

## **INFORMATION AND DATA REQUEST TO CHARTER COMMUNICATIONS, INC.**

1. Produce all documents relating to competition in the provision of each relevant service in each relevant area, including, but not limited to, consumer surveys or studies, market studies, forecasts and surveys, and all other documents relating to:
  - a. sales, market share, number of subscribers, or competitive position of the Company or any of its competitors;
  - b. the relative strength or weakness of persons providing each relevant service;
  - c. the extent to which providers of each relevant service compete with each other;
  - d. supply and demand conditions, including all documents discussing demand elasticity, the impact of price or fee changes, and customer substitution;
  - e. attempts to win customers from other companies and losses of customers to other companies, including:
    - (i) churn data analysis thereof;
    - (ii) studies indicating that a customer left or switched to the Company because of the absence or availability of particular video programming (including figures on subscribers lost or gained);
    - (iii) documents relating to the Company's experience or success in obtaining customers through marketing targeted at a particular MVPD or OVD competitor, including the offers made and figures on the amount spent on the marketing effort, the number of new subscribers gained, average churn rates for such subscribers and revenue realized by the Company;
    - (iv) documents relating to the entry, competitive impact, or the Company's response to any OVD, including but not limited to Netflix, Hulu, Amazon Instant Video, Dish Sling TV, Sony Vue, CBS All Access, and HBO Now; and
    - (v) customer lifetime value, subscriber acquisition costs, costs per gross addition, and subscriber retention costs, including consumer costs incurred in switching to another person's relevant service, and data and studies analyzing the source of the Company's new subscribers, why subscribers disconnect service with the Company and the reasons for disconnections, and factors affecting consumers' decisions

to switch to or from a relevant service offered by the Company, including but not limited to pricing, quality of service and disputes between the Company and edge providers, CDNs or transit service providers;

- f. consumer views or perceptions of MVPDs, and OVDs video programming, including the impact of placing programming in a particular neighborhood or tier, the impact of not offering certain programming, the ability to substitute other programming, the impact of bundling more than one programming network, or the impact of pricing on decisions to purchase video programming or MVPD service, including ratings and consumer surveys relating to video programming offered by the Company;
- g. allegations that any person that provides any relevant service is not behaving in a competitive manner, including, but not limited to, customer and competitor complaints; threatened, pending, or completed lawsuits; and federal and state investigations, including any carriage or program access complaints filed against the Company with the Federal Communications Commission pursuant to 47 C.F.R. § 76.1301 et seq. or 47 C.F.R. § 76.1000 et seq.;
- h. the Company's decisions whether to block, stop, limit, hinder, slow, favor, prioritize, or otherwise treat the transmission of any OVD provider's services or other edge provider content, including the CDN, transit service provider or peer that supports the service, or to favor, prioritize, or otherwise advantage the Company's relevant service over such competing service, Documents solely relating to unsolicited commercial e-mail (i.e., SPAM) and malicious software need not be produced;
- i. any actual or potential effect on the supply, demand, cost, or price of any relevant service as a result of competition from any other possible substitute service or provider;
- j. the role of innovation in competition or any actual or potential competition between or among any persons relating to improvements or innovations in features, functions, ease of operation, performance, cost or other advantages to users of the services, including the ability to sell or provide targeted advertising services;
- k. the role of reliability and reputation in competition or any actual or potential competition between or among any persons relating to any relevant service;
- l. any evaluation or comparison between any relevant service and any other service, including but not limited to the effect or impact

of OVD on MVPD, including studies, reports, analyses, and other documents discussing or referring to research conducted or prepared by any consultants, user groups, or other third-parties (such as analyst reports, trade or industry publications);

- m. any customer preferences or selection criteria relating to the purchase or use of any relevant service rather than any other service, or relating to any relevant service offered by the Company rather than any service offered by any other person (including any sales tracking data);
- n. consumer satisfaction with the Company's relevant services (including all documents relating to plans, policies and procedures for addressing concerns raised by rankings and surveys), and consumer substitution between the Company's Internet access service and DSL service, service using fiber to the node technology, service using fiber to the premises technology, service using satellite technology, and mobile wireless broadband services;
- o. the Company's experience in obtaining or retaining customers through marketing or promotions targeted at providers of relevant services, geographic areas, types of customers, including the offers made and the amount spent on the marketing effort, the number of new subscribers gained, churn rates for such subscribers, and revenue realized by the Company;
- p. the characteristics of consumers who are interested in purchasing, or who have purchased, standalone services or bundled services, and the sales, market share or competitive position of the Company or any of its competitors in the sale of standalone services or bundled services;
- q. any advantage or disadvantage to any person arising from the size of the Company's footprint or its subscribership on its ability: (1) to negotiate interconnection agreements with interconnection partners, edge providers, persons who provide Internet backbone services, persons who provide Internet access service, and transit service providers; and (2) competition with other persons that provide MVPD or Internet access services;
- r. any benefit, efficiency, advantage, or disadvantage to any person arising from the size of its footprint or its subscribership on its ability to negotiate with Persons selling or licensing video programming; and
- s. the impact of cord shavers (i.e., MVPD customers who have dropped some but not all MVPD service), cord cutters (i.e., former MVPD customers that have cancelled all MVPD service) and cord

nevers (i.e., potential MVPD customers that have never signed up for MVPD service) on the Company's marketing, revenues, and profits of each relevant service.

2. Produce all documents discussing the Company's plans relating to any relevant service and each item listed in Request 3 below, including, but not limited to, business plans; short-term and long-range strategies and objectives; budgets and financial projections (including costs and potential profits); expansion or retrenchment plans; research and development efforts; plans to better manage those services; plans to reduce costs, improve service, introduce new services, or otherwise become more competitive; plans to improve services or service quality; plans to provide the video programming affiliated with the Company or affiliated with any officer, director, or executive of the Company, or any entity sharing officers, directors, executives or attributable interest holders with New Charter, to unaffiliated OVDs, including, but not limited to, the minimum viable scale necessary for entry, the time required to roll out the service, and the steps taken or additional steps that the Company would need to take to launch the service; all effects that the transaction, if consummated, would have on these plans; and presentations to management committees, executive committees, and boards of directors;. For regularly prepared budgets and financial projections, the Company need only produce one copy of final year-end documents for each year and cumulative year-to-date documents for the current year.

3. Describe, and identify documents sufficient to show, the Company's past and current business and deployment plans with respect to:

- a. DOCSIS 3.1;
- b. IP cable and Wi-Fi access;
- c. mobile wireless broadband services;
- d. any OVD service inside or outside of the Company's current service area;
- e. wireless backhaul services;
- f. build-out to additional homes in your footprint or franchise area, including the Application's claim that the Company will "build out one million line extensions of our networks to homes in our franchise area";
- g. IP set-top-boxes;
- h. user interfaces and programming guides for subscribers;
- i. increasing speeds for Internet broadband services;
- j. business services; and
- k. time-shifted and place-shifted video programming.

4. Identify each person that has entered or attempted to enter into, or exited from, the provision of each relevant service in each relevant area, from 2005 to the present. For each such

person, identify the services it provides or provided; the area in which it provided the services, including whether the person has sold or distributed the relevant service in the United States; and the date of its entry into or exit from the market. For each entrant, state whether the entrant built a new facility, converted assets previously used for another purpose (identifying that purpose), or began using facilities that were already being used for the same purpose.

5. Provide a list of possible new entrants into the provision of each relevant service, stating why the Company believes each person is a possible entrant and what steps they have taken toward entry and submit all documents relating to requirements for entry into the provision of a relevant service, including, but not limited to, research and development, planning and design, production requirements, distribution systems, service requirements, patents, licenses, sales and marketing activities, and any necessary governmental and customer approvals, and the time necessary to meet each such requirement.

6. Identify each person who holds an attributable interest in the Company, and for each identified person, describe: (i) the nature and extent of each attributable interest, including the percentage of each ownership interest and all board representation, management rights, voting rights, or veto power; and (ii) all effects that the transaction, if consummated, would have on the interests described in response to (i).

7. Identify each video programming network that the Company owns or controls and each video programming network in which the Company or any officer, director, or executive of the Company, or any entity sharing officers, directors, executives with New Charter, holds or will hold an attributable interest and, for each video programming network separately for each month from January 1, 2010, until the present, state (i) the nature, percentage, and extent of each attributable interest in or distribution rights for video programming held by the Company or by an officer, director, or executive of the Company, or by any entity sharing officers, directors, executives or attributable interest holders with New Charter, including but not limited to all board representation, management rights, voting rights, or veto power; (ii) the identity and percentage of each other person holding an interest in the video programming; (iii) how and when the video programming network formed and from whom the interest was acquired; (iv) if the interest was sold or transferred, identify the company or other person acquiring the interest and the rationale for the transaction; (v) total number of subscribers receiving the programming network on the Company's systems and the total number of subscribers receiving the programming network by MVPD, OVD, or any other distribution arrangement; (vi) identify each MVPD or OVD that carries the programming network, the tier on which it is carried, and the total number of subscribers for each tier; (vii) the total revenues for the programming network from each MVPD and OVD, categorized by subscriber fee, advertising revenue, and other (describe); (viii) total advertising revenue from the video programming network; (ix) the number of minutes per hour granted each MVPD for local ad sales for the video programming network; (x) the margin the Company earns on each video programming network, separate for each MVPD or OVD; (xi) the nature and extent of the Company or by an officer or director of the Company in the management, operation, production, or distribution of the identified video programming; and (xii) all effects that the transaction, if consummated, would have on the interests or relationships described above, including but not limited to each attributable interest in video programming that would be held by New Charter post transaction. Provide responses to

subparts (v)-(x) in .csv format.

8. Identify each RSN in which the Company, or an officer, director, or executive of the Company holds an attributable interest or distribution rights, and for each provide the following information:

- a. a description of each distribution zone or other geographic area in which the RSN is licensed to MVPDs or OVDs, including a description of each zone's boundaries and a list of each DMA (identified by name and rank) associated with the distribution zone or area;
- b. separately for each MVPD or OVD, including but not limited to the Company, that carries or has carried the RSN, the month and year in which the MVPD or OVD began carrying, and if applicable, stopped carrying the RSN; and
- c. the identity of each MVPD that serves each DMA in which the RSN is offered that does not distribute the RSN and state the reason you do not license the RSN to each identified MVPD.

9. Describe any discussions and provide all documents relating to deliberations and decisions to create, launch, acquire, or distribute any RSN identified in response to Request 8 or in which the Company, or an officer, director, or executive of the Company, or any entity sharing officers, directors, executives, or attributable interest holders with New Charter, would hold an attributable interest or distribution rights.

10. Identify each instance, including the relevant dates, where an MVPD has discussed with you or any of your officers, directors, or executives raising, threatened to raise, or has raised, a program access complaint as a means to obtain the right to distribute video programming in which you or any of your officers, directors, or executives, or any entity sharing officers, directors, executives or attributable interest holders with New Charter, has an attributable interest or has distribution rights, including via VOD and PPV, and separately for each type of video programming (i.e., standard or high definition), describe:

- a. the nature of the dispute or issue;
- b. the persons involved in the dispute; and
- c. how and whether the dispute or issue was resolved. To the extent the dispute was settled, explain whether the settlement required program access to the complaining party, and produce all documents relating to each instance identified, and any settlement thereof.

11. Provide a list of each agreement currently in effect between the Company and any other person relating to the carriage, licensing, or distribution of any video programming owned by, controlled by, or distributed by the Company, or by any officer, director, or executive of the Company, or by any entity that will share officers, directors, executives or attributable interest holders with New Charter, and produce all documents relating to each negotiation between the

Company and any (a) MVPD and (b) OVD for video programming, regardless of whether or not the negotiations resulted in an agreement (formal or informal). Identify each negotiation, and separately for each negotiation, list the date on which the negotiation began, each date on which a term sheet or draft contract was exchanged between the parties, and the date on which the negotiations concluded.

12. Identify each instance in which the Company analyzed or considered introducing or acquiring an OVD service (including in-footprint service or out-of-footprint service) and for each such instance:

- a. describe the timing of the analysis or consideration;
- b. describe the service, including content, projected prices, and customers to which it would be offered, including whether the intended customers would be existing customers, other customers within your footprint, and customers outside your footprint;
- c. discuss any decision made and the reasons for the decision or factors considered;
- d. identify all employees or agents of the Company involved in the analysis or consideration;
- e. provide all documents related to the analysis and consideration; and
- f. identify documents sufficient to support your answers for each (a), (b), (c), and (d) above.

13. Submit all documents discussing: the CBS All Access service; Comcast's Stream service; DISH's Sling TV service; HBO Now; Sony Entertainment Network's Vue service; or any over-the-top video streaming service that may be offered by you or another person.

14. Produce all documents relating to the Company's consideration, analysis of, or decision to carry or not carry TWC SportsNet, TWC Deportes, TWC SportsNet LA, TWC Sports Channel (collectively TWC RSNs), including but not limited to all documents relating to negotiations with TWC, all communications with any other person relating to carriage of TWC RSNs, and analysis of the effect of carrying any of the TWC RSNs on the Company (such as any effect on subscriber acquisition or retention).

15. The Applicants state that "given the limited nature and quantity of programming affiliated with Liberty Broadband and Advance/Newhouse, neither has any incentive to take actions that conflict with New Charter's best interests." Public Interest Statement at 53 n.146. Explain this statement and describe in detail, and produce and identify all documents relating to, (i) the identity, nature and quantity of programming affiliated with John Malone, Liberty Broadband and Advance/Newhouse; (ii) each one's ownership, control, or management of any programmer; (iii) each one's incentive and ability, or lack thereof, to take actions that conflict with or support New Charter's interests; and (iv) each one's incentive and ability to withhold programming or particular rights to distribute programming from other MVPDs or OVDs in

order to favor or protect New Charter or to increase New Charter's sales.

16. The Applicants state that "there are a number of specific precautions in place to...ensure that Liberty Broadband and Advance/Newhouse cannot improperly influence New Charter." Public Interest Statement at 54. Describe in detail, and produce all documents relating to, reflecting, considering, or describing any "specific precautions" that will exist following the consummation of the transaction ensuring that:

- a. Liberty Broadband and Advance/Newhouse cannot improperly influence New Charter; and
- b. John Malone, Liberty Broadband, and Advance/Newhouse will not withhold, or cause the withholding of, programming from MVPDs or OVDs in order to favor or protect New Charter or increase New Charter's sales.

17. Describe, and provide documents sufficient to show, how the Company determines whether to carry a particular non-broadcast programming network on its own systems in what geographic areas and on which tiers that network would be carried, including the extent to which carriage decisions are made at the corporate level or by an individual system manager (include the identity of specific decision makers), and factors considered by the Company in making its carriage decisions. Explain and provide examples of how the Company evaluates potential replacements for any non-broadcast programming network, including, but not limited to: (i) the geographic areas in which it will offer the replacement non-broadcast programming network; (ii) the metrics used; and (iii) how the Company evaluates potential subscriber losses for not carrying a specific non-broadcast programming network in a market.

18. List and describe all requests for program carriage that were denied and, for each request, state:

- a. the date of the request and the reasons why you denied the request; and
- b. the identity of the video programming at issue including the genre of the video programming (i.e., RSN, news, educational, general entertainment, etc.) offered.

19. Identify each instance, including the relevant dates, where a video programmer has discussed with the Company or an officer, director, or executive of the Company raising, threatening to raise, or having raised, a program carriage complaint as a means to obtain carriage of video programming, and separately for each type of video programming (i.e., standard or high definition), describe and produce documents sufficient to show:

- a. the nature of the dispute or issue;
- b. the persons involved in the dispute; and
- c. how and whether the dispute or issue was resolved. To the extent the dispute was resolved or settled, explain whether the resolution or settlement required you to provide program carriage to the complaining party, and produce one copy of each agreement or



settlement that ended the dispute.

20. Identify each communication between the Company and any other MVPD regarding distribution of any video programming other than video programming owned by a party to the communication. Describe each communication, including subject matter, information provided by the Company, received by the Company, any other MVPDs mentioned, and future plans or strategies discussed in the communication. Provide all documents containing or reflecting any communication between you and any other MVPD relating to the distribution of any video programming, including but not limited to RSNs, other than video programming owned by a party to the communication.

21. Identify each instance since January 1, 2010, in which the Company obtained a reduction in the per-subscriber fee paid for any programming (including through the acquisition or sale of or affiliation with any MVPD or video programming network) and for each such instance: a) describe the circumstances; b) state whether the Company passed through cost savings to residential subscribers as lower monthly fees, moving the network to a less costly tier, or in any other way; and c) produce all documents discussing cost savings, including how they were passed through to subscribers.

22. Submit all documents relating to any plans of, interest in, or efforts undertaken by the Company or any other person for any acquisition, divestiture, joint venture, alliance, or merger of any kind involving the sale of any relevant service other than the Transaction. Describe, and identify documents sufficient to show each instance when the Company attempted to partner with another MVPD to achieve joint objectives, including but not limited to, attempts to launch or deploy a coordinated or joint OVD service, business services, reciprocal access to Wi-Fi networks, out of home data access service, or mobile wireless service (e.g., sales agent, reseller, mobile virtual network operator). In the description, state the results of each instance and the reasons for its success or failure.

23. Describe, and produce all documents relating to your:
- a. plans with respect to television set-top boxes;
  - b. plans to enable or permit the use of third party applications on set-top boxes;
  - c. criteria for determining which third party applications to permit or enable;
  - d. plans for developing set-top-boxes, programming guides, recommendation software, and user interface systems; and
  - e. policies and plans to integrate OVDs into the Company's set-top box, programming guide, or recommendation software, including your criteria for determining which OVDs to integrate.

Identify documents sufficient to support each of your answers.

24. The Applicants note that "DISH recently announced a deal to enable access to Netflix directly from its set-top boxes," and that "[s]uch integration of OVD services creates a competitive advantage and will provide even more incentive for us to provide our customers with

access to OVD services.” Public Interest Statement at 51. Identify, and produce all documents relating to, each OVD service that the Company’s subscribers are able to access, or that the Company has engaged in negotiations to provide access to, through “Spectrum Guide” or through any other means on a “Worldbox” device. For any OVD service for which the Company declined to provide the Company’s subscribers access through the “Spectrum Guide” interface or a “Worldbox” device, state the reason that the Company declined to provide such access.

25. Describe, and produce all documents relating to, reflecting, or describing, the Company’s pricing of integrated and unintegrated cable modems, and billing policies and practices, in effect at any time between January 1, 2012 and the present.

26. Separately for each cable modem billing policy or practice identified state:

- a. when the Company established the policy or practice and the reasons for the policy or practice and altering or abandoning any prior policy or practice;
- b. any change to the policy or practice that has occurred at any time since January 1, 2012, including but not limited to, the date when the change in policy or practice took effect and the reasons for the change; and
- c. all effects that the transaction, if consummated, would have on any policy or practice.

27. State whether, at any time since January 1, 2012, you have included a separate line-item fee for a cable modem that the Company leases, sells, or otherwise provides to Internet access service subscribers on the subscriber’s bill. If so, state the amount and frequency of the fee for each cable modem model and provide documents sufficient to show such charges as they were reflected on subscriber bills.

28. State whether, at any time since January 1, 2012, you have provided any service discount or account credit to an Internet access service subscriber that uses a non-Company-provisioned cable modem, and if so, the amount and frequency of that discount or credit. Provide documents sufficient to show such charges as they were reflected on subscriber bills.

29. Produce all documents presented to or in the possession of your officers, directors, or executives relating to subscriber access to edge provider content that reference: (i) congestion experienced while using the Company’s Internet access service; (ii) whether, how and how much the quality of service of the Company’s Internet access service affects subscriber churn and retention and the acquisition of new subscribers; and (iii) how subscriber demand for edge provider services affects demand for Internet access service.

30. Describe, and produce all documents relating to the policies, procedures and practices the Company follows in processing trouble or incident reports from edge providers or subscribers concerning the Company’s Internet access services.

31. Submit:

- a. one copy of the Company’s Form 477 data filing for December 2013, June 2014, and December 2014, and, for the duration of this

proceeding, supply any updates to these data or any new data filings; and

- b. one copy of the Company's December 2013 and June 2014 State Broadband Initiative data and, for the duration of this proceeding, any updates to these data or any new data filings.

32. Describe the Company's former, current and future plans to enter term contracts with subscribers or impose early termination fees in connection with cable services, whether sold as bundled services or standalone services, including:

- a. description of any term contracts or early termination fee policies implemented Company-wide;
- b. a description of all contract and early termination fee test or pilot programs conducted by the Company;
- c. a description of the results and findings of these test or pilot programs, including any increase in contract adoption by customers in test or pilot program areas versus those not in such areas;
- d. a description of any future term contract or early termination fee test or pilot programs; and
- e. a description of any planned Company-wide initiatives to use contracts or early termination fees.

33. For each relevant service, standalone services and bundled services, produce (i) one copy of all current selling aids and promotional materials; and (ii) all documents discussing marketing or advertising plans and strategies.

34. Produce all documents created or received by the Company relating to or discussing the Company's or any person's prices; pricing plans; pricing policies; pricing lists; pricing forecasts; pricing strategies; pricing analysis; introduction of new pricing plans or promotions; bundled pricing, including analysis of the profitability of bundles and their impact on customer retention; and pricing decisions relating to each relevant service.

35. Describe, and produce all documents relating to, data caps and usage-based pricing of residential broadband services, including but not limited to: (i) data caps imposed for each tier of Internet access service in any relevant area, the criteria used for imposing the data caps and the criteria used to set the data cap thresholds; (ii) the size of the data cap and the price of Internet access service both with and without the data cap; (iii) the Company's use of usage-based pricing (UBP) and the rationale for the Company's imposition of UBP; (iv) non-broadband Internet Access data services, including video programming subject to, and not subject to, a data cap; (v) the cost, detriments and benefits to the Company and to the Company's residential subscribers of offering Internet access service with data caps or UBP, including the effect of the data caps or UBP on the Company's network; (vi) the effect of the data cap or UBP on customer's behavior (e.g., downloading of OVD content, purchase of the Company's PPV and VOD services); (vii) the effect of the data cap or UBP on competition for any relevant service

and persons who provide video programming; (viii) whether different data cap or UBP trials are planned, and if so, a description and timetable for each; and (ix) the findings or results of all trials, studies, or research related to data caps or UBP.

36. For each ZIP code in which the Company engaged in UBP, provide: (a) the beginning and end date for when UBP was effective; (b) the rules describing the UBP plan (maximum usage allowance, fee for usage over the allowed amount, etc.); (c) the percentage of the Company's Internet access service subscribers that were subject to UBP; (d) the revenues that the Company received from subscribers that exceeded their data usage allowance in the month; (e) the number of subscribers that exceeded their data usage allowance in the month; and (f) the average and median number of gigabytes that users exceeding their data usage allowance.

37. Describe, and produce and identify documents sufficient to show: a) any practices and initiatives in which the Company contacted its Internet access service subscribers relating to the subscriber's volume of usage of the Company's Internet access service; b) any actions taken as a result of the subscriber's excessive consumption of the Company's Internet access service; and c) how the practice described in subpart a) impacted the subscriber's usage of the Company's Internet access service. In your description, indicate the threshold or amount of bandwidth usage or consumption that triggers this contact.

38. Describe, and produce and identify documents sufficient to show, the Company's current or past implementation or trials of UBP for residential Internet access service in any relevant service area.

39. Describe, and produce and identify documents regardless of date sufficient to show, the Company's rationale for its 2009 decision to include specific usage caps in the excessive bandwidth provision of the Acceptable Use Policy ("AUP") for residential Internet access service customers.

40. Describe, and produce all documents related to, the Company's rationale for its decision to cease imposing specific usage caps on its residential Internet access service customers. Provide documents including, but not limited to:

- a. the date you ceased imposing specific usage caps;
- b. business plans;
- c. short-term and long-range strategies and objectives;
- d. budgets and financial projections;
- e. projections to management committees, executive committees, and boards of directors; and
- f. plans to improve services.

For each description, identify documents sufficient to support your answer.

41. Describe, and produce all documents regardless of date concerning:

- a. the Company's rationale for: (a) Charter's excessive use trial period; and (b) deciding to cease enforcement of the excessive

bandwidth provision of the AUP; and

- b. the Company's costs to monitor the usage of its residential broadband service customers during Charter's excessive use trial period.

For each description, identify documents sufficient to support your answer.

42. Provide all documents regardless of date relating to Charter's excessive use trial period, including but not limited to:

- a. business plans;
- b. short-term and long-range strategies and objectives;
- c. budgets and financial projections;
- d. projections to management committees, executive committees, boards of directors;
- e. plans to reduce costs;
- f. plans to improve services;
- g. the increased revenues the Company received after converting excessive bandwidth users to business accounts;
- h. the increased revenues the Company received from converting excessive bandwidth users to higher tier residential accounts; and
- i. plans to discontinue Charter's excessive use trial period.

43. Provide, cumulatively on a nationwide basis and separately by DMA, the number and proportion of your customers who exceeded their bandwidth threshold under Charter's excessive use trial period and subsequently:

- a. were converted to a business account;
- b. were converted to a higher tier residential account;
- c. had their account "suspended," as that term was used in the AUP during Charter's excessive use trial period;
- d. had their account terminated;
- e. had their account suspended or terminated after declining Charter's request to convert to a business account;
- f. had their account suspended or terminated after declining Charter's request to convert to a higher tier residential account; and
- g. cancelled their account.

44. Describe and identify and produce documents regardless of date sufficient to show why after deciding to cease enforcement of the excessive bandwidth provision of the AUP in January 2012, Charter waited until October 2014 to eliminate specific usage caps from the

AUP.

45. Describe and produce and identify documents sufficient to show changes, if any, in policies and procedures for technical methods related to edge providers, CDNs, or transit service providers traffic on the Company's Internet access service or Internet backbone services, including but not limited to, methods related to packet classification, admission control and resource reservation, rate control and traffic shaping, congestion management, packet dropping and packet scheduling.

46. Describe and produce and identify documents sufficient to show the traffic management or engineering tools that identify, inspect, monitor, label, tag, cache, throttle, rate-limit, shape, discard, block or otherwise control Internet traffic on the Company's network, including but not limited to policies and procedures for managing traffic delivered to and carried by the Company's networks, including documents that analyze the tradeoffs between allocating differing bandwidth levels, latency, routing assignments or other performance engineering to non-broadband Internet access service data services and whether a particular service qualifies as a non-broadband Internet access service data service, as that term is defined in this Information and Data Request.

47. Provide a list and produce a copy of all Internet interconnection agreements (and amendments), formal or informal, the Company has entered into with any person (including CDNs, edge providers, Internet access service providers and Internet backbone services providers) that are currently in effect or entered into since January 1, 2013. For each person on the list, identify and describe the number of ports, capacity, utilization/congestion, whether the interconnection is peering or transit service traffic, whether the traffic must be localized, and the financial terms associated with each interconnection agreement.

- a. Produce all documents discussing factors the Company considers or considered in negotiating the terms of any interconnection agreement; and
- b. Provide a list of all Internet interconnection agreements entered into or amended after September 11, 2014. If amended, describe the content of the amendment.

48. Describe your Internet backbone in the United States, including identifying and describing all routes, capacity, and each IP point of presence. Identify and describe any fiber (owned or leased), including name of vendor used to transmit data between one IP point of presence and another IP point of presence within the Company's network. For each IP point of presence for your Internet backbone network located in the United States, identify the owner or name of the IP point of presence (e.g., Equinix) and the geographic location (e.g., Ashburn, VA).

49. Describe and provide all documents concerning:
- a. when and why the Company decided to build an Internet backbone;
  - b. the Company's interconnection strategy, and how that strategy

may have changed over time;

- c. the benefits the Company has identified relating to controlling an Internet backbone; and
- d. when the Company's Internet backbone went into service.

50. Produce documents containing written communications between the Company and Netflix, Cogent, Level 3, Akamai, Limelight and Google relating to the negotiation of interconnection agreements.

51. Submit all documents relating to the Company's or any other person's policy or practice with respect to peering, including, but not limited to, any discussion or consideration of imposing changes or conditions upon peering, including any discussion of the effects of such policy or practice or change in such policy or practice.

52. Identify each person: (a) with whom the Company has replaced a settlement-free peering arrangement with a paid peering or transit service agreement, and describe the reason(s) why the Company replaced the settlement-free arrangement with a paid peering or transit service arrangement; and (b) who at their requestor initiation has replaced a settlement-free peering arrangement with the Company with a paid peering or transit service agreement, and describe any reason(s) offered by that person for replacing the settlement-free peering arrangement with a paid peering or transit service agreement.

53. Identify each instance, including the person, date range of the negotiations, and the Company's personnel involved, and the other person's negotiating representative, when the Company entered negotiations for interconnection but where negotiations did not result in an agreement. Produce all documents relating to the identified negotiations, including, but not limited to, documents related to the Company's or any other party's interconnection policies, strategy, or practices or change in such policies, strategy or practices, such as imposing charges or other conditions and the effects of such changes. Explain and produce all documents relating to how such traffic was delivered to the Company in the absence of an interconnection agreement.

54. Describe, and produce and identify all documents sufficient to show:

- a. the Company's policies with respect to upgrading, declining to upgrade, or downgrading interconnections between the Company and any person;
- b. the Company's policies, processes and procedures for addressing congestion at interconnection links, including but not limited to: (1) how far in advance the Company plans for upgrading of interconnection links; (2) the criteria used to determine whether to upgrade capacity when requested, whether requests from settlement-free peers, paid peers, transit service providers, and transit service customers are evaluated using different criteria, and how requests for and installation of upgrades of interconnection links are prioritized; (3) whether the Company seeks to augment capacity when interconnection links reach a certain level of

utilization (i.e., 70% utilization) and if so, where that level is set; and (4) the costs, processes, and length of time involved in provisioning additional capacity, including a description of, and how the Company determines, which party should bear which costs;

- c. any metrics that the Company uses in order to determine whether to upgrade or downgrade an interconnection (e.g., maximum acceptable network utilization or congestion, maximum acceptable packet loss, port availability, bandwidth capacity at particular points, latency, etc.), including what metrics are gathered and what measurement intervals are used; and
- d. any criteria by which the Company chooses a particular type of upgrade or downgrade (e.g., addition or subtraction of an interconnection site, or addition or subtraction of capacity at an existing site).

55. Identify each instance when a settlement-free peer requested augmentation of interconnection capacity that you did not implement within 90 days and describe the reasons for not augmenting capacity.

56. List all instances where the Company refused to upgrade an interconnection link or links for the 25 largest networks — measured by maximum capacity usage measured using the industry standard 95th percentile method — that interconnect with the Company, including: (i) the dates of the upgrades or downgrades; and (ii) the amount of capacity requested.

57. For your 25 largest interconnection partners by traffic volume, provide a complete copy of all paid peering and transit service invoices for services provided from December 31, 2012, through June 30th, 2015. If invoices are provided for a combination of services (e.g., transit service and paid peering), provide an itemized version of each invoice, or explain in detail how the total invoice amount is allocated across services. Submission for the Request should be submitted separately from any document load file and be in an OCR searchable PDF and the invoices should be organized by interconnection partner.

58. Describe, and provide and identify documents sufficient to show:

- a. the number of individuals employed by the Company to sell interconnection service (“interconnection sales people”);
- b. the job description of an interconnection sales person, including a copy of their work plan;
- c. the manner in which interconnection sales people are compensated, including whether it involves a sales-based bonus and how any bonuses are calculated;
- d. the manner in which interconnection sales people’s performance, either individually or as a whole, is evaluated;
- e. the content of a performance review for an interconnection sales



person;

- f. whether interconnection sales people have individual or collective sales targets, and if so, how those targets are measured;
- g. the amount of sales based compensation paid to you interconnection sales people in total and on average per sales person for each quarter;
- h. any planned modifications to the sales or other metric targets for your interconnection sales people; and
- i. whether the Company has plans for hiring additional interconnection sales people and if so, estimates on hiring growth.

59. Describe the Company's existing or planned CDNs, including, for each CDN, a description of whether the CDN is for internal use by the Company (and if so, how) or for sale to or use by third parties. For CDNs sold or offered for third party use, describe the products and services the existing CDN provides or any planned CDN would provide. Identify documents sufficient to show the policies and procedures with respect to the operation of the CDN, business plans, expansion plans, budget sales, forecasts, costs and profits, and analyses of the CDN market, competition or competitors.

60. Describe, and identify and produce documents sufficient to show, the Company's post-transaction plans for interconnection agreements between the Company and interconnection partners in the following situations:

- a. when Charter or TWC has a transit services agreement and the other has a peering agreement, which agreement New Charter will proceed under;
- b. when either Charter or TWC has a peering agreement or a transit services agreement and the other has no interconnection agreement, whether New Charter will apply the existing interconnection agreement for the full network; and
- c. when New Charter has no interconnection agreement with a major network (i.e., Tier 1 backbones, major CDNs), whether New Charter will seek new interconnection agreements and under what peering policy or terms.

61. Describe, and produce and identify documents sufficient to show, the reasons for (a) modifying your "Private Settlement Free Peering Policy and Requirements" in July 2015, including the reasons for lowering the minimum traffic volume that must be maintained in the dominant direction; and (b) adopting the document titled "Charter Communication's IP Interconnection Policy and Requirements." Include in your answer the identity of all persons that you consulted, or with whom you negotiated, regarding the "Charter Communication's IP Interconnection Policy and Requirements" or the modifications to the "Private Settlement Free Peering Policy and Requirements." Produce all documents related to both the July 2015 modifications to your "Private Settlement Free Peering Policy and Requirements" and the

document titled “Charter Communication’s IP Interconnection Policy and Requirements” attached to Charter’s July 15, 2015 *ex parte* filing, including:

- a. documents containing communications with other persons, including but not limited to Internet backbone services providers, transit service providers, edge providers, CDN service providers, consultants, and your agents; and
- b. studies, forecasts, surveys, analyses, business plans, and strategy documents.

62. The “Charter Communications IP Interconnection Policy and Requirements” attached to Charter’s July 15, 2015 *ex parte* filing states that for potential interconnection partners to qualify under the Policy, they “must interconnect at each of the Charter points of presence (each a “POP”) listed below and at any additional Charter POP within 90 days of the establishment of such new POP.”

- a. Identify the POPs where New Charter’s interconnection partners will be required to interconnect in order to qualify;
- b. Describe whether and how the TWC and Bright House POPs will be added to the list of POPs where an interconnection partner must interconnect with New Charter in order to qualify; and
- c. Explain what the requirements for interconnection under the policy will be in situations where there is more than one POP in a city or other geographic location. In such cases, explain whether the interconnection partner must, in order to qualify, interconnect at each POP or at only one of the POPs and whether the interconnection partner must deliver 3 Gbps to each of the multiple POPs, or whether the traffic shows the Company’s minimum can be met on a per city or other geographic location basis.

63. Identify:

- a. all persons that, as of July 1, 2015, qualified for settlement-free peering under the Company’s “Private Settlement Free Peering Policy” in effect prior to July 1, 2015 and the POPs at which they interconnected as of that date;
- b. all persons that, as of July 16, 2015, qualified for settlement-free peering under the Company’s updated “Private Settlement Free Peering Policy” in effect on or after July 15, 2015 and the POPs at which they interconnected as of that date;
- c. all persons that qualify for free interconnection or settlement-free peering under your “IP Interconnection Policy” attached to your *ex parte* filing of July 15, 2015 if it was put into force as of the date of this IR; and
- d. all persons listed in response to (b) that are not listed in response to

(c), and explain each reasons why each person would not qualify for free interconnection under the “IP Interconnection Policy.”

64. Describe, and identify and produce documents sufficient to show, the Company’s post-transaction interconnection plans for its 25 largest interconnection partners by traffic volume. For each such interconnection partner, explain in detail:

- a. whether the plans increase or a reduce the partner’s interconnection capacity, concluding capacity through: (1) settlement- free peering; (2) paid peering, or (3) transit services, and the periods during which such reductions or increases are expected to occur; and
- b. the IP points of presence where the interconnection partner interconnects with you today and where you expect it will interconnect with you post-merger, and the time periods over which such changes are expected to occur.

65. Produce all documents and databases from which data was provided to, reviewed by, relied upon, or referred to by Dr. Fiona Scott Morton in her declaration.

66. Dr. Scott Morton states, “It is likely that some of the OVD services are complements to traditional video services for many subscribers, not substitutes. The ability to watch past seasons of a series, for example, can spur a subscriber’s demand to view the current season.” June 24, 2015 Scott Morton Declaration at ¶ 58. Dr. Scott Morton notes findings that “consumers are not currently substituting traditional television for Netflix.” *Id.* Identify each OVD service that is a complement to traditional video service. Identify each OVD service that is a substitute for traditional video service. Describe in detail, and provide all documents relating to, whether and the extent to which online video services that offer significant current season content, including but not limited to Hulu (free service and subscription service), Amazon Instant Video, CBS All Access service, DISH Network’s Sling TV service, HBO Now, Netflix, and Sony Entertainment Network’s Vue service, are substitutes for, or complements to, the Company’s video services. Describe in detail, and provide all documents relating to, whether, and to the extent which, online video services that offer bundles of live channels (e.g., DISH’s Sling TV, Sony’s Vue) compete against your video services or other MVPD’s video services.

67. Explain, and provide and identify all documents, studies, surveys, forecasts, or estimates that substantiates the claim on page 12 (paragraph 37) of the Dr. Scott Morton Declaration that “each firm’s profitability and future success depends far more on its broadband business than its video business.”

68. Explain in detail the claim made in the Dr. Scott Morton Declaration that New Charter would be willing to use its “broadband business” to promote OVDs and other edge providers given the potential impact on the Company’s video business and identify all documents, studies, surveys, forecasts, or estimates that Dr. Scott Morton relied upon to reach the claim.

69. Provide all the underlying data, spreadsheets, calculations, and explain any assumptions necessary to obtain the figures on page 15, Table 4 of the Dr. Scott Morton

Declaration.

70. With respect to the survey of subscribers mentioned on page 22 (paragraph 52) of the Dr. Scott Morton Declaration:

- a. provide all documents relating to, and a copy of, the survey;
- b. separately describe and produce all documents relating to:
  - (i) the design (including sampling methodology and the procedures used to ensure a lack of bias);
  - (ii) all questions posed to survey respondents; and
  - (iii) all individual responses and the full results of the survey (including response rate);
- c. describe: (i) who conducted the survey; (ii) how the survey was conducted; (iii) how often the survey was conducted; and (iv) why the survey was conducted; and
- d. provide copies of any similar, periodic, or routine customer surveys conducted by the Company in the past.

71. Provide and identify documents, studies, surveys, or estimates sufficient to substantiate the claim on page 23 (paragraph 55) of the Dr. Scott Morton Declaration that “[a]n OVD foreclosure strategy that would blemish a broadband provider in the eyes of consumers would also reduce the demand for its broadband service from new customers, and would lead to less broadband growth.” Explain whether this claim applies to the Company. If the claim is applicable to the Company, please explain why and to what extent the claim is applicable to the Company.

72. Produce all documents relied upon or referred to in the Declaration of Christopher L. Winfrey.

73. The Winfrey Declaration at page 3 (paragraph 8) states that New Charter will increase base speed tiers to “Charter’s current standard minimum of 60 or 100 Mbps at uniform pricing in Time Warner Cable and Bright House territories.” Provide the following:

- a. the number of the Company’s customers that have access to 60 Mbps broadband download speed and where they are located, how many have access to a speed of 100 Mbps and where they are located, and how many customers do not have access to at least 60 Mbps and where they are located;
- b. a description, and provide and identify documents sufficient to show what is meant by the term “uniform pricing” and how such a pricing system differs from the current pricing systems of TWC and Bright House;
- c. a description, and provide and identify documents sufficient to show, the Company’s pricing strategy for stand-alone broadband,

bundled and triple-play services for 2011, 2012, 2013, 2014, 2015;

- d. a description, and provide and identify documents sufficient to show, the rationale for changing the Company's pricing strategy as noted on page 18 of Charter's SEC Form 10-K for the year ending December 31, 2012;
- e. a description, and provide and identify documents sufficient to show, the benefits of the 2012 pricing change, whether the Company's pricing policy would apply across New Charter and why applying this policy across New Charter would be a benefit.

74. At page 27, the Application asserts that New Charter will make wireless a larger piece of its broadband strategy by establishing "widespread, consumer-friendly out-of-home Wi-Fi networks." Paragraph 15 of the Winfrey Declaration states that "New Charter also will evaluate the merits of leveraging in-home routers as public Wi-Fi access points and will have greater resources to devote to such a strategy." Describe and explain in detail, and identify documents that support and demonstrate:

- a. the Wi-Fi technology you plan to deploy and provide the number of in-home and the number of out-of-home Wi-Fi access points and their locations — in .csv format — by census block and latitude and longitude;
- b. your plans both with and without the transaction to expand both in- and out-of-home Wi-Fi access points, including your coverage and capacity objectives;
- c. how the transaction will allow New Charter to invest more efficiently in the technology and infrastructure to support delivery of a Wi-Fi network;
- d. how construction of your Wi-Fi network will enable New Charter to make wireless a larger piece of its broadband Internet access service strategy;
- e. why, and to what extent, leveraging in-home routers as public Wi-Fi access points is a benefit and will be part of New Charter's Wi-Fi network;
- f. whether and why New Charter would have "greater resources to devote to such a strategy;"
- g. the services and products against which New Charter's Wi-Fi access points will compete, including the identity of New Charter's largest anticipated competitors.

75. Applicants assert that the post-transaction scale and more geographically aligned footprint will create increased opportunities for advertising customers to address broader regional audiences on multiple screens, and improve the business case for investment in developing more advanced advertising services, such as addressable advertising and dynamic ad

insertion. Describe and explain in detail and identify documents that support and demonstrate:

- a. how and to what extent “advertisers that want to reach subscribers spanning a combination of Charter, TWC, or BHN” will benefit by the transaction, including their estimated savings or benefits;
- b. how and to what extent “advertisers that want to reach subscribers spanning a combination of Charter, TWC, or BHN” do not contract with you because of the transaction costs associated with buying advertising from “two or three cable MSOs” instead of a “single MSO”;
- c. how and why the transaction will increase opportunities for advertising customers, including whether the transaction will increase the total number of avails or number of avails per hour;
- d. how and why the alleged opportunities for advertising customers to address broader regional audiences on multiple screens and improvements in advanced advertising is a transaction specific benefit as compared to other options, such as partnering, participating in advertising interconnects, or other coordinated advertising efforts; and
- e. whether and how, as a result of the transaction, New Charter will reduce its participation in advertising interconnects or NCC Media, or reduce the number or proportion of avails it will contribute to interconnects and if so to what extent.

76. Produce all documents (except engineering and architectural plans and blueprints) discussing any plans of the Company or any other person for the construction or deployment of new facilities or equipment, closing of existing facilities, or the expansion, conversion or modification (if such modification has a planned or actual cost of more than \$1 million) of current facilities for providing each relevant service in each relevant area.

77. Describe and explain in detail and provide all documents relating to the effect of the proposed transaction on the Company’s investment of resources in communications security and the Company’s existing cybersecurity technologies and practices, including:

- a. the extent to which the proposed transaction would improve service quality and management of communications security and reliability risks in general;
- b. whether, and to what extent, the combined entity plans to utilize the National Institute of Standards and Technology (NIST) Framework for Improving Critical Infrastructure Cybersecurity;
- c. cybersecurity risk management challenges and improvements associated with the transaction, including combining network infrastructure, enterprise risk management functions, procurement processes, and communications security personnel; the current

states and target states of cybersecurity risk management; and present cybersecurity gaps, and any actions, policies, and timeframes identified to close the gaps;

- d. the methods and technologies the combined entity will use to enable real-time awareness of cyber risk across its combined network; and
- e. how the combined entity will enhance communications security for its own customers and for the overall broadband ecosystem, including but not limited to the performance, integrity, and reliability of public safety communications imperatives that may rely on its networks or applications, such as E911, NG911, text-to-911, and emergency alerts.

78. Describe and provide all documents relating to the following statement on Page 28 of the Application: “New Charter also will evaluate the merits of leveraging in-home routers as public WiFi access points and will have greater resources to devote to such a strategy” including:

- a. the Company’s existing privacy and security policies and practices for its customers, routers in its customers’ homes, and the impact using in-home routers as public Wi-Fi access points would have on those policies and practices;
- b. what data would be collected from users of New Charter’s Wi-Fi network, what data, if any, would be retained, and how such data would be secured;
- c. whether any user data would be made available to third parties or advertisers, and if so under what conditions;
- d. what notice (including when and how notice is provided) would be provided to users regarding use of their information, and how users would be notified in the event their data is improperly accessed; and
- e. what consent (including when and how such consent will be obtained) would be required for use of user information; and what privacy policy would cover user information.

79. Produce:

- a. all documents, data, spreadsheets, models, and underlying assumptions relating to the Transaction’s potential cost savings, efficiencies, synergies, or benefits;
- b. all documents relating to any communications between any employee of the Company and any other person with respect to

- any potential cost savings, efficiencies, or synergies; and
- c. all documents provided by any other person to the Company relating to any such potential cost savings, efficiencies, or synergies.

80. Describe in detail, and provide and identify the documents that are sufficient to support and demonstrate: 1) the basis for the cost reductions claimed in Charter’s July 10, 2015 ex parte letter; 2) any analysis that the Company or its agents conducted to estimate the programming cost savings that will result from the transaction, and are claimed as merger-specific benefits; and 3) whether, when, and how reductions in video programming costs will be passed through to consumers in the form of lower subscription prices.

81. Applicants assert at pages 39-40 of the Application that “the value of the mass market advertising to New Charter increases as New Charter’s geographic coverage within a DMA increases... and [that] this increased advertising intensifies competition with rivals and benefits consumers.” Describe and explain in detail and identify documents and data that support and demonstrate:

- a. your current mass market advertising spend including the spend in each DMA;
- b. on a DMA-by-DMA basis how the transaction will change the mass market advertising spend;
- c. on a DMA-by-DMA basis, how the transaction will change the waste associated with your mass market advertising spend, including the dollar value of the waste; and
- d. your business plans and strategy for mass market advertising campaigns across your footprint and in each DMA.

82. Describe and explain in detail and provide documents that support and demonstrate the following:

- a. gross margins and average margins on video; margins on broadband; and margins on voice; and
- b. how you allocate costs for shared infrastructure among those services.

83. Describe and explain in detail, and produce and identify documents that support and demonstrate — including the Company’s current total number of call center and field technician operators — that as a result of the transaction New Charter will be able to “create thousands of U.S.-based jobs” by: (a) hiring for customer service call centers and field technician operations located throughout the country; and (b) returning Time Warner Cable call center jobs to the U.S.

84. Describe and explain in detail and identify documents that support and demonstrate the Company’s plans for embracing Time Warner Cable’s commitment to diversity and inclusion in corporate governance, employment services, procurement and community



partnerships, including, but not limited to, increasing Charter's engagement with minority, women, veteran and disabled-owned businesses that can supply it with the high quality materials and programming its customers demand.

85. Provide one unredacted copy of each Hart-Scott-Rodino 4(c) document and submit and identify all documents analyzing, estimating, justifying, providing the basis for, or otherwise discussing: a) the summary of synergies assumptions as stated in HSR 4(c)-7; and b) the estimates of programming cost savings as stated in HSR 4(c)-11.

86. Identify, describe and explain in detail, and identify documents that support and demonstrate for each of the claimed efficiencies, savings, new and improved products and synergies that are projected by the Applicants to result from the proposed transaction. These synergies included but are not limited to transitioning TWC's and BHN's cable systems to all digital, increasing speeds as a result of transitioning to digital; marketing services that are consistent with Charter's current package and pricing strategies; making available a broadband program to low-income consumers; and the continued expansion of TWC's 300 Mbps service. Submit a timeline for when these efficiencies or savings will be generated and recognized by the Company.

87. To the extent the Applicants contend that the proposed transaction will result in variable or marginal cost savings, describe and explain in detail and identify documents that support and demonstrate:

- a. for each variable or marginal cost saving, why it should be considered a variable or marginal cost saving and provide the dollars per year and the dollars per subscriber per year savings;
- b. New Charter's plans to pass through any variable or marginal cost savings from the transaction to consumers; and
- c. the extent that Charter has passed through past changes in similar marginal costs.

88. The Applicants contend that the proposed transaction will result in fixed cost efficiencies describe and explain in detail and identify documents that support and demonstrate:

- a. for each fixed cost saving, why it should be considered a fixed cost saving, whether it is a one-time or a recurring fixed cost savings, and provide the estimated fixed cost saving; and
- b. identify and explain each new investment, product, or service the savings will allow New Charter to undertake.

89. Describe and explain in detail and identify documents that support and demonstrate any investments that:

- a. the Company currently plans to undertake and how, if at all, the increased scale will allow New Charter to undertake and accelerate these investments. Provide the original timeline and the accelerated

time line for each investment.

- b. the Company has delayed or canceled because it lacked a subscriber base large enough to support or justify the investment, and how the increased post-transaction scale will allow New Charter to undertake these investments. Provide the timeline for each of these investments by New Charter.

90. For each efficiency, synergy, cost-savings, or benefit you identify in response to these Requests, describe, explain, and produce and identify documents sufficient to show: (a) each alternative to the transaction by which the Company considered to achieve any of the claimed efficiencies, synergies cost-savings, or benefits; and (b) why the Company could not achieve that efficiency without the transaction.

91. For each new or improved product or service that the Company claims it will be able to offer as a result of the proposed transaction, describe and explain in detail and produce all documents on the amount the Company will need to invest and spend to provide the new or improved product or service, identifying each element of the cost and expenditure, including but not limited to, research, development, licensing fees, equipment and manufacturing costs.

92. Describe and explain in detail and provide all documents regarding:

- a. your investment in the Spectrum Guide and the Worldbox CPE;
- b. how Charter “validated internally” the capability to run the Spectrum Guide over other equipment;
- c. any plans to sell, provide, or license the Spectrum Guide to other persons or on any other person’s platform or CE device;
- d. any plans to sell, provide, or license the Worldbox to other persons;
- e. any plans to integrate Spectrum Guide and the Worldbox CPE post-merger to TWC and Bright House subscriber households on their legacy equipment;
- f. any cost savings or more efficient customer service from deploying your cloud computing systems such as Worldbox, particularly by eliminating the need for technicians to install equipment and software; and
- g. how the transaction will spur innovation in the further development of consumer devices such as set-top boxes, and of cloud computing services and products; and whether such innovations would be possible absent the transaction.

93. Describe and explain in detail the anticipated advanced mobile application referenced in paragraph 14 of the Winfrey Declaration, including its features, and the benefits and negatives of each feature. Identify and describe the “best features” from each Applicant’s current application that would be included in the new mobile application. Describe and explain

in detail how the transaction will affect the development and deployment of this mobile application. Identify documents that support and demonstrate your response.

94. Describe in detail, and identify documents that support and demonstrate: which multi-location businesses New Charter will be able to provide business services to that it would have been unable to serve prior to the transaction. In your description, please provide detailed information about the scale or characteristics of these potential customers, by geographic unit (such as DMA or MSA) or by each individual business, such as: revenues, proportion of the market, and how revenues that could be earned from the potential customer(s) compare to the Company's total business services revenues.

95. Describe and explain in detail, and identify documents that support and demonstrate how the transaction will "facilitate increased investment in enterprise capabilities, including the investment of "at least \$2.5 billion in the build-out of networks into commercial areas within [New Charter's] footprint beyond where [you] currently operate," and describe how those plans differ from your investment plans made prior to the transaction.

96. In paragraph 18 of the Winfrey Declaration it states that the New Charter would be able to attract a "top-tier research and development team" post-transaction. Describe and explain in detail and identify that support and demonstrate:

- a. why New Charter's current research and development team is not "top-tier;"
- b. your plans, including estimated costs, for recruiting and hiring research and development employees and expanding your research development team post-transaction; and
- c. Charter's current ability to contract or partner with a third party with the capabilities to conduct high quality research and development.

97. On pages 20-21 of the Application, the parties state that "Consumers and shareholders alike are best served by a business strategy that seeks to increase the reach, speed, reliability, and consumer-friendliness of broadband offerings. New Charter will continue Charter's pursuit of that strategy after the merger..."

- a. Describe how Charter defines and measures service reliability. Based on that definition and measure, describe the current status of Charter's service reliability.
- b. Describe how New Charter will define and measure service reliability after the merger, and the effects that definition and measure will have or is likely to have on service reliability.

98. Recent trade press articles have alluded to Charter's entry into the mobile wireless space. Explain and discuss in detail and provide all supporting documents to show how, or whether, this current transaction effects New Charter's entry into the mobile wireless service space.

99. On page 28 of the Application, the parties state that "New Charter also will

evaluate the merits of leveraging in-home routers as public WiFi access points and will have greater resources to devote to such a strategy.” Provide all documents discussing the conversion of in-home routers to dual-purpose public WiFi access points, and if such a strategy is implemented describe and explain in detail and identify and provide documents sufficient to show:

- a. how you will ensure customer security and privacy;
- b. the impact this plan would have on subscriber power consumption and service reliability;
- c. how New Charter will maintain a separation between the public and private functions of in-home routers;
- d. how New Charter will prevent in-home service degradation in cases of heavy demand for public WiFi;
- e. the potential liability issues for the in-home subscriber if the public side of a home router becomes compromised, including law enforcement access to homes with compromised routers;
- f. how New Charter would prioritize private use by the customer over public use and how this would be done;
- g. how New Charter would protect its customers’ in-home routers from malicious activity and service degradation;
- h. how New Charter customers would be informed of this plan, including whether they will be able to opt out;
- i. the potential benefits, including subscription discounts and other customer rewards, to New Charter’s in-home subscribers whose home routers are dual-purposed as public WiFi access points; and
- j. whether home routers have sufficient security to be dual-purposed as public WiFi access points.

100. Produce all documents (except documents solely relating to environmental, tax, human resources, OSHA, or ERISA issues) relating to the proposed transaction and provide:

- a. a timetable for each transaction, a description of all actions that must be taken prior to consummation of each transaction, and any harm that will result if the transactions are not consummated;
- b. a description of (including the rationale for, and identification of all documents directly or indirectly used to prepare the Company’s response to this sub-part) all plans for changes in the Company’s operations, structure, policies, strategies, corporate goals, financing, business, officers, executives or any other area of corporate activity as a result of the transaction; and
- c. a description of any other terms or conditions of the transaction

that are not reflected in the transaction agreements between the parties.

101. Produce all vertical foreclosure analysis, or other vertical competitive effects analysis, econometric modeling, or similar analyses, including those regarding market concentration or pricing, that have been undertaken by the Company or any consultant or expert hired by the Company to analyze the effect of either the proposed Transaction, or any product or service, including all documents and data used in these analyses.

102. Produce all documents relating to the effects of geographic rationalization or clustering with respect to the operation of cable systems and the provision of programming, advertising, broadband Internet access, network interconnection, or other services on such cable systems. Describe how geographic rationalization or clustering enabled by the transaction will affect competition, your costs, the products and services New Charter will offer, and any pass through to consumers of any anticipated cost savings.

103. Provide a list of all of the Company's terms and code words used to refer to the transaction, the Applicants, AT&T's acquisition of DIRECTV, Comcast's proposed acquisition of Time Warner Cable, Charter's prior proposed acquisition of Time Warner Cable, Charter's prior proposed acquisition of Bright House, the proposed swaps between Charter and Comcast, and the transactions associated with, and the creation of, the entity to be named GreatLand Connections.

104. Provide a list of all of the agreements reference in Section 5.18(a) of the Agreement and Plan of Mergers, which was attached as Exhibit B to your merger application. For each agreement listed, indicate whether the agreement has been provided to the Commission (and if so as a part of what submission) or to the Securities and Exchange Commission ("SEC") (and if so as a part of what SEC submission).

105. Describe in detail the Company's plans to migrate TWC and Bright House subscribers acquired as a result of the proposed transaction, including but not limited to:

- a. a projected timeline for the transition of all the acquired customers on to new video, voice, data or bundled plans, to all-digital format, and to a minimum of 60 Mbps download speeds;
- b. all projected expenses related to the integration and transition of TWC and Bright House systems and subscribers into Charter's ecosystem;
- c. any plans for relevant services and devices necessary to access the services to be offered to the acquired subscribers, including but not limited to (1) a detailed description of the Company's plans to provide these subscribers with devices that may be used on the Company's network and any associated charges to an acquired customer who is required to acquire such a device, and (2) the service plans, bundled services and pricing to be offered to the acquired customers;
- d. any plans for the acquired customers to retain their current service

- plans and if so, the length of time the acquired customers may remain enrolled under their existing service plans;
- e. the features and services accessible from each device that will be offered to acquired customers;
  - f. any services or features that an acquired subscriber received from its previous provider that it will not be able to obtain from the Company after the consummation of the proposed TWC transaction and the proposed divestiture transactions, and plans to introduce that lost service or otherwise compensate the subscriber; and
  - g. all documents discussing customer migration and transition of the acquired customers to the Company.

106. Produce, in both (i) PDF and (ii) ESRI Shapefile format, a map showing the location of each cable system owned by, operated by, managed by, or attributed to the Company.

107. Identify, as of June 30, 2012, December 31, 2012, June 30, 2013, December 31, 2013, June 30, 2014, December 31, 2014 and June 30, 2015, each cable system owned by, operated by, managed by, or attributed to the Company, and for each cable system identify the nature of the Company's interests, and state and identify the following in CSV format files:

- a. the Company's data as specified in Attachment A, which seeks data relating to geographic identifiers associated with each cable system;
- b. the facilities-based competing providers of Internet access service and MVPD service (excluding private cable and wireless cable operators), separately identified by service and provider, and the distribution technology used by the competing provider (e.g., wireless, fiber optic cable, hybrid fiber optic cable, or satellite) for each zip code served;
- c. internal estimates of the percentage of homes passed that are overbuilt by any facilities-based competing provider of MVPD service and Internet access service separately for each such competing provider;
- d. the total capacity and the total unused capacity of each of the Company's cable systems by (i) MHz and the spectrum allocated to each cable service and any other service, and (ii) the number of non-broadcast programming networks;
- e. the headends serving each cable system, their physical locations, and the number of subscribers to each Cable Service served by each headend; and
- f. the channel lineups associated with each channel lineup identifier

provided in Request 107(a).

108. For each zip code identified in Request 107(a) and for the Company as a whole, separately for residential subscribers, bulk residential, and non-residential subscribers, and for each month for the period beginning June 2012 through August 2015 provide the following:

- a. the Company's data as specified in Attachment B, which seeks subscriber data relating to each of the Company's service plans;
- b. a complete description of all services that were included in the Company's response to the "Monthly Recurring Revenue" (MRR), "Monthly Recurring Core Service Plan Revenue", and "Monthly Recurring and Non-Recurring Revenue Per Subscriber" (ARPU) fields in the "Service Plan" table provided for subpart (a);
- c. the Company's data as specified in: i) Attachment C.1, which seeks data relating to subscriber counts; ii) Attachment C.2, which seeks data relating to disconnects; iii) Attachment C.3, which seeks data relating to new connects; iv) Attachment C.4, which seeks data relating to continuing subscribers; v) Attachment C.5, which seeks data relating to Internet Access Service tier transitions; vi) Attachment C.6, which seeks data relating to sidegrades; vii) Attachment C.7, which seeks data on long-run customer behavior; viii) Attachment C.8, which seeks data relating to churn by tenure; and ix) Attachment C.9, which seeks data relating to recent downgrades; and
- d. a description of the main types of disconnects that are included in each of the four categories of disconnects – mover, voluntary, non-payment, and all other – reported in Attachment C.2 and an explanation of the methodology the Company uses to estimate the number of disconnects in each category, including a discussion of the extent to which the Company is unable to obtain information on the reason for the disconnect and how the disconnect is classified in such cases.

109. For each zip code identified in Request 107(a) and for the Company as a whole, separately for each VOD service (Subscription, Free, Transactional, Pay-Per-View) and for each month for the period beginning June 2012 through August 2015, state and provide the following:

- a. the Company's data related to VOD as specified in Attachment D; and
- b. in a separate CSV format file, for each VOD service, and for each month for the period beginning June 2012 through August 2015: (1) the total revenues; (2) the total cost of video programming distribution rights; (3) the total number of hours viewed; (4) the price of the service and a description of all discounts or promotions that were in effect; and (5) the percentage of the Company's

MVPD subscribers that view video programming via the service.

110. For video programming that the Company obtained from another person, separately for each month from June 2012 through August 2015, provide the following:

- a. the Company's video programming data as specified in Attachment E; and
- b. in a separate CSV format file, the name and genre of video programming produced by any person that the Company chose not to obtain and the reasons(s) why the Company chose not to carry the network.

111. Provide the Company's internet traffic exchange data as specified in Attachment F.

112. For all non-broadcast programming networks distributed on a national basis in which the Company or an officer, director, or executive of the Company, holds an attributable Interest or distribution rights, please provide:

- a. a complete description of the nature of the attributable interest or distribution rights in the programming network held by the Company, or any officer, director or executive of the Company;
- b. an economic analysis of the effect of the proposed transaction on the merged entity's incentive to permanently withhold these nationally-distributed programming networks from MVPDs and OVDs;
- c. an economic analysis of the effect of the transaction on the merged entity's ability and incentive to raise prices of this nationally-distributed programming to MVPDs and OVDs;
- d. a detailed description of the methodology employed in subparts (b) and (c) as well as the underlying data and documents used to determine the various parameters, including but not limited to: critical departure rates; empirical estimates of actual departure rates; evidence regarding the likely value of estimated departures rates in this transaction; the profit margins on different bundles of services; subscriber counts; the profit margin on the average subscriber that would be induced to switch from a rival to the Company if the programming were withheld from the rival; programming fees; programming costs; subscriber counts and shares; per-subscriber license fees, per-subscriber gross and net advertising revenue, departure rates, diversion rates, and churn rates; and
- e. in a CSV format file, separately for each national network, and separately for each month beginning June 2012 and through August 2015, state and provide the following: total monthly



advertising revenues, the total monthly advertising costs, and total monthly affiliate fee revenues by MVPD.

113. For each month in which usage-based pricing was in effect, and for each zip code identified in the Company's response to Request 108(a), and monthly for one year before and one year after usage-based pricing was in place, please provide the subscriber data for plans that included Internet Access service:

- a. the Company's usage based pricing data as specified in Attachment G.

114. For each market region identified in Request 107(a) and for the Company as a whole, separately for residential subscribers, bulk residential, and non-residential subscribers, and for each month for the period beginning June 2012 through August 2015, provide the following:

- a. the Company's data as specified in Attachment H, which seeks data relating to non-advertising revenues by Bundled Services;
- b. the Company's data as specified in Attachment I, which seeks data relating to Cable Services costs and advertising revenues;
- c. a complete and detailed description of the revenue elements the Company includes in each of the following categories of revenues reported in Attachments H and I: MVPD advertising revenues; Internet Access Service advertising revenues; total non-advertising revenue; recurring non-advertising revenue; and non-recurring non-advertising revenue; and
- d. a complete and detailed description of the cost elements that the Company includes in each of the following categories of costs reported in Attachment I: total programming cost; total MVPD advertising cost; total Internet Access Service advertising cost; variable cost of providing MVPD service other than programming cost and advertising cost; variable cost of providing Internet service other than advertising cost; and variable cost of providing phone service.

115. Provide all Company documents that employ, discuss or calculate customer lifetime value ("CLV") or any other concept related to the present discounted value to the Company of acquiring a new customer for any Bundled Service.

116. State and describe in detail the Company's most current and best estimate of CLV or present discounted value to the Company of acquiring a new customer for each Cable Service or Bundled Services, including a description of how the calculations were performed. Provide all data that the calculations are based upon and programs used for the calculations.

117. Table 4 in Professor Fiona Scott Morton's Declaration of the Application (Exhibit D) provides estimates of the average revenue per user, average gross margin, and average variable cost for TWC, Charter and Bright House, for MVPD Service, Internet Access Services

and Telephone Service to residential customers. Please provide:

- a. all source documents, data and code relied on or produced by Professor Fiona Scott Morton;
- b. an explanation for whether the calculations in Table 4 are for primary residential subscribers, bulk residential subscribers, or all subscribers as a whole, and the time period for which the calculations are relevant;
- c. provide a revised version of Table 4 that disaggregates average video revenue per user into average advertising revenue per user and average non-advertising revenue per user and disaggregates average video variable cost per user into average advertising cost per user and average non-advertising cost per user, provide a complete and detailed explanation of these additional figures were calculated and all source documents and data used to derive them;
- d. a complete and detailed description of the cost elements included in the category “other variable costs” from Table 4 of the Scott Morton Declaration and an explanation of why these are the appropriate cost elements to include in this category;
- e. a complete and detailed description of the various cost elements that are included in the category “variable cost of broadband service” from Table 4 of the Scott Morton Declaration and an explanation of why these are the appropriate cost elements to include in this category;
- f. a complete and detailed description of the various cost elements that are included in the category “variable cost of phone service” from Table 4 of the Scott Morton Declaration and an explanation of why these are the appropriate cost elements to include in this category; and
- g. an explanation for why these estimates are the Company’s best current estimates of average revenue per user, average gross margin and average variable cost for the Company’s MVPD services, Internet Access services and Telephone services to residential customers, or provide an analysis that presents the Company’s current best estimates, including a detailed explanation of how the estimates were derived and all source data and documents used in any additional.

118. For each relevant service, identify each electronic or other database or data set used or maintained by the Company at any time after January 1, 2012, without regard to custodian, that contains information concerning the Company’s (i) sales; (ii) prices; (iii) margins; (iv) costs, including but not limited to, programming costs, distribution costs, standard costs, expected costs, and opportunity costs; (v) patents or other intellectual property; (vi) research or

development projects; (vii) licensing of video programming; (viii) customers; and (ix) network performance, to the extent such customer information is not provided in response to other Requests elsewhere in the document. For each such database, identify (a) the database type, i.e., flat, relational, or enterprise; (b) the size in both number of records and bytes of information; (c) the fields, query forms, and reports available or maintained; and (d) any software product or platform required to access the database.

119. Provide one copy of (and identify the Bates number of) each agenda, summary, or minutes of any meeting of the board of directors of the Company, and one copy of each presentation or other document provided to the board (except documents solely relating to environmental, tax, human resources, OSHA, or ERISA issues).

120. Produce in Excel format, a chart listing the identity of each document cited in or used to support your narrative responses to each of the Information and Data Requests and for each document include the Information and Data Request number(s) for which it was used.

## Definitions

The following definitions apply only to this Information and Data Request. They are not intended to set or modify precedent outside the context of this document. In this Information and Data Request, the following terms shall have the following meanings (such meanings to be equally applicable to both the singular and plural forms of the terms defined):

1. The terms “you,” “your,” “the Company” or “Charter” means Charter Communications, Inc., and its Subsidiaries.
2. The term “2010 Census Block Identifier” means a concatenation of Census 2010 state FIPS code, Census 2010 county FIPS code, Census 2010 census tract code and Census 2010 tabulation block number; see the 2010 TIGER/Line Shapefiles Technical Documentation, Chapter 5, Part 5.2 at <http://www.census.gov/geo/maps-data/data/pdfs/tiger/tgrshp2010/TGRSHP10SF1CH5.pdf> for more information.
3. The term “Acceptable Use Policy” or “AUP” refers to the Company’s policy that governs subscribers’ use of the Company’s Internet and related services and is referenced on pages 102 through 105 of the “Response of Charter Communications, Inc. to Information and Data Requests Dated August 21 and August 26, 2014” filed on September 11, 2014 in MB Docket 14-57. As of the date of issuance of these requests, the Company’s latest AUP appears here: <https://www.charter.com/browse/content/residential-aup>.
4. The term “Advance/Newhouse” means Advance/Newhouse Partnership and its Subsidiaries.
5. The term “Affiliate” means, as to any Person, any other Person that, directly or indirectly, controls, is controlled by or is under common control with such Person.
6. The terms “and” and “or” have both conjunctive and disjunctive meanings.
7. The word “any” shall be construed to include the word “all,” and the word “all” shall be construed to include the word “any.” The word “each” shall be construed to include the word “every,” and the word “every” shall be construed to include the word “each.” All words used in the singular should be construed to include the plural, and all words used in the plural should be construed to include the singular.
8. The term “Applicants” means Charter, TWC, and Advance/Newhouse.
9. The term “Attributable Interest” means: (i) for Cable Systems, any interest that is cognizable or attributable under Section 76.501 of the Commission’s Rules; (ii) for non-broadcast programming networks, any interest that is cognizable or attributable under Section 76.1000(b) of the Commission’s Rules; (3) for broadcast television stations, any interest that is cognizable or attributable under Section 73.3555 of the Commission’s Rules.
10. The term “Autonomous System” or “AS” means a connected group of one or more IP prefixes run by one or more network operators under a single and clearly defined routing policy.

11. The term “Autonomous System Number” or “AS Number” or “ASN” means a globally unique number assigned to autonomous systems, used in both the exchange of exterior routing information (between neighboring ASes) and as an identifier of the AS itself.

12. The term “Average Recurring Service Plan Revenue per Subscriber” or “ARSPR” means the average monthly revenue received from subscribers to a Service Plan, where the revenue only includes monthly recurring subscription revenue to MVPD Service, Internet Access Service and Telephone Services tiers. It should not include fees and charges associated with taxes, facilities fees, installation fees, activation charges, customer equipment fees, high definition fees, premium channels or any other add-on services. Credits such as gift cards, retention credits and other discounts related to one time payments should be amortized on a monthly basis over a one year period and deducted from the 0-12 month monthly ARSPR. For example, a \$300 gift card would reduce 0-12 ARSPR by \$25 per month.

13. The term “Bright House Networks” or “Bright House” or “BHN” means Advance/Newhouse Partnership’s subsidiary Bright House Networks, LLC and its subsidiaries.

14. The term “Broadcast Programming Network” means without limitation network Video Programming delivered simultaneously to two or more Broadcast Television Stations.

15. The term “Broadcast Television Station” means a station in the television broadcast band transmitting simultaneous visual and aural signals intended to be received by the public.

16. The term “Bundled Services” means, and information shall be provided separately for, (a) MVPD service, Internet Access Service and Telephone Services; (b) MVPD Service and Internet Access Service; (c) MVPD Service and Telephone Services; and (d) Internet Access Service and Telephone Services; or (e) any combination of, each sold as a package of services for a single price.

17. The term “Business Services” means a dedicated communications service generally marketed to enterprise or commercial customers. Business Services do not include “best efforts” services, e.g., mass market Internet Access Service such as MVPD Service or cable modem Internet Access Service. Examples of Business Services include private network services, and sophisticated managed network services, such as packages that include Internet Access Service and secure private voice and data services.

18. The term “Cable Services” means, and information shall be provided separately for (a) MVPD Service, (b) Internet Access Service and (c) Telephone Services, either purchased as a standalone service or as part of a bundle.

19. The term “Cable System” means a facility consisting of a set of closed transmission paths and associated signal generation, reception, and control equipment that is designed to provide cable service which includes Video Programming and which is provided to multiple subscribers within a community, as defined in Section 76.5 of the Commission’s rules.

20. The term “Capacity” means capacity for efficient provision of service, stated in the measure customarily used in the particular industry involved. When stating capacity, state each assumption used to calculate capacity, including the customary period over which capacity is measured, and the customary unit of time in which the service is provided. If you know of no

customary capacity measure for a service, state the maximum amount of the service that could be provided efficiently over a one month period given existing facilities, equipment and personnel.

21. The term “Charter’s Excessive Use Trial Period” means the period of time between December 2010 and January 2012 where Charter adopted or enforced the excessive bandwidth provision of Charter’s Acceptable Use Policy for residential Internet access services customers. The Company discusses this period on pages 103 through 104 of the “Response of Charter Communications, Inc. to Information and Data Requests Dated August 21 and August 26, 2014” filed on September 11, 2014 in MB Docket 14-57.

22. The term “Charter” means Charter Communications Inc., and its Subsidiaries.

23. The term “Clustering” means commonly owned or managed Cable Systems in close geographic proximity that are operated on an integrated basis through the use of common personnel, marketing, or shared use of technical facilities.

24. The term “Content Delivery Network” or “CDN” means a distributed system of servers that cache content closer to end users.

25. The term “customer” means an end user of any relevant service, as opposed to a distribution partner.

26. The term “DBS” means direct broadcast satellite.

27. The term “Designated Market Area” or “DMA” means unique, county-based geographic areas designated by The Nielsen Company.

28. The term “discussing” when used to refer to documents means analyzing, constituting, summarizing, reporting on, considering, recommending, setting forth, or describing a subject. Documents that contain reports, studies, forecasts, analyses, plans, proposals, evaluations, recommendations, directives, procedures, policies, or guidelines regarding a subject should be treated as documents that discuss the subject. However, documents that merely mention or refer to a subject without further elaboration should not be treated as documents that discuss that subject.

29. The term “documents” means all computer files and written, recorded, and graphic materials of every kind in the possession, custody, or control of the Company. The term “documents” includes without limitation, electronic correspondence, metadata, embedded, hidden and other bibliographic or historical data describing or relating to documents created, revised, or distributed on computers systems, and all duplicates of documents (whether or not identical) in the files of or in the files maintained on behalf of all directors, officers, managers or other supervisory employees, duplicates of documents in all other files that are not identical duplicate of the originals, and duplicates of documents the original of which are not in the possession, custody, or control of the Company. The term “documents” includes spreadsheets, as well as underlying cell formulae and other codes. In addition, the term “documents” includes without limitation any amendments, side letters, appendices, or attachments. The term “computer files” includes without limitation information stored in, or accessible through, computer or other information retrieval systems. Thus, the Company should produce documents that exist in machine-readable form, including documents stored in personal computers, portable computers, workstations, minicomputers, mainframes, servers, backup disks and tapes and archive disks and

tapes, and other forms of offline storage, whether on or off the Company's premises. Electronic mail messages should also be provided, even if only available on backup or archive tapes or disks. Computer files shall be printed and produced in hard copy or produced in machine-readable form (provided that Commission staff determine prior to submission that it would be in a format that allows the Commission to use the computer files), together with instruction and all other materials necessary to use or interpret the data. Unless otherwise specified, the term "documents" excludes bills of lading, invoices, purchase orders, customs declarations, and other similar documents of a purely transactional nature and also excludes architectural plans and engineering blueprints. Where more than one identical copy of a requested document exists, the Company shall only produce one representative copy.

30. The term "Edge Provider" means entities that provide content, applications, or services over the Internet, and include but are not limited to Online Video Providers, gaming companies, and Voice over Internet Protocol ("VoIP") providers that rely on the Internet to provide service..

31. The term "End User" means a residential or business customer (a private or public entity or an institution) that purchases a Relevant Service. With respect to Internet Access Service, the term "End User" means a Person who originates, receives, or otherwise interacts with information, data and content on the Internet.

32. The term "identify," when used with reference to a Person or Persons, means to state his/her full legal name, current or last known business address, current or last known telephone number, current or last known organization, and position therewith. "Identify," when used with reference to a document, means to state the Bates number, date, author, addressee, type of document (e.g., the types of document, as described above), a brief description of the subject matter, its present or last known location, and its custodian, who must also be identified. "Identify," when used with reference to an entity other than a Person, means to state its name, current or last known business address, and current or last known business telephone number. The term "identify" when used with reference to a census block means to geocode the census block using the 2010 Census Block Identifier.

33. The term "Interconnection" means the linking together of interoperable systems, and the linkage used to join two or more communications units, such as systems, networks, links, nodes, equipment, circuits and devices.

34. The term "Interconnection Agreement" means an agreement for the purchase of Transit Service, the sale of Transit Service, Settlement-Free Peering, Paid Peering, or equivalent agreements.

35. The term "Interconnection Partner" means any Autonomous System with which the Company has an Interconnection Agreement.

36. The term "Internet Access Service" means the provision to end users of connectivity to the Internet by any means, including, for instance, hybrid-coaxial, optical fiber or coaxial cable, xDSL, satellite systems, fixed or mobile wireless services, ultra-high frequency microwave (sometimes referred to as "LMDS"), or multichannel multipoint distribution services ("MMDS").

37. The term “Internet Backbone Services” means services that route traffic between Internet Access Service , other Internet Backbone Services, Edge Providers, and CDNs, and, when exchanging traffic with third-party services or networks, the exchange of traffic by means of Settlement-Free Peering, Paid Peering or Transit Service.

38. The term “Internet Traffic Exchange” means interconnection between Internet Access Service, Internet Backbone Services, Edge Providers, CDNs, and other Internet networks and services, where traffic is exchanged pursuant to an interconnection agreement or arrangement.

39. The term “IP Point of Presence” means any point where an Internet Access Service or an Internet Backbone Services interconnects, offers to interconnect, or intends to offer interconnection with other Internet networks, services or Edge Providers.

40. The term “Multichannel Video Programming Distributor” or “MVPD” means an entity, including cable operators, which is engaged in the business of making available for purchase, by subscribers or customers, multiple channels of Video Programming.

41. The term “MVPD Service” means the distribution of Video Programming or Online Video Programming by an MVPD to consumers, including but not limited to, distribution as part of a programming package or tier or on an individual basis, and distribution as part of TV Everywhere or Non-Broadband Internet Access Service Data Services, regardless of whether such programming is distributed inside or outside of the MVPD’s footprint.

42. The term “New Charter” means the Applicants’ successor company or future parent that will result from the Transactions and which is referred to in the Applicant’s Public Interest Statement.

43. The term “Non-Broadband Internet Access Service Data Services” means services that share capacity with Internet Access Service over providers’ last-mile facilities.<sup>1</sup>

44. The term “Non-Broadcast Programming Network” means without limitation network Video Programming delivered directly to MVPDs, whether delivered in standard or high definition.

45. The term “Online Video Programming” means Video Programming that is intended for distribution by means of the Internet or other IP-based transmission path.

46. The term “Online Video Distributor” or “OVD” means any entity that provides Video Programming by means of the Internet or other IP-based transmission path provided by a

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<sup>1</sup> See *Protecting and Promoting the Open Internet*, Report and Order on Remand, Declaratory Ruling, and Order, FCC 15-24, 30 FCC Rcd 5601, 5611, ¶ 35 (2015); see also 47 C.F.R. Section 8.2(a) (defining Broadband Internet Access Service as “a mass-market retail service by wire or radio that provides the capability to transmit data to and receive data from all or substantially all Internet endpoints, including any capabilities that are incidental to and enable the operation of the communications service, but excluding dial-up Internet access service. This term also encompasses any service that the Commission finds to be providing a functional equivalent of the service described in the previous sentence, or that is used to evade the protections set forth in this part.”).



person other than the OVD. Unless otherwise stated, an OVD does not include an MVPD inside its MVPD footprint or an MVPD to the extent it is offering Online Video Programming as a component of an MVPD subscription to customers whose homes are inside its MVPD footprint.

47. The term “Paid Peering” is peering in which one peer pays another for the exchange of traffic. Paid peering is sometimes referred to as “Non Transit” interconnection.

48. The term “Pay Per View” or “PPV” means a service that allows MVPD subscribers, for an additional fee, to order individual programs, generally live event programming.

49. The term “Peer” means a Person who is a party to a peering arrangement.

50. The term “Peering” means an interconnection arrangement between Persons, pursuant to which Internet traffic is exchanged between Persons and their customers, however, there is no Transit Service through networks to other Peers or Transit Service providers.

51. The term “Person” includes the Company, and means any natural person, corporate entity, association, partnership, joint stock company, trust, unincorporated association, joint venture, limited liability company or other entity, or a government or any political subdivision or agency thereof.

52. The term “plans” means tentative and preliminary proposals, recommendations, or considerations, whether or not finalized or authorized, as well as those that have been adopted.

53. The term “Public Interest Statement” means the Public Interest Statement submitted in support of the Transactions dated June 25, 2015.

54. The term “quality of service” means the performance specification of a network, indicated by performance parameters, such as jitter, latency, packet loss, capacity, utilization, and congestion.

55. The term “Regional Sports Network” or “RSN” means any Non-Broadcast Video Programming Network that (i) provides live or same-day distribution primarily within a limited geographic region of sporting events of, or a sports team that is a member of, Major League Baseball, the National Basketball Association, the National Football League, the National Hockey League, NASCAR, NCAA Division I Football, or NCAA Division I Basketball and (ii) in any year, carries a minimum of either 100 hours of programming that meets the criteria of subheading (1), or 10% of the regular season games of at least one sports team that meets the criteria of subheading (1).

56. The term “relating to” means in the whole or in part constituting, containing, concerning, discussing, describing, analyzing, identifying, or stating.

57. The term “relevant area” means, and information shall be provided separately for,

- a. with respect to Content Delivery Services, the United States;
- b. with respect to business services, the Cable System in which the Company provides such services;
- c. with respect to Cable Advertising Representation Services, the

United States;

- d. with respect to Internet Access Service, the Cable System in which the Company provides such services; and
- e. with respect to Internet Backbone Services, the United States;
- f. with respect to Internet Traffic Exchange, the United States; and
- g. with respect to an MVPD (except DBS), each Cable System in which the MVPD provides MVPD service;
- h. with respect to MVPD Service, each DMA in the United States in which the Company offers MVPD Service;
- i. with respect to an OVD, the United States;
- j. with respect to Telephone Services, the Cable System in which the Company provides such services;
- k. with respect to Video Programming acquired or provided by an MVPD or OVD (except RSN programming as discussed in subpart (l) below), the United States;
- l. with respect to RSN programming, each network's local territory (a/k/a "zone(s)") as defined in terms of zip codes for DBS customers and county boundaries for cable customers;
- m. with respect to Video Programming Distribution, the United States.

58. The term "relevant service" as used herein means, and information shall be provided separately for, each service in the following categories:

- a. Content Delivery Network;
- b. Business Services;
- c. Internet Access Service;
- d. Internet Traffic Exchange, and information shall be provided separately for interconnection between the Company and each provider of:
  - (i) Internet Access Service;
  - (ii) Internet Backbone Services;
  - (iii) Edge Providers;
  - (iv) CDNs; and
  - (v) other Internet networks and services;
- e. Video Programming; and
- f. Video Programming Distribution, and information shall be

provided separately for:

- (i) MVPDs; and
- (ii) OVDs.

59. The term “Service Plan” shall mean a package of specific tiers of one or more Cable Services, sold as a package of services for a single price

60. The term “Settlement-Free Peering” means peering where there are no payments exchanged between network providers for the exchange of traffic.

61. The term “Standalone Services” means, and information shall be provided separately for: (a) MVPD Service; (b) Internet Access Service; and (c) Telephone Services, each sold as a separate service for a single price.

62. The term “Subsidiary” as to any Person means any corporation, partnership, joint venture, limited liability company, or other entity of which shares of stock or other ownership interests having ordinary voting power to elect a majority of the board of directors or other managers of such corporation, partnership, joint venture, limited liability company or other entity are at the time owned, or the management of which is otherwise controlled, directly or indirectly, through one or more intermediaries, or both, by such Person.

63. The term “Telephone Services” means any service offering that provides a customer the ability to make a voice telephone call, including Voice over Internet Protocol (“VoIP”) services or similar services, regardless of the physical facilities (e.g., copper wire, coaxial cable, fiber, fixed wireless) over which the call is transmitted, but excluding CMRS as that term is defined in section 20.3 of the Commission’s rules.

64. The term “Time-Shifted and Place-Shifted Video Programming” means Video Programming that may be viewed by consumers at the time and place of their choosing, usually via an Internet-connected device or on a VOD basis.

65. The term “Time Warner Cable” or “TWC” means Time Warner Cable Inc. and its Subsidiaries.

66. The term “Transaction” means the transaction contemplated in the applications filed by Charter, TWC, and Advance/Newhouse Partnership on June 25, 2015, that, if completed, would effectuate the sale of TWC and Bright House Networks cable systems and assets to Charter.

67. The term “Transit Service” means a service arrangement where customer pays Internet Backbone Services provider to send and receive traffic to and from destinations that can be either on or off the provider’s network.

68. “United States” or “U.S.” means the United States, its possessions, territories, and outlying areas.

69. The term “Video-on-Demand” or “VOD” means a service which allows subscribers to MVPD Service to view individual programs at the time of their choosing including, but not limited to, motion pictures, professional video, Broadcast Programming Networks, or Non-Broadcast Programming Networks. VOD includes without limitation both free

programs and programs for which there is a charge.

70. The term “Video Programming” means programming provided by, or generally considered comparable to programming provided by, a television broadcast station or cable network, regardless of the medium or method used for distribution, and includes but is not limited to: programming prescheduled by the programming provider (also known as scheduled programming or a linear feed); programming offered to viewers on an on-demand, point-to-point basis (also known as VOD or PPV); short programming segments (also known as clips); programming that includes multiple video sources (also known as feeds, including camera angles); programming that includes video in different qualities or formats (including high-definition, 3D and 4K); and films.

71. The term “Video Programming Distribution” means the provision of Video Programming to consumers.

## Instructions

1. Unless otherwise specified, each Information and Data Request that calls for documents requires the Company to submit all responsive documents that were created or received by the Company on or after July 24, 2013. Where information is required, provide it separately for each year. Where yearly data is not yet available, provide data for the calendar year to date.
2. Submit responses to Information Requests in both paper and electronic form, unless an electronic form is specified (e.g., electronic spreadsheet). Submit responsive documents (including materials containing Highly Confidential or Confidential Information) in electronic form only, unless otherwise specified, as set forth in the Instructions for Submission of Electronic Documents. The Commission does not now require the submission of paper copies of these documents at this time, but reserves the right to require their submission at a later time. The Commission does not now require the submission of drafts and final copies of agreements between the Company and any programmer who is not an Applicant in this Matter (MB Docket No. 15-149) for the carriage of a non-Applicant programmer's content by the Company nor any emails exchanged between the Company and a non-Applicant programmer related to negotiations over such agreements, but reserves the right to require their submission at a later time.
3. Where a narrative response is required, identify each document relied upon to support the Company's response in the narrative response.
4. Documents submitted in response to this Information Request that were or will be submitted both to the Commission and the U.S. Department of Justice must have the same Bates number and the same metadata.
5. Each responsive document shall be submitted in its entirety, even if only a portion of that document is responsive to a request made herein. This means that the document shall not be edited, cut, or expunged, and shall include all appendices, tables, or other attachments, and all other documents referred to in the document or attachments. All written materials necessary to understand any document responsive to these Requests shall also be submitted.
6. Documents written in a language other than English must be translated into English; automated or machine translations are not permitted. Submit the foreign language document with the English translation attached.
7. Data provided in response to this Information Request should include a list of all parameters/assumptions on which the data are based.
8. Unless otherwise agreed to by the Commission, requests for the production of documents (and any particular type of document) require the production of all responsive documents in the possession, custody, or control of the Company.
9. For each statement submitted in response to the Information Request, indicate, by number and subsection, the specific request to which it is responsive.
10. For each document submitted in response to the Information Request, identify the Person(s) from whose files the document was retrieved (i.e., the custodian). If any document is

not dated, if known, state the date on which it was prepared. If any document does not identify its author(s) or recipient(s), provide, if known, the name(s) of the author(s) or recipient(s) as metadata in accordance with Instructions for Submission of Electronic Documents. The Company must identify with reasonable specificity all documents provided in response to these Requests. Where more than one identical copy of a requested document exists, the Company may submit only one representative copy, but in all cases all metadata, including without limitation all custodians who possessed identical documents withheld, must be provided in accordance with the provisions of Instructions for Submission of Electronic Documents.

11. For each question in this Information Request, provide a list of which custodians, based on discussions with Commission staff are most likely to have relevant documents, are to be searched for responsive documents.

12. Describe the search methodologies and the applications used to execute the search conducted in response to this Information Request, including, if search terms were used to conduct all or any part of the search, a list of terms used.

13. Provide a glossary of industry and company terminology, including project code words.

14. The specific requests made herein are continuing in nature. The Company is required to produce in the future any and all documents and information that are responsive to the requests made herein but not initially produced. In this regard, the Company must supplement its responses (a) if the Company learns that, in some material respect, the documents and information initially disclosed were incomplete or incorrect or (b) if additional responsive documents or information are acquired by or become known to the Company after the initial production.

15. Any documents that are withheld in whole or in part from production based on a claim of privilege shall be assigned document control numbers (with unique consecutive numbers for each page of each document). For any page of any document that the Company has designated to be withheld as entirely privileged, the Company shall submit a substitute, placeholder page that lists only the Document ID of the page that was withheld in entirety as privileged and a statement indicating that the page has been withheld in entirety as privileged. For any document withheld as entirely privileged, it is sufficient to supply one substitute, placeholder page for that document, so long as the range of Document IDs for the entire document is listed on the placeholder page and each Document ID for each page of the document is reflected in metadata. The placeholder pages must be imaged as any other paper record, as described above. For each document withheld as privileged, whether in entirety or in part, the Company shall code the substitute document submitted as specified in and provide as metadata the information in the attached MetaData Table of Requested Fields.

16. For each Document identified on the Company privilege log:

- a. Provide the document control number(s);
- b. Identify all authors of the document;
- c. Identify all addressees of the document;
- d. Identify all recipients of the document or of any copies of the document, to the extent not included among the document's addressees;
- e. Provide the date of the document;
- f. Provide a description of the subject matter of the document;
- g. State the nature or type of the privilege that the Company is asserting for the document (e.g., "attorney-client privilege");
- h. Provide the number(s) of the Information Request to which the document is responsive;
- i. Provide the document control number(s) of any attachments to the document, regardless of whether any privilege is being asserted for such attachment(s); and
- j. State whether the document has been produced in redacted form, and include the range of Document ID labels for those produced documents.

17. The Company's privilege log shall also conform with all of the following requirements:

- a. Provide a separate legend identifying each author, addressee, and recipient identified on the Company's privilege log.
- b. Identify on the privilege log, and denote with an asterisk, all attorneys acting in a legal capacity with respect to the withheld document or communication.
- c. The description of the subject matter of each document shall describe the nature of the document in a manner that, though not revealing information that is itself privileged, provides sufficiently detailed information to enable the Commission to assess the applicability of the privilege claimed.
- d. For each document withheld under a claim that it constitutes or contains attorney work product, also state whether the Company asserts that the document was prepared in anticipation of litigation or for trial and, if so, specify the anticipated litigation or trial upon which the assertion is based.
- e. Produce all nonprivileged portions of any responsive document (including nonprivileged or redactable attachments) for which a claim of privilege is asserted, except where the only nonprivileged

information in the document has already been produced. Note where any redactions in the document have been made.

- f. The privilege log shall be produced in both hardcopy and electronic form, the electronic form of which shall be both searchable and sortable.
- g. Documents sent solely between counsel, including in-house counsel acting solely in a legal capacity, and documents authored by the Company's outside counsel that were not directly or indirectly furnished to any third party, such as internal law firm memoranda, may be omitted from the privilege log. However, any attachments to such documents must be included on the privilege log (if a privilege is applicable to such materials), unless such attachments are addressed and sent solely to counsel.



# Instructions for Electronic Production of Documents and Electronically Stored Information

## Introduction

This document contains the standard specifications and procedures for submitting to the Federal Communications Commission electronic versions of documents in response to an Information Request.

- In many cases, it is useful for the party producing the documents, its vendor and the FCC staff to review the technical details of the production prior to submitting the response.
- Take care to ensure that all responsive data and metadata are preserved in the collection process.
- Submit two copies of the response: file one copy in the docket with the Secretary's Office and provide one copy to FCC staff or the FCC's contractor, as directed, for loading and review.

### 1. Categories of Documents

There are seven major categories of relevant documents: (1) email and other electronic messages (*e.g.*, instant messaging, text messages), (2) other electronic documents, (3) hard copy documents, (4) shared resources, (5) databases, (6) audio and video data, and (7) foreign-language materials. Typically, responsive documents will come from the first four categories, although databases will be used to respond to Data Requests. The general requirements for each category of document are outlined below. The attached Metadata Table of Requested Fields provides information regarding document-specific metadata and bibliographic information (identifying information).

#### A. Email, Attachments, and Other Electronic Messages

Email and other electronic messages (*e.g.*, instant messages (IMs), text messages) should be produced as image files with related searchable text, metadata and bibliographic information. Depending on how the Company's systems represent names in email messages, IMs or text messages, we may require a table of names or contact lists from custodians.

Each IM or text conversation should be produced as one document.

Email repositories, also known as email databases (*e.g.*, Outlook .PST, Lotus .NSF), can contain a variety of items, including messages, calendars, contacts, tasks, etc. For purposes of production, responsive items should include the "Email", "Other ESI", or "Calendar Items" metadata/database fields outlined in the Metadata Table, including but not limited to all parent items (mail, calendar, contacts, tasks, notes, etc.) and child files (attachments of files to email or other items), with the parent/child relationship preserved. Similar items found and collected outside an email repository (*e.g.*, .MSG, .EML, .HTM, .MHT) should be produced in the same manner.

Graphic objects embedded in emails such as logos, letterheads, or backgrounds should remain as part of the email and not be extracted as separate attached documents.

Pay special attention to the PARENTID, ATTACHMENTIDS, and FAMILYRANGE fields, which are used to track email families. While the example below relates to email families, all attachment relationships for all responsive documents are to be produced in this format.

EXAMPLE: Consider ABC-JD-00000001 a 10-page parent email, with records ABC-JD-00000011 to ABC- JD-00000015, ABC-JD-00000016 to ABC-JD-00000020, and ABC-JD-00000021 to ABC-JD-00000025 as its attachments. Fields should be populated exactly as follows using the semicolon as the multi-entry delimiter for ATTACHMENTIDS:

BEGDOC#	ENDDOC#	PARENTID	ATTACHMENTIDS	FAMILYRANGE
ABC-JD-00000001	ABC-JD-00000010		ABC-JD-00000011;ABC-JD-00000016;ABC-JD-00000021	ABC-JD-00000001 – ABC-JD-00000025
ABC-JD-00000011	ABC-JD-00000015	ABC-JD-00000001		ABC-JD-00000001 – ABC-JD-00000025
ABC-JD-00000016	ABC-JD-00000020	ABC-JD-00000001		ABC-JD-00000001 – ABC-JD-00000025
ABC-JD-00000021	ABC-JD-00000025	ABC-JD-00000001		ABC-JD-00000001 – ABC-JD-00000025

## B. Electronic Documents

Electronic documents include word-processing documents, spreadsheets, presentations, and all other electronic documents not specifically discussed elsewhere. Production of these items should include image files with related searchable text, metadata, and bibliographic information. All passwords and encryption must be removed from electronic documents prior to production. Note that the following apply to both attachments of files to email or other items and loose native files:

1. *Spreadsheets*: Spreadsheets should be produced in native format (*e.g.*, as .XLSX files), with searchable text for the entire document, metadata, and bibliographic information. Provide only a single image of the first page of the spreadsheet or provide a single placeholder image. The placeholder image must contain at a minimum the BEGDOC#, FILENAME, and FILEPATH. The Identification range for a spreadsheet should be a single number (*e.g.*, ABC-JD-00000001 – ABC- JD-00000001). The linked native file name should match the BEGDOC#/DOCID with the appropriate file extension.
2. *Presentations*: Presentations should be produced in full slide image format along with speaker notes (which should follow the full images of the slides)

with related searchable text, metadata, bibliographic information and linked native file. Presentations should also be produced in native format (*e.g.*, as .PPT files). The linked native file name should match the BEGDOC#/DOCID with the appropriate file extension.

3. *Hidden Text.* All hidden text (*e.g.*, track changes, hidden columns, hidden slides, mark-ups, notes) shall be expanded and rendered in the extracted text file. For files that cannot be expanded linked native files shall be produced with the image files.
4. *Embedded Files.* All embedded objects (*e.g.*, graphical files, Word documents, Excel spreadsheets, .wav files) that are found within a file shall be produced so as to maintain the integrity of the source document as a single document. For purposes of production the embedded files shall remain embedded as part of the original source document. Hyperlinked files must be produced as separate, attached documents upon request. Any objects that cannot be rendered to images and extracted text (*e.g.*, .wav, .avi files) must be produced as separate extracted files with linked native files and placeholder images and be treated as attachments to the original file.
5. *Image-Only Files.* All image-only files (non-searchable .PDFs, multi-page TIFFs, Snipping Tool screenshots, etc., as well as all other images that contain text) shall be produced with associated OCR text, metadata, and bibliographic information.
6. *Proprietary File Types and Non-PC or Non-Windows Based Systems.* Proprietary file types, such as those generated by financial or graphic design software, should be discussed with Commission staff in advance of production to determine the optimal format of production. Also, file types from non-PC or non-Windows based systems (*e.g.*, Apple, UNIX, LINUX systems), should be discussed with Commission staff in advance of production to determine the optimal format of production.
7. *Archive File Types.* Archive file types (*e.g.*, .zip, .rar) must be uncompressed for processing. Each file contained within an archive file should be produced as a child to the parent archive file. If the archive file is itself an attachment, that parent/child relationship must also be preserved.
8. *Processing Errors.* The text of the placeholder image should also be contained in the searchable text of the document in the event of uncorrectable processing errors.

### C. Hard-Copy (or Paper) Documents

Hard-copy documents are to be produced as black-and-white image files, except where noted below, with related searchable OCR text and bibliographic information. Special attention should be paid to ensure that hard-copy documents are produced as they are kept, reflecting attachment relationships between documents and information about the file folders within which

each document is found. In addition, multi-page documents must be produced as single documents (*i.e.*, properly unitized) and not as several single-page documents. Where color is required to interpret the document, such as hard copy photos, and certain charts, that image must be produced in color. These color images are to be produced as .jpg format. Hard-copy photographs should be produced as color .jpg format files, if originally in color, or black-and-white .tif files if originally in black-and-white.

#### D. Shared Resources

Shared Resources should be produced as separate custodians if responsive custodians have access to them or if they contain responsive documents. The name of the group having access would be used as the custodian name, *i.e.* Marketing Execs or Accounting Dept. The Company will separately provide a brief description of each shared resource that includes a list of the custodians who have access to that shared resource.

#### E. Database Productions

Production of enterprise databases are not addressed in these specifications and must be discussed with the appropriate government legal and technical staff to determine the optimal production format; these will usually fall outside the scope of an image-based production. Care must be taken to ensure that all responsive databases and their metadata are preserved.

#### F. Audio/Video Data

These specifications do not address the production of audio/video data. Care must be taken to ensure that all responsive audio/video data and their metadata are preserved. These data types may be stored in audio or video recordings, voicemail text messaging, and related/similar technologies. However, such data, logs, metadata, or other files related thereto, as well as other less common but similar data types, should only be produced after consultation with and consent of Commission staff as to the format for the production of such data.

#### G. Foreign-Language Materials

Foreign language materials should be produced after consultation with Commission staff.

### **2. De-duplication**

Before doing any de-duplication, provide Commission staff with a written description of the method used to de-duplicate (including which elements are compared and what hash codes are used), and what is considered a duplicate. Then confirm that your approach is acceptable to the Commission. The Commission does not allow de-duplication of hard-copy documents, or that of “loose” electronic documents (*e.g.*, presentation slides located on the custodian’s C: drive) against email attachment versions of those same documents. The integrity of any produced email and any related “document family” must be maintained except as limited by any claim of privilege. Email attachments may not be deduplicated against attachments in other email families. De-duplication should occur both vertically within each custodian and horizontally across custodians. Vertical de-duplication is crucial when a production includes electronic

documents from back-up tapes. Horizontal de-duplication must be done in a way that preserves (and produces) information on blind copy (Bcc) recipients of emails and other custodians whose files contain the duplicates that will be eliminated from the production as well as original filepath and mailbox folder information.

*Custodian Append File.* A Custodian Append file is to be produced when de-duplicating ACROSS custodians (*i.e.*, horizontal de-duplication) and data is produced on a rolling basis. The file must be provided on an incremental basis starting with the second submission; as more custodians are discovered for previously produced documents, this file is updated with only the new custodian information. The Custodian Append File is a four-field delimited file consisting of the DOCIDs of the previously delivered document, the new custodian names, the Filepath(s) prepended with Custodian Name (multi-entry), and the FolderLabel(s) prepended with Custodian name (multi- entry) for the duplicates of those records that would otherwise have been produced in the subsequent (new) submissions.

These specifications do not allow for near de-duplication or email threading. These forms of de- duplication must be discussed separately with Commission staff and consent obtained prior to the use of such techniques for production.

### **3. Document Numbering**

Documents must be uniquely and sequentially numbered across the entire production, with an endorsement burned into each image. Each number shall be of a consistent length, include leading zeros in the number, and unique for each produced page. Numbers should contain no more than three segments connected by a hyphen. The leading segment must be the Company identifier, a middle segment identifying the custodian, and a sequential page counter with connecting hyphens (*e.g.*, ABCCO-CEO-00000001). The number of digits in the numeric portion of the format should not change in subsequent productions, nor should spaces, hyphens, or other separators be added or deleted. Under no circumstances should Identification numbers contain embedded spaces, slashes (/), backslashes (\), carats (^), underscores (\_), ampersands (&), hash marks (#), plus signs (+), percent signs (%), dollar signs (\$), exclamation marks (!), pipes (|), any character used as a delimiter in the metadata load files, or any character not allowed in Windows file-naming convention (, \ / : \* ? " < > | ~ @ ^).

### **4. Privilege Designations**

Documents redacted pursuant to any claim of privilege will be designated “Redacted” in the EPROPERTIES field as described in the Metadata Table. Appropriately redacted searchable text (OCR of the redacted images is acceptable), metadata, and bibliographic information must also be provided.

All documents that are part of a document family that includes a document withheld pursuant to any claim of privilege will be designated “Family Member of Privileged Doc” in the EPROPERTIES field as described in the Metadata Fields table for all other documents in its family. Placeholder images with BEGDOC#, FILENAME, FILEPATH and reason withheld (*e.g.*, “Privileged”) should be provided in place of the document images of the privileged

document.

## **5. Sample**

Before beginning production, a sample production covering files of all types, including emails with attachments, loose files including spreadsheets and presentations, redacted documents, etc., should be provided, as directed by Commission staff. The sample size should be between 500 to 1000 records to be large enough to be representative and small enough to review quickly. The Commission will take a few business days to evaluate the sample and provide feedback. If there are any problems, corrected samples will need to be resubmitted until the Commission can confirm the problems are resolved.

## **6. Load File Set/Volume Configuration**

Each production must have a unique MEDIAID name associated with it. This MEDIAID name must also appear on the physical label. The MEDIAID naming scheme should start with a 2 or 3 letter prefix identifying the Company followed by a 3-digit counter (*e.g.*, ABC001). Each separate volume delivered on that media must also have a separate VOLUMENAME associated with it. On the root of the media, the top level folder(s) must be named for the volume(s). VOLUMENAME(s) should also be indicated on the physical label of the media. The volume naming scheme should be based on the MEDIAID name followed by a hyphen, followed by a 3-digit counter (*e.g.*, ABC001-001). Load file volumes should be as large as practical but not contain more than 100,000 records each. The VOLUMENAME should increase sequentially across all productions on the same MEDIAID.

Under the VOLUMENAME folder, the production should be organized in 4 subfolders:

1. DOCLINK (contains linked native files, may contain subfolders, with no more than 5,000 files per folder)
2. IMAGES (may contain subfolders, with no more than 5,000 image files per folder)
3. FULLTEXT (may contain subfolders, with no more than 5,000 document-level text files per folder)
4. LOADFILES (should contain the metadata, DII, OPT, LST, and custodian append files)

## **7. Deliverables**

A submission index spreadsheet must be delivered with each submission and should provide statistical information about the volume(s) and media produced. Provide this in hard copy format and electronically on the deliverable media. A sample is included in this PDF. It is expected that all productions will conform to the structure of the final, approved sample production. Any changes to production procedures that alter output format will require prior submission of another sample production as outlined in section 5. Sample.

The Commission accepts electronic productions loaded onto hard drives, CD-ROMs, or DVD-ROMs; however, production on hard drives minimizes costs and delay and is preferable.

Where the size of the production exceeds the capacity of a single DVD-ROM, hard drives should be used as the delivery medium. For each piece of media a unique identifier (MEDIAID) must be provided and must be physically visible *on the exterior* of the physical item.

If the media is encrypted, supply the tool for decryption on or with the same media, as well as instructions for decryption. Provide the password separately.

All documents produced in electronic format shall be scanned for, and free of, viruses. The Commission will return any infected media for replacement, which may affect the timing of the Company's compliance with this Information Request.

The Commission does not accept load file productions via email or those that are posted on download sites (*e.g.*, FTP, secure server).

The Commission recognizes that occasionally unforeseen issues will arise that require replacing documents or data from a previously delivered production with new documents or corrected data. Substantive corrections may require the reproduction of the entire production volume. The production format for all corrections must be agreed upon prior to any submission of corrections. Any productions that have been created but not delivered when the need for corrections is detected must be corrected prior to delivery. Each replacement or corrected production must be named based on the production volume that is being replaced or corrected. For example, if a corrected metadata file replaces data in the previously delivered volume ABC-001-001 then the file name ABC-001-001-fix.txt should be used. Replacement document image file names, likewise, must be labeled with the same Identification number as the image being replaced. A separate correcting file is required for each volume to be corrected. These replacement or corrected productions must be delivered on separate media from any new productions. In the event that corrections alter the statistical information previously reported in the cover letter spreadsheet, an updated submission index spreadsheet with the corrected final statistical information must accompany each replacement or corrected submission. Provide this in hard copy format and electronically on the deliverable media.

## METADATA TABLE OF REQUESTED FIELDS

Review carefully as fields have been added or modified from the Commission's last set of specifications.

Field Name	Field Description	Field Type	Hard-Copy	Email	Other ESI	Calendar Items
COMPANIES	Company submitting data	Multi-Entry	X	X	X	X
MEDIAID	The unique identifier on the physical piece of media (e.g., ABC001)	Note Text	X	X	X	X
VOLUMENAME	Production volume number (e.g., ABC001-001)	Note Text	X	X	X	X
CUSTODIAN	Custodian(s) / source(s) -- format: <i>Last, First</i> or <i>ABC Dept.</i> Be consistent across all ESI sources/productions.	Multi-Entry	X	X	X	X
TIMEZONE	The TimeZone in which the custodian is located.	Note Text		X	X	X
SPEC#	Subpoena/request paragraph number to which the document is responsive	Multi-Entry	X	X	X	X
HASHMD5	Document MD5 hash value (used for deduplication or other processing)	Note Text		X	X	X
HASHSHA	Document SHA1 hash value (used for deduplication or other processing)	Note Text		X	X	X
SEARCHVALUES	List of search terms used to identify record as responsive (if used)	Multi-Entry	X	X	X	X
BEGDOC#	Start Identification number (including prefix) -- No spaces or special characters	Note Text	X	X	X	X
ENDDOC#	End Identification number (including prefix) -- No spaces or special characters	Note Text	X	X	X	X
DOCID	Must equal the value appearing in the BEGDOC# field and be UNIQUE	Note Text	X	X	X	X
NUMPAGES	Page count	Integer	X	X	X	X
PARENTID	Parent record's BEGDOC#, including prefix (populated ONLY in child records)	Note Text	X	X	X	X
ATTACHMENTIDS	Child document list: BEGDOC# of each child (populated ONLY in parent records)	Multi-Entry	X	X	X	X
FAMILYRANGE	Range of the BEGDOC# value of the parent record to the ENDDOC# value (including prefix) of the last child record (for example, ABC-JD-00001201 - ABC-JD-00001220); populated for all documents in the group. Empty if the record is NOT in family grouping	Note Text	X	X	X	X
EPROPERTIES	Indicate all that apply : Record Type: E-Doc, E-Doc Attachment, Email, Email Attachment, Hard Copy, Calendar Appt Other Notations: Translation of [DOCID of original], Translated as [DOCID of Translation] Privilege Notations: Redacted, Privileged, Family Member of Priv Doc	Multi-Entry	X	X	X	X
FOLDERLABEL	Email folder path (sample: Smith,James-Inbox\Active); or Hard Copy folder/binder title/label prepended with Custodian Name.	Multi-Entry	X	X		X
FROM	Author of the Email or Calendar item (as formatted on the original)	Note Text		X		X
TO	Recipients of the Email or Calendar Item (as formatted on the original)	Multi-Entry		X		X
CC	Names of the individuals who were copied on the Email or Calendar Item (as formatted on the original)	Multi-Entry		X		X
BCC	Names of the individuals who were blind-copied on the Email or Calendar Item (as formatted on the original)	Multi-Entry		X		X
SUBJECT	Email or calendar subject	Note Text		X		X
DATE_HC	Date of hard copy documents, if coded. Format: YYYYMMDD.	Date	X			
DOCDATE	This is a multipurpose date field. Populate with: DATESAVED for E-Docs; DATESENT for Emails; DATEAPPTSTART for calendar appointments; DATE_HC for hard copy documents, if available. Format: YYYYMMDD.	Date	X	X	X	X
DATECREATED	Date electronic file was created. Format: YYYYMMDD.	Date			X	
DATESENT	Date the Email or Calendar Item was sent. Format: YYYYMMDD.	Date		X		X
TIMESENT	Time Email or Calendar Item was sent -- Format: HH:MM:SS (use 24 hour times, e.g., 13:32 for 1:32 pm; timezone indicators cannot be included)	Time		X		X
DATERECEIVED	Date Email or Calendar Item was received. Format: YYYYMMDD.	Date		X		X
TIMERECEIVED	Time Email or Calendar Item was received. Format: HH:MM:SS (use 24 hour times, e.g., 13:32 for 1:32 pm; timezone indicators cannot be included)	Time		X		X
HEADER	The internet header information for Email sent through the internet;	Note Text		X		
INTERNETMSGID	Globally unique identifier for a message which typically includes messageid and a domain name. Example: <0E6648D558F338179524D555@m1p.innovy.net	Note Text		X		X



MESSAGEID	Unique system identification number for the e-mail message assigned by the proprietary email database/mailstore/post office file associated with centrally managed enterprise email servers. EntryID for Microsoft Outlook, the UniqueID (UNID) for Lotus Notes, or equivalent value for other proprietary mailstore formats.	Note Text		X		X
INREPLYTOID	Internet message ID of the Email replied to	Note Text		X		
CONVERSATIONINDEX	Email Thread Identification	Note Text		X		X
IMPORTANCE	Email flag indicating priority level set for message	Note Text		X		X
DELIVRECEIPT	Delivery receipt request notification for Email messages	Note Text		X		X

An “X” indicates that the field should be populated in the load file produced. “Other ESI” includes non-email files, such as, but not limited to MS Office files, WordPerfect files, etc.

