# Mobility Fund Phase II
Data Specifications and Error Codes

# MOBILITY FUND PHASE II CHALLENGE PROCESS

## Data Specifications

The table below provides the specification for the **Challenger Speed Test** CSV file.

| Field<br>*= required | Description | Data Type | Max Length | Example |
|---|---|---|---|---|
| latitude* | Latitude of the speed test location.<br>Values must have at least five digits to the right of the decimal.<br>Coordinates must be in the WGS84 geographic coordinate system. | Float | N/A | 39.509220 |
| longitude* | Longitude of the speed test location. Values must have at least five digits to the right of the decimal. Coordinates must be in the WGS84 geographic coordinate system. | Float | N/A | -98.433700 |
| timestamp* | Date and time of the speed test measurement in ISO 8601 style format (YYYY-MM-DD HH:MM ±HH:MM)<br>Speed tests must be recorded between 06:00 and 24:00 in the local time zone of the measurement location.<br>Speed tests must also be recorded between 2018-02-27 and the date of upload. | Date | 30 | 2017-09-07 13:42 -04:00 |

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| Field *= required | Description | Data Type | Max Length | Example |
|---|---|---|---|---|
| signal_strength* | Measured signal strength of the speed test in dBm. (Value may be 0 if coverage is insufficient to conduct test) | Decimal | N/A | -99.10 |
| download_speed* | Measured download speed in Mbps (Value may be 0 if coverage is insufficient to conduct test) | Decimal | 10 | 5.89 |
| latency* | Measured latency in milliseconds (Value may be 0 if coverage is insufficient to conduct test) | Integer | 10 | 176 |
| provider_id* | FCC identifier for the provider | Integer | 3 | 90 |
| provider_name* | Common name of speed measurement network provider | String | 255 | Acme Wireless |
| device_id* | FCC identifier for the unique device from the Provider_Handsets.csv file | Integer | 3 | 5 |
| device_imei* | Device IMEI number | String | 16 | 867686022335391 |
| measurement_method_code* | FCC code for the measurement method (1: non-drive app test, 2: software drive test, 3: hardware drive test) | Integer | 3 | 1 |
| measurement_app_name | The name of the measurement app used (Value may be null if measurement_method_code is 2 / 3) | String | 255 | Ookla |
| measurement_server_location | IP address or location of measurement server | String | Between 2 and 150 Characters | Washington |

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# Data Error Codes

If submitted data fails validations, you may download the **Data Errors** CSV file from the **Create Challenge** screen.  The table below provides a list of all data error and warning codes generated by the system.

| Category | Code | Description |
|---|---|---|
| Latitude | LAT_REQUIRED | The latitude field is required and must not be null. |
| Latitude | INVALID_LAT_DEGREE_RANGE | The latitude range to the left of the decimal must be between -90 and 90, inclusive. |
| Latitude | INVALID_LAT_FORMAT | The latitude must be in numeric decimal format. |
| Latitude | INVALID_LAT_DECIMAL_ACCURACY | The latitude should have a minimum of 5 digits to the right of the decimal. |
| Longitude | LON_REQUIRED | The longitude is required and must not be null. |
| Longitude | INVALID_LON_DEGREE_RANGE | The longitude range to the left of the decimal must be between -180 and 180, inclusive. |
| Longitude | INVALID_LON_FORMAT | The longitude field must be in numeric decimal format. |
| Longitude | INVALID_LON_DECIMAL_ACCURACY | The longitude field must have a minimum of 5 digits to the right of the decimal. |
| Latitude / Longitude | INVALID_SPEED_TEST_LOCATION | The latitude and longitude coordinate of each speed test must match a valid challenge area cell for the state. |
| Timestamp | TIMESTAMP_REQUIRED | The timestamp field is required and must not be null. |

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| Category | Code | Description |
|---|---|---|
| Timestamp | TIMESTAMP_FORMAT | The timestamp field must be a string formatted in valid ISO 8601 format:<br>(YYYY-MM-DD HH:MM ±HH:MM) |
| Timestamp | INVALID_TIMESTAMP_TIME | The timestamp of each speed test measurement must be recorded between 06:00 and 24:00 within the local time zone of the measurement location. |
| Timestamp | INVALID_TIMESTAMP_DATE_RANGE | The timestamp of each speed test measurement must be recorded between 2018-02-27 and the date of file upload |
| Signal Strength | SIGNAL_STRENGTH_REQUIRED | The signal_strength field is required and must not be null. |
| Signal Strength | SIGNAL_STRENGTH_FORMAT | The signal_strength field must be in numeric decimal format. |
| Download Speed | DL_SPEED_REQUIRED | The download_speed field is required and must not be null. |
| Download Speed | INVALID_DL_SPEED_FORMAT | The download_speed field must be in numeric decimal format. |
| Download Speed | INVALID_CHG_DL_SPEED | The download_speed measurement must be below 5.0 Mbps. |
| Latency | LATENCY_REQUIRED | The latency field is required and must not be null. |
| Latency | INVALID_LATENCY_FORMAT | The latency field must be in integer format. |
| Provider ID | PROVIDER_ID_REQUIRED | The provider_id field is required and must not be null. |
| Provider ID | INVALID_PROVIDER_ID_FORMAT | The provider_id field must be in integer format. |

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| Category | Code | Description |
| --- | --- | --- |
| Provider ID | INVALID_PROVIDER_ID_CHALLENGE | The provider_id cannot match your own organization's ID. |
| Provider Name | PROVIDER_NAME_REQUIRED | The provider_name field is required and must not be null. |
| Provider Name | INVALID_PROVIDER_NAME_LENGTH | The provider_name field must be a string that is less than or equal to 255 characters long. |
| Device ID | DEVICE_ID_REQUIRED | The device_id field is required and must not be null. |
| Device ID | INVALID_DEVICE_ID_FORMAT | The device_id field is a number and must be in integer format. |
| Device ID / Provider ID | INVALID_DEVICE_PROVIDER_ASSOCIATION | The device_id and provider_id together must match a device and provider pairing from the Provider Handsets file. |
| Device IMEI | DEVICE_IMEI_REQUIRED | The device_imei field is required and must not be null. |
| Device IMEI | INVALID_DEVICE_IMEI_LENGTH | The device_imei field must be a string of digits between 15 and 16 characters long. |
| Device IMEI | INVALID_DEVICE_IMEI_FORMAT | The device_imei field must be an integer string |
| Measurement Method Code | MEASUREMENT_METHOD_CODE_REQUIRED | The measurement_method_code field is required field and must not be null. |
| Measurement Method Code | INVALID_MEASUREMENT_METHOD_CODE_FORMAT | The measurement_method_code field is a number and must be in integer format. |

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| Category | Code | Description |
|---|---|---|
| Measurement Method Code | INVALID_MEASUREMENT_METHOD_CODE | The measurement_method_code must match one of the acceptable measurement codes: (1: non-drive app test, 2: software drive test, 3: hardware drive test) |
| Measurement App Name | INVALID_MEASUREMENT_APP_NAME_LENGTH | The measurement_app_name field must be a string that is less than or equal to 255 characters long. |
| Measurement App Name | MEASUREMENT_APP_NAME_REQUIRED | If measurement_method_code =1 then measurement_app_name is a required field and must not be null. |
| Measurement Server Location | MEASUREMENT_SERVER_LOCATION_REQUIRED | The measurement_server_location field is required and must not be null. |
| Measurement Server Location | INVALID_MEASUREMENT_SERVER_LOCATION_LENGTH | The measurement_server_location field must be a string that is less than or equal to 150 characters long. |

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