EV-DO network has been in operation since October of 2003 and as of June 2007, covered more than 210 million pops with EV-DO Rev. A.⁹⁸ We note again the importance of roaming to consumers in rural areas, where mobile data services may be solely available from small rural providers, and therefore the past difficulties of rural providers in obtaining data roaming presents a serious concern.

27. We are also concerned that the recent successes by some providers in obtaining 3G data roaming agreements or offers⁹⁹ may have been the result of large providers seeking to defuse an issue under active Commission consideration and may not accurately reflect the ability of requesting providers to obtain data roaming arrangements in the future if the Commission were to decide not to adopt any data roaming rules.¹⁰⁰ For example, although the Commission determined in 2007 that CMRS providers were not entitled to voice roaming within their own licensed service areas (the “home roaming” exclusion) in part because it contemplated that providers would negotiate home roaming agreements, we concluded in the *Order on Reconsideration* that “the adoption of an automatic roaming obligation with a home roaming exclusion appears to have significantly reduced the incentive to make home roaming available, and will lead to a reduction in the availability of home roaming arrangements over time.”¹⁰¹ Consolidation in the mobile wireless industry has reduced the number of potential roaming partners for some of the smaller, regional and rural providers.¹⁰² In addition, this consolidation may have simultaneously reduced the incentives of the largest two providers to enter into such arrangements by reducing their need for

⁹⁶ See Letter from Rebecca Murphy Thompson, General Counsel, Rural Cellular Association, and Caressa D. Bennet, General Counsel, Rural Telecommunications Group, RTG, to Marlene Dortch, Secretary, FCC, WT Docket No. 05-265, filed Nov. 12, 2010 (RCA & RTG Nov. 12, 2010 *Ex Parte*).

⁹⁷ See Verizon Wireless Jan. 18, 2011 *Ex Parte*; Verizon Wireless Nov. 5, 2010 *Ex Parte*. Verizon Wireless stated in April, 2010, that “[n]o carrier . . . can credibly claim that Verizon Wireless has denied a request for data roaming services.” See Letter from Tamara Preiss, Verizon, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Apr. 13, 2010 (Verizon Wireless Apr. 13, 2010 *Ex Parte*), at 4.

⁹⁸ See “Verizon Wireless: 100 Percent Of Wireless Broadband Network Now Enhanced With Faster Speeds,” <http://news.vzw.com/news/2007/06/pr2007-06-28h.html>.

⁹⁹ See, e.g., AT&T Reply Comments at 32-34.

¹⁰⁰ See Letter from Grant B. Spellmeyer, United States Cellular Corporation, to Marlene Dortch, Secretary, FCC, WT Docket No. 05-265, filed Feb. 18, 2011, at 2 (asserting that US Cellular’s “ability to eventually enter into a data roaming agreement was reinforced by the strong likelihood that the FCC would act to require the negotiation of data roaming agreements on reasonable terms and conditions.”). See also Mosaic Mar. 30, 2011 *Ex Parte* (stating that it had reached an HSPA+ roaming agreement with AT&T and that the Commission announcement of its decision to adopt a data roaming rule “certainly accelerated the near-dormant pace of the negotiations”).

¹⁰¹ *Order on Reconsideration*, 25 FCC Rcd at 4195 ¶¶ 26, 28.

¹⁰² See *Order on Reconsideration*, 25 FCC Rcd 4181, 4196 ¶ 29; Letter from Thomas J. Sugrue, T-Mobile USA, Inc., to Chairman Julius Genachowski, FCC, WT Docket No. 05-265, filed Mar. 11, 2011, at 2 (“Consolidation in the wireless industry – specifically acquisition of many regional carriers by AT&T and Verizon – has reduced the total number of potential roaming partners.”).

reciprocal roaming.¹⁰³ We also note that AT&T and Verizon Wireless are only now deploying “fourth-generation” Long Term Evolution networks.¹⁰⁴ Based on the record before us, we find it likely that these providers will not be willing to offer roaming arrangements that cover these networks any time in the near future, except in very limited circumstances.¹⁰⁵ We agree with many of the commenters that, given the coverage of these nationwide providers, there is a serious risk they might halt the negotiations of roaming on their advanced mobile data networks altogether in the future in the absence of Commission oversight, harming competition and consumers.¹⁰⁶ Given these developments in the mobile services marketplace, and in light of past difficulties that providers have experienced obtaining data roaming arrangements, we find that adopting a balanced, flexible requirement will help to promote the availability of data roaming in the future. We note that we intend to closely monitor further development of the commercial mobile broadband data marketplace and stand ready to take additional action if necessary to help ensure that our goals in this proceeding are achieved.

28. In sum, we conclude that there are substantial benefits that will be derived from adoption of the data roaming rule set forth herein, and that these benefits substantially outweigh the minimal costs associated with the rule. We reach this conclusion even though it is not possible to quantify with precision the benefits and costs based on the information we have before us, and even though many of the benefits are not subject to quantification. Adoption of the rule, which is designed to promote access to nationwide mobile broadband service and enhance incentives for providers to invest in deployment of broadband facilities, is necessary to help ensure that the benefits of mobile broadband services will be more fully realized. Absent such a rule, there will be a significant risk that fewer consumers would have nationwide access to competitive mobile broadband services, and that even voice roaming will ultimately be rolled back as voice becomes a data application.

29. The benefits of adopting the proposed data roaming obligation are substantial. The rule promotes the availability of commercially reasonable data roaming arrangements that might not otherwise be available. Consistent with the record comments submitted by providers of all sizes serving a large

¹⁰³ See, e.g., T-Mobile Comments at 8.

¹⁰⁴ See Verizon Launches 4G LTE In 38 Major Metropolitan Areas By The End Of The Year, Oct. 6, 2010, <http://news.vzw.com/news/2010/10/pr2010-10-01c.html>; Eric Zeman, *AT&T Says LTE Roll-Out Coming Mid-2011*, InformationWeek, Sept. 16, 2010, at http://www.informationweek.com/news/telecom/voice/showArticle.jhtml?articleID=227500076&cid=RSSfeed_IWK_News; Phil Goldstein, *AT&T to Launch LTE by Mid-2011*, FierceWireless, Sept. 16, 2010, at <http://www.fiercewireless.com/story/t-launching-lte-mid-2011/2010-09-16> (citing AT&T Operations CEO John Stankey). Cellular South asserts that it has “asked national carriers for assurances that [they] will be able to negotiate for 4G roaming at the appropriate time,” but that these requests have been refused. Letter from Eric Graham, Cellular South, Inc., to Marlene H. Dortch, FCC, WT Docket No. 05-265, filed Feb. 9, 2011, at 2.

¹⁰⁵ We note that Verizon Wireless has indicated its willingness to enter into roaming agreements with small rural providers that agree to construct 4G LTE networks in areas where Verizon Wireless does not currently have 4G coverage, use Verizon Wireless’s 700 MHz spectrum, and substantially integrate their network operations into Verizon Wireless’s 4G LTE network. See *Verizon Wireless Nov. 5, 2010 Ex Parte* at 2 (“Verizon Wireless will offer 4G data roaming to participants in its LTE in Rural American [sic] program.”). See also Verizon Wireless Comments at 17; Verizon Wireless Reply Comments at 1, 33 n.104.

¹⁰⁶ See, e.g., Blooston Comments at 7; Cellular South Comments at 17; Leap Reply Comments at 18; Media Access Project Comments at 6; NTCH Comments at 3; T-Mobile Comments at 10-11; MetroPCS Reply Comments at 11-12; NCTA Reply Comments at 2-3; NTELOS Reply Comments at 6; RCA Reply Comments at 6; US Cellular Reply Comments at 3.

portion of consumers throughout all parts of this country, millions of American consumers who otherwise might not have full access to mobile broadband services will benefit from adoption of the rule.

30. Furthermore, we find that the rule will promote significant investment in facilities-based broadband networks throughout the country. As discussed above, several providers state that a data roaming obligation is necessary to provide an acceptable level of risk for the investment in data capabilities for their network, as it increases their chances of being able to offer their subscribers the nationwide coverage needed for a viable product offering. Based on the information in the record, we expect that there could be billions of dollars of additional investment in upgraded facilities and/or expanded coverage, providing consumers with substantial benefits while also creating thousands of jobs.¹⁰⁷

31. With the added investment and deployment of broadband services by multiple providers, additional benefits will result from increased competition. As discussed above, several commenters have stated that a data roaming obligation is necessary for them to provide competitive services, and enables them to upgrade existing services or build out facilities-based coverage in new markets. The benefits of competition include likely lower prices for such services, which will result in direct consumer surplus as well as greater utilization of broadband data services. In addition, less expensive mobile broadband services increase the availability of these services to consumers, which in turn creates incentives for edge providers to develop innovative new services that use this capability. Although the benefits cannot be calculated with precision, a rough estimate is that the benefits from the increased competition would be in the billions of dollars per year.¹⁰⁸

¹⁰⁷ See Bright House Dec. 3, 2010 *Ex Parte* (Affidavit of Leo Cloutier, Senior VP) at 5 (Bright House's entry into data services market would produce several hundred million dollars in capital investment); SkyTerra Comments at 3-4 (as a new entrant, SkyTerra asserts data roaming obligation is necessary as it builds out its network, stating that it has billions of investment dollars on the line); Cellular South, February 9, 2011 *Ex Parte* at 3 ("The capital needed for an extensive deployment of LTE . . . has remained sidelined as a result of the lingering uncertainty surrounding data roaming and interoperability"); NTELOS Comments at 3 ("Before pursuing a 4G upgrade, with a capital outlay of many millions of dollars and increased operating expenses, NTELOS must be confident that it will continue to be able to reach agreements on roaming arrangements with other carriers."). See generally paragraphs 17-19 *supra*. We also note that studies find that there could be a substantial increase in jobs in rural America that would result from increased broadband deployment. See, e.g., "Economic Impact of Wireless Broadband in Rural America" by Raul Katz *et al*, attachment to Letter from Rebecca Murphy Thomas, General Counsel, RCA, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed February 24, 2011.

¹⁰⁸ Our estimate is based on a consideration of the impact that lower prices for data services could have on the customers who now or in the future are likely to have data plans. At the end of 2009, for instance, approximately 52.5 million customers had wireless Internet access subscriptions (see *Internet Access Services: Status as of December 31, 2009*, Industry Analysis and Technology Division, Wireline Telecommunications Bureau, FCC, December 2010, at 15); this number is anticipated to increase substantially over the next few years. Assuming, based on this figure, that 52.5 million customers now have data plans, the additional usage following the implementation of the data roaming rule would be determined by the amount by which prices are lower and by the price elasticity of data services. The consumer benefit of marginal units can be valued at the price of those units.

Using Verizon Wireless data, for example, it can be assumed that providers incur a variable cost of serving this additional demand equal to approximately 32% of the revenue. (For 2009, Verizon Wireless reports \$62,131 million in service and equipment revenue, \$7,722 million in cost of services, and \$12,222 million in equipment costs. See Verizon Wireless Form 10-K 3/1/2011. Treating all of these costs as variable costs yields a variable cost to revenue ratio of $19,944/62,131 = \sim 0.32$.) The record does not address the elasticity of demand for wireless broadband services, but the academic literature provides estimates of elasticities for wireless voice minutes of use and wired broadband usage. For wireless voice minutes of use, these estimates range between -0.1 and -1.3. (See, e.g., Allan (continued....))

32. By comparison with the benefits of adopting a data roaming rule that promotes the availability of data roaming arrangements, we find that the potential costs of adopting the rule that requires providers to offer data roaming arrangements on commercial reasonable terms and conditions are small.

33. As discussed above, the two major opponents of a data roaming obligation – Verizon Wireless and AT&T – assert that adoption of such an obligation could discourage investment by providers, particularly in rural areas, which in turn would reduce mobile broadband availability and utilization. The rule adopted in this Order, however, allows host providers to control the terms and conditions of proffered data roaming arrangements, within a general requirement of commercial reasonableness. For the reasons stated above, we conclude that such terms would preserve providers' incentive to invest in their networks. Indeed, neither AT&T nor Verizon state that they would invest less under a roaming obligation and therefore do not expect the roaming rule to reduce the investment of host networks.

34. Another potential cost is the possibility that requesting providers will substitute roaming for investment in coverage and accordingly under-invest in deploying new infrastructure. Again, however, our rule obligates the host provider only to offer data roaming on commercially reasonable terms and conditions. As discussed above,¹⁰⁹ such a standard will provide the requesting provider with sufficient incentive to invest in facilities, except where doing so would be economically infeasible or

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T. Ingraham, Sidak, J. Gregory, "Do States Tax Wireless Services Inefficiently – Evidence on the Price Elasticity of Demand," 24 Va. Tax Rev. 249, Fall, 2004; Christian Growitsch, J. Scott Marcus, and Christian Wernick, "The effects of lower Mobile Termination Rates (MTRs) on retail price and demand," Communications & Strategies Article, October 1, 2010; Youngsoo Kim, Rahul Telang, William B. Vogt, Ramayya Krishnan, "An Empirical Analysis of Mobile Voice Service and SMS: A Structural Model," Management Science Vol. 56, No. 2, pp. 234–252, February 2010.) The estimates in the academic literature for wired broadband usage range from -0.97 to -2.5. (See, e.g., M. Cardona, A. Schwarz, B. B. Yurtoglu, and C. Zulehner, "Demand Estimation and Market Definition for Broadband Internet Services," University of Vienna, 2008; P. Rappaport, L. Taylor, and D. Kridel, "Willingness to Pay and Demand for Broadband Services, in (Ed), Allan L. Shampine, *Down to the Wire*, Nova Science Publishers Inc., Hauppauge, NJ, 2003; P. Rappaport, D. Kridel, L. Taylor, K. Dunny-Deno, and J. Alleman, "Residential Demand for Access to the Internet," in *International Handbook of Telecommunications Economics*, Vol. II, ed. G. Madden, pp. 55-72, Edward Elgar, Cheltenham, UK, 2003.)

Since wireless data services are likely to be more price elastic than voice services, and likely to more closely mirror wired broadband service elasticities, the midpoint of the range of elasticity estimates for wireless voice (which is -0.7) would likely underestimate the elasticity of wireless data services alone, and therefore provides a conservative estimate of the social benefit of an output increase arising from lower prices. Using this elasticity and an average revenue per user (ARPU) of \$513 per year for non-text data services, a 5% industry-wide reduction in prices for data services would imply approximately \$17.51 in additional usage per year for 52.5 million subscribers. After subtracting variable costs, the aggregate social benefit (increase in aggregate surplus) can be estimated to be ~\$0.62 billion per year. (An ARPU of \$513 per year is calculated by multiplying \$41.5 billion in total data revenue (reported in Robert F. Roche and Lesley O'Neill, CTIA's Wireless Industry Indices, Semi-Annual Data Survey Results: A Comprehensive Report from CTIA Analyzing the U.S. Wireless Industry, Year-End 2009 Results, May 2010, at 118-119) by 65% (the percentage of data revenue not attributed to text messaging in 2008, see *Fourteenth Competition Report* at p. 116 (Chart 28)), then divided by 52.5 million wireless Internet subscribers.) Assuming a 10% industry-wide reduction in prices for data would imply a ~\$1.2 billion benefit to society per year. If an elasticity of -1.1 were used, it would suggest a range for the increased social benefit of between ~\$0.97 billion to \$1.9 billion per year.

¹⁰⁹ See para. 21 *supra*.

unrealistic regardless of the availability of roaming agreements.¹¹⁰ Further, we provide that the data roaming obligation does not create mandatory resale obligations.

35. An additional potential cost could result from harm to the host provider's network that might result from congestion or technical problems. To enable a host provider to safeguard its quality of service against network congestion, the order expressly provides that host providers are permitted to negotiate commercially reasonable measures to safeguard against network congestion that might result from data roaming traffic.¹¹¹ The host provider thus would have the flexibility to account for the additional traffic roaming would generate, and therefore avoid harmful congestion. Similarly, the rule expressly provides that it is reasonable for a provider not to offer a data roaming arrangement to a requesting provider that is not technologically compatible, or where it is not technically feasible to provide roaming for the particular data service for which roaming is requested, or where any changes to the host provider's network required to accommodate roaming are not economically reasonable.

36. Thus, we conclude that there are substantial benefits that will be derived from adoption of the data roaming rule set forth herein, and that these benefits substantially outweigh the minimal costs associated with the rule.

B. Scope and Requirements of the Data Roaming Rule

37. **Background.** In the *Second Further Notice*, we sought comment on the appropriate scope of any data roaming requirements that we might adopt, including what entities should be entitled to request data roaming and whether the scope of the rules should differ in various respects from the roaming obligations that the Commission has established for interconnected services.¹¹² In addition, we requested comment on whether the scope of entities that would be covered by the rules should include providers of commercial mobile data services that do not also offer CMRS, and whether the class of covered entities should be limited to terrestrial networks or also encompass satellite providers of mobile data services (either by satellite or ancillary terrestrial component).¹¹³

38. In particular, we sought comment on what specific terms, conditions, or restrictions the Commission should include in any data roaming rule that we might adopt. We wanted to know whether any conditions might be appropriate to help ensure that providers' incentives to innovate and invest are not undermined.¹¹⁴ We inquired whether, for instance, we should limit any data roaming requirement in a manner similar to the manner by which the Commission has addressed push-to-talk and text messaging service, whereby the requesting provider must provide the underlying service for which roaming is requested, roaming must be technically feasible, and any changes to the host network necessary to accommodate roaming access to the requested service must be economically reasonable.¹¹⁵ We stated our belief that including these conditions may be appropriate in the data roaming context, noting in particular that requiring a requesting provider to offer a data service on its network would appear to be an essential

¹¹⁰ In our previous decision applying the voice roaming obligation to "in-market" roaming, the Commission concluded that there may be areas where building another network may be economically infeasible or unrealistic. *Order on Reconsideration*, 25 FCC Rcd at 4192 ¶ 23.

¹¹¹ See *infra* III.B.

¹¹² See *Second Further Notice*, 25 FCC Rcd at 4221 ¶ 85.

¹¹³ See *id.*

¹¹⁴ See *Second Further Notice*, 25 FCC Rcd at 4222, ¶ 87.

¹¹⁵ See *id.*; *Further Notice*, 22 FCC Rcd at 15845-46 ¶ 79.

element of a request for data roaming, and would help ensure that the request is not a request for resale.¹¹⁶ Further, we sought comment on whether these conditions would address concerns regarding the potential technical issues that may arise when implementing data roaming arrangements.¹¹⁷

39. We also sought comment on the impact of data roaming obligations on the network capacity of host providers and their ability to provide full access to their own customers.¹¹⁸ In the 2007 *Further Notice*, the Commission had sought comment on any issues concerning network capacity, network integrity, or network security if automatic roaming obligations were extended to non-interconnected services and features, and on the effect that automatic roaming would have on the capacity of data networks and the ability of providers to offer full access to their customers.¹¹⁹ In the *Second Further Notice*, we requested specific information “on how concerns regarding capacity or traffic management issues from data roaming traffic could be addressed,” particularly as to network congestion issues.¹²⁰

40. Discussion. As discussed above, we conclude that the public interest would be served by adopting a data roaming rule. We will require that facilities-based providers of commercial mobile data services offer data roaming arrangements to other such providers on commercially reasonable terms and conditions, subject to certain limitations specified below. We determine that the data roaming rule we adopt should apply to all facilities-based providers of commercial mobile data services. In establishing this rule, we seek to balance various competing interests, and we find that it is appropriate to specify certain grounds on which, under the rule adopted today, providers of commercial mobile data services can reasonably refuse to offer a data roaming arrangement. We also clarify that under the data roaming rule adopted herein, providers of commercial mobile data roaming services are permitted to negotiate commercially reasonable measures to safeguard quality of service against network congestion that may result from roaming traffic or to prevent harm to their networks. We discuss the rule and limitations and the standard of commercial reasonableness in more detail below.

41. Covered Entities. Consistent with the comments addressing the scope of covered entities, we determine that the data roaming requirement should apply to all facilities-based providers of commercial mobile data services. For purposes of data roaming, we define a “commercial mobile data service” as any mobile data service that is not interconnected with the public switched network but is (1) provided for profit; and (2) available to the public or to such classes of eligible users as to be effectively

¹¹⁶ See *Second Further Notice*, 25 FCC Rcd at 4223 ¶ 89. We noted that, as with our automatic voice roaming requirement, we did not intend a data roaming requirement “to constitute a resale requirement” and we emphasized we would decide in the case of a specific dispute whether data roaming should be provided in a particular instance, and on what terms, or whether the request is essentially a request for resale. *Id.*

¹¹⁷ See *Second Further Notice*, 25 FCC Rcd at 4223 ¶ 90.

¹¹⁸ See *Further Notice*, 22 FCC Rcd at 15846 ¶ 80; *Second Further Notice*, 25 FCC Rcd at 4220-21 ¶¶ 80-84.

¹¹⁹ *Further Notice*, 22 FCC Rcd at 15846 ¶ 80. The Commission noted its concern that requiring a carrier to offer roaming service on its data network to the customers of other carriers may result in the carrier facing capacity constraints that adversely affect its own customers, and asked whether a carrier should have the right to limit access to its network by roamers and what would justify any such limits. *Id.*

¹²⁰ See *Second Further Notice*, 25 FCC Rcd at 4220 ¶¶ 80-81. Some comments filed in response to the *Further Notice* addressed quality of service in terms of congestion. See *id.*, 25 FCC Rcd at 4220 ¶ 80 n.226 (contrasting commenters arguing that roaming traffic will create congestion problems and undermine the quality of service for users with those arguing that additional capacity needed to accommodate roamers will be negligible and that capacity concerns therefore do not justify denying automatic roaming).

available to the public. The scope of the current roaming obligation in Section 20.12 covers the CMRS providers' provision of mobile voice and data services that are interconnected with the public switched network, as well as their provision of text messaging and push-to-talk services.¹²¹ The rule adopted herein will complement the current roaming obligation in Section 20.12 and cover mobile services that fall outside the scope of that obligation. Under our decision today, as long as a provider provides mobile data services that are for profit and available to the public or to such classes of eligible users as to be effectively available to the public, it will be covered by the rule adopted herein regardless of whether the provider also provides any CMRS and without regard to the mobile technology it is utilizing to provide services. Thus, the scope includes MSS/ATC providers that offer commercial mobile data services that meet these requirements. In addition, the data roaming rule adopted herein covers all facilities-based providers of commercial mobile data services, including those constructing network facilities to offer service on a wholesale basis.¹²² Further, providers of commercial mobile data services are covered without regard to the devices used to access or receive their services. This approach is supported by those parties in the record that commented on this issue,¹²³ will help to achieve technological neutrality in the data roaming obligation, and will ensure that the rule we adopt is adequate in the face of rapid changes in commercial mobile technology and the commercial mobile ecosystem overall.

42. *Application of the Commercial Mobile Data Roaming Rule.* The rule we adopt today requires all facilities-based providers of commercial mobile data services to offer data roaming arrangements to other such providers on commercially reasonable terms and conditions. As noted above, we conclude that this rule serves the public interest by promoting connectivity for and nationwide access to mobile data services and by promoting investment in and deployment of mobile broadband networks, among other benefits. When a request for data roaming negotiations is made, as a part of the duty of providers to offer data roaming arrangements on commercially reasonable terms and conditions, a would-be host provider has a duty to respond promptly to the request and avoid actions that unduly delay or stonewall the course of negotiations regarding that request. We will determine whether the terms and conditions of a proffered data roaming arrangement are commercially reasonable on a case-by-case basis, taking into consideration the totality of the circumstances.¹²⁴

43. The duty to offer data roaming arrangements on commercially reasonable terms and conditions is subject to certain limitations. In particular: (1) providers may negotiate the terms of their roaming arrangements on an individualized basis; (2) it is reasonable for a provider not to offer a data roaming arrangement to a requesting provider that is not technologically compatible; (3) it is reasonable for a provider not to offer a data roaming arrangement where it is not technically feasible to provide roaming for the particular data service for which roaming is requested and any changes to the host

¹²¹ See 47 C.F.R. § 20.12(a)(2).

¹²² See SkyTerra Comments at 6. As we have stated in the past, however, roaming arrangements cannot be used as a backdoor way to create *de facto* mandatory resale obligations. See *Report and Order*, 22 FCC Rcd at 15836 ¶ 51.

¹²³ See, e.g., RCA Comments at 1 (urging the Commission to extend roaming obligations to data services, including mobile broadband services, which are provided without interconnection to the public switched network); Cincinnati Bell Comments at 4 (arguing the Commission should "extend automatic roaming obligations to all data services and . . . apply the obligation to all facilities-based providers, whether or not they also provide CMRS"); SkyTerra Comments at 1 (supporting extending automatic roaming obligations to all data services), 4-5 ("The very nature of data roaming requires that the Commission apply it to a broader set of entities than are currently covered by the automatic roaming rule . . . [and] . . . the Commission should apply the obligation, at a minimum, to all providers of facilities-based commercial data services.").

¹²⁴ See *infra* III.D.

provider's network necessary to accommodate roaming for such data service are not economically reasonable; and (4) it is reasonable for a provider to condition the effectiveness of a data roaming arrangement on the requesting provider's provision of mobile data service to its own subscribers using a generation of wireless technology comparable to the technology on which the requesting provider seeks to roam.¹²⁵

44. We conclude that it serves the public interest to include these limitations in recognition of the particular technical and policy issues that arise with respect to the provision of data services. As discussed above, we recognize that the commercial mobile broadband data marketplace, particularly 4G deployment, is still in a critical early stage. It encompasses many different services offered in conjunction with many different devices employing wide-ranging technologies and exacting varying network demands. In light of that continuing evolution, we find that the scope we establish for the roaming rule is sufficiently flexible to apply to a wide range of ever changing technologies and commercial contexts, and should afford parties negotiating commercial mobile data services roaming agreements a solid framework within which to arrange their negotiations and ultimately reach agreement on commercially reasonable terms. Below, we further discuss and clarify each of these limitations in turn.

45. First, providers may negotiate the terms of their roaming arrangements on an individualized basis. In other words, providers may offer data roaming arrangements on commercially reasonable terms and conditions tailored to individualized circumstances without having to hold themselves out to serve all comers indiscriminately on the same or standardized terms. Conduct that unreasonably restrains trade, however, is not commercially reasonable. As discussed below, the Commission may consider a range of individualized factors in addressing disputes over the commercial reasonableness of the terms and conditions of the proffered data roaming arrangements.¹²⁶ Giving providers flexibility to negotiate the terms of their roaming arrangements on an individualized basis ensures that the data roaming rule best serves our public interest goals discussed herein, and the boundaries of the rule are narrowly tailored to execute our spectrum management duties under the Act.

46. Second, it is commercially reasonable for providers not to offer a data roaming arrangement to a requesting provider that is not technologically compatible. We clarify, however, that technological compatibility does not necessarily require the same air interface in the network infrastructure of the two providers.¹²⁷ Technological compatibility can be achieved by using mobile equipment that can communicate with the host provider's network.¹²⁸ For example, requesting providers that operate on different bands or technologies than the host might achieve technological compatibility by

¹²⁵ In other words, a provider offering service only through, for example, a 1xRTT or GPRS/EDGE network, would not be able to rely on the data roaming obligation for this service to obtain roaming on a later generation EV-DO or UMTS/HSPA network until it starts offering the later generation service.

¹²⁶ See *infra* III.D.

¹²⁷ *Report and Order*, 22 FCC Recd at 15819 ¶ 5 (stating that "[t]he basic technical requirement for roaming, whether done manually or automatically, is that the subscriber has a handset that is capable of accessing the roamed-on (host) system."). See also *Manual and Automatic Roaming Obligations Pertaining to Commercial Mobile Radio Services*, Notice of Proposed Rulemaking, 15 FCC Rcd 21628, 21629 ¶ 2 (2000) (*2000 CMRS Roaming NPRM*); *Interconnection and Resale Second Report and Order*, 11 FCC Rcd at 9466 ¶ 7.

¹²⁸ We expect that, when one of two overlapping frequency bands is a subset of the other, a mobile device with a compatible air interface technology that supports the larger of the two bands will be capable of communicating with a network deployed in the smaller band.

providing subscribers with multi-band¹²⁹ and multi-mode user devices.¹³⁰

47. Even if providers are technologically compatible, however, roaming for a particular service may not be feasible for other technical reasons.¹³¹ Accordingly, it is also commercially reasonable for a provider to refuse to enter into a data roaming arrangement for a particular data service where it is not technically feasible to provide roaming for such service and where any changes to its network that are necessary to accommodate such data roaming are economically unreasonable. With regard to these grounds for reasonably refusing to enter into a roaming arrangement, we disagree with commenters that they are too vague or would be too open to interpretation by providers seeking to delay or deny roaming access.¹³² As noted above, identical conditions already apply to requests for push-to-talk and text-messaging roaming arrangements.¹³³ Further, we find that these grounds will offer parties negotiating roaming agreements reasonable flexibility to negotiate terms without, for example, unduly hampering a host provider with the burden of either adopting technologies which it has not already adopted in order to accommodate the requesting provider's technology or undertaking economically unreasonable changes to its network.

48. Finally, we provide that it is commercially reasonable for a provider to condition the effectiveness of a roaming arrangement on the requesting provider's provision of mobile data service using a generation of wireless technology comparable to the technology on which the requesting provider seeks to roam. We note that as with technological compatibility, this does not mean that the requesting provider must have exactly the same air interface as the host provider.¹³⁴ Rather, this focuses on capabilities, including data rates, of the generation of mobile wireless technology that is being used to provide services to subscribers. Permitting a service provider to condition the effectiveness of a roaming arrangement in this circumstance provides additional incentives for the requesting provider to invest in and upgrade its network to offer advanced services to its subscribers and ensures that the requesting provider is not merely reselling the host provider's services. This limitation prevents providers, for example, from only building a 2G network, providing their customers with 3G capable handsets, and then relying on roaming arrangements to provide nationwide 3G coverage, and thus reasonably addresses concerns raised by AT&T.¹³⁵ To prevent undue delay in negotiations, we clarify that a host provider may

¹²⁹ We note that in the case of overlapping bands, it is possible that multi-band support could be accomplished via a software solution in the device or a software solution in the network. The term "multi-band support" is not necessarily intended to imply a hardware solution in the mobile device.

¹³⁰ See, e.g., MetroPCS Comments at 50-51; RCA Comments at 17-18; Sprint Comments at 6 n.11; T-Mobile Reply Comments at 17; U.S. Cellular Reply Comments at 4-5.

¹³¹ See *Report and Order*, 22 FCC Rcd at 15837 ¶ 55.

¹³² SouthernLINC Reply Comments at 23-24.

¹³³ See, e.g., Cincinnati Bell Comments at 14.

¹³⁴ See, e.g., Leap Comments 28-29; RTG Comments at 8 & n.25; Leap Reply Comments at 25-26.

¹³⁵ See AT&T Comments at 63-66 (raising concerns that providers would have an incentive to build a 2G network, provide their customers with 3G capable handsets, and rely on roaming arrangements to provide national 3G coverage, and suggesting as example that a provider could build out a less expensive GSM/EDGE network in Los Angeles and provide customers with HSPA handsets that are backwards compatible with its GSM/EDGE network, and then rely on roaming arrangements to supply its customers with HSPA services in both its home area and throughout the country). For purposes of this rule, we note that a next generation network will be regarded as comparable to previous generation networks. For example, an LTE network provider can request non-interconnected data roaming from an HSPA or EDGE network provider.

not decline to enter into a roaming agreement with a requesting provider on the grounds that the requesting provider is not actually providing service at the time of the request for negotiations, but may tie the effectiveness of the agreement to the requesting provider offering the underlying service to its subscribers with a generation of wireless technology comparable to the technology on which it would roam. We find that incorporating this limitation as part of the scope of the data roaming rule is in the public interest and critical to ensuring facilities are deployed, helping to alleviate concerns about providers merely reselling commercial mobile data services on other networks.¹³⁶ While we agree that providers have many different legitimate business and technological reasons for rolling out services in certain markets and not in others,¹³⁷ we find that requiring, at a minimum, the underlying service to be offered by the requesting provider with a generation of wireless technology comparable to the technology on which it seeks to roam best balances competing interests of affording data roaming while also encouraging facilities-based service.

49. This limitation is also consistent with the Commission's previous roaming decisions where the Commission has consistently limited roaming obligations to provisioning of certain services on technologically compatible networks.¹³⁸ The limitation on covered services coupled with the technologically compatible networks requirement was sufficient to ensure that the generations of wireless technologies used were comparable. The commercial mobile data services marketplace, however, encompasses a broad array of generations of wireless technology and many different applications-- many of which may require different technical considerations and offer different data speeds. Some of these also may be more competitively attractive than others. We seek to encourage facilities-based offerings of advanced mobile data services by providers and usage of data roaming arrangements to supplement such offerings. Accordingly, it serves the public interest to focus on capabilities, including data rates, of the generation of mobile wireless technology that is being used to provide services to subscribers.

50. We decline to adopt certain other requirements proposed by AT&T, which suggests that, in order to preserve the proper incentives for investment, the Commission establish an "equal network" rule that would limit data roaming to only providers that use the same radio technologies and air interfaces and that have substantial networks of their own.¹³⁹ For the reasons discussed above, we conclude, contrary to AT&T's argument, that providers will not have heightened incentives under the rule adopted here to scale back their own deployments and "free-ride" on the superior investments of others.¹⁴⁰

51. We find it is unnecessary to adopt a requirement of identical interfaces. We require that the air interfaces be comparable in terms of capabilities, which should achieve the same benefits as a requirement of identical interfaces while providing greater technological flexibility in the rule. Further,

¹³⁶ See, e.g., AT&T Comments at 65-66. See also *Second Further Notice*, 25 FCC Rcd at 4223 ¶ 89.

¹³⁷ See, e.g., MetroPCS Comments at 49-52 (stating that these reasons could include not having sufficient spectrum to deploy such technology, needing the spectrum to service both existing customers and plan for future growth, or not deploying a technology in one metropolitan area or another because the technology may be incompatible with existing uses or may cause interference to other licensees).

¹³⁸ See, e.g., *Report and Order*, 22 FCC Rcd at 15831 ¶ 33 (stating that "[t]o be deemed reasonable, a request for automatic roaming may involve only those real-time, two-way switched voice or data services that are interconnected with the public switched network and utilize an in-network switching facility that enables the provider to reuse frequencies and accomplish seamless hand-offs of subscriber calls"). See also T-Mobile Reply Comments at 17-18.

¹³⁹ AT&T Comments at 63-66.

¹⁴⁰ *Id.*

we agree with Leap and RCA that adopting a “substantial network” requirement could be problematic.¹⁴¹ An inability to negotiate a roaming arrangement before making a substantial build out could deter new entrants and small, rural, and mid-sized providers from investing in broadband at the exact time such investment is sorely needed.¹⁴² We are concerned that a “substantial network” requirement could hamper or dampen facilities-based build-out in rural areas by unduly limiting the role of roaming in network buildout. We also disagree with AT&T that, absent this requirement, providers will have heightened incentives to scale back their own deployments and “free-ride” on the superior investments of others.¹⁴³ As discussed above, the relatively high price of roaming compared to providing facilities-based service will often be sufficient to counterbalance the incentive to scale back deployments in favor of relying on another provider’s network.¹⁴⁴ Further, although we do not find that lack of “substantial” networks deployments is categorically a commercially reasonable ground for declining to enter into a roaming arrangement, the Commission may consider the extent and nature of providers’ build-out as one of the relevant factors in determining whether the proposed terms and conditions of a particular data roaming arrangement are commercially reasonable.¹⁴⁵

52. *Reasonable safeguards against congestion.* With respect to any issues concerning network capacity, network integrity, or network security, we note that under the rule that we are adopting providers of commercial mobile data services are free to negotiate commercially reasonable measures to safeguard quality of service against network congestion that may result from roaming traffic or to prevent harm to their networks.¹⁴⁶ We expect any measures, methods, or practices to manage the roaming traffic to be part of the roaming terms and conditions offered by the host providers in their roaming arrangements given that once providers enter into a data roaming arrangement, the arrangement will govern the terms under which roaming is provided. Any issues arising in connection with the negotiation of these measures will be resolved in accordance with the dispute resolution procedures we adopt in this Order. We note that reasonable measures to safeguard against network congestion from roaming traffic are supported by a number of commenters,¹⁴⁷ and are already a feature of many commercially negotiated

¹⁴¹ Leap Comments at 28-29; RCA Comments at 17-18.

¹⁴² See, e.g., Blooston Comments at 2, 10; Cellular South Comments at 20; MetroPCS Reply Comments at 52; RCA Comments at 7-10.

¹⁴³ AT&T Comments at 63-66.

¹⁴⁴ See *supra* III.A.

¹⁴⁵ See *infra* III.D.

¹⁴⁶ The record indicates that providers already commonly include in their negotiated roaming agreements terms that give a host provider the ability to suspend roaming service if roaming becomes impractical for reasons such as overload, outage, or other operational or technical issues. See Letter from Kathleen O’Brien Ham, T-Mobile USA, Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Dec. 20, 2010, at 4.

¹⁴⁷ See AT&T Comments at 61-63; NTCH Comments at 6; Clearwire Reply Comments at 14-15; Letter from Erin Boone, Clearwire, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Oct. 29, 2010 (Clearwire Oct. 29, 2010 *Ex Parte*) (stating that “mobile data roaming arrangements must be carefully negotiated and managed to prevent unexpected congestion across a carrier’s network”); Letter from Howard J. Symons, Counsel to T-Mobile USA, Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Nov. 2, 2010 (T-Mobile Nov. 2, 2010 *Ex Parte*) (a host carrier should be able to take reasonable management practices to address congestion attributable to roaming traffic, and also argues that the Commission must “make clear that the host carrier may not insist on suspension or management rights that have the intent or effect of undermining or frustrating its obligation to provide roaming on just and reasonable terms and conditions.”); Letter from Charles W. McKee, Sprint Nextel, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-265, filed Nov. 22, 2010 (Sprint Nov. 22, 2010 *Ex Parte*) (continued....)