Federal Communications Commission

Auction 107
Public Reporting System File Formats

Version 1.0 – February 19, 2021

Contents

1. Clock Phase

1.1. Auction Summary

File name: clock_auction_summary.csv

The Auction Summary file provides high-level information for each round.

File Structure:
- CSV file (first row contains header)
- One record per round

Field	Description	Data Type	Example/*Notes*
auction_id	The FCC auction number for the auction	String	107
auction_description	Description of auction	String	3.7 GHz
round	Round number	Integer	12
start_time	Round starting time	String YYYY-MM-DD HH:MM:SS	2020-12-10 10:00:00 *All times are in Eastern Time.*
end_time	Round ending time	String YYYY-MM-DD HH:MM:SS	2020-12-10 12:00:00 *All times are in Eastern Time.*
proceeds	Actual gross proceeds after the round	Integer	2077000000
net_proceeds	Net proceeds based on the processed bids	Integer	1990000000 *If the round is not the final clock round, bidding credits are incorporated with a worst-case calculation (two lower bounds for the proceeds net of bidding credits using the larger of the two). In the last round of the clock phase, it is the sum, over all bidders, of a bidder's commitment minus its capped commitment discount.*

Field	Description	Data Type	Example/*Notes*
activity_requirement	Activity requirement percentage per bidder per round	Integer	95 *95 = 95%*
activity_limit_percentage	Maximum activity percentage that a bidder can submit in this round	Integer	120 *120 = 120%*
increment_percentage	Increment percentage	Integer	10 *10 = 10%* *NULL for Round 1*
products_with_demand_greater_than_supply	Number of products (market-category combination) with aggregate demand greater than supply	Integer	196
products_with_demand_equal_to_supply	Number of products (market-category combination) with aggregate demand equal to supply	Integer	5
products_with_demand_less_than_supply	Number of products (market-category combination) with aggregate demand less than supply	Integer	2

1.2. Bids

File name: clock_bids.csv

The Bids file provides a list of all the bids considered by the bidding system in each round. Each bid pertains to a specific product (PEA and license category combination) offered.

In addition to providing information about the bid, the file provides information about the associated product in that round, such as the opening price, clock price, and supply.

File Structure:
- CSV file (first row contains header)
- One record per round and bid combination
- 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 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 auction	String	107
round	Round number	Integer	12

Field	Description	Data Type	Examples/*Notes*
market_number	The PEA (Partial Economic Area) ID	String (["PEA"][0-9][0-9][0-9]){6}	PEA001
market_name	The PEA name	String	"New York, NY"
category	License category	String [A|BC|ABC] {1,3}	A BC ABC
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 the bidder	String [0-9]{10}	0003645844
bid_type	Type of bid	String [Simple|Switch]	Simple Switch
quantity	Number of blocks requested	Integer	2 *This value is the requested quantity for the product (not the number of blocks to be reduced or switched).*
bid_amount	Requested price for each block	Integer	125000 *For the "to" product in a switch bid, this value is the clock price associated with the product.*
price_point	The price point associated with the bid	Decimal [0-1] {10}	0.7560548272 *In Round 1 this value is 1.0000000000.* *For the "to" product in a switch bid, this value will always be 1.0000000000 regardless of the price point of the "from" product.*

Field	Description	Data Type	Examples/*Notes*
switch_from_category	For the "to" product in a switch bid, this field indicates the license category of the "from" product in a switch bid	String [A|BC] {1,2}	A BC *NULL for Simple and the "from" product of a switch bid*
switch_to_category	For the "from" product in a switch bid, this field indicates the license category of the "to" product in a switch bid	String [A|BC] {1,2}	A BC *NULL for Simple and the "to" product of a switch bid*
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 *NULL for Round 1*
prev_round_aggregate_ demand	The aggregate demand for the product at the start of the round	Integer	12 *NULL for Round 1*
round_opening_price	The lowest price available for bidding on the associated product in the round	Integer	11500000 *In Round 1 this is the opening price, for all other rounds it is the posted price from the previous round.*
round_clock_price	The clock price (highest price) of the associated product in the round	Integer	12650000
selection_number	The pseudo-random number associated with the bid used for tie-breaking purposes	Integer {1,15}	123456789012345 *NULL for Round 1*

1.3. Results

File name: clock_results.csv

The Results file provides a list of the results of bid processing for all products (PEA and license category combinations) for which each bidder had processed demand in the previous round and/or submitted a bid for the product 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 accepted, the file provides an indication of such and details about why one or more bids for the product were not accepted.

File Structure:

- CSV file (first row contains header)
- One record for each round and product combination where bidders had processed demand for the product and/or submitted a bid for the product in the previous round

Field	Description	Data Type	Examples/*Notes*
auction_id	The FCC auction number for the auction	String	107
round	Round number	Integer	12
market_number	The PEA (Partial Economic Area) ID	String (["PEA"][0-9] [0-9][0-9]){6}	PEA001
market_name	The PEA name	String	"New York, NY"
category	License category	String [A|BC|ABC] {1,3}	A BC ABC
bidder	Bidder name	String	Company XYZ "ABC, Inc."
frn	The bidder's FCC Registration Number (FRN) which uniquely identifies the bidder	String [0-9]{10}	0003645844
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	String [Y|N] {1}	Y N *If a switch bid is not fully processed, both the "from" and "to" categories will have an "N".*

Field	Description	Data Type	Examples/*Notes*
processed_demand_detail	Details about why one or more bids for the product were not accepted or not fully accepted during bid processing	String {500}	"Simple bid to increase demand to 5 @ $147,000,555: 2 blocks were not applied due to insufficient eligibility." "Simple bid to reduce demand to 0 @ $36,600,222: 3 blocks were not applied due to insufficient aggregate demand." *If more than one detail message is applicable (e.g., intra-round bids), then the messages are separated with semi-colons.* *If a switch bid was partially (or not) processed, the message will be in the record for both the switch from and to categories.* *NULL if all bid(s) for the product were fully accepted*
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

1.4. Product Status

File name: product_status.csv

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

File Structure:

- CSV file (first row contains header)
- One record for each round and product combination

Field	Description	Data Type	Example/*Notes*
auction_id	The FCC auction number for the auction	String	107
round	Round number	Integer	12
market_number	The PEA (Partial Economic Area) ID	String (["PEA"][0-9] [0-9][0-9]){6}	PEA001
market_name	The PEA name	String	"New York, NY"
category	License category	String [A|BC|ABC] {1,3}	A BC ABC
round_opening_price	The lowest price available for bidding on the product in the round	Integer	11500000 *In Round 1 this is the opening price, for all other rounds it is the posted price from the previous round.*
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
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

1.5. Bidder Status

File name: clock_bidder_status.csv

The Bidder Status file provides information related to bidders for a round. For each round the file gives bidders' eligibilities, required activities and bidding activities in the round. The results of bid processing are also given for the round including bidders' processed activities as well as the bidders' eligibilities and required activities for the next round. Financial information for bidders (requested commitment, processed commitment, net requested commitment, and processed net commitment) are also given.

File Structure:
- CSV file (first row contains header)
- One record for each round and bidder combination

Field	Description	Data Type	Examples/*Notes*
auction_id	The FCC auction number for the auction	String	107
round	Round number	Integer	12
bidder	Bidder name	String	Company XYZ "ABC, Inc."
frn	The bidder's FCC Registration Number (FRN) which uniquely identifies the bidder	String [0-9]{10}	0003645844
bidding_credit_pct	The bidding credit percentage associated with the bidder	Integer [0|15|25]	0 15 25 *0 = no bidding credit* *15 = 15% bidding credit* *25 = 25% bidding credit*
bidding_credit_type	Indicates the type of bidding credit that the bidder is eligible to receive Rural = bidder is eligible for the rural service provider bidding credit Small Business = bidder is eligible for the small business bidding credit	String [Rural | Small Business]	Small Business Rural *NULL if the bidder is not eligible for a bidding credit*
eligibility	The bidder's eligibility in bidding units at the start of round	Integer	8000000

Field	Description	Data Type	Examples/*Notes*
activity_upper_limit	The bidder's maximum activity that it can submit for the round	Integer	10000000 *For Round 1, activity_upper_limit = eligibility*
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 for licenses in dollars for the round based on any bidding credits and applying any applicable bidding credit caps	Integer	10000000 *NULL if the bidder is not eligible for a bidding credit*
req_net_commitment	The bidder's requested net commitment is equal to its requested commitment minus its capped requested commitment discount in dollars for the round	Integer	336000000 *NULL if the bidder is not eligible for a bidding credit*
req_commitment_discount_uncapped	The bidder's requested discount for licenses in dollars for the round based on any bidding credits without applying any applicable bidding credit caps	Integer	16000000 *NULL if the bidder is not eligible for a bidding credit*
req_commitment_discount_uncapped_small	The bidder's requested discount for licenses in dollars for the round in the small markets based on any bidding credits without applying any applicable bidding credit caps	Integer	11000000 *NULL if the bidder is not eligible for the small business bidding credit*
processed_activity	The bidder's bidding activity in bidding units after processing	Integer	4100000
commitment	The bidder's commitment in dollars for the round	Integer	348500000

Field	Description	Data Type	Examples/*Notes*
commitment_discount_capped	The bidder's discount for licenses in dollars for the round based on any bidding credits and applying any applicable bidding credit caps	Integer	10000000 *NULL if the bidder is not eligible for a bidding credit*
net_commitment	The bidder's net commitment is equal to its commitment minus its capped commitment discount in dollars for the round	Integer	338500000 *NULL if the bidder is not eligible for a bidding credit*
commitment_discount_uncapped	The bidder's discount for licenses in dollars for the round based on any bidding credits without applying any applicable bidding credit caps	Integer	15900000 *NULL if the bidder is not eligible for a bidding credit*
commitment_discount_uncapped_small	The bidder's discount for licenses in dollars for the round in the small markets based on any bidding credits without applying any applicable bidding credit caps	Integer	11900000 *NULL if the bidder is not eligible for the small business bidding credit*
next_round_eligibility	The bidder's eligibility in bidding units at the start of the next round	Integer	5125000
next_round_activity_upper_limit	The bidder's maximum activity that it can submit for the next round	Integer	5300000
next_round_required_activity	The bidder's required activity in bidding units for the next round	Integer	4100000

1.6. Bidder Market

File name: bidder_market.csv

The Bidder Market file lists the markets each bidder selected on its FCC Form 175.

File Structure:
- CSV file (first row contains header)
- One record for each bidder and market combination

Field	Description	Data Type	Examples
auction_id	The FCC auction number for the auction	String	107
frn	The bidder's FCC Registration Number (FRN) which uniquely identifies the bidder	String [0-9]{10}	0003645844
bidder_name	Bidder name	String	Company XYZ "ABC, Inc."
market_number	The PEA (Partial Economic Area) ID	String	PEA001
eligible_market	Indicates if the bidder selected the PEA on its application form	String [Y|N]{1}	Y N

1.7. Markets

File name: markets.csv

The Markets file defines the geographic markets in the auction. The geographic markets are Partial Economic Areas (PEAs). For each PEA the file provides the market number, name, population, bidding units, and whether the market is subject to the small market bidding credit cap.

File Structure:
- CSV file (first row contains header)
- One record for each market

Field	Description	Data Type	Examples
auction_id	The FCC auction number for the auction	String	107
market_number	The PEA (Partial Economic Area) ID	String (["PEA"][0-9][0-9][0-9]){6}	PEA001
market_name	PEA name	String	"New York, NY"
market_population	The population in the PEA	Integer	25237061
bidding_units	Bidding units per block in the PEA	Integer	25000
small_market_indicator	Indicates if the PEA is subject to the small market bidding credit cap	String	Y N

2.2. Bids

File name: assignment_bids.csv

The Bids file provides the details of the bidding options available to each bidder in each round in which the bidder could participate based on its winnings in the clock phase.

File Structure:
- CSV file (first row contains header)
- One record for each available bidding option for each bidder

Field	Description	Data Type	Examples/*Notes*
auction_id	The FCC auction number for the auction	String	107
round	Round number	Integer	11 *Information about Round 0 (pre-assigned markets) is not included in this file.*
bidder	Bidder name	String	Company XYZ "ABC, Inc."
frn	The bidder's FCC Registration Number (FRN), which uniquely identifies a bidder	String [0-9]{10}	0003645844
region	The REAG of the Partial Economic Area(s) except for PEAs 1–20. For PEAs 1–20, "TOP 20"	String [TOP 20| REAG 1| REAG 2| REAG 3| REAG 4| REAG 5| REAG 6]	REAG 2 TOP 20
market_number	The PEA ID(s) associated with the bidding option	String	PEA001 PEA077;PEA138 *Multiple PEAs are separated with semicolons.*
market_name	The PEA name(s) associated with the bidding option	String	"New York, NY" "Portland, ME;Burlington, VT" *Multiple PEAs are separated with semicolons.*
assignment_category	The assignment category associated with the bidding option	String [A|A+BC|ABC] {1,4}	A A+BC ABC

Field	Description	Data Type	Examples/*Notes*
assignment_category_name	Name of assignment category	String	Interim Assignment Final Assignment Assignment
winnings	The number of blocks that the bidder has won in this assignment category per PEA	Integer	3 *If the assignment category is A+BC and the bidder won 1 Category A block and 2 Category BC blocks in the clock phase in a given PEA, the value of this field will be 3.* *If the grouping includes 3 PEAs and the bidder won 2 blocks in Assignment Category ABC in each PEA, the value will be 2.*
option	The specific blocks in the bidding option	String	A3.A4.A5 *Each block is separated from the next block with a period.*
assignment_round_bid	The bid amount submitted for the bidding option	Integer	129000 *NULL for a bidding option where it is the only option for the bidder. Otherwise, 0 by default or the bid amount submitted by the bidder.*
random_number	The pseudo-random number associated with the bid used for tie-breaking purposes	Integer {1,9}	15435468 *NULL for a bidding option where it is the only option for the bidder*

Field	Description	Data Type	Examples/*Notes*
clock_payment	The clock phase payment for the option, summed across products in the bidding option	Integer	2873499 *If the assignment category is A or ABC, the clock phase payment is calculated as the number of blocks won by the bidder in the assignment category in each PEA associated with the bidding option multiplied by the sum of the final clock phase prices of all PEAs associated with the option.* *If the assignment category is A+BC, the clock phase payment is calculated as the sum of the clock phase payment for Category A and the clock phase payment for Category BC.*

2.3. Results

File name: assignment_results.csv

The Results file provides the assignment results for bidders, listing each bidding option that was won by each bidder (the "winning assignment") and its assignment phase payment, if any. The file also includes winning assignments that were pre-assigned to bidders in advance of the first assignment round, if any.

File Structure:

- CSV file (first row contains header)
- One record per winning assignment

Field	Description	Data Type	Example/*Notes*
auction_id	The FCC auction number for the auction	String	107
round	Round number	Integer	2 *This will be 0 for any pre-assigned bidding options.*
bidder	Bidder name	String	Company XYZ "ABC, Inc."
frn	The bidder's FCC Registration Number (FRN), which uniquely identifies a bidder	String [0-9]{10}	0003645844
region	The REAG of the Partial Economic Area(s) except for PEAs 1–20. For PEAs 1–20, "TOP 20"	String [TOP 20| REAG 1| REAG 2| REAG 3| REAG 4| REAG 5| REAG 6]	REAG 2 TOP 20
market_number	The PEA ID(s) associated with the bidding option	String	PEA001 PEA077;PEA138 *Multiple PEAs are separated with semicolons.*
market_name	The PEA name(s) associated with the bidding option	String	"New York, NY" "Portland, ME;Burlington, VT" *Multiple PEAs are separated with semicolons.*
assignment_category	The assignment category associated with the bidding option	String [A|A+BC|ABC] {1,4}	A A+BC ABC
assignment_category_name	Name of assignment category	String	Interim Assignment Final Assignment Assignment

Field	Description	Data Type	Example/*Notes*
winnings	The number of blocks that the bidder has won in this assignment category per PEA	Integer	3 *If the assignment category is A+BC and the bidder won 1 Category A block and 2 Category BC blocks in the clock phase in a given PEA, the value of this field will be 3.* *If the grouping includes 3 PEAs and the bidder won 2 blocks in Assignment Category ABC in each PEA, the value will be 2.*
clock_payment	The clock phase payment for the option, summed across products in the bidding option	Integer	2873499 *If the assignment category is A or ABC, the clock phase payment is calculated as the number of blocks won by the bidder in the assignment category in each PEA associated with the bidding option multiplied by the sum of the final clock phase prices of all PEAs associated with the option.* *If the assignment category is A+BC, the clock phase payment is calculated as the sum of the clock phase payment for Category A and the clock phase payment for Category BC.*
option_assigned	The specific blocks in the assigned bidding option	String	A3.A4.A5 *Each block is separated from the next block with a period.*

Field	Description	Data Type	Example/*Notes*
assignment_round_bid	The bid amount submitted for the bidding option	Integer	182000 *NULL for a bidding option where it is the only option for the bidder*
vickrey_price	The Vickrey price of the bidder for its assignment	Integer	130000 *0 for a bidding option where it is the only option for the bidder or if no additional assignment payment is necessary*
core_adjustment	The additional payment above the bidder's Vickrey price that ensures no group of bidders is willing to pay more for an alternative assignment	Integer	26000 *0 for a bidding option where it is the only option for the bidder or if no additional assignment payment is necessary*
assignment_payment	The assignment phase payment for the winning assignment	Integer	156000 *0 for a bidding option where it is the only option for the bidder or if no additional assignment payment is necessary*
gross_payment	The gross payment amount for the winning assignment is the sum of the clock phase payment and the assignment phase payment, not taking into account any bidding credit discounts	Integer	3457884

2.4. Bidder Status

File name: assignment_bidder_status.csv

The Bidder Status file contains the cumulative payment amounts for each bidder after each round. The file contains one record for each bidder and each round.

File Structure:

- CSV file (first row contains header)
- One row per bidder-assignment round combination

Field	Description	Data Type	Example/*Notes*
auction_id	The FCC auction number for the auction	String	107
round	Round number of the last posted round covered by the data, or 0 for data relating to pre-assignments	Integer	2
bidder	Bidder name	String	Company XYZ "ABC, Inc."
frn	The bidder's FCC Registration Number (FRN), which uniquely identifies a bidder	String [0-9]{10}	0003645844
gross_payment	The sum of the clock phase payments for all of the bidder's clock phase winnings and the bidder's assignment phase payments for all assignment rounds completed, not taking into account any bidding credit discounts	Integer	1100000000
discount	The discount to the gross amount for all markets calculated taking into account the small market cap (if applicable) and the overall cap	Integer	165000000 *NULL if the bidder is not eligible for a bidding credit*
net_payment	The gross payment minus the capped bidding credit discount	Integer	175000000 *NULL if the bidder is not eligible for a bidding credit*

Field	Description	Data Type	Example/*Notes*
discount_uncapped	The discount to the gross payment amount for all markets calculated without taking into account the small market cap (if applicable) or the overall cap	Integer	165000000 *NULL if the bidder is not eligible for a bidding credit*
discount_uncapped_small	The discount to the gross payment amount for small markets calculated for small markets without taking into account the small market cap	Integer	11000000 *NULL if the bidder is not eligible for the small business bidding credit*

2.5. Results by License

File name: results_by_license.csv

This file provides final license authorization price information for each license authorization assigned in the auction. It includes records for all license authorizations (single or paired) assigned to bidders.

File Structure:

- CSV file (first row contains header)
- One record per license authorization

Field	Description	Data Type	Examples/*Notes*
auction_id	The FCC auction number for the auction	String	107
license	The combined license name	String	PEA276-A1 *The license name is a combination of market_number and the block of the final assignment separated by "-".*
market_number	The PEA (Partial Economic Area) ID	String (["PEA"][0-9] [0-9][0-9]){6}	PEA043
market_name	The PEA name	String	"New York, NY"
block_final	The final assignment block	String	A1 C1

Field	Description	Data Type	Examples/*Notes*
block_interim	The interim assignment block (if any)	String	A1 *NULL if the license is not associated with an interim assignment*
bidder	Bidder name	String	Company XYZ "ABC, Inc."
frn	The bidder's FCC Registration Number (FRN) which uniquely identifies the bidder	String [0-9]{10}	0003645844
bidding_credit_type	Indicates the type of bidding credit that the bidder who won the license is eligible for.	String [Rural | Small Business]	Small Business Rural *NULL if the bidder is not eligible for a bidding credit*
bidding_credit_pct	The bidding credit percentage associated with the bidder	Numeric [0|15|25]{1,2}	0 15 25 *0 = no bidding credit* *15 = 15% bidding credit* *25 = 25% bidding credit*
gross_license_price	The gross price of the license after apportioning the assignment payment	Integer	145592166
net_license_price	The net price of the license after apportioning the assignment payment and any bidding credit discount	Integer	123941798
effective_bidding_credit	Calculated as 100 times 1-(net_license_price/ gross_license_price)	Decimal	14.42 *Rounded to the nearest 2 decimal places*

3. 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.

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 are examples of valid decimals:

- 123.45
- -0.15
- .67
- 0.30

The following are 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 are examples of valid integers:

- 009
- 9
- 2147483647

The following are 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
- 103

Invalid values for example 1:

- 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.