INFORMATION AND DATA REQUEST TO
COMCAST CORPORATION

1. 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.

2. Identify, as of December 31, 2009, December 31, 2010, December 31, 2011, December 31, 2012, December 31, 2013, and June 30, 2014, 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:

a. the Community Unit Identifiers (CUID);

b. the Physical System Identifiers (PSID);

c. the name and number of the DMA served by the cable system;

d. the census blocks served by the cable system;

e. the zip codes served by the cable system;

f. the internal Company names and codes that apply to the cable system;

g. 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;

h. any 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;

i. 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; and

j. the headends serving each cable system and the number of cable services subscribers served by each headend.

3. For each zip code identified in response to Request 2(e), and from January 1, 2009, to the present, describe each of the Company's bundled services plans and standalone services plans offered through any sales channel, and for each plan, describe the (i) MVPD service, including each service tier or programming package offered and the channels (both standard definition and high definition) on each tier or package; (ii) Internet access service, including each tier or package offered and the upload and download speed associated with each such tier or programming package, explaining how the upload speed is calculated if no advertised speed is available; and (iii) telephone services.

4. For each zip code identified in Request 2(e) and for the Company as a whole, separately for residential subscribers and other subscribers, and for each month for the period beginning January, 2009, to the present, state and produce in CSV or Excel format:

a. the number of customer locations to which cable services are available, separately for residential customer locations and other customer locations, and the penetration rate;

b. the number of standalone services and bundled services subscribers as of the last day of the month;

c. the average revenue per subscriber in the month for standalone services and bundled services;

d. the number of subscribers who first began subscribing to any of the Company's standalone services and bundled services in the specified month who were not subscribers to any of the Company's cable services in the prior month;

e. the average revenue per new subscriber described in subpart (d) to standalone services and bundled services, and that churned from a competing provider, separately for each competing provider;

f. the number of subscribers discontinuing all subscriptions to the Company's cable services;

g. the average revenue per departing subscriber described in subpart (f) for standalone services and bundled services, and the number of subscribers that churned to competing provider, separately for each competing provider;

h. the number of the Company's current subscribers who first began subscribing to any of the Company's other standalone services or bundled services in the specified month;

i the number of subscribers discontinuing their subscription to one or more of the Company's standalone services or bundled services, but who remain a subscriber to one or more of the Company's cable services at the end of the specified month;

j. the churn rate for standalone services and bundled services;

k. the per-subscriber acquisition cost or cost per gross addition for standalone services and bundled services and an explanation of how these values were calculated;

l. the cost per subscriber to the Company's MVPD service of acquiring video programming distribution rights and an explanation of how these values were calculated;

m. the cost per subscriber to the Company's MVPD service of acquiring VOD and PPV distribution rights and an explanation of how these values were calculated;

n. the average gross and net advertising revenue per subscriber to the Company's MVPD service and an explanation of how these values were calculated;

o. other variable costs per subscriber for standalone services and bundled services and an explanation of how these values were calculated; and

p. the value of each additional subscriber to the Company for standalone services and bundled services and an explanation of how these values were calculated.

5. Separately for (i) every zip code identified in 2(e), and (ii) every DMA for where the Company provides MVPD service, and separately for every subscription VOD service offered by the Company, for every month from January, 2009, to the present, state:

a. the number of subscribers to the service at the end of the month;

b. the number of subscribers that added the service;

c. the number of subscribers that added the service at the same time that they added MVPD service from the Company;

d. the number of subscribers that cancelled the service;

e. the number of subscribers that cancelled the service at the same time that they cancelled MVPD service from the Company;

f. the total subscription revenues;

g. the total cost of video programming distribution rights;

h. the total number of hours viewed; and

i. the price of the service and a description of all discounts or promotions that were in effect.

6. Separately for (i) every zip code identified in 2(e), and (ii) every DMA for where the Company provides MVPD service, for every month from January, 2009, to the present, state:

a. separately for the Company's paid VOD service and PPV service, (1) the number of subscribers that used the service at least once; (2) the total revenues from subscribers; (3) the total cost of video programming distribution rights; and (4) the total number of hours viewed;

b. for free VOD service, (1) the number of subscribers that used the service at least once; (2) the total number of hours viewed; and (3) the total cost of video programming distribution rights; and

c. for the Company's over-the-top video services (e.g. "TV everywhere), (1) the percentage of the Company's MVPD subscribers that view video programming via the service, (2) the total number of hours viewed, and (3) the total cost of video programming distribution rights.

7. For each month, from January, 2014, to the present, separately for subscribers to the Company's standalone services and bundled services, and by month of tenure on the subscriber's current plan, state and produce in CSV or Excel format:

a. the number of subscribers as of the first day of the month;

b. the average revenue per subscriber;

c. the total number of disconnects from the service plan initiated either by the subscriber or the Company in the month;

d. the number disconnects from the service plan initiated by the Company for non-payment or other reasons in the month;

e. the number of mover disconnects from the service plan initiated by the subscriber in the month; and

f. the number of other disconnects from the service plan initiated by the subscriber in the month.

8. As of December 31, 2013, and June 30, 2014, and for each DMA, state and produce in CSV or Excel format:

a. the number of subscribers to the Company's MVPD service;

b. the number of the Company's subscribers who will become subscribers of Comcast's, Spinco's, and Charter's MVPD service, stated as if the proposed TWC transaction and the proposed divestiture transactions had been consummated as of June 30, 2014;

c. the number of TV households, citing the source of this information and explaining how this number was calculated;

d. the number of Hispanic TV households, citing the source of this information and explaining how this number was calculated;

e. the number of Hispanic households that subscribe to MVPD service, citing the source of this information and explaining how this number was calculated;

f. the number of Hispanic households that subscribe to the Company's MVPD service; and

g. the number of the Company's Hispanic households who will become subscribers of Comcast's, Charter's and SpinCo's MVPD service, stated as if the proposed TWC transaction and the proposed divestiture transactions had been consummated as of June 30, 2014.

In the event that as a result of the proposed divestiture transactions, the assets, Hispanic households and the Hispanic subscribers in a single DMA will be divided between Comcast, Charter and SpinCo, for subparts (b) and (g), allocate the subscribers and Hispanic households to the receiving applicant, and provide an explanation of the methodology used to make the allocation.

9. 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 or other services on such cable systems, including documents relating to geographic rationalization

or clustering as a result of the proposed TWC transaction and the proposed divestiture transactions.

10. 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 or competitive position of the Company or any of its competitors;

b. the relative strength or weakness of persons selling each relevant service, selling either standalone services or bundled services, and the extent to which providers of each relevant service compete with each other;

c. supply and demand conditions;

d. how consumers, MVPDs, and OVDs view or perceive video programming offered by the Company (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 channel, 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;

e. 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., or to the Comcast-NBCU Order at App. A, § IV.G.1.a since January 1, 2009;

f. 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, and the role of reputation and reliability in competition with other persons who supply any relevant service;

g. churn, 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;

h. (1) 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 (2) 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, and mobile wireless broadband services;

i. the Company's experience or success in obtaining or retaining customers through marketing or promotions targeted at providers of relevant services, geographic areas, types of customers, and ethnic groups such as Hispanics or Asians, 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;

j. the characteristics of consumers who want to purchase 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;

k. the provision of video programming over the Internet, including, the sales, market share, or competitive position of the Company or its competitors, the relative strength or weakness of companies, including the Company and its competitors, that are currently providing or are planning to engage in online video distribution;

l. any advantage or disadvantage to any person arising from the size of its footprint or its subscribership on its ability: (1) to negotiate terms with persons selling or licensing video programming, including but not limited to terms that grant the Company exclusive rights to programming; (2) to negotiate terms of interconnection agreements with edge providers, persons who provide Internet backbone services, persons who provide Internet access service, and transit service providers; and (3) competition with other providers of MVPD service and persons that provide Internet access service;

m. the Company's decisions whether to block, stop, throttle, slow, favor, congest or otherwise hinder the transmission of any OVD service or other content, including the CDN, transit service provider or peer that supports the OVD service or to favor, prioritize or otherwise advantage the Company's relevant service over such competing service;

n. the role of innovations in competition or potential competition relating to improvements and innovations in features, functionality, platforms, performance, cost or other advantages to users of the service;

o. the impact of cord shavers, cord cutters and cord nevers on the Company's marketing, revenues and profits of each relevant service; and

p. the Company's experience and success with video programming, broadcast television stations, broadcast programming networks, and non-broadcast programming networks targeted at specific ethnic groups, including but not limited to, competition with the video programming broadcast television stations, broadcast programming networks, and non-broadcast programming networks owned by, operated by managed by, attributed to or produced by Univision Communications Inc.

11. Produce all documents created or received by the Company that relate to the Company's or any other person's (i) pricing plans; (ii) pricing policies; (iii) pricing lists; (iv) rate cards; (v) pricing forecasts; (vi) pricing strategies; (vii) pricing analysis; (viii) introduction of new pricing plans or promotions; (ix) bundled pricing, including analysis of the profitability of bundles and their impact on customer retention; and (x) pricing decisions relating to each relevant service.

12. State the name and address of each person that has entered or attempted to enter into, or exited from, the provision of each relevant service, from January 1, 2009, 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.

13. Provide a list of possible new entrants into the provision of, or a substitute for, each relevant service, stating why the Company believes each person is a possible entrant or could provide a substitute service, including but not limited to, mobile wireless broadband service, and what steps it has taken toward entry. Submit a list of all requirements for entry into the provision of, or a substitute for, a relevant service and an estimate of the time required to meet each requirement, and provide all documents relating 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 for entry in to the provision of each relevant service.

14. Produce all documents relating to the Company's or any other person's pre-transaction and post-transaction plans relating to any relevant service, including, but not limited to, business plans; short-term and long-range strategies and objectives; budgets and financial projections; presentations to management committees, executive committees, and boards of directors; expansion plans; research and development efforts; and plans to deploy DOCSIS 3.1, converged cable access platform, converged regional area network, IP Cable and Wi-Fi access points and mobile wireless broadband services; plans relating to the company's time-shifted and place-shifted video programming, dynamic ad insertion service, addressable advertising; plans to offer an OVD service outside the Company's current service area or to provide the Company's video programming to unaffiliated OVDs, wireless backhaul services, and business services; and plans to reduce costs, to improve services or service quality, and to manage communications security and reliability risks. For regularly prepared budgets and financial projections, the Company need only produce one copy of final year-end documents for 2011 through 2013 and cumulative year-to-date documents for 2014.

15. Separately for each relevant service (i) describe the minimum viable scale necessary for entry, including but not limited to, hurdle rates, the capital required for entry, construction of new facilities, spectrum and/or licensing requirements, whether carriage on any particular MVPD or OVD is necessary and if so, the identity of each such provider, and the number of subscribers and advertisers needed to break-even, and to the extent not already produced, (ii) produce all documents relating to the Company's entry into each of the above services since January 1, 2009. Indicate in your response whether your response would vary based upon the type of video programming (e.g., movies, sports, Spanish-language).

16. Produce all documents (except engineering and architectural plans and blueprints) discussing any plans of the Company or any other person for the construction of new facilities or equipment, the 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.

17. 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 relating to advertising plans and strategies.

18. Identify each non-broadcast programming network owned by, operated by, managed by, or attributed to the Company, by stating the information requested by the subparts to this Request, and provide the date and details of any changes to that information:

a. the nature and percentage of the Company's ownership interest;

b. the identity of and percentage owned by each other person who holds an attributable interest;

c. the date the network was launched, and if acquired from another entity, the date the network was acquired and from whom the Company acquired its ownership interest; and

d. the nature and extent of the Company's role in management, including whether the Company has any board representation, management rights, voting rights, and/or veto power supermajority or other investor protections.

19. For each non-broadcast programming network identified in response to Request 18, state separately, and produce in CSV or Excel format, for each month from January, 2009, to the present:

a. the identity of any MVPD that carries the network, and for each MVPD state (1) the total and per subscriber license fee paid by the MVPD to the Company, (2) the total number of the MVPD's subscribers that receive the network, (3) the number of minutes per hour granted to the MVPD for local advertising sales and (4) the tier on which the network is carried;

b. for all MPVDs carrying the network, state (1) the total per subscriber license fees and average per subscriber license fees paid by all MVPDs to the Company, (2) the total number of MVPD subscribers that receive the network, and (3) the average number of minutes per hour granted to MVPDs for local advertising sales;

c. the average gross advertising revenue per subscriber and the average net advertising revenue per subscriber and an explanation of how these values were calculated; and

d. the identity of each OVD, including but not limited to Apple, Amazon.com, Google, Netflix, Hulu, and the Company that publishes, sells or distributes, in whole or part, content produced or distributed by the non-broadcast programming network, and the total fees paid each year by the OVD to the Company for the right to distribute such programming.

20. Produce all agreements between the Company and any other person relating to the carriage, licensing, or distribution of any video programming owned by or controlled by the Company, and all documents relating to each negotiation since January 1, 2009, between the Company and any (i) MVPD, and (ii) OVD for video programming, regardless of whether or not the negotiations resulted in a contract (formal or informal). Exclude any documents related to the *Project Concord, Inc. v. NBCUniversal Media, LLC* proceeding.

21. Identify each instance where an MVPD has discussed raising, threatened to raise, or has raised, a program access complaint as a means to obtain the right to distribute the Company's non-broadcast programming, including via VOD and PPV, and separately for each type of non-broadcast programming network (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 the Company to provide program access to the complaining party, and produce all documents relating to each instance identified, and any settlement thereof.

22. Identify each agreement the Company has entered with another person through which the Company licenses another person to distribute the Company's broadcast or non-broadcast video programming , that contains any of the following provisions: (i) any economic or non-economic Most-Favored-Nation clause; (ii) any exclusive rights to distribute the programming; (iii) any limits on the further distribution of the programming that is the subject of the agreement either temporally, such as through the use of "windows," or by another person or class of similar persons; (iv) any limits on the further distribution of the programming on another platform; and (v) any rights to obtain, or limits on distribution of, additional programming whether or not such programming was in existence at the time the agreement was entered; and (vi) any other provision that impacts the way that the programming is distributed or made available to other distributors, and for each such agreement state:

a. the parties to the agreement;

b. the date of the agreement;

c. the term of the agreement;

d. a description of the provision;

e. the date that any party to the agreement exercised any rights or received any benefits from any of the provisions set forth in parts (i) through (vi) of this Request; and

f. a description of any actions taken or benefits received as a result of any of the provisions set forth in parts (i) through (vi) of this Request.

23. In Section A of Appendix B of the Comcast-NBCU Order, the Commission used a methodology to calculate "critical departure rates" for both permanent and temporary foreclosure of programming. Using this or similar methodology, determine and state how the current transaction will affect critical departure rates for both permanent and temporary foreclosure, (i) separately for each of the NCBU O&Os, (ii) a bundle consisting of all non-broadcast programming networks distributed on a national basis in which the Company has an interest (or attributable interest) (iii) separately for each of the RSNs in which the Company has an interest (or an attributable interest). Describe in detail the methodology employed and produce the underlying data used to determine the various parameters used to calculate these

critical departure rates, including but not limited to the profit margin on MVPD service subscribers, per subscriber license fees, per subscriber advertising revenue, departure rates, diversion rates, and churn rates. If the methodology is not identical to that employed in Section A of Appendix B of the Comcast-NBCU Order, describe in detail the changes made to that methodology.

24. In Section B of Appendix B in of the Comcast- NBCU Order, the Commission used a methodology to calculate the magnitude of vertical price rises that would be caused by the transaction. Using this or a similar methodology, calculate the vertical price increases that will be caused by this transaction (i) separately for each NBCU O&O, (ii) a bundle consisting of all non-broadcast programming networks distributed on a national basis in which the company has an interest (or attributable interest), and (iii) separately for each of the RSNs in which the Company has an interest (or an attributable interest). Describe in detail the methodology employed and produce the underlying data used to determine the various parameters needed to calculate these price increases, including but not limited to the profit margin on MVPD service subscribers, the departure rates and diversion rates. If the methodology is not identical to that employed in Section B of Appendix B of the Comcast-NBCU Order, describe in detail the changes made to that methodology.

25. In Section E of Appendix B in of the Comcast- NBCU Order, the Commission used a methodology to investigate whether Comcast favors its own networks and, to the extent this occurs, whether or not this is due to vertical efficiencies or foreclosure incentives. Using this or a similar methodology, provide an analysis of whether Comcast/NBCU favors its own networks and, to the extent this occurs, whether or not this is due to vertical efficiencies or foreclosure incentives. Describe in detail the methodology employed and produce the underlying data on which the analysis is based. If the methodology is not identical to that employed in Section E of Appendix B of the Comcast-NBCU Order, describe in detail the changes made to that methodology.

26. Identify all sports teams, leagues, and other organizations with which the Company (or a network in which the Company has an attributable interest) has a contract granting distribution rights in the United States, and for each contract state:

a. the official name of the team, league, or organization, the sport played, and its home venue;

b. the term of the contract that grants the right to distribute the sports programming in the United States and whether the Company has a right of first refusal;

c. the geographic area in which the Company has rights to distribute the sports programming;

d. the percentage of total game events entitled to be distributed live under the contract, and the percentage of total game events which the live distribution rights are exclusive to non-broadcast programming networks or cable systems in which the Company has an interest;

e. any plans to begin distributing game events in the United States; and

f. whether the Company is currently distributing this sports programming on an attributable or non-attributable sports programming network.

27. Provide a list of and produce a copy of all contracts or informal understandings, entered into since January 1, 2009, between the Company (or a network in which the Company has an attributable interest) and any marquee sports league which convey the right to distribute the league's games or other content in the United States. Include any contract that allows for distribution as a part of any non-broadcast programming network in which the Company has an ownership, controlling or attributable interest, or as video programming on the Internet, whether distributed via MVPD or by an OVD, and all documents relating to negotiations of the contracts produced in response to this Request.

28. As of June 30, 2014, identify each RSN in which the Company has an ownership interest (or an attributable interest), and for each RSN identified, state:

a. the primary DMA in which the RSN is distributed;

b. the average license fee revenue per subscriber (excluding out of market subscribers);

c. the average gross and the average net advertising revenue per subscriber (excluding out of market subscribers) and an explanation of how these values were calculated;

d. the number of subscribers (excluding out of market subscribers) to the RSN, separately for each MVPD that distributes the RSN;

e. the number of Comcast, Charter, and SpinCo subscribers (excluding out of market subscribers) to the RSN, stated as if the proposed TWC transaction and the proposed divestitures transactions had been consummated on June 30, 2014; and

f. each MVPD that serves the DMA that does not distribute the RSN and the reason that the MVPD does not distribute the RSN.

29. For each channel of video programming that the Company obtained from another person, separately for each month from January 1, 2009 to the present, state:

a. the name and genre of each channel of video programming the Company obtained;

b. the number of the Company's subscribers whose MVPD programming packages include each such channel;

c. the total and per subscriber fee paid by the Company for each such channel; and

d. the name and genre of each channel of video programming produced by each such person that the Company chose not to obtain and the reason(s) why the Company chose not to carry the channel.

30. Describe how the Company determines whether to carry a particular non-broadcast programming network on its own systems and in what geographic areas that network will 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; (iii) how the Company evaluates potential subscriber losses for not carrying a specific non-broadcast network in a market; and (iv) the factors considered when negotiating the terms and conditions of carriage.

31. List and describe all requests for program carriage since January 1, 2011, specifying which program carriage requests were approved and which were denied, and for each request state:

a. the date of the request and the reasons why each non-broadcast programming network request was approved or denied;

b. the genre of each non-broadcast programming network (i.e., children's, news, Spanish language, etc.);

c. the tier and channel placement for networks granted carriage;

d. whether the inclusion of the non-broadcast programming network resulted in any adjustment or modification to the price for the tier on which such programming is carried based on said carriage; and

e. whether any carriage agreement into which the Company has entered during the last three years has resulted in a change in tier placement for the subject network in any geographic area covered by the agreement.

32. Provide a list of and produce a copy of all agreements between the Company and any other person for distribution of any video programming carried by the Company's (i) MVPD service and (ii) OVD service, and in each case produce all documents relating to each negotiation since January 1, 2009, between the Company and any other person regardless of whether the negotiations resulted in an agreement or informal arrangement.

33. Identify each agreement the Company has entered with another person through which the Company acquires video programming from another person that contains any of the following provisions: (i) any economic or non-economic Most-Favored-Nation clause; (ii) any exclusive rights to distribute the programming; (iii) any limits on the further distribution of the programming that is the subject of the agreement either temporally, such as through the use of "windows," or by another person or class of similar persons; (iv) any limits on the further distribution of the programming on another platform; and (v) any rights to obtain, or limits on distribution of, additional programming whether or not such programming was in existence at the time the agreement was entered; (vi) any provision relating to the authentication of users, including any limits on video programming distributors that impact their ability to authenticate the identity of a user for the purpose of delivering additional data to advertisers, and any

provision that concerns the extent to which access to the set-top box impacts the ability of any person to authenticate users, for example through the operations of apps; and (vii) any other provision that impacts the way that the programming is distributed or made available to other distributors or providers differential treatment of a service provided by the Company or any affiliate, and for each such agreement state:

a. the parties to the agreement;

b. the date of the agreement;

c. the term of the agreement;

d. a description of the provision;

e. the date that any party to the agreement exercised any rights or received any benefits from any of the provisions set forth in parts (i) through (vi) of this Request; and

f. a description of any actions taken or benefits received as a result of any of the provisions set forth in parts (i) through (vii) of this Request.

34. For each instance that the Company, in negotiations with another person that did not result in an agreement for the Company to either acquire broadcast or non-broadcast video programming from another person, or license another person to distribute the Company's broadcast or non-broadcast video programming, such negotiations proposed any of the following provisions: (i) any economic or non-economic Most-Favored-Nation clause; (ii) any exclusive rights to distribute the programming; (iii) any limits on the further distribution of the programming that is the subject of the agreement either temporally, such as through "windows," or by another person or class of similar persons; (iv) any limits on the further distribution of the programming on another platform; and (v) any rights to obtain, or limits on distribution of, additional programming whether or not such programming was in existence at the time the agreement was entered; (vi) any provision relating to the authentication of users, including any limits on video programming distributors that impact their ability to authenticate the identity of a user for the purpose of delivering additional data to advertisers, and any provision that concerns the extent to which access to the set-top box impacts the ability of any person to authenticate users, for example through the operations of apps; and (vii) any other provision that impacts the way that the programming is distributed or made available to other distributors or providers differential treatment of a service provided by the Company or any affiliate, and for each such agreement state:

a. the person to whom the term was proposed;

b. the broadcast or non-broadcast video programming that would have been the subject of the provision;

c. the date the proposal was made; and

d. the reasons why an agreement was not reached.

35. Describe each instance since January 1, 2009 when the Company obtained a lower per-subscriber fee than the rate the Company was previously paying for any video

programming (including through the acquisition or sale of or affiliation with any MVPD or video programming channel), and for each such instance: (i) state the date, circumstances and the reduction received; (ii) whether the Company passed through the programming cost saving to its residential subscribers in the form of lower monthly subscription fees, moving the relevant channel to a less costly service tier, or in any other way; and (vi) produce all documents discussing any savings, including how the savings were allocated or passed through to subscribers. Produce all documents that would allow a comparison between the per subscriber fee the Company pays for video programming and the per subscriber fee paid by other persons for the same video programming.

36. Provide a list of all broadcast television stations (i) which the Company owns or has an attributable interest, and (ii) the Company manages or operates pursuant to an agreement, including but not limited to a joint sales agreement or local marketing agreement, (and produce a complete copy of each associated contract), and for each station listed:

a. identify the licensee, the network affiliation (if any), the call sign, the community of license and DMA in which the broadcast television station operates, and the number of television households it reaches;

b. identify each MVPD system that currently retransmits the broadcast television station, and for each: (1) state whether the station is carried under a retransmission consent agreement or a must-carry election; (2) if the station is carried under a retransmission consent agreement, state the term and expiration date of such agreement; (3) if the station is carried under a retransmission consent agreement, indicate whether the agreement was combined, bundled, or negotiated concurrently with a contract for rights to other video programming in which the Company has a financial interest (if so, identify the specific video programming with which the retransmission rights were combined, bundled, or negotiated concurrently); and (4) identify the periods of time, if any, during which the broadcast television station was not retransmitted by the MVPD; and

c. state, for each MVPD that retransmits the broadcast television station, the number of subscribers that receive the retransmitted broadcast television station, and the retransmission consent fee;

d. state, the monthly revenues received since January, 2009, by each such broadcast station including, but not limited to, revenue received from (1) MVPDs; (2) local advertising; (3) NBCU; and (4) other sources.

37. Identify each broadcast programming network owned by, operated by, managed by, or attributed to the Company, and for each such network, state the nature and extent of the Company's role in management, including whether the Company has any board representation, management rights, voting rights, veto power or supermajority or investor protection rights, and for the period beginning January, 2009, to the present, state separately for each quarter:

a. each OVD that distributes, and the total number of subscribers and unique users of each OVD who view, content produced or distributed by each broadcast programming network;

b. the total revenues, separately categorized by (1) subscription fees, (2) advertising revenues, and (3) other (briefly describe) received from each (a) MVPD; (b) non-affiliated OVD; (c) affiliated OVD; and (d) broadcast affiliate;

c. the margin the Company earns on each broadcast programming network separately for each (1) MVPD; (2) non-affiliated OVD; and (3) affiliated OVD; and

d. the value to the Company of selling each broadcast programming network to each additional subscriber (categorized by (1) subscription fees, (2) advertising revenue, and (3) other (briefly describe)), separately for each (a) MVPD; (b) non-affiliated OVD; and (c) affiliated OVD.

38. As of June 30, 2014,

a. identify each broadcast television station owned by or in which the Company has an attributable interest in, and state the call sign of the station and the DMA it serves;

b. state separately, for each station identified in response to subpart (a), the average retransmission consent fee per subscriber;

c. state NBCU's and Telemundo's average gross and average net advertising revenue per viewer for national broadcast advertising sales, and explain how these values were calculated; and

d. state separately for each station identified in response to subpart (a), the average gross and the average net advertising revenue per viewer for local spot advertising sales sold by the station, and explain how these values were calculated.

39. Produce all documents relating to:

a. the Company's current and continued support for currently deployed operator-supplied CableCARD devices, currently deployed retail CableCARD devices, and future CableCARD devices;

b. the Company's plans to deploy system technology or otherwise offer any relevant service that will be incompatible with the current CableCARD standard, including documents discussing the nature of the new technologies and the timeframes for their deployment;

c. technologies currently deployed by TWC but not by Comcast, such as StartOver and LookBack, including underlying system technologies not generally visible to consumers;

d. the development and deployment of streaming solutions that provide the Company's broadcast or non-broadcast video programming to consumer devices with or without using in-home hardware to transcode the video programming;

e. the extent to which new system technologies used in providing any of the Company's relevant services would enhance or limit a subscriber's ability to use a consumer-owned navigation device to record video programming; and

f. consumer-owned navigation devices, including, but not limited to, compliance with Section 629 of the Communications Act through technologies other than CableCARD, including downloadable security, and agreements to develop and support these technologies, and the retail and wholesale pricing of CableCARDs, including licensing fees. (47 U.S.C. § 549).

40. Describe the Company's current participation in, support for, and future plans relating to:

a. CableLabs, and its role in the development of products and technologies deployed by or planned to be deployed by the Company in providing any relevant service, particularly relating to the Comcast X1/X2 platform and other cloud services; and

b. The Society of Cable Telecommunications Engineers, and its role in the development of products and technologies deployed by or planned to be deployed by the Company in providing any relevant service, particularly relating to the Comcast X1/X2 platform and other cloud services.

41. Describe, and produce all documents relating to, each instance the Company has attempted to partner with another MVPD to achieve joint objectives, including but not limited to attempts to launch a coordinated TV Everywhere service. In the description, state the results of each instance and the reasons for its success or failure.

42. Describe the extent to which the technology, cloud services, software, and hardware developed in support of the X1 and X2 platforms are available for license or purchase by unaffiliated MVPDs from (i) third party hardware, software, and service providers, and (ii) available for license or purchase from Comcast.

43. With respect to the deployment of TV Everywhere provide:

a. a complete list of devices for which the Company provides TV Everywhere authentication and a complete list of applications for which the Company provides TV Everywhere authentication, that also includes identification of each device through which access for each application has been approved;

b. a list of and description of each application and device for which the Company is currently negotiating TV Everywhere authentication services;

c. a list of and description of each application and device for which the Company has declined to provide TV Everywhere authentication services;

d. a description of all the criteria used by the Company to determine whether to enter into an agreement to provide TV Everywhere authentication service to an application, content provider, or device manufacturer;

e. all documents relating to the planned or possible deployment of TV Everywhere technologies currently offered by Comcast to its current subscribers but not offered by TWC to its current subscribers; and

f. a description of Comcast's authentication of HBO Go on consumer-owned devices.

44. With regard to the capability of the Company's content and consumer premises equipment ("CPE") to interact or operate with unaffiliated content, such as through the use of applications on the Company's CPE and devices, as described on page 79-80 of the Public Interest Statement, provide:

a. a list of unaffiliated content supported by the Company that includes a description of the applications, devices or technologies that the Company uses for interoperability with such unaffiliated content;

b. the licensing and other agreements entered into by the unaffiliated content providers to accomplish the interoperability with the Company's CPE;

c. the criteria used to determine whether to grant or deny an unaffiliated person's request for access to the Company's CPE, devices or content;

d. a list of all unaffiliated content providers who have not received approval and the reasons supporting each denial for (1) unaffiliated content sources, such as those from Netflix, Hulu, and Amazon on the Company's CPE, (2) delivery of unaffiliated content to retail devices in the home, such as to Microsoft's Xbox, Sony's Playstation, Tivo devices, Roku devices, and Apple's AppleTV by in-home streaming, CableCARD, and other technologies; and (3) delivery of unaffiliated content to retail devices outside the home; and

e. all documents related to CPE research, development and innovation plans.

45. Describe the extent to which retail customers who adopt Comcast's new services, such as the "robust and innovative" services referred to on page 83 of the Public Interest Statement, are, or will be encouraged, or will otherwise find it necessary to substitute a leased CPE for a retail CPE and the extent to which future relevant services will require proprietary hardware.

46. Provide the following information separately for Strata Marketing, Inc. ("Strata") and National Cable Communications LLC ("NCC Media"):

a. all ownership, voting, or management interests in Strata and NCC Media and the parties that hold these interests;

b. a description of the roles and functions of Strata and NCC Media with respect to, and separately for, national, regional, and local cable spot advertising, including, but not limited to:

i. the persons that do business with Strata and NCC Media;

ii. the access, services, and products provided by Strata and NCC Media;

iii. the criteria used by Strata and NCC Media to determine whether to provide access, services, or products to a person and the prices charged, including any affiliation with Strata, NCC Media, or a person with an interest in Strata or NCC Media; and

iv. any alternatives to Strata and NCC Media that are available to persons that wish to place cable spot advertising; and

c. separately for national, regional, and local cable spot advertising, the quarterly revenues received by the Company from Strata and NCC Media since January 1, 2009.

47. Provide the following information concerning the cable interconnects that are owned by, controlled by, or managed by the Company in the relevant area:

a. a description of the roles and functions of the cable interconnects with respect to, and separately for national, regional, and local cable spot advertising, including, but not limited to:

i. the parties that do business with the cable interconnects;

ii. the access, services, and products provided by the cable interconnects;

iii. how the Company determines whether to give a person access to a cable interconnect, or provide related services or products to the person, and the prices charged, including the extent to which these determinations depend on whether the party is owned by, controlled by, managed by, or affiliated with the Company; and

iv. any alternatives to the cable interconnects that are available to persons that wish to place cable spot advertising; and

b. a listing of all DMAs in which the Company owns, controls, or manages one or more cable interconnects, indicating the following for each such DMA:

i. whether the DMA also is served by one or more cable interconnects that are not owned, controlled, or managed by the Company;

ii. the extent to which any such cable interconnects overlap or compete with cable interconnects that are owned, controlled, or managed by the Company; and

c. separately for national, regional, and local cable spot advertising, the quarterly revenues received by the Company from the cable interconnects since January 1, 2009, in CSV or Excel format.

48. Provide the following information concerning the Company's provision of cable advertising representation services in the relevant area:

a. a listing of all DMAs in which the Company provides these services;

b. an explanation of how the Company determines whether to run advertising on a cable system that is owned or managed by the Company and the prices charged, including the extent to which these determinations depend on whether the Company provides cable advertising representation services for that advertiser; and

c. separately for national, regional, and local cable spot advertising, the quarterly revenues received by the Company from cable advertising representation services since January 1, 2009, produced in CSV or Excel format.

49. Describe the impact the Company's policies and practices relating to dynamic ad insertion and addressable advertising have on the ability of advertisers who place ads on unaffiliated video programming or unaffiliated content to take advantage of these services, including but not limited to whether the programming is delivered to the Company's subscribers either though a set-top box or Internet access service, and the extent to which any restrictions imposed on unaffiliated video programming and content apply to advertisers placing ads on the Company's video programming or other content.

50. State the number of households:

a. eligible, as of the date of this Request, for the Company's Internet Essentials program, describe the method for calculating the number of eligible households, and produce all documents relied upon in formulating your response.

b. that will be eligible to receive Internet Essentials under Comcast's expanded eligibility requirements, as described on pages 63-64 of the Public Interest Statement after consummation of the proposed TWC transaction, and after consummation of the proposed divestiture transactions; describe the method for calculating the number of eligible households, and produce all documents relied upon in formulating this response.

51. On page 106 of the Public Interest Statement, the Applicants state that various Comcast-NBCU Order conditions, commitments and obligations will be extended to the TWC cable systems. Provide the following information:

a. List all the conditions, commitments and obligations that will be extended to the assets acquired after consummation of the proposed TWC transaction, and after consummation of the proposed divestiture transactions, and the date the conditions, commitments and obligations will expire.

b. List all conditions, commitments and obligations that will not be extended to the assets acquired after consummation of the proposed TWC transaction, and after consummation of the proposed divestiture transactions, and explain why each condition, commitment and obligations will not be extended to the acquired assets.

52. For each of the conditions and commitments contained in the Comcast-NBCU Order, state whether it has "become part of Comcast's core business ethics and operations," as described on page 107 of the Public Interest Statement, and explain how the Company has implemented each of the identified conditions and commitments.

53. Identify each instance where an OVD has discussed raising, threatened to raise, or has raised, rights to programming under the Comcast-NBCU Order or the Final Judgment entered in U.S. v. Comcast Corp. and NBC Universal, Inc., Civ. Action No. 1:11-cv-00106 (D.D.C. 2011), as a means to obtain the right to distribute the Company's non-broadcast programming, and separately for each type of non-broadcast programming network (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 the Company to provide program access to the complaining party, and produce all documents relating to each instance identified, and any settlement thereof.

54. Identify the TWC and Charter cable systems where it may take "more time and technological development" to expand access to local programming and children's VOD content and to empower parents, as described on page 110 of the Public Interest Statement; and provide an estimate when these commitments will be fulfilled. Describe in detail why the Company cannot fulfill these "other programming commitments" without additional time.

55. State the number of local news and information programming hours, as defined in the Comcast-NBCU Order, for (i) the NBC O&Os and (ii) the Telemundo O&Os as of the closing of the Comcast-NBCU transaction.

56. Provide a list of each PEG channel on the cable systems to be acquired pursuant to the proposed TWC transaction and proposed divestiture transactions, and the tier(s) (including analog and digital tiers) on which each of those channels appears. Identify, by cable system being acquired, any PEG programming carried on Video on Demand or an online platform.

57. Describe in detail and produce all documents reflecting or relating to any involvement of any officer, director, or agent of the Company to exert influence or control over the operation of Hulu, including but not limited to discussions, negotiations, or deliberations concerning any potential sale of Hulu, whether resulting in agreement or otherwise.

58. Produce all documents relating to allegations by any person that Comcast is not complying with any of the conditions or commitments contained in the FCC's Comcast-NBCU Order, excluding any complaints formally filed with the FCC.

59. Describe and produce all documents relating to data caps, including but not limited to: (i) any data caps imposed by the Company for each tier of Internet access service identified in response to Request 3 in any relevant area and the criteria used for imposing them and selecting the limit; (ii) the size of the data cap and the price of the Company's Internet access service both with and without the data cap; (iii) the Company's usage-based pricing (UBP) trials, rationale for them, and the findings or results of each such trial; (iv) video programming and other services subject to, and not subject to, the cap; (v) the cost, detriments and benefits to the Company and to the Company's subscribers of offering Internet access service with data caps, including the effect of the data caps on the Company's network; (vi) the effect of the data cap on

the Company's customer's behavior (e.g., downloading of OVD content, purchase of the Company's PPV and VOD services); (vi) the effect of the data cap on competition for any relevant service and persons who provide video programming; and (vii) whether different UBP trials are planned, and if so, a description and timetable for each.

60. Describe and produce all documents relating to traffic management or engineering tools that identify, inspect, label, tag, throttle, rate-limit, shape, discard, block or otherwise control Internet traffic on the Company's network, including but not limited to:

a. network device configurations and applicable network diagrams indicating where such actions are configured on network devices and applied to Internet traffic entering, transiting or exiting the Company's network;

b. traffic engineering actions that differentiate between the Company's services (including but not limited to VoIP – peer-to-peer and video streaming services) and similar services provided by other persons;

c. 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 specialized services and whether a particular service qualifies as a specialized service, as that term is defined by the Comcast-NBCU Order, Appendix A § 1, and separately, as defined by this Information and Data Request.

61. List all IP addresses, domain names, ports, edge applications, edge services or, categories of services where the Company has applied any traffic engineering actions described in response to Request 60 to improve or limit performance from January 1, 2011 to the present.

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

63. Produce all documents relating to subscriber access to edge providers that reference: (i) congestion of the Company's Internet access service; (ii) how quality of the Company's Internet access service affects subscriber churn and retention and the acquisition of new subscribers; and (iii) how the existence of edge providers affects demand for Internet access service.

64. Provide a list and produce a copy of all interconnection agreements, formal or informal, the Company has entered into with CDNs, edge providers, Internet access service providers and Internet backbone services providers, and all documents discussing factors the Company considers or considered in negotiating the terms of any interconnection agreement.

65. Describe any performance, service delivery guarantees or service level agreements that the Company offers to edge providers and CDNs, including but not limited to guarantees relating to latency, data rate (bandwidth/speed), steady state, peak, burst, dynamic variation or other qualifiers, packet loss, jitter, and entry points into the network.

66. List (i) the 40 "settlement free routes" into the Company's network described on page 159 of the Public Interest Statement, and (ii) all settlement-free peering agreements or arrangements that the Company has entered with any other person for each year since January 1, 2009, and identify which of these settlement- free links have been used to deliver Netflix, Inc.'s content to the Company's network.

67. Produce all documents relating to:

a. Netflix, Inc.'s Internet traffic;

b. the Company's interconnection agreement with Netflix, Inc., and the negotiations for that agreement, including but not limited to, discussions regarding traffic volumes, traffic quality, Netflix's Open Connect CDN, and network capacity; and

c. changes, if any, in policies and procedures for technical methods related to Netflix, Inc.'s 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.

68. Describe the Company's CDN, including the products and services it offers, and the contractual terms, and produce all documents relating to the Company's CDN, including but not limited to, interconnection agreements with other networks, business plans, expansion plans, budgets, forecasts of sales, costs and profits, and analyses of the market, competition or competitors.

69. Describe, and produce all documents relating to the determination by the Company that a potential or current settlement-free peer has met or continues to meet the following obligation described in the Company's settlement-free peering policy: "The end to end network investment to carry traffic between Applicants customers and Comcast customers should be relatively similar to justify settlement free network trade." The description of the methodology and associated document submission should include, but should not be limited to, the metrics, processes, protocols, tools, software and systems used to determine if data traffic with a settlement-free peer is "relatively similar," and the underlying data used to formulate the methodology.

70. Identify each instance, since January 1, 2009, where the Company entered negotiations for an interconnection agreement where the negotiations did not result in a formal or informal contract. Produce all documents relating to such negotiations between the Company and any other person, including, but not limited to, documents related to the Company's or any other party's interconnection policies or practices or change in such policies or practices, such as imposing charges or other conditions and the effects of such changes.

71. For each settlement-free peering arrangement entered into by the Company from January 1, 2009, to date, (i) describe each instance when the Company initiated a discussion that resulted in replacement of a settlement-free peering arrangement with paid peering or transit service agreement, including a description of the settlement-free peer, the date the change was made and of the reasons the change was made, and (ii) identify each person who initiated a discussion that resulted in the replacement of a settlement-free peering arrangement with the

Company with a paid peering or transit service agreement, including a description of the settlement-free peer, the date the change was made and of the reasons the change was made.

72. Describe, and produce all documents relating to:

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 upgrades 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 automatically seeks to add additional capacity when interconnection links reach a certain level of traffic (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;

d. requests, from January 1, 2010 to the present, by settlement-free peers to upgrade capacity that were not implemented within 90 days; and

e. 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).

73. List, for any upgrades or downgrades to interconnection links from January 1, 2011, to the present, for the 25 largest networks that interconnect with the Company measured by maximum capacity usage measured using the industry standard 95th percentile method: (i) the dates of the upgrades or downgrades; (ii) the amount of capacity added or removed; (iii) the type of upgrade or downgrade; (iv) whether the upgraded was initiated by a request from the network operator, or undertaken by the Company on its own initiative; and (v) the reason for the upgrade or downgrade.

74. The Applicants claim that "any action that the combined firm might undertake to harm edge providers would degrade its broadband service and reduce the profits it could earn. … Providing high-quality broadband service provides Comcast with the significant percentage of its revenue and an even higher percentage of Comcast's and TWC's operating cash flow…" Public Interest Statement at page 157, and Dr. Israel states that the "alternative of attempting to harm OTT providers by erecting "tollbooths" or otherwise foreclosing access to Comcast's broadband subscribers … would harm Comcast's broadband business." April 8, 2014 Israel Declaration at par. 37.

a. Describe in detail how harming edge providers would degrade Comcast's Internet access service and would reduce the profits Comcast could earn, and produce the data and calculations performed to support this statement, including, but not limited to, stating the "profit," "revenue" and "operating cash flow," and changes thereto, used in reaching the conclusion recited in this Request, and the quantification of the amount that the degradation of the Internet access service would reduce Comcast's profit;

b. Describe in detail the harm to Comcast's Internet access service business that would result from "erecting tollbooths" or "foreclosing access to Comcast's Internet access service subscribers," including but not limited to all quantifications of the harms;

c. Describe in detail the support for the statement that providing high quality Internet access service generates for the Company a "significant percentage of Comcast's revenue and an even higher percentage of Comcast's and TWC's operating cash flow;"

d. State whether the Company weighed any of the harms described in the statements recited in this Request against any benefits received from the harm to competition a lower quality or slower Internet access service could cause, and if so, describe the weight given to each element and produce all documents relating to the balancing undertaken by the Company; and

e. Produce all data and documents relied upon in making the statements quoted in this Request, and the calculations that support these statements.

75. For each day during the period from January 1, 2012, to May 31, 2014, and for each DMA where the Company provides VOD and PPV services, identify each IP point of presence through which traffic from (i) Cogent Communications Inc., and (ii) Level 3 Communications Inc., was delivered to the Company's Internet access service subscribers in that DMA.

76. Identify and describe each type of customer class that the Company serves, or desires to serve, outside its service areas, and describe how it markets business services or monitors the sales of such services to each customer class identified. In your description of each identified customer class (including small, medium, enterprise and cellular backhaul customers as defined on page 85 of the Public Interest Statement), include specific characteristics that distinguish each class (e.g., revenue size, geographic scope) and describe how the Company markets and monitors the sale of business services. Produce all documents relating to competition to provide services to each customer class defined on page 85 of the Public Interest Statement.

77. Produce all documents relating to bids submitted in response to requests for proposals to supply business services to customer locations outside the Company's service areas, including, but not limited to, the bids, and discussions with other persons whose service area includes customer locations outside the Company's service areas.

78. Describe in further detail, and produce all documents relating to, the business services initiative mentioned in paragraph 152 of the Israel Declaration submitted in support of the proposed TWC transaction, in which the Applicants will "partner to serve national accounts

that span the footprints of the two firms by aggregating services," and state when the planning for this partnership began, the identity of any persons that Comcast's intends to offer to provide services to after consummation of the proposed TWC transaction and proposed divestiture transactions, the services Comcast plans to provide and what next steps, if any, will be taken.

79. Identify the each of Company's programming contracts that will supersede the contracts for programming applicable to the cable systems it is acquiring as a result of the proposed TWC transaction and proposed divestiture transactions, and for each programming contract identified, quantify the amount of annual savings or additional expense, separately for each year over the seven year period following consummation of the proposed TWC transaction and the proposed divestiture transactions, that will be generated as a result of the acquisition and the application of the Company's programming contracts.

80. To the extent the Applicants contend that the proposed TWC transaction and the proposed divestiture transactions will result in (i) savings in any costs or expenditures, (ii) geographic efficiencies, (iii) an enhanced ability to introduce new products, provide more products and services to customers and to improve service quality and management of communications security risks, and (iv) any other synergies:

a. describe in detail all of the claimed efficiencies, savings, new and improved products and synergies that are projected by the Applicants to result from the proposed TWC transaction and the proposed divestiture transactions, and submit a timeline for when these efficiencies, savings, new or improved products and synergies will be generated and recognized by the Company;

b. produce all plans, analyses, and reports, models, assumptions, and spreadsheets, relating to the estimates of savings in costs, new or improved products the Company will introduce, and all synergies referred to in the Applicants' filings in the record;

c. describe in detail, and produce all documents relating to, how the proposed TWC transaction and the proposed divestiture transactions "should result in cost savings and other synergies worth approximately $1.5 billion in increased earnings before interest, taxes, depreciation and amortization within three years, and recurring every year thereafter" and "approximately $400 million in capital expense efficiencies." (Public Interest Statement at page 27);

d. provide, for each operational savings or cost synergy identified by the Applicants in determining their total savings and annual savings referred to in the Public Interest Statement and supporting declarations: (1) a quantification of the operational savings or cost synergy and an explanation of how the quantification was calculated; and (2) the steps that the Company anticipates taking to achieve that operational savings or cost synergy, and the estimated time and costs required to achieve it;

e. state, for each cost savings, whether it is a fixed cost saving or a variable cost saving and explain the reasoning. State separately the one-time fixed cost savings, recurring fixed cost savings, and variable cost savings (in dollars per subscriber and dollars per year);

f. produce all documents analyzing, estimating, justifying, providing the basis for, or otherwise discussing: (1) the operating and capital expense efficiencies and additional revenue synergies referred to in Paragraphs 6-11 in the Angelakis Declaration; (2) the increased economies of scale and scope, enhanced ability to increase investment and innovation, and the expansion and acceleration of infrastructure development as described in Paragraphs 12-39 of the Angelakis Declaration; (3) the benefits to businesses as described in Paragraphs 31-39 of the Angelakis Declaration; (4) the benefits to advertisers as described in Paragraphs 40-42 of the Angelakis Declaration; and (5) the improvements in broadband quality as described in Paragraphs 171-180 of the Israel Declaration; and

g. for each new and improved product or service that the Company claims it will be able to offer as a result of the proposed TWC transaction and the proposed divestiture transaction, state specifically 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, including but not limited to, research, development, licensing fees, equipment and manufacturing costs.

81. Produce all documents (i) relating to any communication between employees of the Company and any other person with respect to any potential cost savings, efficiencies or synergies, (ii) provided by any other person to the Company relating to any potential cost savings, efficiencies or synergies, and (iii) provided by the Company to any other person relating to any potential cost savings, efficiencies or synergies.

82. Produce all documents discussing categories of cost savings realized as a result of the Company's acquisition of an ownership interest in a joint venture involving NBC Universal, Inc. and for each category of cost savings, state whether and how much of the cost savings were passed onto the Company's subscribers.

83. The Public Interest Statement states, at pages 124-125, that the transaction will enable the merged firm to invest additional resources in communications security and extend Comcast's advanced cybersecurity technologies and practices. Produce all documents supporting this assertion, including but not limited to:

a. how customers of the combined entity will benefit from Comcast's commitment to utilize the National Institute of Standards and Technology (NIST) Framework for Improving Critical Infrastructure Cybersecurity, specifically citing the difference in cybersecurity benefits between current customers of the applicants and customers of the merged entity;

b. cybersecurity risk management challenges and improvements associated with the transaction, including (1) combining network infrastructure, enterprise risk management functions, procurement processes, and communications security personnel; (2) the current states and target states of cybersecurity risk management, and present cybersecurity gaps; and (3) any actions and timeframes identified to close the gaps;

c. implementation of DNSSEC and IPv6 to all Comcast and TWC systems;

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 the combined entity's 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.

84. Produce all documents (except documents solely relating to environmental, tax, human resources, OSHA, or ERISA issues) relating to the proposed TWC transaction and the proposed divestiture transactions, and provide for each transaction:

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 or TWC's operations, structure, policies, strategies, corporate goals, financing, business, officers, employees or any other area of corporate activity as a result of the transaction;

c. a description of, and all documents relating to (a) each alternative to the transaction by which the Company could achieve the efficiencies and cost-savings identified in Request 80 above and for each, why the company could not achieve that efficiency without the transaction; and

d. a description of any other terms or conditions of the transaction that are not reflected in the transaction agreements between the parties.

85. Produce all documents relied upon or referred to in the Angelakis Declaration. In addition, produce all documents provided to, reviewed by, relied upon, or referred to by Dr. Gregory L. Rosston, Dr. Michael D. Topper, Dr. Mark A. Israel, and Richard R. Dykhouse in their respective declarations.

86. 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 the proposed TWC transaction and the proposed divestiture transactions, including all documents and data used in these analyses.

87. Produce a copy of (i) The Nielsen Report, (ii) ComScore report, (iii) SNL Kagan report, (iv) Centris report, and (v) any other third party report on MVPD service, video programming or OVD video usage regularly used by the Company and all research using any of these reports.

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

a. a projected timeline for the transition of all the acquired customers;

b. 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;

c. 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;

d. the features and services accessible from each device that will be offered to acquired customers;

e. 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

f. all documents discussing customer migration and transition of the acquired customers to the Company.

89. Provide the Company's data as specified in Attachment A, which seeks data relating: to active and potential business service addresses; internet traffic exchange and interconnection; subscriber and plan data; daily data on the capacity and use of IP points of presence; and, for Comcast, Charter and SpinCo after the consummation of the proposed divestiture transactions, monthly data for cable service on subscribers and locations served.

90. Submit all documents analyzing the (i) the proposed acquisition of DirecTV, Inc. by AT&T, Inc., (ii) the acquisition of TWC by Charter, and (iii) the distribution agreement between The Walt Disney Company and Dish Network Corporation.

91. Produce one copy – in electronic form if available, otherwise in hard copy – of each document, database, or data set used or maintained by the Company at any time after January 1, 2009, without regard to custodian, that constitutes, records, or discusses for each relevant service: (i) subscriber acquisition cost; (ii) subscriber churn, service level change, cancellation or additions; (iii) audience or viewership measurement; (iv) advertising sales personnel call reports; (v) prices, discounts, quotes, estimates, or bids submitted to any customer or potential customer; (vi) sales; (vii) Internet traffic; (viii) billing; (ix) customer relationship databases; and (x) network performance. For each database or data set produced in response to this Request, submit any accompanying data dictionary, and any software product or platform required to access the database or data set.

92. 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, 2009, 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 Request 91. 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.

93. For all databases or data sets produced, describe in detail the relationship of the different tables in the database (e.g., an entity relationship diagram and all foreign keys) and produce documents sufficient to show the tables that are populated by the Company, and the following items for each table: (i) the size of the table in both number of records and bytes of information; (ii) the table name; (iii) a general description of the information contained in the table; (iv) a list of field names; (v) a definition for each field as it is used by the Company, including the meanings of all codes that can appear as field values; (vi) the format, including variable type and length, of each field; and (vii) the primary key in a given table that defines a unique observation.

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 term "Company" means Comcast Corporation and its Subsidiaries.

2. The term "NBCU" means NBC Universal, Inc. and its Subsidiaries.

3. The terms "NBC O&O" and "Telemundo O&O" means a Broadcast Television Station licensed to the NBC Telemundo License LLC or its Subsidiaries.

4. The term "Comcast-NBCU Order" means the Application of Comcast Corp., General Electric Co., and NBC Universal, Inc. for Consent to Assign Licenses and Transfer Control of Licenses, Memorandum Opinion and Order, 26 FCC Rec 4238 (2011).

5. 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.

6. 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.

7. The terms "and" and "or" have both conjunctive and disjunctive meanings.

8. 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.

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

14. 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.

15. 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, each sold as a package of services for a single price.

16. 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.

17. The term “Cable Advertising Representation Services” means products and services related to the sale and placement of advertising on Cable Systems.

18. The term “Cable Interconnect” means a group of Cable Systems within a DMA that are connected together to allow advertisers to reach all cable households served by the Cable Systems via a single advertising transaction.

19. 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.

20. The term “Cable Spot Advertising” means advertising time purchased on one or more Cable Systems and includes:

a. “National Cable Spot Advertising” which is Cable Spot Advertising purchased by businesses or other entities with a national footprint;

b. “Regional Cable Spot Advertising” which is Cable Spot Advertising purchased by businesses or other entities with a regional footprint; and

c. “Local Cable Spot Advertising” which is Cable Spot Advertising by local businesses or other local entities.

21. 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.

22. The term “Capacity” means capacity for efficient production 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 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.

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

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

25. The term “Comcast” means Comcast Corporation and its Subsidiaries.

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

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

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

29. 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.

30. 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, drafts of documents, copies of documents that are not identical duplicates of the originals, and copies of documents the originals of which are not in the possession, custody, or control of the Company. 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.

31. The term "Edge Provider" means entities that provide content, applications, or services over the Internet, and include but are not limited to OVDs, Voice over Internet Protocol ("VoIP") providers, and gaming companies.

32. 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.

33. The term "hurdle rate" means the required rate of return in a discounted cash flow analysis, above which investment makes sense and below which it does not. Often, this is based on a firm's cost of capital or weighted average cost of capital, plus or minus a risk premium to reflect the project's specific risk characteristics.

34. 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 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.

35. 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.

36. 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.

37. 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").

38. 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.

39. 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.

40. 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.

41. The term "Marquee Sports League" or "League" means any or all of the following sports teams or leagues: Major League Baseball, the National Basketball Association, the National Football League, the National Hockey League, NASCAR, Indy Car Series, NCAA Division I Football, NCAA Division I Basketball, the Olympics, Major League Soccer, English Premier League, ATP, USTA, WTA, USGA, PGA, LPGA, and The Tour de France.

42. The term "Multichannel Video Programming Distributor" or "MVPD" means an entity, including but not limited to, a cable operator, which is engaged in the business of making available for purchase, by subscribers or customers, multiple channels of Video Programming.

43. 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 Specialized Services, regardless of whether such programming is distributed inside or outside of the MVPD's footprint.

44. The term "Navigation Devices" means converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel Video Programming and other services offered over multichannel video programming systems via the use of authentication or another form of conditional access.

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

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

47. 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 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.

48. 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.

49. 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.

50. The term "Peer" means a Person who is a party to a peering arrangement.

51. 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.

52. The term "Person" includes the Company, and means any individual, partnership, corporation (including a business trust), joint stock company, trust, unincorporated association, joint venture, limited liability company or other entity, or a government or any political subdivision or agency thereof.

53. 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.

54. The term "Professional Video" means any video that is created or produced using professional-grade equipment, talent, and/or production crews, or for which media and/or entertainment companies hold or maintain the rights of distribution and/or syndication.

55. The term "Proposed Divestiture Transactions " means all transactions contemplated in the applications filed by Comcast, TWC, and Charter on June 5, 2014, that, if completed, would effectuate: (a) the sale of certain existing TWC Cable Systems and assets to subsidiaries or affiliates of Charter; (b) the exchange of certain existing TWC and Charter Cable Systems and assets between affiliates or subsidiaries of Comcast and Charter; or (c) the transfer of certain Cable Systems and assets from Comcast and its affiliates and related entities to a new, independent and publicly-traded company referred to as SpinCo.

56. The term "Proposed TWC Transaction" means the transaction contemplated in the applications filed by Comcast and TWC on April 8, 2014, that, if completed, would effectuate the sale of TWC Cable Systems and assets to Comcast.

57. The term "Public Interest Statement" means the Public Interest Statement submitted in support of the Proposed TWC Transaction dated April 8, 2014.

58. The term "Regional Sports Network" or "RSN" means any Non-Broadcast Video Programming Network that (i) provides live or same-day distribution within a limited geographic region of sporting events of a Marquee Sports League 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).

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

60. The term "relevant area" means, and information shall be provided separately for,

a. with respect to DBS, the United States;

b. with respect to Cable Advertising Representation Services, the United States;

c. with respect to Internet Access Service, the Cable System in which the Company provides such services; and

d. with respect to Internet Backbone Services, the United States;

e. with respect to Internet Traffic Exchange, the United States; and

f. with respect to Local Broadcast Television and Local Cable Spot Advertising, the United States;

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,

i. for Video Programming acquired or provided by an MVPD or OVD (except RSN programming and broadcast television signals as discussed in subparts (b) and (c), respectively, below), the United States;

ii. for 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; and

iii. for broadcast television signals licensed to MVPDs for retransmission to their subscribers pursuant to a retransmission consent granted by the broadcast television station or the FCC's must-carry rules, each DMA within which the station broadcasts.

l. with respect to Video Programming Distribution, the United States.

61. 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. Internet Access Service, and information shall be provided separately for:

i. Subscribers; and

ii. Edge Providers;

c. 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;

d. MVPD Service;

e. Video Programming; and

f. Video Programming Distribution, and information shall be provided separately for:

i. MVPDs; and

ii. OVDs.

62. 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

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

64. The term "Specialized Services" means services that share capacity with Internet Access Service over providers' last-mile facilities.

65. The term "SpinCo" means the new publicly traded company created by the Proposed Divestiture Transactions.

66. The term “Sports Programming” is limited to sporting events associated with sports teams, leagues, and organizations.

67. 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.

68. 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.

69. The term “System Technology” means techniques including but not limited to encoding, frequency banding, modulation, physical connections, protocols, and security (including authentication and conditional access).

70. 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.

71. 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.

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

73. 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.

74. The term “TV Everywhere” means the MVPD initiative, which allows consumers of certain services to access Video Programming on a variety of fixed and mobile Internet-connected devices.

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

76. 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.

77. 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.

78. The term "Video Programming Distribution" means the provision of Video Programming to consumers.

Instructions

1. Unless otherwise specified, all Information and Data Requests cover the period from January 1, 2009, through the date of the Request.

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 require the submission of paper copies of these documents at this time, but reserves the right to require their submission at a later time.

3. 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.

4. 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.

5. Data provided in response to this Request should include a list of all parameters/assumptions on which the data are based.

6. 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.

7. For each statement submitted in response to the Requests, indicate, by number and subsection, the Request to which it is responsive.

8. For each document submitted in response to the Requests, 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.

9. 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.

10. Provide a glossary of industry and company terminology.

11. 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 at the time, date, and place specified herein. 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.

12. 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.

13. 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 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.

14. 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.

Instruction 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. <u>Email, Attachments, and Other Electronic Messages</u>

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. <u>Hard-Copy (or Paper) Documents</u>

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. <u>Shared Resources</u>

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. <u>Provide this in hard copy format and electronically on the deliverable media.</u>

METADATA TABLE OF REQUESTED FIELDS

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

A "**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.

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: *Last, First* or *ABC Dept.* 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
READRECEIPT	Read Receipt request notification for Email messages	Note Text		X		X
SENSITIVITY	Sensitivity field from Email messages	Note Text		X		X
REVISION	Revision number extracted from metadata of native file	Note Text			X	
DATESAVED	Date native file was last modified. Format: YYYYMMDD.	Date			X	
DATEPRINTED	Date native file was printed (metadata derived from Word documents, etc.)	Date			X	
EORGANIZATION	Company field extracted from the metadata of a native file	Note Text			X	
EAUTHOR	Author field value extracted from the metadata of a native file	Note Text			X	
LAST_AUTHOR	Last Saved By field value extracted from metadata of a native file	Note Text			X	
ESUBJECT	Subject field value extracted from metadata of a native file	Note Text			X	
FILESIZE	File size in Bytes (integer value only - do not include unit of measure, thousands character, or decimal places - *e.g.*, 1008 not 1,008)	Integer		X	X	X
FILENAME	File name of native file (E-Docs or attachments to Email)	Note Text		X	X	X
APPLICATION	Application used to create native file (*e.g.*, Excel, Outlook, Word)	Note Text		X	X	X
FILEEXTENSION	File extension of native file	Fixed Length 5 chars		X	X	X
FILEPATH	File path to native file as it existed in original environment, prepended with Custodian Name.	Multi-Entry		X	X	X
DOCLINK	File path location to the current native file location on the delivery medium	Note Text			X	
DATEAPPTSTART	Start date of calendar appointment. Format: YYYYMMDD.	Date				X
TIMEAPPTSTART	Start time of calendar appointment. Format: HH:MM:SS (use 24 hour times, *e.g.*, 13:32 for 1:32 pm; timezone indicators cannot be included)	Time				X
DATEAPPTEND	End date of calendar appointment. Format: YYYYMMDD.	Date				X
TIMEAPPTEND	End time of calendar appointment. Format: HH:MM:SS (use 24 hour times, *e.g.*, 13:32 for 1:32 pm; timezone indicators cannot be included)	Time				X

Submission Index Spreadsheet for ABC Company Production

Matter: ABC's Acquisition of XYZ

Custodian	Physical Media Name	Volume Name	Begin I.D. Number	End I.D. Number	Intentionally Left Blank	Number of Records	Number of Images	Number of Native Files	Number of Extracted/OCRed Text Files	Volume Size in GB	Date Produced
Doe, John K.	ABC001	ABC001-001	ABC-JKD-00000001	ABC-JKD-00005825		258	5,825	13	258		
Doe, Jane B.	ABC001	ABC001-001	ABC-JBD-00000001	ABC-JBD-00003711		365	3,711	52	362		
TOTALS FOR THIS VOLUME						**623**	**9,536**	**65**	**621**	**0.50**	mm/dd/yyyy
Daniels, James	ABC001	ABC001-002	ABC-JAD-00000001	ABC-JAD-00005727		1,150	5,727	156	1,149		
Wise, Barry	ABC001	ABC001-002	ABC-BLW-00000001	ABC-BLW-00003010		600	3,010	20	598		
TOTALS FOR THIS VOLUME						**1,750**	**8,737**	**176**	**1,750**	**1.39**	mm/dd/yyyy
Brown, Charlene J.	ABC002	ABC002-001	ABC-CJB-00000001	ABC-00006952		1,315	6,952	68	1,310	1.02	mm/dd/yyyy
Mahan, Freda	ABC002	ABC002-001	ABC-FRM-00000001	ABC-FRM-00010400	ABC-FRM-00000698 - ABC-00000982	2,023	10,115	85	2,023	2.00	mm/dd/yyyy
TOTALS FOR THIS VOLUME						**3,338**	**17,067**	**153**	**1,750**	**1.39**	mm/dd/yyyy
GRAND TOTALS						**5,711**	**35,340**	**394**	**4,121**	**3.28**	

*** This spreadsheet can be provided on a current production-specific or a cumulative production basis, but the totals per *volume* must be provided**

**** This spreadsheet is a sample of format and does not reflect the names/Identification numbers of the sample files provided**

***** Volume size is actual space used not total available space on the delivery media**