



Office of the Attorney General
State of Texas

CIVIL INVESTIGATIVE DEMAND

To: Alphabet Inc.
c/o Kevin Yingling
25 Massachusetts Avenue, NW
9th Floor
Washington, DC 20001
202.346.1282

The Office of the Attorney General of Texas ("OAG") is investigating anticompetitive conduct in markets relating to online advertising in Texas and the rest of the United States. Such activity may violate Section 15.05(b) of the Texas Free Enterprise and Antitrust Act of 1983, Tex. Bus. & Com. Code § 15.01 *et seq.* (the "Act").

The OAG has reason to believe that you may have information and/or material relevant to its investigation and is therefore issuing you this Civil Investigative Demand ("CID") pursuant to Section 15.10 of the Act. Please review the following instructions and definitions carefully before responding to this CID. The documents you submit must be produced under a sworn certificate in the form attached as Exhibit A. Your response should be submitted **on or before October 9, 2019** to Assistant Attorney General David M. Ashton, Antitrust Division, Texas Office of the Attorney General, 300 W. 15th Street, 7th Floor, Austin, Texas 78701 or, if delivered by mail, at P.O. Box 12548, Austin, Texas 78711.

Section 15.10(i)(5) of the Act governs OAG's treatment of documents designated as containing trade secrets or confidential information. You should clearly designate documents or

portions thereof, if any, that contain trade secrets or confidential information.

NOTICE

Any person who, with intent to avoid, evade, or prevent compliance, in whole or in part, with a CID, removes from any place, conceals, withholds, destroys, mutilates, alters, or by any other means falsifies any documentary material, or otherwise provides inaccurate information, is guilty of a misdemeanor which, on conviction, is punishable by a fine of not more than \$5,000, or by confinement in county jail for not more than one year, or both. Objections to this demand may be made in accordance with Section 15.10 of the Act.

Issued on September 9, 2019.

KEN PAXTON
Attorney General of Texas

JEFFREY C. MATEER
First Assistant Attorney General

DARREN McCARTY
Deputy Attorney General for Civil Litigation

KIM VAN WINKLE
Chief, Antitrust Division

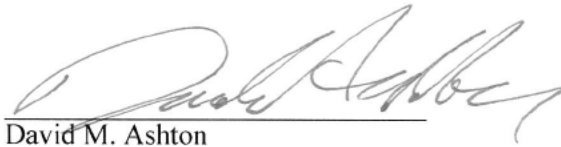


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CERTIFICATE OF SERVICE

I certify that on September 9, 2019, a true and correct copy of this Civil Investigative Demand was sent via certified mail, return receipt requested, and via electronic mail, addressed as follows:

Alphabet Inc.
c/o Kevin Yingling
25 Massachusetts Avenue, NW
9th Floor
Washington, DC 20001
202.346.1282

A handwritten signature in black ink, appearing to read "David Ashton", written over a horizontal line.

David M. Ashton
Assistant Attorney General

INSTRUCTIONS

1. Except as otherwise specified, this CID requires production of documents and information from January 1, 2014 to present day.
 - A. **This request is continuing in nature.** To the extent that Documents or information responsive to this CID are obtained or generated after the issuance of this CID, Your production and responses should be supplemented accordingly.
2. For Your response to this CID to be complete, the certification form attached as **Exhibit A** must be executed by the official supervising compliance with this CID, notarized, and submitted along with the responsive materials and information.
3. For the purposes of the request for documents, the following instructions apply:
 - A. No copying costs will be reimbursed unless a representative from the OAG has provided written approval, prior to submission, of the estimated cost of providing copies of the non-electronic documents requested in this CID. All other costs of complying with this CID will be borne by You.
 - B. If all or any portion of any responsive document is withheld for any reason, including a claim of attorney-client privilege, any other applicable privilege or immunity, or judicial order, please submit a list of the documents withheld and state individually as to each document: (1) the source of the document; (2) the name, address, position and organization of the author and recipient of the document; (3) the type, title, specific matter, length and date of the document; and (4) the reason for withholding the document, including, but not limited to, identifying the actual or anticipated litigation that underlies a claim of work product immunity.
 - C. Documents produced electronically must comply with the Specifications for Electronic Document Production attached hereto as **Exhibit B**.
 - D. All documents responsive to this request for documents, regardless of format or form and regardless of whether submitted in paper or electronic form:
 - a. shall be produced in complete form, unredacted unless privileged, and in the order in which they appear in Your files and shall not be shuffled or otherwise rearranged. For example:
 - i. if in their original condition papers were stapled, clipped or otherwise fastened together or maintained in file folders, binders, covers or containers, they shall be produced in such form, and any documents that must be removed from their original folders, binders, covers or containers to be produced shall be identified in a manner so as to clearly specify the folder, binder, cover or container from which such documents came; and
 - ii. if in their original condition electronic documents were maintained in folders or otherwise organized, they shall be produced in such form and information shall be produced so as to clearly specify the folder or organization format;
 - b. shall be produced in color where necessary to interpret the document;
 - c. shall be marked on each page with corporate identification and consecutive document control numbers;

- d. shall be accompanied by an index that identifies: (i) the name of each person from whom responsive documents are submitted; and (ii) the corresponding consecutive document control number(s) used to identify that person's documents, and if submitted in paper form, the box number containing such documents. If the index exists as a computer file(s), provide the index both as a printed hard copy and in machine-readable form (provided that OAG representatives determine prior to submission that the machine-readable form would be in a format that allows the agency to use the computer files).
 - E. If books and records that provide accurate responses are not available, enter best estimates and describe how the estimates were derived, including the sources or bases of such estimates. Estimated data should be followed by the notation "est." If there is no reasonable way for You to make an estimate, provide an explanation.
- 4. If documents responsive to a particular document request no longer exist for reasons other than the ordinary course of business or the implementation of Your document retention policy as disclosed or described in response to an interrogatory or a document request, but You have reason to believe have been in existence, state the circumstances under which they were lost or destroyed, describe the documents to the fullest extent possible, state the document request(s) to which they are responsive, and identify persons having knowledge of the content of such documents.
 - 5. If there have been any changes that affected Your answer to an interrogatory during the time period applicable to that interrogatory, or if Your response to an interrogatory would have been different at any point during the time period applicable to that interrogatory, Your response must describe those changes and the reason(s) for those changes.
 - 6. If You are unable to respond to any request for documents or information fully, explain why such response is incomplete, the efforts made by You to obtain the information, and the source from which the complete response may be obtained.
 - 7. The section headings in the interrogatories and document requests are included solely for convenience or reference and shall not in any way affect the meaning or interpretation of any of the specific interrogatories or requests.
 - 8. The terms "and" and "or" have both conjunctive and disjunctive meanings.

**Questions concerning this CID should be directed to Assistant Attorney General
David M. Ashton (512-936-1781, David.Ashton@oag.texas.gov).**

DEFINITIONS

As used herein:

1. “**AMP Page**” shall mean a webpage designed and served as an accelerated mobile page, as addressed on the domain <https://amp.dev/>.
2. “**AMP Project**” shall mean the open-source initiative in which You participate for standardizing code and design of websites for display on mobile devices, as addressed on the domain <https://amp.dev/> and at <https://opensource.google.com/projects/ampproject>.
3. “**Ad Auction**” shall mean any auction to sell Ad Inventory in the Display Advertising Market.
4. “**Ad Exchange**” shall mean a digital marketplace for Ad Inventory that Publishers and Advertisers connect to, by direct or indirect means, in order to buy or sell their online Ad Inventory, including but not limited to AdX, AppNexus, The Rubicon Project, OpenX, or One by AOL.
5. “**Ad Impression**” shall mean that specific advertisement displayed to a particular user in a specific ad space on a Publisher’s website.
6. “**Ad Intermediation Market**” shall mean that market for intermediation in online advertising consisting of Ad Exchanges and Ad Networks.
7. “**Ad Inventory**” shall mean the ad space that any Publisher has available to sell in the Display Advertising Market.
8. “**Ad Network**” shall mean those pools of Ad Inventory that are sold to Advertisers whether bought or sold directly or through an Ad Exchange, such as AdSense.
9. “**Ad Serving Market for Advertisers**” shall mean the market for providing ad serving technologies that help Advertisers manage their ad campaigns.
10. “**Ad Serving Market for Publishers**” shall mean the market for providing ad serving technologies that help Publishers manage their Ad Inventory.
11. “**AdMeld**” shall mean that SSP of the same name that You acquired in 2011.
12. “**AdMeld Merger Period**” shall mean that period of time from January 1, 2010 until December 31, 2012.
13. “**AdMob**” shall mean that Ad Network for mobile devices of the same name that You acquired in 2010.
14. “**AdMob Merger Period**” shall mean that period of time from January 1, 2008 until December 31, 2011.
15. “**AdRank**” shall mean that method for determining a winning bid in an AdWords Auction.
16. “**AdSense**” shall mean Your Ad Network that enables certain Publishers to sell ads to the Google Display Network through AdWords.
17. “**AdSense Auction**” shall mean that auction through which You sell Ad Inventory to the bidder to AdWords and AdX buyers only.

18. “**AdSense Direct**” shall mean that feature of AdSense that allows Publishers to manage Direct Sales through AdSense.
19. “**AdWords**” shall mean Your Demand Side Platform that allows Advertisers to buy display space on a limited number of websites.
20. “**AdWords Auction**” shall mean that auction method for selling AdWords Ad Inventory.
21. “**Advertiser**” shall mean anyone who buys online Ad Inventory on a Publisher’s webpage to serve ads to those internet users who visit a Publisher’s webpage.
22. “**Advertiser Ad Server**” shall mean those tools used by Advertisers to manage their ad campaign by optimizing how Advertisers store and deliver advertisements by tracking where ads are served, such as Your DoubleClick Campaign Manager or DV360.
23. “**AdWords Customer Match**” shall mean Your advertising retargeting product.
24. “**Behavioral Data**” shall mean all types of data collected based on online user preferences and behaviors, regardless of whether acquired directly from the user (“**First-Party Data**”) or indirectly (“**Second-Party Data**” or “**Third-Party Data**”).
25. “**Carousel**” shall mean that collection of news stories, news content, or other articles, displayed or featured in cart-style design near the top of a Google search engine results page.
26. “**Cookie-Matching**” shall mean the process of mapping a user from a Demand Side Platform to a Data Management Platform by giving him/her a unique ID.
27. “**Cost-Per-Click**” or “**CPC**” shall mean that method of payment by which Advertisers pay a certain amount of money each time a user clicks on ad space filled by that Advertiser.
28. “**Cost-Per-Mille**” or “**CPM**” shall mean that method of payment by which Advertisers pay a certain amount of money for every thousand Ad Impressions that occur in a given ad space.
29. “**Client-Side Header Bidding**” shall mean that form of Header Bidding where the user’s browser rather than the DFP invites bids from Advertisers for a specific Ad Impression.
30. “**Data Management Platform**” or “**DMP**” shall mean those data providers who collect, store, classify, analyze, organize, and manage First-Party Data and Third-Party Data and link to or integrate with a DSP, including but not limited to, BlueKai, Weborama, eXelate, Krux, Lotame, and Adobe Audience Manager.
31. “**Deal ID**” shall mean that data or information passed to a DSP along with a bid request that enables the DSP to know that a particular viewer of an Ad Impression belongs to the audience that an Advertiser intends to target with the ad.
32. “**Demand Side Platform**” or “**DSP**” shall mean those entities that act on behalf of Advertisers to purchase Ad Inventory by connecting Advertisers to Ad Exchanges or SSPs or help Advertisers find the most effective Ad Impressions, including but not limited to, DoubleClick Bid Manager, DataXu, MediaMath, AOL, Turn, the Trade Desk, Rocket Fuel, Audience Science, AppNexus, Adform, and Amazon DSP.
33. “**Direct Sales**” shall mean the portion of Ad Inventory that is sold directly by a Publisher.

34. **“Display Advertising Market”** shall mean that portion of the online advertising market that displays visual-based advertisements on the website of a Publisher.
35. **“Document”** shall mean the original and all non-identical copies (whether different from the original because of notes, underlining, attachments, or otherwise), all computer files, and any written, printed, or recorded material of every kind in the possession, custody, or control of You. The term “computer files” includes information stored in or accessible through computers, portable computers, handheld devices, workstations, minicomputers, mainframes, servers, backup disks and tapes, archive disks and tapes, and other forms of offline storage, whether on or off the premises of Your place of business. This definition covers electronic mail messages (“e-mail”), wikis, slack messages, text messages, social media messages, and other electronic Documents in Your possession, custody, or control.
36. **“DoubleClick Merger Period”** shall refer to that time period from January 1, 2007 to January 1, 2010.
37. **“DoubleClick Bid Manager”** or **“DBM”** shall mean Your Demand Side Platform that manages the purchasing of Ad Inventory for Advertisers.
38. **“DoubleClick Campaign Manager”** or **“DCM”** shall mean Your Demand Side Ad Server that stores and delivers advertisements and helps Advertisers monitor and optimize their ad campaigns.
39. **“DoubleClick for Publishers”** or **“DFP”** shall mean Your Ad Server used to manage Publisher Ad Inventory before it was integrated with AdX and renamed Google Ad Manager.
40. **“DFP Ad Privacy Policy”** shall mean all iterations of Your advertising privacy policy throughout the Extended Time Period, including all amendments, changes, corrections, and modifications thereto.
41. **“DFP Premium”** shall mean that version of Your DFP that charges Publishers based on the number of impressions that their ads receive.
42. **“DFP Small Business”** shall mean that version of Your DFP that is offered to Publishers who earn fewer than ninety million total impressions per month.
43. **“Dynamic Allocation”** shall mean that feature of DFP introduced in 2014 that changed the procedure for how a winning bid was selected on DFP.
44. **“Enhanced Dynamic Allocation”** or **“EDA”** shall mean that feature of DFP that allowed AdX to use Dynamic Allocation on Premium Inventory and Direct Sales of Publishers.
45. **“Exchange Bidding Dynamic Allocation”** **“Exchange Bidding”** or **“EBDA”** shall mean that feature of DFP introduced in 2018 which enabled Publishers using DFP to connect to third-party exchanges to AdX over a server-to-server Connection, allowing multiple Ad Exchanges to submit bids simultaneously in a Unified Auction.
46. **“Extended Time Period”** shall mean that period of time from January 1, 2010 to the present day.
47. **“First-Price Auction”** shall mean that method of Ad Auction where the Publisher is paid the amount that the highest bidder bids, either directly or through an intermediary.
48. **“First-Party Cookies”** shall mean those cookies that are associated with the domain of the site a user visits.

49. **“AdX Floor Pricing”** shall refer to that practice of AdX where it uses the highest estimated price of the Ad Exchange at the top of the Waterfall as the price floor in an AdX auction.
50. **“Google Ad Manager”** shall mean Your Ad Server previously identified as DFP and DFP after it was integrated with AdX.
51. **“Google Ad Exchange”** or **“AdX”** shall mean Your Ad Exchange before it was integrated with DFP to form Google Ad Manager.
52. **“Google AdWords”** or **“AdWords”** shall mean that computer program that enables Advertisers to create ads to appear on relevant search results pages.
53. **“Google AdX Seller”** shall mean that Ad Network sales platform on AdX that allows Publishers to manage Direct Sales.
54. **“Google Analytics”** shall mean Your enterprise-level data analytics product.
55. **“Google Audience Center”** shall mean Your Data Management Platform that integrated with DoubleClick Bid Manager.
56. **“Google Certified Ad Networks”** shall mean those Ad Networks to which AdSense limits sales to AdWords and AdX buyers.
57. **“Google Cookie Matching”** shall mean that service provided by You that associates a DoubleClick cookie with a buyer-specific encrypted ID and a cookie associated and matches that cookie with a cookie from user’s web browser within a buyer’s domain.
58. **“Google Display Network”** or **“GDN”** shall mean that network of Publishers that sell Ad Inventory through AdSense and AdX Seller.
59. **“Google Display & Video 360”** or **“DV360”** shall mean that advertising product that manages the purchasing of Ad Inventory for Advertisers after DoubleClick Campaign Manager, Google Audience Center, and DoubleClick Studio were integrated with DoubleClick Bid Manger.
60. **“Google Marketing Platform”** shall mean that marketing platform launched by You in 2018 that unified Google Analytics and DoubleClick under a single brand.
61. **“Header Bidding”** shall mean that form of Ad Auction where Ad Exchanges and SSPs are invited to submit bids for an Ad Impression through Pre-Auction Bidding simultaneously in a Unified Auction, conducted outside of DFP.
62. **“Identify”** with respect to a Document means to give, to the extent known, the type of Document, the general subject matter, the date of the Document, and the author, addressees, and recipients of the Document.
63. **“Identify”** with respect to a Person means to give, to the extent known, the Person’s full name, title, and when referring to a natural Person, additionally, the present or last known place of employment. Once a Person has been first identified in accordance with this definition, only the name of that Person need be listed in response to subsequent discovery requesting the identity of that Person.
64. **“Intermediated Sales”** shall mean the sale of Ad Inventory by an intermediary, or otherwise Ad Inventory not sold by the Publisher itself.

- 65. **“Invite Media Merger Period”** shall mean that period of time from January 1, 2009 until December 31, 2012.
- 66. **“Non-Premium Inventory”** shall mean that Ad Inventory that is not Premium Inventory or Remnant Inventory.
- 67. **“Person”** is defined as set forth in TEX. BUS. & COM. CODE § 15.03(3), and includes any natural person, corporate entity, partnership, association, joint venture, government entity, or trust.
- 68. **“Pre-Auction Bidding”** shall mean that feature of Header Bidding where the active bidding process takes place before a user’s browser or third-party server asks DFP to serve the ad and before the webpage starts loading.
- 69. **“Premium Inventory”** shall mean the most expensive high yield Ad Inventory that a Publisher has available, generally at the top of a webpage.
- 70. **“Programmatic Advertising”** shall mean that computerized decision-making process where Ad Inventory in the Display Advertising Market is managed and sold.
- 71. **“Publisher”** shall mean anyone who serves content on the internet that is monetized by selling Ad Inventory to Advertisers.
- 72. **“Publisher Ad Servers”** shall mean those tools used by Publishers to determine how Ad Inventory is filled, such as DFP, Google Ad Manager, OpenX or AdZerk.
- 73. **“Real-Time Auction”** shall mean that process by which Advertisers bid on Ad Inventory directed at a particular user in real time where the Ad Impression is awarded to the highest bidder.
- 74. **“Real-Time Bidding”** or **“RTB”** shall mean that process by which Advertisers submit bids for Ad Impressions in real-time.
- 75. **“Relating to”** shall mean in whole or in part constituting, containing, concerning, embodying, reflecting, discussing, describing, analyzing, identifying, stating, referring to, dealing with, or in any way pertaining to.
- 76. **“Remnant Inventory”** shall mean Ad Inventory whose delivery has not been guaranteed by the Publisher.
- 77. **“Search Advertising Market”** shall mean that type of Header Bidding where the Pre-Auction Bidding takes place on a remote server instead of a user’s browser.
- 78. **“Second-Price-Auction”** shall mean that type of auction where the winning bid is awarded to the highest bidder, but the price the Advertiser pays for the winning bid is only slightly more than the second-highest bid submitted.
- 79. **“Server-Side Header Bidding”** shall mean that type of Header Bidding where the Pre-Auction Bidding takes place in third-party server instead of in a user’s browser.
- 80. **“Software Development Kit”** or **“SDK”** shall mean any software that is used to collect data from user behavior within a specific application on a mobile device.
- 81. **“Smart Pricing”** shall mean that practice of You that automatically reduces bids for ad space with historically poor performance.

82. **“Supply Side Platforms” or “SSP”** shall mean those entities that organize demand for Ad Inventory and connect Publishers to Ad Exchanges to sell Ad Inventory, including those that allow Publishers to connect directly to DSPs, such as AdX, AppNexus, PubMatic, Rubicon Project, OpenX, and One by AOL.
83. **“T-50 Advertisers”** shall mean those top fifty Advertisers identified in response to interrogatory number 123.
84. **“T-50 Publishers”** shall mean those top fifty Publishers identified in response to interrogatory number 124.
85. **“Third-Party Cookies”** shall mean those cookies that are associated with a domain that is different from the domain of the site a user visits, such as those used by Your Ad Server, Google Ad Manager.
86. **“Unified Auction”** shall mean that feature of Exchange Bidding which allows all third-party Ad Exchanges that are connected to AdX to compete in an Ad Auction.
87. **“Waterfall”** shall refer to that system under which a Publisher could connect to several Ad Exchanges through DFP that were ranked according to their average historical yield to avoid relying on only one Ad Exchange.
88. **“You”, “Your”, “Alphabet”, or “Google”** shall mean Alphabet Inc., its past and present officers, employees, agents and representatives, parents and predecessors, divisions, subsidiaries, affiliates, partnerships and joint ventures. The terms “subsidiary”, “affiliate”, and “joint venture” refer to any firm in which there is total or partial ownership of twenty-five percent or more or total or partial control between the company and any other Person or entity.

INTERROGATORIES

Acquisitions

1. Explain Your business rationale for Your acquisition of DoubleClick in 2008 and Identify any projects or other efforts by You to enter the Display Advertising Market prior to Your acquisition of DoubleClick. The time period applicable to this Interrogatory is the DoubleClick Merger Period.
2. Explain Your business rationale for Your acquisition of AdMob in 2010 and Identify any projects or other efforts by You to enter the Mobile Advertising Market prior to Your acquisition of AdMob. The time period applicable to this Interrogatory is the AdMob Merger Period.
3. Explain Your business rationale for Your acquisition of Invite Media in 2010.
4. Explain Your business rationale for Your acquisition of AdMeld in 2011.

Integrations

5. Explain Your business rationale for integrating AdMob and Invite Media into AdX.
6. Explain Your business rationale for integrating DFP and AdX into Google Ad Manager.
7. Explain Your business rationale for unifying Google Analytics and DoubleClick into Google Marketing Platform.
8. Explain Your business rationale for integrating DV360 into Google Marketing Platform.

Google Display Network

9. Explain the relationship between AdWords and AdSense.
10. Explain the relationship between AdSense and AdX Seller.
11. Explain how AdWords, AdSense, and AdX Seller interact with the Google Display Network.
12. Explain Your business rationale for using AdSense to limit AdWords and AdX buyers to purchasing only from Google-Certified Ad Networks.
13. Explain Your business rationale for requiring AdX sellers to purchase Ad Inventory through AdX in order to interact with buyers from sales platforms other than AdX Seller.
14. Identify the types of Behavioral Data that You collect, have collected, or can collect through or for use with AdWords, DoubleClick Campaign Manager, and DoubleClick Bid Manager, and describe how that Behavioral Data is maintained.

Google Display & Video 360

15. Explain the pricing structure for DV360. Include in Your response any discounts, bundled or otherwise, that Advertisers are eligible for, and Identify the criteria that an Advertiser must meet to be eligible for any such discount.

AdWords & Ad Sense Auctions

16. Explain how AdWords conducts an Ad Auction and selects a winning bid.

17. Explain how the price is determined for the winning bid in an AdWords Auction.
18. Describe how a Second-Price-Auction works in AdWords.
19. Explain how AdSense conducts an Ad Auction and selects a winning bid, including the role of AdRank in the process.
20. Explain how the price is determined for the winning bid in an AdSense Auction.
21. Describe how a Second-Price-Auction works in AdSense.
22. Explain Your business rationale for using Smart Pricing in an AdSense Auction to automatically reduce bids for certain Ad Inventory.

DoubleClick for Publishers

23. Explain how a user's browser interacts with DFP.
24. Explain the process of how DFP identifies whether or not an ad that was sold directly by the Publisher is eligible to be served to a user.
25. Explain the process of how DFP triggers AdWords to invite Advertisers to submit bids for an Ad Impression.
26. Explain the process of how DFP interacts with Ad Exchanges to submit bids for an Ad Impression.
27. Explain the process of how DFP interacts with AdX to collect bids for an Ad Impression.
28. Explain Your business rationale for offering DFP Small Business to Publishers for free.
29. Explain Your business rationale for charging Publishers for access to DFP Premium based on the number of impressions their ads receive.
 - a. State how much You charge each Publisher per Ad Impression on DFP Premium.
 - b. Explain Your business rationale for not including impressions sold through AdSense in this pricing model.
 - c. Explain Your business rationale for not including impressions sold though AdX Seller in this pricing model.
 - d. Identify the revenue of DFP by fiscal quarter for the Extended Time Period.
30. Identify the costs of running DFP by fiscal quarter for the Extended Time Period. To the extent that DFP Small Business and DFP Premium differ on cost, please distinguish between the costs of each.

Google Ad Exchange

31. Explain how AdX conducts an Ad Auction and selects a winning bid.
32. Explain how DSPs and Ad Networks submit bids for Ad Inventory and Ad Impressions. As part of Your response:
 - a. Explain how AdX processes bids from DSPs and Ad Networks.

- b. Explain how AdX interacts with other Ad Exchanges to submit a bid for an Ad Impression.
 - c. Explain how DSPs and Ad Networks compete within AdX.
 - d. Explain how DSPs and Ad Networks compete with AdWords for Ad Impressions.
 - e. Explain how AdX competes with third-party Ad Exchanges.
33. Explain how and why an AdX Auction is optimized. As part of Your response:
- a. Explain why You might choose to close an AdX Auction at a price lower than the reserve price.
 - b. Identify the types and purposes of any experiments AdX runs in order to optimize the AdX Auction.
 - c. Identify each factor that is considered by You in exercising Your discretion to optimize an AdX Auction.
34. Explain Your business justification for imposing a mandatory minimum ad spend on buyers for purchasing Ad Inventory through AdX. As part of Your response:
- a. Identify the types of customers that are subject to this mandatory minimum.
 - b. Explain Your business justification for why You only consider ad spend that is purchased through DBM to satisfy the mandatory minimum requirements on buyers for purchasing Ad Inventory on AdX.

Data Management Platforms

35. Identify any DMP that requested to connect to, interoperate with, or integrate with DBM or Google Audience Center.
- a. For each company that You granted such a request, explain why such request was granted.
 - b. For each company that was denied such a request, explain why such request was denied.
36. Identify the types and sources of data collected by DBM and Google Audience Center.
37. Explain Your business justification for prohibiting DMPs from using tracking pixels on GDN unless the DMP also owns the DSP executing the transaction.
38. Explain Your business justification for prohibiting DMPs from operating on AdSense, GDN, or any other Ad Network owned or operated by You.
39. Identify the DMPs that are allowed to use tracking pixels on GDN.

Retargeting

40. Identify the types and sources of data that You rely upon for retargeting campaigns.
41. Explain how You collect the data that You rely upon for retargeting campaigns on Chrome.
42. Explain how You collect the data that You rely upon for retargeting campaigns on mobile devices.

43. Identify each product that competes with AdWords Customer Match to provide retargeting services.
44. Explain the advantages of using AdWords Customer Match over other retargeting products.
45. Explain how Google Analytics evaluates the success of an AdWords Customer Match retargeting campaign.
46. Explain how Cookie-Matching facilitates bidding in a retargeting campaign.
47. Explain the extent to which You make Deal ID's available to third-party DSPs or third-party DMPs.

Dynamic Allocation

48. Explain how Ad Exchanges are or were ranked according to a Waterfall without enabling Dynamic Allocation. In Your response:
 - a. Explain how the performance of Ad Exchanges are measured when Dynamic Allocation is not enabled; and
 - b. Detail the types and sources information used to make ranking determinations when Dynamic Allocation is not enabled.
49. Explain how You ranked or rank Ad Exchanges when Dynamic Allocation is enabled. In Your response:
 - a. Identify the factors that You examine or have examined to analyze the performance of Ad Exchanges when Dynamic Allocation is enabled;
 - b. Detail the types and sources of information You use or have used in determining the rank of an Ad Exchange when Dynamic Allocation is enabled;
 - c. Explain how You evaluated the highest estimated CPM price of an Ad Exchange when Dynamic Allocation was enabled, and Identify what data, if any, You relied upon;
 - d. Explain how AdX used Dynamic Allocation to offer more for an Ad Impression than the estimated CPM price of a different Ad Exchange; and
 - e. Identify the sources of historical data used by You to estimate the CPM price to assign to an Ad Exchange.
50. Explain how non-AdX Ad Exchanges could bid against AdX in real-time when Dynamic Allocation was enabled.
51. Explain how non-AdX Ad Exchanges can submit a bid after AdX has completed AdX's real time auction when Dynamic Allocation was enabled.
52. Explain how AdX selects the winner of the AdX Ad Auction when Dynamic Allocation was enabled.
53. Explain how AdX could set floor prices for bids when it conducted an Ad Auction with Dynamic Allocation enabled.
54. Identify the types and sources of information related to other Ad Exchanges, including the estimated CPM price of those exchanges, that AdX had access to prior to running AdX's real time auction.

55. Explain how a non-AdX Ad Exchange that did not participate in Your DFP could participate in Real Time Bidding prior to the advent of Header Bidding.
56. Explain Your business justification for causing AdX, AdSense, AdMob, and DFP work together, interact, interoperate, or integrate when Dynamic Allocation is enabled.

Enhanced Dynamic Allocation

57. Explain how EDA is different from Dynamic Allocation.
58. Explain how a Publisher's Premium Inventory and Direct Sales are affected when EDA is enabled.
59. Explain how a Publisher with guaranteed Ad Inventory competes with AdX when EDA is enabled.

Header Bidding

60. Explain how AdX utilized the CPM price estimate after Header Bidding was introduced and Identify any changes in how AdX estimated the CPM price after the introduction of Header Bidding.
61. Identify by type and brand any software of which You were aware of that assisted Publishers or SSPs with implementing Header Bidding.
62. Explain how Header Bidding affects the latency or load time of a webpage.
 - a. Explain how Server-Side Header Bidding affects the latency or load time of a webpage.
 - b. Explain how Client-Side Header Bidding affects the latency or load time of a webpage.
63. Explain how a Publisher's decision to limit the number of demand sources that are integrated into a header auction affect webpage latency or webpage load times.
64. Explain how Header Bidding can be implemented asynchronously to reduce latency or load time of a webpage.

Exchange Bidding

65. Explain how Publishers connect third-party exchanges to AdX through DFP using Exchange Bidding.
66. Explain Your business or technological rationale for hosting the Unified Auction as a First-Price Auction as opposed to a Second-Price Auction when Exchange Bidding is enabled.
67. Explain how enabling the Exchange Bidding feature on the Google Display Network affects the Unified Auction hosted by the DFP.
68. Explain how Exchange Bidding operates differently, if at all, for Ad Exchanges that have integrated with AdX through a server-to-server connection versus Ad Exchanges that have not integrated with AdX through a server-to-server connection.
69. Identify the sources and types of any information that DFP sends to AdX during or before the Exchange Bidding process, which is not simultaneously available to other Ad Exchanges.

70. Identify the sources and types of information that You rely on in submitting a bid when Exchange Bidding is enabled.
71. Identify any fees charged to competing Ad Exchanges to participate in Exchange Bidding.

Mobile Targeting

72. Explain how Android Advertising ID tracks individual users across different applications on Android.
73. Identify any SDKs utilized by any Google application on Android and explain the types and categories of user data they collect from each user of any Google owned application.
74. Explain Your business justification for using a login function to collect user behavioral data across devices.
75. Identify each of Your competitors that has successfully collected and monetized user data across devices using a login function.
76. Identify the top fifty independent application developers that use AdMob.
77. Identify the percentage of revenue from mobile ads that goes to a mobile application developer who uses AdMob.
78. Identify the percentage of revenue that You keep from revenue from mobile ads on applications developed by independent application developers that use AdMob.

Accelerated Mobile Pages

79. Explain Your relation to, control or influence over, or participation in the AMP Project, including the identity of any individual currently or previously employed or retained by You who possesses or has possessed decision-making authority relating to the AMP Project, and the nature of their authority.
80. Explain each materially different iteration of the governance of or final decision-making authority within the AMP Project (for instance, by a steering committee versus by technical lead).
81. Explain the criteria by which participants in the governance of the AMP Project are or have been selected.
82. Identify any companies or individuals You are aware of who have expressed a desire to participate in the governance of the AMP Project but who have been denied.
83. State the amount and type of resources (for instance, money, employee time, equipment, or facilities), by year, that You have expended in relation to the AMP Project.
84. State and explain the financial impact – both direct and indirect – to You arising from the AMP Project.
85. Identify any technologies, solutions, or projects that You considered as a potential alternative to the AMP Project.

86. State Your reasons or motivations for Your participation in the AMP Project, including any of Your plans to profit directly or indirectly from the AMP Project.
87. State Your reasons for requiring that (or acquiescing to a requirement that) AMP Pages be served from a cache via google.com or ampproject.org.
88. State the direct and indirect benefits and costs to You of implementing a requirement that AMP Pages be served from a cache via google.com or ampproject.org (as opposed to a third-party server, such as a Publisher's server).
89. List the types of Behavioral Data which You have collected or can collect when a user views an AMP Page.
90. List the types of Behavioral Data which third-party website owners have collected or can collect when a user views an AMP Page.
91. List the types of Behavioral Data which You have collected or can collect when a user views a non-AMP Page.
92. List the types of Behavioral Data which third-party website owners have collected or can collect when a user views a non-AMP Page.
93. How does the introduction or use of AMP Pages impact the Cookie-Matching process?
94. What benefits do You perceive as able to accrue to You when a user views an AMP Page instead of its non-AMP Page counterpart?
95. What pro-competitive benefits or efficiencies do You contend have accrued from or will accrue from the AMP Project?
96. How does a webpage's status as an AMP Page versus a non-AMP Page impact that webpage's placement and order in Your search engine results page, including placement and order within Your Carousels?
 - a. What factors have You considered in determining whether, or the extent to which, a webpage's status as an AMP Page versus a non-AMP Page impacts that webpage's placement and order in Your search engine results page?
 - b. What factors have You considered in determining whether, or the extent to which, a webpage's status as an AMP Page versus a non-AMP Page impacts that webpage's placement and order within Your Carousels?
97. To what extent are third-party analytics vendors such as Adobe Analytics or comScore permitted or given access to Behavioral Data which You collect or maintain and which results from an AMP Page being served from a cache via google.com or ampproject.org (as opposed to from a third-party server such as a Publisher's server)?
98. Identify the criteria that You use to determine whether a third-party analytics vendor such as Adobe Analytics or comScore will be permitted or given access to Behavioral Data which You collect or maintain and which results from an AMP Page being served from a cache via google.com or ampproject.org (as opposed to from a third-party server such as a Publisher's server).

99. Explain Your relation to, control or influence over, or association with Prebid and prebid.org.
100. How has the AMP Project affected internet traffic to Publishers who offer their own targeted advertising services to Advertisers?
101. Explain how a Publisher, SSP, or competing Ad Exchange can utilize Header Bidding to serve ads on an AMP Page.

Chrome

102. List the types of Behavioral Data which You have collected or can collect when a user views a website on Chrome.
103. List the types of Behavioral Data which third-party Publishers have collected or can collect when a user views the Publisher's website on Chrome.
104. List the types of Behavioral Data which third-party Data Management Platforms have collected or can collect when a user views a website on Chrome.
105. Do You now or do You have plans to restrict cross-site tracking or Cookie-Matching on Chrome? If so, explain those plans in detail.

Privacy Policy

106. Explain Your business rationale for any change to Your DFP Ad Privacy Policy in 2016 notifying users of Your ability to combine their browsing data with personally identifiable information.

YouTube

107. Explain Your business justification for removing YouTube inventory from other Ad Exchanges.
108. Identify all of the Ad Exchanges that an Advertiser could utilize to advertise on YouTube in 2014.
109. Identify all of the Ad Exchanges that an Advertiser could utilize to advertise on YouTube in 2016.
110. Identify all platforms that Advertisers can use to buy ads on YouTube.

Competition

111. State the name, business address, estimated revenue (if applicable), and estimated market shares, of each of Your competitors with respect to AdX.
112. State the name, business address, estimated revenue (if applicable), and estimated market shares, of each of Your competitors with respect to AdMeld.
113. State the name, business address, estimated revenue (if applicable), and estimated market shares, of each of Your competitors with respect to Ad Mob.
114. State the name, business address, estimated revenue (if applicable), and estimated market shares, of each of Your competitors with respect to DFP.
115. State the name, business address, estimated revenue (if applicable), and estimated market shares, of each of Your competitors with respect to DBM.

116. State the name, business address, estimated revenue (if applicable), and estimated market shares, of each of Your competitors with respect to Google Audience Center.
117. State the name, business address, estimated revenue (if applicable), and estimated market shares, of each of Your competitors with respect to DoubleClick Campaign Manager.
118. State the name, business address, estimated revenue (if applicable), and estimated market shares, of each of Your competitors with respect to AdSense.
119. State the name, business address, estimated revenue (if applicable), and estimated market shares, of each of Your competitors with respect to GDN.
120. State the name, business address, estimated revenue (if applicable), and estimated market shares, of each third-party Ad Exchange or SSP that competes with AdX.
121. State the name, business address, estimated revenue (if applicable), and estimated market shares, of each of Your competitors with respect to Chrome.
122. State the name, business address, estimated revenue (if applicable), and estimated market shares, of each of Your competitors with respect to YouTube.

General

123. Identify the top fifty Advertisers that purchase Ad Inventory in the Display Advertising Market through one or more of Your products in terms of annual dollar amounts paid for Ad Inventory, during the Extended Time Period.
124. Identify the top fifty Publishers that sell Ad Inventory in the Display Advertising Market through one or more of Your products in terms of annual revenue received from Ad Inventory sold, during the Extended Time Period. For any contract produced in response to any Request for Documents, Identify those which have provisions that relate to exclusive dealing, exclusionary periods, or restrictions on contracting with any competitors of You, or which restrict any counterparty from entering or operating in a particular product market in which You are also a market participant.
125. Identify any service or third-party service providers You use to observe, measure, or track Publisher traffic to or through Your products in both the Ad Intermediation Market the Ad Serving Market for Advertisers, and the Ad Serving Market for Publishers including but not limited to, AdX, AdMeld, Ad Mob, DFP, DBM, DCM, AdSense, and GDN.
126. For each of the following terms and phrases, list all abbreviations or other alternate or shorthand terms or phrases which You use or have used to mean the same thing:

“AMP Page”, “AMP Project”, “Ad Auction”, “Ad Exchange”, “Ad Impression”, “Ad Intermediation Market”, “Ad Inventory”, “Ad Network”, “Ad Serving Market for Advertisers”, “Ad Serving Market for Publishers”, “AdMeld”, “AdMob”, “AdSense”, “Advertiser”, “Advertiser Ad Server”, “AdWords Customer Match”, “Behavioral Data”, “First-Party Data”, “Second-Party Data”, “Third-Party Data”, “Carousel”, “Cookie-Matching”, “Cost-Per-Click”, “Cost-Per-Mille”, “Client-Side Header Bidding”, “Data Management Platform”, “Demand Side Platform”, “DoubleClick Bid Manager”, “Direct Sales”, “Display Advertising Market”, “DoubleClick Campaign Manager”, “DoubleClick for Publishers”, “DFP Ad Privacy Policy”, “Dynamic

Allocation”, “Enhanced Dynamic Allocation”, “Exchange Bidding”, “First-Price Auction”, “First-Party Cookies”, “AdX Floor Pricing”, “Google Ad Manager”, “Google Ad Exchange”, “AdWords”, “Google Analytics”, “Google Audience Center”, “Google Cookie Matching”, “Google Display Network”, “Google Display & Video 360”, “Google Marketing Platform”, “Header Bidding”, “Intermediated Sales”, “Non-Premium Inventory”, “Pre-Auction Bidding”, “Premium Inventory”, “Programmatic Advertising”, “Publisher”, “Publisher Ad Servers”, “Real-Time Auction”, “Real-Time Bidding”, “Remnant Inventory”, “Search Advertising Market”, “Second-Price-Auction”, “Server-Side Header Bidding”, “Software Development Kit”, “Supply Side Platforms”, “Third-Party Cookies”, “Unified Auction”, “Waterfall”.

127. Identify each Person involved in answering any part of these interrogatories or gathering Documents or Communications responsive to these document requests, indicating which interrogatory each person answered and which document requests the person was involved in gathering.
128. For each of the foregoing Interrogatories, Identify the Persons currently or previously employed or retained by You, with principle knowledge, decision-making or management authority, or expertise related to the subject matter of the Interrogatory. For each Person so identified, Identify by type and format, the number of Documents under that Person’s custody or control that relate to the subject matter of the Interrogatory.
129. For each of the following Document requests for which responsive Documents are produced, Identify the bates range of Documents produced that correspond to each Document request.

REQUESTS FOR DOCUMENTS

Acquisitions

1. Produce planning documents, white papers, market analyses, competitive analyses, merger retrospectives, strategic plans or other decision-making and analytical Documents that relate to Your acquisition of DoubleClick. The time period applicable to this Request is the DoubleClick Merger Period.
2. Produce planning documents, white papers, market analyses, competitive analyses, merger retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your acquisition of AdMob. The time period applicable to this Request is the AdMob Merger Period.
3. Produce planning documents, white papers, market analyses, competitive analyses, merger retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your acquisition of AdMeld. The time period applicable to this Request is the AdMeld Merger Period.
4. Produce planning documents, white papers, market analyses, competitive analyses, merger retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your acquisition of Invite Media. The time period applicable to this Request is the Invite Media Merger Period.

Integrations

5. Produce planning documents, white papers, market analyses, competitive analyses, retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your integration of AdMob and Invite Media into AdX. The time period applicable to this Request is the Extended Time Period.
6. Produce planning documents, white papers, market analyses, competitive analyses, retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your integration of DFP and AdX into Google Ad Manager. The time period applicable to this Request is the Extended Time Period.
7. Produce planning documents, white papers, market analyses, competitive analyses, retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your unification of Google Analytics and DoubleClick into Google Marketing Platform. The time period applicable to this Request is the Extended Time Period.
8. Produce planning documents, white papers, market analyses, competitive analyses, retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your integration of DV360 into Google Marketing Platform. The time period applicable to this Request is the Extended Time Period.

Google Display Network

9. Produce planning documents, white papers, market analyses, competitive analyses, retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your decision to use AdSense to limit AdWords and AdX buyers to purchasing only from Google Certified Ad Networks. The time period applicable to this Request is the Extended Time Period.

10. Produce planning documents, white papers, market analyses, competitive analyses, retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your decision to require AdX sellers to purchase Ad Inventory through AdX in order to interact with buyers from sales platforms other than AdX Seller. The time period applicable to this Request is the Extended Time Period.

Google Display & Video 360

11. Produce Documents, including any documents detailing any discounts, bundled or otherwise, sufficient to show the pricing structure for DV360.

AdWords & AdSense Auctions

12. Produce Documents that relate to any complaint by any T-50 Publisher or T-50 Advertiser, regarding the method by which AdWords selects a winning bid at an AdWords Ad Auction. The time period applicable to this Request is the Extended Time Period.
13. Produce Documents that relate to any complaint by any T-50 Publisher or T-50 Advertiser, regarding any efforts by You to optimize the AdWords Ad Auction. The time period applicable to this Request is the Extended Time Period. The time period applicable to this Request is the Extended Time Period.
14. Produce Documents that relate to any complaint by any T-50 Publisher or T-50 Advertiser regarding Your use of Smart Pricing in Ad Sense Ad Auctions. The time period applicable to this Request is the Extended Time Period.

DoubleClick for Publishers

15. Produce Documents that relate to any complaint received by You from any T-50 Publisher regarding DFP filling Ad Inventory that was a directly sold by the Publisher. The time period applicable to this Request is the Extended Time Period.
16. Produce planning documents, white papers, market analyses, competitive analyses, retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your decision to offer DFP Small Business to Publishers for free. The time period applicable to this Request is the Extended Time Period.
17. Produce Documents analyzing, discussing, or forecasting how You monetize or intend to monetize DFP Small Business.
18. Produce planning documents, white papers, market analyses, competitive analyses, retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your decision to charge Publishers for access to DFP Premium. The time period applicable to this Request is the Extended Time Period.
19. Produce planning documents, white papers, market analyses, competitive analyses, retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your decision to not include impressions sold through AdSense in DFP Premium pricing. The time period applicable to this Request is the Extended Time Period.
20. Produce planning documents, white papers, market analyses, competitive analyses, retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your decision to

not include impressions sold through AdX Seller in DFP Premium pricing. The time period applicable to this Request is the Extended Time Period.

Google Ad Exchange

21. Produce Documents that relate to any complaint made by any Ad Exchange or SSP regarding how they interact with AdX in order to submit a bid for an Ad Impression. The time period applicable to this Request is the Extended Time Period.
22. Produce Documents that relate to any complaint made by any DSP or Ad Network regarding competition within AdX. The time period applicable to this Request is the Extended Time Period.
23. Produce Documents that relate to any complaint made by any Ad Exchange or SSP, regarding how AdX is optimized by You, including the reliability of any experiments conducted by AdX in order to optimize a AdX Auction. The time period applicable to this Request is the Extended Time Period.
24. Produce Documents that relate to any complaint made by any Ad Exchange or SSP regarding Your closing of an AdX Auction at a price lower than the reserve price. The time period applicable to this Request is the Extended Time Period.
25. Produce planning documents, white papers, market analyses, competitive analyses, retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your decision to impose a mandatory minimum ad spend for AdX.
26. Produce planning documents, white papers, market analyses, competitive analyses, retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your decision to only consider ad spend that is purchased through DBM to satisfy the mandatory minimum requirements for AdX.

Data Management Platforms

27. Produce Documents that relate to any complaint received by You from any DMP that You permitted to connect to, interoperate with, or integrate with DBM regarding problems connecting to, interoperating with, or integrating with DBM or Google Audience Center.
28. Produce Documents that relate to any complaint received by You from any DMP that You denied a request to connect to, interoperate with, or integrate with DBM or Google Audience Center.
29. Produce Documents which relate to how Your policy of prohibiting standalone DMPs from using tracking pixels on GDN affects their business, including their ability to retarget users on Ad Networks not owned by Google and their ability to target users across channels.

Retargeting

30. Produce Documents that relate to any complaint by any T-50 Advertiser regarding the use of last-click attribution or last-impression attribution by Google Analytics as a means to measure the effectiveness of any ad campaign, ad channel, or advertising strategy.

Dynamic Allocation

31. Produce Documents that relate to any complaint received by You from any Ad Exchange or any T-50 Publisher regarding how Dynamic Allocation estimated the CPM price of an Ad Exchange.

32. Produce Documents that relate to any complaint received by You from any Ad Exchange regarding AdX Floor Pricing when Dynamic Allocation was enabled.
33. Produce Documents that relate to any complaint received by You from any Ad Exchange complaining about an inability to win bids for Ad Inventory when Dynamic Allocation was enabled.
34. Produce Documents that relate to any complaint received by You from any Ad Exchange or any T-50 Publisher regarding how Dynamic Allocation ranked an Ad Exchange.
35. Produce Documents sufficient to show how AdX, AdSense, AdMob, and DFP work together, interact, interoperate, or integrate when Dynamic Allocation is enabled.

Enhanced Dynamic Allocation

36. Produce Documents that relate to any complaints by any T-50 Publisher regarding EDA.
37. Produce Document that relate to any request by any T-50 Publisher to stop participating in EDA or to return to Dynamic Allocation as it was before the implementation of EDA.
38. Produce Documents that relate to any decision by any T-50 Publisher to stop using DFP because of EDA.

Header Bidding

39. Produce Documents that relate to any changes to any of Your products, any introduction of new products by You, or any effect on Your businesses as a result of Header Bidding.
40. Produce Documents that relate to the impact of Header Bidding on Publishers' ad revenue.
41. Produce Documents that relate to webpage latency resulting from Header Bidding.
 - a. Produce Documents that relate to the effect of Server-Side Header Bidding on webpage latency or webpage load times.
 - b. Produce Documents that relate to the effect of Client-Side Header Bidding on webpage latency or webpage load times.
42. Produce Documents that relate to the effect asynchronous implementation of header bidding has on webpage latency or webpage load times.
43. Produce Documents that relate to how a Publisher's decision to limit the number of demand sources that are integrated into a header auction affect webpage latency or webpage load times.
44. Produce all latency studies done by You or in Your possession with respect to Header Bidding.
45. Produce all Documents relating to any study responsive to the preceding request.
46. Produce all abandonment studies done by You or in Your possession with respect to Header Bidding.
47. Produce all Documents relating to any study responsive to the preceding request.
48. Produce all effectiveness studies done by You or in Your possession with respect to Header Bidding.

49. Produce all Documents relating to any study responsive to the preceding request.

Exchange Bidding

50. Produce Documents that relate to any complaint by any T-50 Publisher regarding the Exchange Bidding process.
51. Produce Documents that relate to any instance in which any T-50 Advertiser or any Ad Exchange complained that they wanted to or intended to bid on any Ad Impression, but was unable to do so based on how an Ad Exchange was ranked in DFP with Exchange Bidding enabled.
52. Produce Documents that relate to any complaint made by any Ad Exchange related to integrating with AdX through a server-to-server connection.
53. Produce Documents that relate to the impact of Exchange Bidding on other Ad Exchanges.
54. Produce Documents that relate to the impact that Exchange Bidding had on Publishers' ad revenue.
55. Produce Documents that relate to the impact that Exchange Bidding had on Advertisers' ad spend.
56. Produce Documents sufficient to demonstrate any fee structure for fees charged to third-party exchanges for the opportunity to participate in Exchange Bidding.

Mobile Targeting

57. Produce Documents that identify Your scale, market share, or product diversity as source of Your ability to collect and monetize data across multiple devices and technologies, or that otherwise compare Your ability to collect and monetize data across multiple devices and technologies with that of any competitor.
58. Produce Documents that relate to any complaint by any T-50 Publisher regarding AdMob SDK filling Ad Inventory that was a directly sold by the Publisher.
59. Produce planning documents, white papers, market analyses, competitive analyses, retrospectives, strategic plans, or other decision-making and analytical Documents that relate to Your decision to use a login function to collect user behavioral data across devices.

Accelerated Mobile Pages

60. Produce Documents sufficient to show Your relation to, control or influence over, or participation in the AMP Project, including Documents sufficient to identify any individual currently or previously employed or retained by You who possesses or has possessed decision-making authority relating to the AMP Project, and the nature of their authority.
61. Produce Documents sufficient to illustrate each materially different iteration of the governance of or final decision-making authority within the AMP Project (for instance, by a steering committee versus by technical lead).
62. Produce Documents sufficient to show the criteria by which participants in the governance of the AMP Project are or have been selected.
63. Produce Documents sufficient to identify all persons who have expressed a desire to participate in the governance of the AMP Project.

64. Produce Documents sufficient to show the amount and type of resources (for instance, money, employee time, equipment, or facilities) You have expended in relation to the AMP Project.
65. Produce Documents sufficient to show the pros and cons of any technology, solution, or project You considered as a potential alternative to the AMP Project.
66. Produce Documents that relate to Your reasons or motivations for Your participation in the AMP Project, including Your plans to profit directly or indirectly from the AMP Project.
67. Produce Documents that relate to any reason You have or have had for requiring that (or acquiescing to a requirement that) AMP pages be served from a cache via google.com or ampproject.org.
68. Produce Documents that relate to any direct and indirect benefits or costs to You of implementing a requirement that AMP Pages be served from a cache via google.com or ampproject.org (as opposed to a third-party server, such as a Publisher's server).
69. Produce Documents sufficient to show the types of Behavioral Data which You have collected or can collect when a user views an AMP Page.
70. Produce Documents sufficient to show the types of Behavioral Data which third-party website owners have collected or can collect when a user views an AMP Page.
71. Produce Documents sufficient to show the types of Behavioral Data which You have collected or can collect when a user views a non-AMP Page.
72. Produce Documents sufficient to show the types of Behavioral Data which third-party website owners have collected or can collect when a user views a non-AMP Page.
73. Produce Documents sufficient to show how the introduction or use of AMP Pages impacts the Cookie-Matching process.
74. Produce Documents that relate to any benefit You perceive as able to accrue to You when a user views an AMP Page instead of its non-AMP Page counterpart.
75. Produce all Documents relating to Your consideration or analysis of whether (or the extent to which) non-AMP Pages should be included in Your Carousels.
76. Produce Documents that relate to how a webpage's status as an AMP Page versus a non-AMP Page can impact that webpage's placement in Your search engine results page.
77. Produce Documents relating to Your analysis or consideration of whether, or the extent to which, a webpage's status as an AMP Page versus a non-AMP Page should impact that webpage's placement in Your search engine results page.
78. Produce Documents that relate to the direct or indirect financial impact to You arising from the AMP Project.
79. Produce Documents that relate to any of Your predictions or analysis of future direct or indirect financial impact to You arising from the AMP Project.
80. Produce all Documents that relate to any criticisms that the AMP Project harms competition or Publishers, including but not limited to Documents that relate to the correspondence published at ampletter.org.

81. Produce Documents sufficient to show the extent to which any third-party analytics vendor is permitted or given access to Behavioral Data with respect to AMP Pages.
82. Produce Documents sufficient to show the criteria by which it is determined whether a third-party analytics vendor such as Adobe Analytics or comScore is permitted or given access to Behavioral Data which You collect or maintain and which results from an AMP Page being served from a cache via google.com or ampproject.org (as opposed to from a third-party server such as a Publisher's server).
83. Produce Documents sufficient to show Your relation to, control or influence over, or association with Prebid and prebid.org.
84. Produce all latency studies done by You or in Your possession with respect to the AMP Project or AMP Pages.
85. Produce all Documents relating to any study responsive to the preceding request.
86. Produce all abandonment studies done by You or in Your possession with respect to the AMP Project or AMP Pages.
87. Produce all Documents relating to any study responsive to the preceding request.
88. Produce all effectiveness studies done by You or in Your possession with respect to the AMP Project or AMP Pages.
89. Produce all Documents relating to any study responsive to the preceding request.
90. Produce Documents that relate to how the AMP Project will affect or has affected internet traffic to Publishers who offer their own targeted advertising services to Advertisers.

Chrome

91. Produce planning documents, white papers, market analyses, competitive analyses, merger retrospectives, strategic plans, or other decision-making and analytical Documents concerning the ability of third-parties to implement cross-site tracking or Cookie-Matching on Chrome.
92. Produce Documents that relate to any complaints from Publishers or Data Management Platforms regarding the ability of third-parties to implement cross-site tracking or Cookie-Matching on Chrome.

Privacy Policy

93. Produce planning documents, white papers, market analyses, competitive analyses, merger retrospectives, market studies, forecasts and surveys, strategic plans, and other decision-making and analytical Documents regarding changes You made to Your DFP Ad Privacy policy in 2016.
94. Produce Documents that relate to any complaints from any T-50 Publisher, or from any Data Management Platform, Ad Exchange, SSP, or DSP, regarding changes You made to Your DFP Ad Privacy Policy in 2016.

YouTube

95. Produce Documents that relate to any complaints from any T-50 Advertiser or T-50 Publisher, of from any DSPs or Ad Exchanges, regarding Your decision to remove YouTube Ad Inventory from other Ad Exchanges.

Competition

96. Produce planning documents, white papers, market analyses, competitive analyses, merger retrospectives, market studies, forecasts and surveys, strategic plans, and other decision-making and analytical Documents related to the sales, market share, or competitive position of You or Your products or competitors and their products. For the purpose of this interrogatory, “competitor” shall mean any competitor identified in response to interrogatories 104-115. The time period applicable to this Request is the Extended Time Period.

Financial Documents

97. Produce Documents sufficient to show Your share of Programmatic Advertising revenue (i.e. the total amount paid by Advertisers in respect of ads using your services) in comparison to the portion of Programmatic Advertising revenue received by Publishers for the Extended Time Period.
98. Produce Documents sufficient to show the fee structure paid by Advertisers on each of Your products in the Ad Intermediation Market and the Ad Serving Market for Advertisers throughout the Extended Time Period.
99. Produce Documents sufficient to show the fee structure paid by Publishers on each of Your products in the Ad Intermediation Market and the Ad Serving Market for Advertisers throughout the Extended Time Period.
100. Produce Documents sufficient to show the fee structure paid by Advertisers on each of Your products in the Ad Intermediation Market and the Ad Serving Market for Publishers throughout the Extended Time Period.
101. Produce Documents sufficient to show the fee structure paid by Publishers on each of Your products in the Ad Intermediation Market and the Ad Serving Market for Publishers throughout the Extended Time Period.
102. Produce Documents that relate to the historical bid data and pricing data of competing Ad Exchanges that is retained by DFP throughout the Extended Time Period.
103. Produce Documents that relate to how You use historical bid data and pricing data to calculate how much You will bid for Ad Inventory during the Extended Time Period.
104. Produce any contracts that You have entered into with any T-50 Publisher or T-50 Advertiser during the Extended Time Period.

EXHIBIT A

CERTIFICATE

STATE OF _____

COUNTY OF _____

_____, being duly sworn upon his/her oath states:

I am a representative of Alphabet Inc. and have knowledge of the facts and circumstances relating to the preparation of the answers to the interrogatories in this civil investigative demand. All of the requested information in the possession, custody, control, or knowledge of Alphabet Inc. has been set forth fully and accurately in the answers to interrogatories. I have knowledge of the facts and circumstances relating to the production of material in response to the requests for documents in this civil investigative demand. All of the requested material in the possession, custody, or control of Alphabet Inc. has been produced.

Title: _____

SUBSCRIBED and SWORN TO BEFORE ME this ____ day of _____, 2019.

NOTARY PUBLIC IN AND FOR THE
STATE OF _____

Specifications for Electronic Document Production

Texas Office of the Attorney General

Specifications for Relativity Load File Production

Electronic Discovery Unit



<u>Purpose.....</u>	<u>1</u>
<u>Production Components.....</u>	<u>1</u>
<u>Production Cover Letter.....</u>	<u>2</u>
<u>Relativity Load Files.....</u>	<u>3</u>
<u>Single Page TIFF Images</u>	<u>4</u>
<u>Document Level Text/OCR Files</u>	<u>4</u>
<u>Natively Produced Items.....</u>	<u>5</u>
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Purpose:

This document provides the specifications and procedures involved in producing an image-based production to the State of Texas Office of the Attorney General using Relativity style load files. The guidelines discussed here may be applied to productions of electronically stored information (ESI) or scanned hard copy paper documents with optical character recognition (OCR) text.

Any party in receipt of a subpoena or request for production (RFP) of documents from the Texas Office of the Attorney General should follow the guidelines in this specification when submitting productions. Failure to adhere to the form of production laid out below may result in rejection of the production and rework at the cost of the producing party.

Production Components:

The following components are expected in each production volume.

1. Production Cover Letter
2. Metadata DAT Load File
3. Opticon Image Load File
4. Single Page TIFF Images
5. Document Level Text/OCR Files
6. Native Files (as necessary)



Production Cover Letter

The production cover letter is designed to summarize each production volume submitted to the OAG by the producing party. Using Excel, the producing party should provide the following information for each production:

- Volume Name
- Custodian(s)
- Begin Bates Number
- End Bates Number
- Number of Records
- Number of Pages/Images
- Number of Native Files
- Date Produced

Example of Production Cover Letter content:

Volume Name	Custodian	Begin Bates Nbr	End Bates Nbr	Intentionally Left Blank	Nbr of Records	Nbr of Images	Nbr of Native Files	Date Produced
ABC001	Smith, John	ABC-00000001	ABC-00001234		24	1234	0	4/30/2013
ABC002	Doe, Jane	ABC-00001235	ABC-00123456		8429	122222	42	6/25/2013



Relativity Load Files

Two load files are required with each production volume – metadata DAT and Opticon image load files. These load files should be encoded in ANSI or ISO-8859-1. If your production will include a foreign language which requires Unicode (i.e. UTF-8) to support multi-byte characters, please discuss this with the OAG prior to submitting a production.

Opticon (OPT) Image Load File:

The OPT file is a comma separated file which will contain one line for each page in the production volume. An example is provided below:

```
ABC-00000001,ABC001,IMAGES\001\ABC-00000001.TIF,Y,,,3 ABC-  
00000002,ABC001,IMAGES\001\ABC-00000002.TIF,,,, ABC-  
00000003,ABC001,IMAGES\001\ABC-00000003.TIF,,,, ABC-  
00000004,ABC001,IMAGES\001\ABC-00000004.TIF,Y,,,1
```

In the example above, each comma separates a field of information. The first field is the page number or Bates number of the page in the production. The second field contains the value which corresponds to the production volume¹. The third field contains the relative path² to the TIF image file for that page. The fourth field contains a value of "Y" if the line represents the first page of a document; otherwise the field is left blank as in lines 2 and 3 in the example above. The fifth and sixth fields are not used and should be left blank. The seventh and final field contains the page count for the document and is only populated for the first page.

Metadata (DAT) Load File:

The DAT file is nothing more than a text file which uses a standard set of delimiters to separate fields of values. The standard Relativity delimiters for the metadata DAT file are:

Delimiter Type	Character	Description	ASCII Code
Text Qualifier	þ	Small Letter Thorn	254
Field Separator		DC4	20
Multi-Value	;	Semi Colon	59
Newline	®	Registered Sign	174

The first line of the DAT file must contain a header row which identifies the field³ names.

Additional Considerations:

- All date fields must be formatted as: mm/dd/yyyy
- All attachments must sequentially follow the parent email/document
- Extracted or OCR text should NOT be included in the DAT file

¹ The production volume is typically comprised of a short 3 or 4 character prefix and starts at volume 1 or "001". This allows for a possible 999 production volumes in the case. Four digit volume numbers may be used for very large cases with extensive rolling productions.

² The 'relative path' is defined as the path starting from the production volume folder.

³ Metadata field requirements and recommendations are included in Appendix A.



Single Page TIFF Images

TIFF images will be provided in the "IMAGES" folder of the production volume. All images must be single-page, black and white, Group IV TIFF files, with a resolution of 300 dpi. Each TIFF image file will be named for the corresponding Bates page number (i.e. ABC-00000001.tif). File names should avoid using embedded spaces whenever possible. A hyphen/minus (-) or Low Line (_) may be used to separate the Bates prefix from the number.

Additional Considerations:

- Bates numbers should be endorsed on the lower right corner of all images using a clear font typeface such as Arial 12 pt.
- When a production will include more than 2000 images/pages, sub-folders should be organized within the "IMAGES" directory such that no one folder contains more than 2,000 files⁴.
- When a file is to be produced natively (i.e. Microsoft Excel, audio/video files) a placeholder TIFF image should be included to represent the native file⁵.

Document Level Text/OCR Files

A text file which contains the searchable text content of each document must be provided in the "TEXT" folder of the production volume. All text files must be document level (i.e. contains all pages of each document) and each text file must be named for the beginning Bates number of that document.

When a document originates in electronic format, extracted text should be provided unless the item contains no embedded text (i.e. an image only PDF file).

If the document contains no embedded text or if the origin is hard copy paper, optical character recognition should be performed on the item to create an OCR text file. Likewise, items requiring redaction should be OCR'd in order to provide full text for un-redacted content.

Additional Considerations:

- Text files should be encoded using an ASCII character set. Do not submit Unicode text files unless your data contains a foreign language and you have first discussed with the OAG.
- Full text should NEVER be included in the metadata DAT load file
- Natively produced items must also have a corresponding extracted text file in the TEXT folder. If the item is an audio or video file, a blank text file (0 byte) should be provided.
- When a production will include more than 2,000 items, sub-folders should be organized within the "TEXT" directory such that no one folder contains more than 2,000 files.

⁴ An example of the production volume folder structure is provided in Appendix B

⁵ See Appendix C for an example of a native placeholder image



Natively Produced Items

The content of certain file types is not conducive to production in image format. Electronic data such as audio or video files, spreadsheets (such as Microsoft Excel), or databases (such as Microsoft Access) do not convert to TIFF images in a usable manner. As such, it may be necessary to produce these items in native format.

When a file is produced in native format, it will receive a single Bates number which represents the content of the entire file. The native file is given the Bates number as the file name along with the respective file extension (i.e. ".xlsx" or ".wav"). Additionally, a single TIFF image which indicated that the file have been produced natively should be included in the "IMAGES" folder. The placeholder image is branded with the corresponding Bates number and the image file is also given the Bates number as the file name followed by the ".tif" file extension.

Additional Considerations:

- All items produced natively should be located within the "NATIVES" folder of the production volume.⁶
- No one folder should contain more than 2,000 items, therefore sub-folders should be used within the "NATIVES" folder when there will be more than 2,000 native files produced.
- Production volumes which include natively produced items should also include a field in the Metadata DAT file named 'NATIVEPATH'. This field is to be populated with the relative path to the native file within the production volume.

Example NATIVEPATH value:

`\NATIVES\001\ABC-00000001.xlsx`

⁶ An example of the production volume folder structure is provided in Appendix B



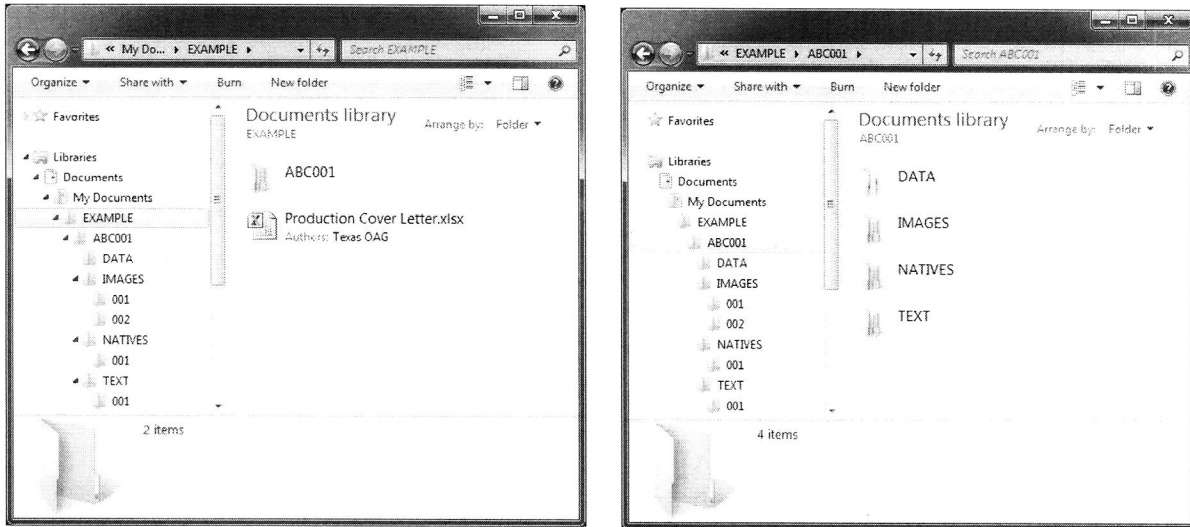
Appendix A – Metadata Reference

Metadata Field Name:	Description:	Email	Attached	Loose	Paper
BEGBATES	Beginning Bates number	X	X	X	X
ENDBATES	Ending Bates number	X	X	X	X
BEGATTACH	Beginning Attachment number	X	X	X	X
ENDATTACH	Ending Attachment number	X	X	X	X
PAGECOUNT	Number of pages	X	X	X	X
DOCTYPE	Example values: Email, Attachment, File, Hard	X	X	X	X
CUSTODIAN	Populated with Lastname, Firstname of the	X	X	X	X
SUBJECT	The subject value from the email message	X			
FROM	The sender of the email message	X			
TO	The “TO” recipients of the email message	X			
CC	The carbon copied recipients of the email message	X			
BCC	The blind carbon copied recipients of the email	X			
DATESENT	The date the email message was sent formatted as	X			
TIMESENT	The time the email message was sent formatted as	X			
DATERECEIVED	The date the email message was received	X			
TIMERECEIVED	The time the email message was received	X			
FILENAME	The file name of the item including the file		X	X	X
FILE_EXTENSIO	The file extension of the item (without the “.” dot)		X	X	X
FILE_SIZE	An integer - the size of the item in bytes	X	X	X	X
TITLE	The Title of the item from Windows properties		X	X	X
AUTHOR	The Author of the item from Windows properties		X	X	X
APPLICATION	The Program name of the item from Windows	X	X	X	X
CREATEDATE	The date the item was created formatted as		X	X	X
CREATETIME	The time the item was created formatted as		X	X	X
LASTMODDATE	The date the item was last modified formatted as		X	X	X
LASTMODTIME	The time the item was last modified formatted as		X	X	X
NUMATTACH	An integer, the number of attached items (“0” if no	X	X	X	X
NATIVEPATH	The relative path to the native file within the				
TEXTPATH	The relative path to the extracted/OCR text file	X	X	X	X



Appendix B – Example Production Volume Folder Structure

The images below provide the expected folder structure for a production volume named ABC001.



In the example, the Production Cover Letter is stored at the same level as the production volume folder. Within the production volume folder, the following sub-folders are present:

- DATA
- IMAGES
 - o 001
 - o 002
- NATIVES
 - o 001
- TEXT
 - o 001

The “DATA” folder is used to store the Metadata DAT and Opticon Image load files.

The “IMAGES” folder will contain the single page TIFF images. Productions with more than 2,000 images will have sub-folders in the “IMAGES” folder for each set of 2,000 images. The sub-folders will iterate up from “001” or “0001” until enough folders are present to store each set of 2,000 images.

The “NATIVES” folder will contain any files which have been produced in native format. Productions with more than 2,000 natives will have sub-folders in the “NATIVES” folder for each set of 2,000 native files. The sub-folders will iterate up from “001” or “0001” until enough folders are present to store each set of 2,000 native files.

The “TEXT” folder will contain the document level extracted text or OCR text files. Productions with more than 2,000 records will have sub-folders in the “TEXT” folder for each set of 2,000 text files. The sub-folders will iterate up from “001” or “0001” until enough folders are present to store each set of 2,000 text files.



Appendix C— Example Native Placeholder

This file has been produced in native format.

Fall Earnings Report.xlsx

ABC-00000001