

AUCTION 102 CLOCK PHASE BIDDER DATA FILE FORMATS

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1. Introduction

This document provides the data file specifications for the FCC Auction Bidding System upload and download files that will be available to bidders during the clock phase of Auction 102. Each file specification includes the format of the file and definitions of the data elements in the files including a name, description, data type, examples and notes. Data type definitions and notation rules are explained in an appendix attached to this document.

In addition to the data file specifications, sample files are available on the Auction 102 website (www.fcc.gov/auction/102) in the Education section. Sample files are provided for round 1 and round 2. The files for round 2 include examples where bids could not be processed in part or in full. We emphasize that the sample data provided is not meant to reflect any predictions or assumptions by the Commission regarding bidding activity, the number of rounds, or the outcome of the Auction 102.

2. Bidder Download Files

This section provides the specifications of the bidding-related download files available to bidders during the clock phase of the auction.

2.1. My Bidder Markets

File name: my_bidder_markets.csv

The My Bidder Markets file provides information about each partial economic area (PEA) available in the clock auction. It indicates whether a bidder is eligible to bid on the market based on the PEAs selected on its FCC Form 175 application.

File Structure:

- CSV file (first row contains header)
- One record for each PEA available in the clock auction

Field	Description	Data Type	Examples/Notes
auction_id	The FCC auction number	String	102
market_number	PEA ID	String ([PEA][0-9] [0-9][0-9]){6}	PEA001
market_name	PEA name	String	"New York, NY"
bidder	Bidder name	String	Company XYZ "ABC, Inc."
frn	The bidder's FCC Registration Number (FRN) which uniquely identifies a bidder	Alpha-numeric {10}	0003645843
selected_market	Indicates whether the bidder selected the PEA on its application form	Character [Y N]{1}	Y

2.2. Sample Bids File (Round 1)

File name: sample_bids_round_001.csv

This version of the Sample Bids file provides a sample template for a bidder that wants to upload its bids in round 1 of the clock phase. Specifications of the bid upload file for round 1 are provided in Section 3.1 of this document. For each product (PEA and license category) it wishes to bid on, the bidder indicates the desired quantity of blocks. This file is available before and during the first round of the clock auction.

File Structure:

- CSV file (first row contains header)
- One record for each product the bidder is eligible to bid on in the clock auction

Field	Description	Data Type	Examples/Notes
round	Round number	Integer	1
market_number	PEA ID	String ([PEA][0-9][0-9][0-9][0-9]){6}	PEA001
market_name	PEA name	String	"New York, NY"
category	License category	String [L U UI]{1,2}	L U UI
bidding_units	Number of bidding units associated with the product	Integer	2300
supply	The supply of blocks associated with the product	Integer	5
aggregate_demand	The aggregate demand for the product	Integer	0 <i>Equals 0 for round 1</i>
bid_amount	Requested price for each block	Integer	13915000 <i>Equals the opening price of the product for round 1</i>
quantity	Number of blocks requested	Integer	0 <i>The bidder must input its desired quantity before uploading the file.</i>

2.3. Sample Bids File (Rounds 2+)

File name: sample_bids_round_###.csv

(### = 3-digit round number including leading zeroes)

This version of the Sample Bids file provides a sample template for a bidder that wants to upload its bids in rounds after round 1. Specifications of the bid upload file for rounds after the first round are given in Section 3.2 of this document. The Sample Bids download file for a given round contains default bids for each product a bidder is eligible to bid on (the same default bids are displayed in the bidding system on the bidder's bidding screen at the beginning of a round). The default bid for a product (PEA and license

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category) for a given round is a simple bid for a quantity equal to the bidder's processed demand from the previous round, for a price equal to the clock price for that product in the round. If a bidder does not have processed demand for a product, the default bid is a quantity of zero at the clock price for the product in the round. The Sample Bids file for a particular round is available once the round results for the previous round have been posted and until the close of the round.

File Structure:

- CSV file (first row contains headers)
- One record for each product the bidder is eligible to bid on in the clock auction

Field	Description	Data Type	Examples/Notes
round	Round number	Integer	12
market_number	PEA ID	String ([PEA][0-9][0-9][0-9])\{6}	PEA001
market_name	PEA name	String	"New York, NY"
category	License category	String [L U UI]\{1,2}	L U UI
bidding_units	Number of bidding units associated with the product	Integer	2300
supply	The supply of blocks associated with the product	Integer	5
aggregate_demand	The aggregate demand for the product	Integer	15
previous_round_posted_price	Posted price for the product after processing the previous round's bids (this is the minimum bid price in the current round)	Integer	12650000
clock_price	The clock price (highest price) of the product in the round	Integer	13915000
processed_demand	The bidder's demand for the product after processing of the previous round	Integer	2
quantity	Number of blocks requested	Integer	2 <i>By default, this field contains the bidder's processed demand for the product from the previous round (or zero if the bidder did not have processed demand for the product).</i>

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Field	Description	Data Type	Examples/Notes
bid_amount	Requested price for each block	Integer	13915000 <i>By default, this field contains the clock price of the product in the round.</i>
bid_type	Type of bid	String [Simple Switch]	"Simple", "Switch" <i>By default, the bid type is always "Simple".</i>
switch_to_category	The license category of the "to" product in a switch bid	String [L U]{1}	L U <i>By default, this field is NULL because the bid type is "Simple".</i>

2.4. My Bids

File name: my_bids_round_###.csv

(### = 3-digit round number including leading zeroes)

The My Bids file provides a list of all the bids considered by the bidding system for a bidder in a round, including bids that were submitted so far in an open round. Each bid pertains to a specific product (PEA and license category combination) being offered in the clock auction. Note that the file does not contain bids that were submitted and subsequently modified within the same round, rather the file contains the list of bids the bidding system is currently considering or did consider for that bidder in the associated round.

In addition to providing information about the bid and the authorized bidder who submitted the bid, the file provides information about the associated product in that round such as the opening price, the clock price, the supply, and the bidder's processed demand for that product.

File Structure:

- CSV file (first row contains header)
- One record per round and bid combination
- After the results of a round have been posted, this file may also contain missing bids submitted by the bidding system. A missing bid is a simple bid for a quantity of 0 at the lowest possible price for the product in that round.
- The file contains data for a single round — either a past round or the current round.
- The file contains two entries for each switch bid: one for the "from" category and one for the "to category". The "from" and "to" categories are listed in both records in switch_from_category and switch_to_category.

Field	Description	Data Type	Examples/Notes
auction_id	The FCC auction number for the clock auction	String	102
round	Round number	Integer	12

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Field	Description	Data Type	Examples/Notes
market_number	PEA ID	String ((PEA)[0-9][0-9][0-9]){6}	PEA001
market_name	PEA name	String	"New York, NY"
category	License category	String [L U UI]{1,2}	L U UI
bidding_units	Number of bidding units associated with the product	Integer	2300
bidder	Bidder name	String	Company XYZ "ABC, Inc."
frn	The bidder's FCC Registration Number (FRN) which uniquely identifies a bidder	Alpha-numeric {10}	0003645843
bid_type	Type of bid	String [Simple Switch]	Simple Switch
quantity	Number of blocks requested	Integer	2 <i>This value is the requested quantity for the product (not the number of blocks to be reduced or switched).</i>
bid_amount	Requested price for each block	Integer	12500000 <i>For the "to" product in a switch bid, this value is the clock price associated with the product.</i>
price_point	The price point associated with the bid	Decimal [0-1]{12}	0.7560548272 <i>In round 1 this value is 1.0000000000.</i> <i>For the "to" product in a switch bid, this value will always be 1.0000000000 regardless of the price point of the "from" product.</i>
switch_from_category	The license category of the "from" product in a switch bid	String [L U]{1}	L U <i>NULL for a simple bid</i>

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Field	Description	Data Type	Examples/Notes
switch_to_category	The license category of the "to" product in a switch bid	String [L U]{1}	L U <i>NULL for simple bid</i>
supply	The supply of blocks associated with the product	Integer	5
prev_round_processed_demand	The bidder's processed demand for the product at the start of the round	Integer	4 <i>NULL for round 1</i>
prev_round_aggregate_demand	The aggregate demand for the product at the start of the round	Integer	12 <i>NULL for round 1</i>
round_opening_price	The lowest price available for bidding on the associated product in the round	Integer	11500000 <i>In round 1 this is the opening price. For all other rounds it is the posted price from the previous round.</i>
round_clock_price	The clock price (highest price) of the associated product in the round	Integer	12650000
entered_by	Name of authorized bidder or telephonic bid assistant who submitted the bid, or "System" if the bidding system submitted a missing bid	String	Karen Smith Telephonic Bid Assistant System
entered_time	The time the bid was submitted	String YYYY-MM-DD HH:MM:SS	2015-04-12 15:21:47 <i>All time stamps are in Eastern Time.</i>
selection_number	The pseudo-random number associated with the bid used for tie-breaking purposes	Integer {15}	123456789012345 <i>NULL until the round is closed</i> <i>NULL in round 1</i>

2.5. My Results

File name: my_results_round_###.csv
(### = 3-digit round number including leading zeroes)

The My Results file provides a list of the results of bid processing for a bidder in a given round for all products (PEA and license category combinations) in which the bidder had processed demand in the previous round. For each product the file gives the processed demand, posted price and the aggregate demand. Additionally, if a bid was not fully applied, the file provides an indication of such and details

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about why one or more bids for the product were not applied. The data pertaining to bidding results for a round is available in the file once the round results have been posted.

File Structure:

- CSV file (first row contains header)
- One record for each round and product combination where the bidder had processed demand for the product in the previous round
- The file contains data for a single round in the past.

Field	Description	Data Type	Examples/Notes
auction_id	The FCC auction number	String	102
round	Round number	Integer	12
market_number	PEA ID	String ((PEA)[0-9][0-9][0-9]){6}	PEA001
market_name	PEA name	String	"New York, NY"
category	License category	String [L U UI]{1,2}	L U UI
bidder	Bidder name	String	Company XYZ "ABC, Inc."
frn	The bidder's FCC Registration Number (FRN) which uniquely identifies a bidder	Alpha-numeric {10}	0003645843
processed_demand	The bidder's demand for the product after processing	Integer	2
processed_demand_flag	Indication if all bids for the product were fully processed	Character [Y N]{1}	Y <i>If a switch bid is not fully processed, both the "from" and "to" categories will have an "N".</i>

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Field	Description	Data Type	Examples/Notes
processed_demand_detail	Details about why one or more bids for the product were not applied or not fully applied during bid processing	String {500}	<p>"Simple bid to increase demand to 4 @ \$147,000,555; 2 blocks were not applied due to insufficient eligibility."</p> <p>"Simple bid to reduce demand to 0 @ \$36,600,222; 3 blocks were not applied due to insufficient aggregate demand."</p> <p><i>If more than one detail message is applicable (e.g. intra-round bids), then the messages are separated with semi-colons.</i></p> <p><i>For a switch bid that was not fully applied, the detail message is provided in both the "from" and "to" categories of the switch bid.</i></p> <p><i>NULL if all bid(s) for the product were fully applied.</i></p>
supply	The supply of blocks associated with the product	Integer	5
aggregate_demand	The aggregate demand for the product after processing	Integer	15
posted_price	The posted price for the product after processing	Integer	12650000

2.6. My Product Status

File name: my_product_status_round_###.csv
 (### = 3-digit round number including leading zeroes)

The My Product Status file provides the status of each product (PEA and license category combination) after bid processing in a round. For each product the file gives the posted price, aggregate demand and the clock price in the next round. Additionally, the file provides supporting information about each product in that round such as the opening price and clock price, the supply, bidding units, and population.

The data pertaining to bidding results for a round is available in the file once the round results have been posted. Information pertaining to next round clock prices is available in the file once the information for

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the next round has been updated in the bidding system (usually at the same time or very soon after the results have been posted).

File Structure:

- CSV file (first row contains header).
- One record for each round and product combination where the bidder is eligible to bid on the product based on the PEAs it selected on its Form175.
- The file contains data for a single round in the past.

Field	Description	Data Type	Example/Notes
auction_id	The FCC auction number for the clock auction	String	102
round	Round number	Integer	12
market_number	PEA ID	String ((PEA)[0-9][0-9][0-9][0-9]){6}	PEA001
market_name	PEA name	String	"New York, NY"
category	License category	String [L U UI]{1,2}	L U UI
round_opening_price	The lowest price available for bidding on the product in the round	Integer	11500000 <i>In round 1 this is the opening price. For all other rounds it is the posted price from the previous round.</i>
round_clock_price	The clock price (highest price) of the product in the round	Integer	12650000
aggregate_demand	The aggregate demand for the product after processing	Integer	15
posted_price	The posted price for the product after processing	Integer	12650000
next_round_clock_price	The clock price (highest price) of the product in the next round	Integer	13915000 <i>NULL if the next round has not yet been announced</i>
bidding_units	Number of bidding units associated with the product	Integer	2300
supply	The supply of blocks for the product	Integer	5
population	The population in the PEA associated with the product	Integer	25237061

2.7. My Bidder Status

File name: my_bidder_status_round_###.csv
 (### = 3-digit round number including leading zeroes)

The My Bidder Status file provides information related to a bidder for a round. For each round the file gives the bidder's eligibility, required activity and bidding activity in the round. The results of bid processing are also given for the round including the bidder's processed activity as well as the bidder's eligibility and required activity for the next round. Financial information for both a bidder's requested commitments and its processed commitments are also given.

The data pertaining to the bidder's results for a round is available in the file once the round results have been posted. Information pertaining to next round eligibility and required activity is available in the file once the information for the next round has been updated in the bidding system (usually at the same time or very soon after the results have been posted).

File Structure:

- CSV file (first row contains header).
- One record for each round
- The file contains data for a single round in the past.

Field	Description	Data Type	Examples/Notes
auction_id	The FCC auction number	String	102
round	Round number	Integer	12
bidder	Bidder name	String	Company XYZ "ABC, Inc."
frn	The bidder's FCC Registration Number (FRN) which uniquely identifies a bidder	Alpha-numeric {10}	0003645843
bidding_credit_pct	The bidding credit percentage associated with the bidder	Integer [0 15 25]	0, 15, 25 <i>0 = no bidding credit</i> <i>15 = 15% bidding credit</i> <i>25 = 25% bidding credit</i>

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Field	Description	Data Type	Examples/Notes
bidding_credit_type	Indicates the type of bidding credit that the bidder is eligible to receive	String [Rural Small Business]	Small Business Rural <i>Rural = bidder claimed eligibility for the rural service provider bidding credit</i> <i>Small Business = bidder claimed eligibility for a small business bidding credit</i> <i>NULL if the bidder is not eligible for a bidding credit.</i>
eligibility	The bidder's eligibility in bidding units at the start of round	Integer	8000000
required_activity	The bidder's required activity in bidding units for the round	Integer	5000000
activity	The bidder's bidding activity in bidding units for the round	Integer	4000000
req_commitment	The bidder's requested commitment in dollars for the round	Integer	346000000
req_commitment_discount_capped	The bidder's requested discount in dollars for the round based on any bidding credits and applying any applicable bidding credit caps	Integer	25000000 <i>NULL if the bidder is not eligible for a bidding credit</i>
req_net_commitment	The bidder's requested net commitment in dollars for the round	Integer	321000000 <i>NULL if the bidder is not eligible for a bidding credit</i>
req_commitment_discount_uncapped	The bidder's requested discount in dollars for the round based on any bidding credits without applying any applicable bidding credit caps	Integer	156000000 <i>NULL if the bidder is not eligible for a bidding credit</i>
req_commitment_discount_uncapped_small	The bidder's requested discount in dollars for the round in the small markets based on any bidding credits without applying any applicable bidding credit caps	Integer	11000000 <i>Contains a value if the bidder is eligible for a small business bidding credit, NULL otherwise</i>

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Field	Description	Data Type	Examples/Notes
processed_activity	The bidder's bidding activity in bidding units after processing	Integer	4100000 <i>NULL if the round results have not yet been posted</i>
commitment	The bidder's commitment in dollars for the round	Integer	348500000 <i>NULL if the round results have not yet been posted</i>
commitment_discount_capped	The bidder's discount in dollars for the round based on any bidding credits and applying any applicable bidding credit caps	Integer	25000000 <i>NULL if the bidder is not eligible for a bidding credit</i>
net_commitment	The bidder's net commitment in dollars for the round	Integer	323500000 <i>NULL if the bidder is not eligible for a bidding credit</i>
commitment_discount_uncapped	The bidder's discount in dollars for the round based on any bidding credits without applying any applicable bidding credit caps	Integer	156900000 <i>NULL if the bidder is not eligible for a bidding credit</i>
commitment_discount_uncapped_small	The bidder's discount in dollars for the round in the small markets based on any bidding credits without applying any applicable bidding credit caps	Integer	11900000 <i>Contains a value if the bidder is eligible for a small business bidding credit, NULL otherwise</i>
next_round_eligibility	The bidder's eligibility in bidding units at the start of the next round	Integer	5125000 <i>NULL if the next round has not been announced</i>
next_round_required_activity	The bidder's required activity in bidding units for the next round	Integer	4100000 <i>NULL if the next round has not been announced</i>

3. Bidder Upload File

3.1. Bid Upload in the Initial Round of the Auction

During the first round of the clock auction when a bidder must input its initial demand for products, the bidder may utilize an initial round bid upload feature in the bidding system. A sample template is provided to the bidder as a download (see Section 2.2 *Sample Bids File for the Initial Round of the Clock Auction*). A bidder may simply download a sample file, enter the quantities requested for each product, and upload the file to the bidding system. The Sample Bids File contains all the products that the bidder is eligible to bid on. If a bidder does not want to bid on one of its eligible products it may either omit it from the file or enter a quantity of 0 for that product.

File Requirements:

- The upload file must be in CSV format. A particular file name is not required.
- The following fields are required, all others will be ignored:
 - Round number (column header "round")
 - PEA number (column header "market_number")
 - License category (column header "category")
 - Price (column header "bid_amount")
 - Quantity (column header "quantity")
- A bid upload file will be rejected in its entirety if any of the following conditions occur:
 - Column headers for required fields are missing or invalid
 - The file contains blank lines between products
 - A bid was submitted for a round other than round 1
 - A bid was submitted for an invalid product (a PEA-license category combination that is not available in the auction)
 - A bid was submitted for a PEA that the bidder did not select on its Form 175
 - A bid was submitted for a product with a quantity that is not a whole number greater than or equal to 0 and less than or equal to the supply of the product
 - The sum of the bidding units for the quantities bid exceeds the bidder's eligibility
 - A bid was submitted for a product with price not equal to Round 1 price.

Field	Description	Data Type	Examples/Notes
round	Round number	Integer	1
market_number	PEA ID	String ([PEA][0-9][0-9][0-9]){6}	PEA001
market_name	PEA name	String	"New York, NY" <i>This field is optional.</i>
category	License category	String [L U UI]{1,2}	L U UI
bidding_units	Number of bidding units associated with the product	Integer	2300 <i>This field is optional.</i>

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Field	Description	Data Type	Examples/Notes
supply	The supply of blocks associated with the product	Integer	5 <i>This field is optional.</i>
aggregate_demand	The aggregate demand for the product	Integer	0 <i>This field is optional.</i> <i>The aggregate demand will always be 0 for the initial round of the auction.</i>
bid_amount	Requested price for each block	Integer	13915000 <i>The bid amount will always be equal to opening price of the product for the initial round of the auction.</i>
quantity	Number of blocks requested	Integer	2

3.2. Bid Upload in All Rounds after the Initial Round of the Auction

For rounds other than round 1, a bidder may utilize a bid upload feature in the bidding system to upload bids for that round. A sample template is provided to the bidder as a download (see Section 2.3 *Sample Bids File for All Rounds after the Initial Round of the Auction*). A bidder may simply upload its Sample Bids download file for a round if it wishes to submit the default bids for each of its products. The default bid for a product for a given round is a simple bid for a quantity equal to the bidder's processed demand from the previous round at a price equal to the clock price for that product in the given round. If a bidder does not have processed demand for a product the default bid is a quantity of zero at the clock price for the given round. If a bidder does not want to submit its default bids, it may modify the Sample Bids file prior to uploading it to the bidding system. The bidder may also create its own bid upload file. The file specifications and criteria for rejection of a bid upload file are given below. Bid upload files will not be partially accepted. That is, if there are any errors in the bid upload file, the file will be rejected in its entirety. If the bid upload file contains one or more errors and is therefore rejected, the bidding system will display the errors on the bidding screen and the bidder may then edit the file and upload it again.

File Requirements:

- The bid upload file must be in CSV format. A particular file name is not required.
- The following fields are required in a bid upload file, all others will be ignored:
 - Round number (column header "round")
 - PEA number (column header "market_number")
 - License category (column header "category")
 - Quantity (column header "quantity")
 - Price (column header "bid_amount")
 - Type of bid (column header "bid_type")
 - For switch bids: switch "to" category (column header "switch_to_category")

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- The bid upload file must contain a row for all products for which the bidder had processed demand greater than zero after bid processing of the previous round. The only exception is a switch bid, in which case the "to" product should not be listed in the upload file as a separate row as it is already defined in the "from" product row.
- A bid upload file will be rejected in its entirety if any of the following conditions occur:
 - Column headers for required fields are missing or invalid
 - The bidding activity associated with the set of bids in the bid upload file exceed the bidder's eligibility
 - A bid was submitted for a round other than the current round
 - A bid was submitted for an invalid product (a PEA-license category combination that is not offered in the auction)
 - A bid was submitted for a PEA that the bidder is not eligible to bid on (i.e., the PEA was not selected on the bidder's FCC Form 175)
 - A bid was submitted for a product with a bid amount that was not between the previous round's posted price and the current clock price
 - An invalid type of bid was specified for a product
 - A bid was submitted for a product with a quantity that is not a whole number greater than or equal to 0 and less than or equal to the supply of the product
 - A simple bid was submitted for a product with a quantity equal to the product's processed demand from the previous round but for a bid amount other than the clock price for the product in the current round
 - A bid was submitted for a product with the same quantity as was specified at a different price for that product
 - Multiple bids were submitted for a product such that when the bids were sorted in ascending order by bid amount, the requested quantities were not all increasing or all decreasing
 - Multiple bids of different types (simple, switch) were submitted for the same product
 - The upload file contained a row for a product that was specified as the "to" product of a switch bid
 - A switch bid was submitted for a product with a quantity that is greater than or equal to the processed demand of the "from" product from the previous round
 - A switch bid was submitted with an invalid or missing "to" category
 - A switch bid was submitted for a PEA where the resulting quantity would exceed the supply of the "to" product
 - Multiple switch bids were submitted for the same PEA in which a given category was listed as both a "from" and a "to" category

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Field	Description	Data Type	Examples/Notes
round	Round number	Integer	12
market_number	PEA ID	String ([PEA][0-9][0-9][0-9]) ⁶	PEA001
market_name	PEA name	String	"New York, NY" <i>This field is optional.</i>
category	License category	String [L U UI]{1,2}	L U UI <i>For a switch bid, this value is associated with the "from" product.</i>
bidding_units	Number of bidding units associated with the product	Integer	2300 <i>This field is optional.</i>
supply	The supply of blocks associated with the product	Integer	5 <i>This field is optional.</i>
aggregate_demand	The aggregate demand for the product	Integer	12 <i>This field is optional.</i>
previous_round_posted_price	Posted price for the product after processing the previous round's bids (this is the minimum bid price in the current round)	Integer	3000000 <i>This field is optional.</i>
clock_price	The clock price (highest price) of product in the current round	Integer	4000000 <i>This field is optional.</i>
processed_demand	The bidder's processed demand for the product at the start of the round	Integer	4 <i>This field is optional.</i>
quantity	Number of blocks requested	Integer	2 <i>NULL if processed_demand = 0</i>
bid_amount	Requested price for each block	Integer	3500000 <i>For a switch bid, this value is associated with the "from" product.</i>
bid_type	Type of bid	String [Simple Switch]	Simple Switch <i>Bidder needs to specify "Simple" or "Switch" for each bid placed.</i>

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Field	Description	Data Type	Examples/Notes
switch_to_category	The license category of the "to" product in a switch bid	String [L U]{1}	L U <i>NULL for a simple bid</i>

4. Appendix: Data Type Definitions

The following is a guide to interpreting data types defined in this document. This guide is based on regular expressions used in XML standards.

Valid Data Types used in this Document

Character: A character is a single standard ASCII character. The following list has examples of valid ASCII characters:

- a
- D
- 3
- %

String: A string contains one or more characters and can contain whitespace. The following list has examples of valid strings:

- PEA001
- 005
- 588.3-593.3 MHz + 628.3-633.3 MHz
- Huntsville-Decatur-Florence, AL

Note that strings containing a comma that are included in a CSV formatted file need to include quotation marks around them. In the above example, "Huntsville-Decatur-Florence, AL" would be the correct format for the string in a CSV file.

Numeric: Numeric is a generic data type that covers a number of different underlying data types. As a result, anything defined as numeric could be any of the following:

- Decimal
- Integer
- Long

Decimal: The Decimal data type is used to specify a number that may optionally contain a fractional portion. The decimal numbers in the bidding system are made with 2 decimal places.

The following list has examples of valid Decimals:

- 123.45
- -0.15
- .67
- 0.30

The following list has examples of invalid Decimals:

- 123.4.5
- 5+6
- 1.4545E6
- 5,121.00

Integer: The integer data type is used to specify a numeric value without a fractional component.

- It's assumed that any Integers defined in this document are unsigned and never include a (+) plus or (-) minus sign. Any signed Integers containing a + or – are considered invalid.
- If the Integer is of defined length, then curly brackets should be used. For example, {3} indicates the integer should be exactly 3 numbers long.

The following list has examples of valid Integers:

- 009
- 9
- 2147483647

The following list has examples of *invalid* Integers:

- -009
- +009

Null

Regardless of the data type, under certain conditions a field may be null, which means there is no data for that field (i.e., the field is blank).

Restricting values for a data type

Restrictions are used to define acceptable values for any given data type. The following lexicon is used when defining data types:

- Square brackets define the *pattern*.
 - e.g., [A-L] means only the uppercase letters A through L are allowed.
 - e.g., [U|D] means only the uppercase letters U or D are allowed.
 - e.g., [0-9] means only the numbers 0 through 9 are allowed.
- Curly brackets define the *length* including whitespace.
 - e.g., {3} means the value has to be exactly 3 characters long.
 - e.g., {1,3} means the value has to be a minimum of 1 character and a maximum of 3 characters.
 - e.g., {0,50} means the value has to be a minimum of 0 characters and a maximum of 50 characters.

Example 1:

The Data Type is defined as follows:

Integer
{3}

The curly brackets mean only a 3-digit integer is allowed.

Valid Values for example 1:

- 009
- 056
- 102

Invalid Values for example 1:

- 09
- 3502
- 1
- +12
- -35

Example 2:

The Data Type is defined as follows:

String
[A-L]{1}

The square brackets mean only the uppercase letters A through L are allowed and the curly brackets mean it must be exactly 1 character long.

Valid Values for example 2:

- B
- L

Invalid Values for example 2:

- a
- M
- 6

Example 3:

The Data Type is defined as follows:

String
[0-9]{3}

The square brackets mean only the numbers 0 through 9 are allowed and the curly brackets mean it must be 3 characters long.

Valid Values for example 3:

- 001
- 023
- 358

Invalid Values for example 3:

- 2
- 01
- 2026

Example 4:

The Data Type is defined as follows:

String
[0-9]{1,2}

The square brackets mean only the numbers 0 through 9 are allowed and the curly brackets mean it must be a minimum of 1 character long and a maximum of 2 characters long.

Valid Values for example 4:

- 4
- 04
- 41

Invalid Values for example 4:

- 123
- Blank or null value

Example 5:

The Data Type is defined as follows:

String
[US|CA|MX]{2}

The square brackets mean the pattern must be either US, CA or MX. The curly brackets mean it must be exactly 2 characters long.

Valid Values for example 5:

- US
- CA

Invalid Values for example 5:

- C
- USA

Example 6:

The Data Type is defined as follows:

String
(["PEA"]|[0-9][0-9][0-9]){6}

The square brackets inside the round brackets mean the pattern must be a concatenation of the text "PEA" followed by three single numbers, with each number ranging from 0 through 9. The curly brackets mean it must be exactly 6 characters long.

Valid Values for example 6:

- PEA002
- PEA356

Invalid Values for example 6:

- PEA0001
- PEA-005
- PEA-05
- PEA-0512
- PEA-2

Example 7:

The Data Type is defined as follows:

String

{0,50}

The absence of square brackets means there are no restrictions to the characters in this string. The curly brackets mean it must be a minimum of 0 characters long (i.e., can be blank/null) and a maximum of 50 characters long.

Valid Values for example 7:

- 588.3-593.3 MHz + 628.3-633.3 MHz
- Albuquerque-Santa Fe, NM

Invalid Values for example 7:

- Greenville-Spartanburg, SC-Asheville, NC-Anderson, SC
- This is an invalid string which is longer than 50 characters including spaces.