

Connect America Fund Goals

- Preserve and advance universal availability of voice service
- Drive universal availability of modern networks capable of providing voice and broadband service to homes, businesses and community anchor institutions
- Drive universal availability of modern networks capable of providing advanced mobile voice and broadband service
- Ensure that rates for broadband and voice services are reasonably comparable in all regions of the nation
- Contain administrative costs and minimize the universal service contribution for consumers and businesses through efficient, effective program management

Connect America Fund Compliance

USAC closely monitors carrier compliance with broadband deployment obligations to safeguard the accountability, transparency and integrity of the Connect America Fund.

Compliance process consists of three steps:

HUBB Portal: Tracking Broadband Deployment

Verification Reviews: Confirming Broadband Deployment

Performance Testing: Measuring Network Speed and Latency

High Cost Universal Broadband (HUBB) Portal

A system that collects the geographic coordinates (latitude and longitude) of locations where carriers are deploying broadband using CAF support

- Tool for collecting location-specific service availability data from carriers across all Connect America Fund (modernized) programs millions of individual records
- Performs automated, real-time <u>validation</u> of data submissions
 - Checks that latitude and longitude of a reported location fall within area eligible for funding
 - Checks that the location is not a duplicate of one already submitted
- Tracks carrier progress toward meeting deployment obligations, including interim milestones
- Annual HUBB filing deadline is in March for carriers to report broadband deployed with CAF support in the prior calendar year

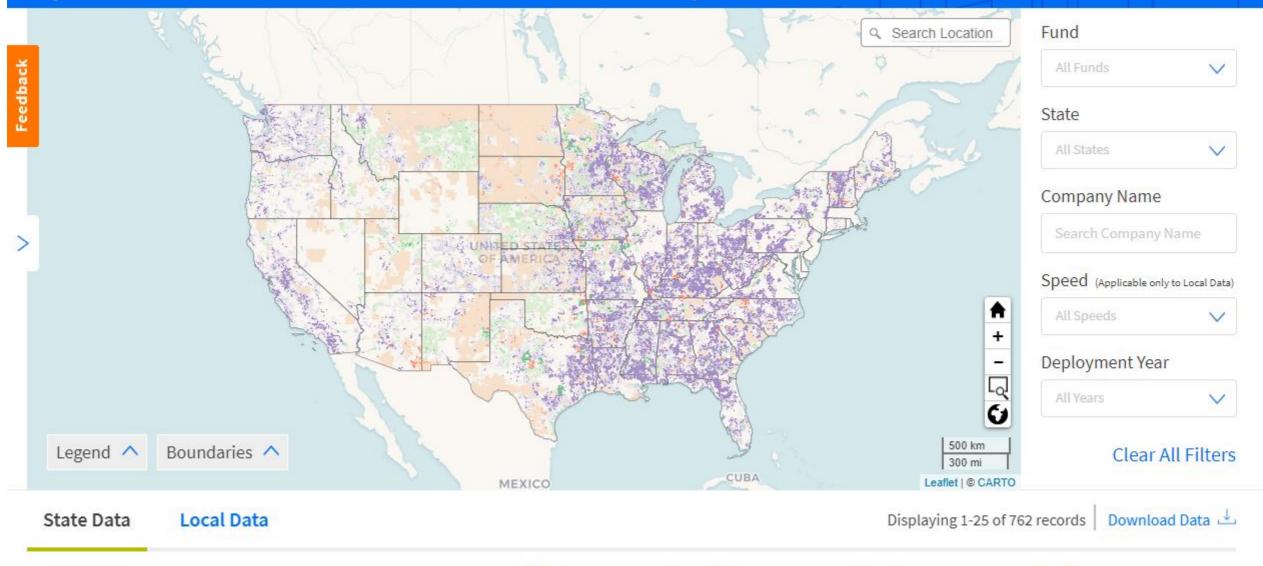
High Cost Universal Broadband (HUBB) Portal

A system that collects the geographic coordinates (latitude and longitude) of locations where carriers are deploying broadband using CAF support

- Serves as a starting point for <u>verification</u> reviews to confirm deployment to a random sample of locations reported by carriers
 - All carriers participating in CAF programs with deployment milestone obligations are subject to verification reviews
 - Goal is to verify that a carrier deployed broadband service meeting the FCC's performance standards to a qualifying number of locations by the relevant deployment milestone
- Provides the foundation for the CAF Map, a public map that shows the impact of CAF funding on broadband expansion across rural America

Connect America Fund Broadband Map











Total Support Disbursed



HUBB Filing Obligations by Fund

Carriers in these funds have until March 1, 2022 to file data for all locations deployed in 2021:

- Connect America Fund (CAF) Phase II Model
- Alternative Connect America Cost Model (A-CAM) and Revised ACAM
- ACAM II
- Connect America Fund-Broadband Loop Support (CAF BLS)
- Rural Broadband Experiments (RBE)
- Alaska Plan (other than carriers with individualized performance plans that only require them to maintain service at existing levels)
- Connect America Fund (CAF) Phase II Auction
- Rural Digital Opportunity Fund (RDOF)

Carriers that did not deploy any locations in 2021 must still log into the HUBB and certify "no locations to upload" by March 1, 2022

HUBB Filing Obligations by Fund (Cont.)

Carriers with 2021 deployment milestones must also complete separate milestone certifications as part of the annual HUBB filing and may face verification reviews tied to those milestones to confirm deployment to a random sample of reported locations

- Original and Revised ACAM carriers face a milestone for deploying 10/1 Mbps broadband service, and must be at least 50 percent of the way toward meeting their final 10/1 Mbps build-out obligations by the end of 2021
- Alaska Plan carriers face five-year milestone as of the end of 2021
- CAF II Model carriers faced 100 percent deployment milestone as of the end of 2020
- ACAM II and CAF II Auction carriers face their first broadband deployment milestone (for 40 percent of required deployments) at the end of 2022
- CAF BLS carriers face just one final milestone (for deploying 25/3 Mbps broadband service) by the end of 2023

Carriers that miss deployment milestones face increased reporting obligations and potential loss of support.



Performance Measures Testing

Carriers that receive CAF support to provide fixed-location broadband must conduct network speed and latency testing and report the results to USAC. Testing mandates currently apply to:

- Connect America Fund (CAF) Phase II Model
- Connect America Fund (CAF) Phase II Auction
- Alternative Connect America Cost Model (A-CAM), Revised ACAM and ACAM II
- Connect America Fund-Broadband Loop Support (CAF-BLS)
- Rural Broadband Experiments (RBE)
- Alaska Plan
- Rural Digital Opportunity Fund (RDOF)

The windows to start pre-testing/testing vary by fund and began in 2020 with CAF II Model.

ACAM II, CAF II Auction and CAF BLS carriers start pre-testing in 2022. These carriers should prepare now by determining where they have active subscribers and updating their HUBB data.

Performance Measures Testing

- Carriers must conduct one week of speed and latency testing at a USAC-selected random sample of CAF-supported locations with active subscribers in each quarter of the calendar year
- Carriers must test speed and latency from the customer premises of active subscribers to a remote test server located at, or reached by passing through, an FCC-designated Internet exchange point (IXP)
 - Carriers serving areas greater than 500 air miles from an FCC-designated IXP may conduct all required speed and latency testing between the customer premises and the point at which traffic is aggregated for transport to the continental U.S.
- Carriers must report the test results to USAC as part of the annual compliance process and must report results for 100 percent of subscribers in a sample to be in compliance

Performance Measures Testing

Carriers can choose from among three options for speed and latency testing:

- Leverage existing Measuring Broadband America (MBA) testing infrastructure by using entities that manage and perform testing for the FCC MBA program
- Use existing network management systems and tools, ping tests and other commonly available performance measurement and network management tools
- Develop own self-testing configuration using software installed on residential gateways or in equipment attached to residential gateways

Performance Measures Testing - Official Testing

- Carriers must submit speed and latency test results from the previous calendar year for each state and speed tier combination to USAC by annual July filing deadline
 - USAC encourages carriers to file and certify test results on a quarterly basis
- At least 80 percent of network speed measurements must be at 80 percent of required speeds (as determined by fund) and 95 percent of low-latency measurements must fall at or below 100 milliseconds round-trip time
 - For carriers with high-latency networks, 95 percent of high latency measurements must fall at or below 750 milliseconds round-trip time
 - Carriers with high-latency networks are also subject to Mean Opinion Score (MOS)
 measurements
- FCC will consider failure to meet speed and latency requirements as a failure to deploy and may withhold support

Performance Measures Testing - Official Testing

- Although carriers have until the following July to submit speed and latency test results from the previous calendar year, USAC encourages carriers to file and certify test results on a quarterly basis
- USAC will provide quarterly compliance reports to carriers that file and certify test data on a
 quarterly basis to allow them to track their progress in meeting speed and latency metrics
 and address any shortfalls before the end of the year
 - Note that PMM compliance is calculated using only certified data Don't forget to certify
- Final compliance is calculated annually
 - USAC will only calculate final compliance for the year and withhold support from carriers that fail meet speed and latency requirements – after carriers submit and certify test data for all four quarters
 - There is no penalty for failing to meet speed and latency requirements in one quarter if a carrier's results for the full year (all four quarters) are in compliance

Performance Measures Testing - Pre-Testing

- Before official testing, carriers are subject to a "pre-testing" period for one week of each quarter of the calendar year
- During pre-testing, carriers must test speed and latency at a random sample
 of subscriber locations and submit the results to USAC within one week of
 the end of the quarter
- Carriers will not face withholding of support for failing to meet speed and latency standards during pre-testing, but will be subject to withholding if they fail to submit the required testing results

Schedule for Pre-Testing and Testing

Schedule for Pre-Testing and Testing

Program	Pre-testing start date	Testing start date
CAF Phase II (Price-cap carrier funding)	January 1, 2020	July 1, 2020
Rural Broadband Experiments	January 1, 2021	January 1, 2022
Alaska Plan	January 1, 2021	January 1, 2022
A-CAM I	January 1, 2021	January 1, 2022
A-CAM I Revised	January 1, 2021	January 1, 2022
ACAM II	January 1, 2022	January 1, 2023
Legacy Rate of Return	January 1, 2022	January 1, 2023
CAF II Auction	January 1, 2022	January 1, 2023
New NY Broadband Program	January 1, 2022	January 1, 2023

Performance Measures Pre-Testing in 2022

Fund	Pre-Testing Start	Pre-Testing End	Pre-Testing Data Filing Deadlines	Official Testing Start Date	Testing Data Filing Deadlines
ACAM II	1/1/22	12/31/22	4/7/22; 7/7/22; 10/7/22; 1/7/23	1/1/23	7/7/24
CAF BLS	1/1/22	12/31/22	4/7/22; 7/7/22; 10/7/22; 1/7/23	1/1/23	7/7/24
CAFII Auction (NY Broadband)	1/1/22	12/31/22	4/7/22; 7/7/22; 10/7/22; 1/7/23	1/1/23	7/7/24

Performance Measurement Module (PMM)

- Collects carrier data on which locations in the HUBB have active subscribers
- Generates a random sample of those locations for speed and latency testing and provides the obligated speed tiers to be tested
 - Obligated speed tiers are based on the speed tiers reported for those locations in the HUBB compared with the speeds carriers are required to deliver
- Collects the actual speed and latency test data from carriers
- Calculates compliance with performance measures standards based on certified test results.

Performance Measurement Module

How It Works:

- Carriers download certified locations already filed in the HUBB
 - Data provided in CSV file (template for subscriber upload)
- Carriers add subscriber IDs as unique identifiers for locations with active subscribers
 - Do not use personally identifiable information (PII) for subscriber IDs
- Carriers upload CSV file with subscriber IDs into the PMM
 - Only include HUBB locations with subscriber IDs
- PMM generates a random sample of locations with active subscribers for testing, along with the obligated speed tiers to be tested
- Carriers must test up to 50 locations for each speed tier per state, depending on the number of subscribers a carrier has in each state and speed tier

Performance Measurement Module

How It Works (cont.)

- Carriers must use the same locations for speed and latency testing
 - All speed tests for the sample must be conducted in the same week and all latency tests for the sample must be conducted in the same week
 - Speed and latency tests may be conducted in different weeks
 - Carriers must conduct testing between 6 p.m. and 12 a.m. local time
- Carriers upload speed and latency test results to PMM using CSV files
 - Separate CSV templates for Speed and Latency results
 - Carriers must submit all test results
- Carriers cannot edit the number of units for HUBB records for subscriber locations selected for testing
- Carriers must obtain a new random sample after two years of testing/pre-testing

Performance Measures Testing – Samples

- Sample by State
 - Carriers receive samples for each state they are authorized in
- Sample by Speed Tier
 - Carriers in funds with multiple speed tier obligations get samples for each speed tier
 - For example, ACAM II has obligations for 4/1 and 25/3, so ACAM II carriers will get two samples
- Sample Size
 - Sample size is based on the number of subscribers submitted
 - Maximum of 50 subscribers to test per sample

Performance Measures Testing – Sample Management

- Replacing subscribers
 - To replace a selected subscriber with the next randomly selected one, a carrier must provide a reason:
 - Subscriber Refused to Allow Installation of Testing Equipment
 - Subscriber Dropped Service (no longer active)
 - Subscriber Demands Removal of Testing Equipment
 - Subscriber Subscribes to Lower Speed Than Being Tested
 - Natural Disaster
 - Other Requires Explanation and USAC / FCC Review
- Adding subscribers
 - Carriers may request additional randomly selected subscribers to test, but are responsible for submitting test data for any additional subscribers
- No Valid Subscribers
 - Carriers that cannot find five active subscribers to test are subject to verification that more subscribers are not available

Performance Measurement Module

- The PMM is open now for ACAM II, CAF II Auction and CAF BLS carriers to upload subscriber location data
- Coming very soon: USAC will notify ACAM II, CAF II Auction and CAF BLS carriers when the system is ready to generate random samples for testing
- Carriers should prepare NOW by:
 - Collecting data on where they have active subscribers
 - Start now since this process can take time
 - Carriers with locations in the HUBB can download their deployment data from the HUBB into the CSV template and add subscriber IDs to serve as unique identifiers for locations with subscribers
 - Updating their broadband deployment data in the HUBB to be as accurate, complete and current as possible

Performance Measurement Module

Before uploading subscriber location data into the PMM, carriers should be sure their deployment data in the HUBB is as up-to-date, accurate and complete as possible

- Begin filing 2021 deployment data in the HUBB now so that these locations can potentially be included in the random samples for performance testing
- Make any necessary edits to latitude and longitude coordinates, address information, etc. for locations already in the HUBB
- Update speed tier data for locations already in the HUBB to reflect network upgrades
 - Speed tier data reported in the HUBB will be used to generate the obligated speed tiers for testing for any locations selected for a PMM random sample
 - Obligated speed tiers are based on the speed tiers reported in the HUBB compared with the speeds that carriers are required to deliver
 - Obligated speed tiers will soon be locked for locations already in the HUBB

Performance Measures Testing - Carriers with No HUBB Data

- Some carriers do not have location data in the HUBB yet because they do not face deployment milestones yet:
 - ACAM II and CAF II Auction carriers do not face their first broadband deployment milestone (for 40 percent of required deployments) until the end of 2022
 - CAF BLS carriers only face one final milestone (for deploying 25/3 Mbps broadband service) at the end of 2023
- These carriers are not required to conduct pre-testing until they have deployment data in the HUBB, but should plan to begin pre-testing within one quarter after they do

Performance Measures Testing - Carriers with No HUBB Data

Some CAF BLS carriers may not report any or most of their deployment data in the HUBB because the HUBB will not accept any CAF BLS locations deployed before May 25, 2016

- This includes CAF BLS carriers that were fully deployed at speeds of at least 25/3 Mbps to all locations in their study area by May 25, 2016 or become fully deployed after that date
- These carriers do have to conduct quarterly pre-testing starting in 2022
- USAC will follow up with CAF BLS carriers that do not have enough locations in the HUBB to generate a random location sample
- USAC will help these carriers upload their subscriber information so that they can obtain random subscriber location samples to begin speed and latency pre-testing in 2022
- These carriers should prepare now by collecting data on where they have active subscribers



Performance Measures Testing Process Overview

- Step 1 Update Your HUBB Data Available Now
 - Clean up your HUBB data and update speed tier data to reflect network upgrades
 - Upload and certify any 2021 deployments you want included in your pool
- Step 2 Download HUBB Locations & Compile Subscribers Available Now
 - Download your list of all certified locations from HUBB
 - Identify which locations have active subscribers
 - Complete subscriber template with subscriber ID (no PII)
- Step 3 Upload Subscriber Locations to PMM Available Now
- Step 4 Submit data to randomizer Coming Soon
 - Generate sample PMM will generate a random sample of subscribers
 - Download sample files
- Step 5 Start testing

Step 1 – Get Current Certified HUBB Data



Performance Measures Module

Sign Out

Upload Subscribers

Subscriber Detail

Randomizer

Upload Subscriber List

330 days left to Upload Subscribers.

Step 1: Generate and Download your HUBB data file.

This file will have a column for you to add your Subscriber IDs.

Generate HUBB Data



Click here to get a CSV file with HUBB locations

Step 2: Upload the downloaded HUBB Data file with your Subscriber IDs.

For more information on data validation and formatting rules, click on Detailed Instructions.

Upload Subscriber File

Recently Uploaded Files

File Name Uploaded Progress Records Uploaded Records Saved Data Errors Download Errors Delete

Subscriber Upload Information

- Autosaved Locations: Files uploaded that do not contain errors will be saved in the system.
 They will be counted towards the sampled subscriber locations, used in the randomizer.
- Locations with errors: Files uploaded that contain one or more errors will not be saved in the system.
 Please download your error file, delete the original file, make the necessary changes, and re-upload the clean file.

Subscriber Data Upload Template File - Before

	Α	В	С	D	Е	F	G	Н	I	J
1	SAC	Latitude	Longitude	Address	State	Speed Tier	# of Units	Carrier Location ID	HUBB Location ID	Subscriber ID(s)
2	250283	33.91935	-86.4103	ADDRESS A	VA	6	15600	6010201	38712807	
3	250283	33.89576	-86.3793	ADDRESS A	VA	6	200	6010202	38712808	
4	250283	33.89783	-86.3591	ADDRESS A	VA	6	6300	6010203	38712809	
5	613004	61.58238	-159.539	ADDRESS A	VA	6	300	6010203	38712810	
6	613004	61.57872	-159.527	ADDRESS A	VA	6	37800	6010203	38712811	
7	613004	61.57796	-159.561	ADDRESS A	VA	6	300	6010203	38712812	
8	250283	33.91935	-86.4103	ADDRESS A	VA	6	15600	6010201	38712813	
9	250283	33.89576	-86.3793	ADDRESS A	VA	6	200	6010202	38712814	
10	250283	33.89783	-86.3591	ADDRESS A	VA	6	6300	6010203	38712815	
11	613004	61.58238	-159.539	ADDRESS A	VA	6	300	6010203	38712816	
12	613004	61.57872	-159.527	ADDRESS A	VA	6	37800	6010203	38712817	
13	613004	61.57796	-159.561	ADDRESS A	VA	6	300	6010203	38712818	
14	250283	33.91925	-86.4104	ADDRESS A	VA	6	15600	6010201	38712819	
15	250283	33.89566	-86.3798	ADDRESS A	VA	6	200	6010202	38712820	
16	250283	33.89784	-86.3591	ADDRESS A	VA	6	6300	6010203	38712821	
17	613004	61.58248	-159.539	ADDRESS A	VA	6	300	6010203	38712822	
18	613004	61.57874	-159.526	ADDRESS A	VA	6	37800	6010203	38712823	
19	613004	61.57786	-159.56	ADDRESS A	VA	6	300	6010203	38712824	
20										

Blank column to add Subscriber IDs



Latitude, Longitude and Address will be blank for CAF-BLS special exception carriers

Step 2 – Compile Subscriber Information

Subscriber Data Upload Template File - Afte

4	Α	В	С	D	E	F	G	Н	I	J	٨٠١
1	SAC	Latitude	Longitude	Address	State	Speed Tier	# of Units	Carrier Location ID	HUBB Location ID	Subscriber ID(s)	AddSubscriber
2	250283	33.91935	-86.4103	ADDRESS	VA	6	15600	6010201	38712807	1	- IDs here
3	250283	33.89576	-86.3793	ADDRESS	VA	6	200	6010202	38712808	2	IDS HEIE
4	250283	33.89783	-86.3591	ADDRESS	VA	6	6300	6010203	38712809	3;20;22	
5	613004	61.58238	-159.539	ADDRESS	VA	6	300	6010203	38712810	4	4
6	613004	61.57872	-159.527	ADDRESS	VA	6	37800	6010203	38712811		
7	613004	61.57796	-159.561	ADDRESS	VA	6	300	6010203	38712812	6	Leave
8	250283	33.91935	-86.4103	ADDRESS	VA	6	15600	6010201	38712813	7	– Subscriber II
9	250283	33.89576	-86.3793	ADDRESS	VA	6	200	6010202	38712814	8	blank or
10	250283	33.89783	-86.3591	ADDRESS	VA	6	6300	6010203	38712815	9	delete this
11	613004	61.58238	-159.539	ADDRESS	VA	6	300	6010203	38712816	10	row if no
12	613004	61.57872	-159.527	ADDRESS	VA	6	37800	6010203	38712817	11	active
13	613004	61.57796	-159.561	ADDRESS	VA	6	300	6010203	38712818	12	Subscribers
14	250283	33.91925	-86.4104	ADDRESS	VA	6	15600	6010201	38712819	13;30;31;32	at this
15	250283	33.89566	-86.3798	ADDRESS	VA	6	200	6010202	38712820	14	location



Latitude, Longitude and Address will be blank for CAF-BLS special exception carriers

For locations with multiple units and subscribers, separate Subscriber IDs with a semi colon

Step 3 – Upload Subscriber Information

Step 1: Generate and Download your HUBB data file.

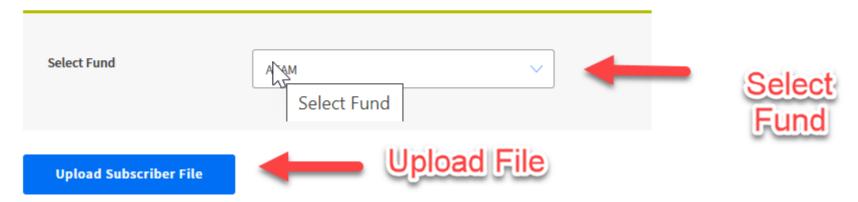
This file will have a column for you to add your Subscriber IDs.

Generate HUBB Data

Performance Subscriber Data Upload Template_12-03-2021-12-48-05.csv

Step 2:Upload the downloaded HUBB Data file with your Subscriber IDs by Fund.

For more information on data validation and formatting rules, click on Detailed Instructions.



Step 3 – Upload Subscriber Information



Performance Measures Module

Upload Subscribers

Subscriber Detail

Randomizer

Upload Subscriber List

330 days left to Upload Subscribers.

Step 1: Generate and Download your HUBB data file.

This file will have a column for you to add your Subscriber IDs.

Generate HUBB Data

Performance Subscriber Data Upload Template_09-26-2019-14-28-41.csv

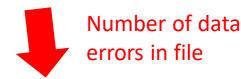
Step 2: Upload the downloaded HUBB Data file with your Subscriber IDs.

For more information on data validation and formatting rules, click on Detailed Instructions.

Recently Uploaded Files
File Name

Performance Subscriber Data Upload Template_09-26-2019-14-28-41 TW.csv

Uploaded Subscriber CSV file(s) listed here



Uploaded Progress Records Uploaded Records Saved Data Errors Download Errors Delete

09/26/2019 2:36:57PM

18 13 5 Download Delete





Step 3 – Upload Subscriber Information

Subscriber Data Issue Log File

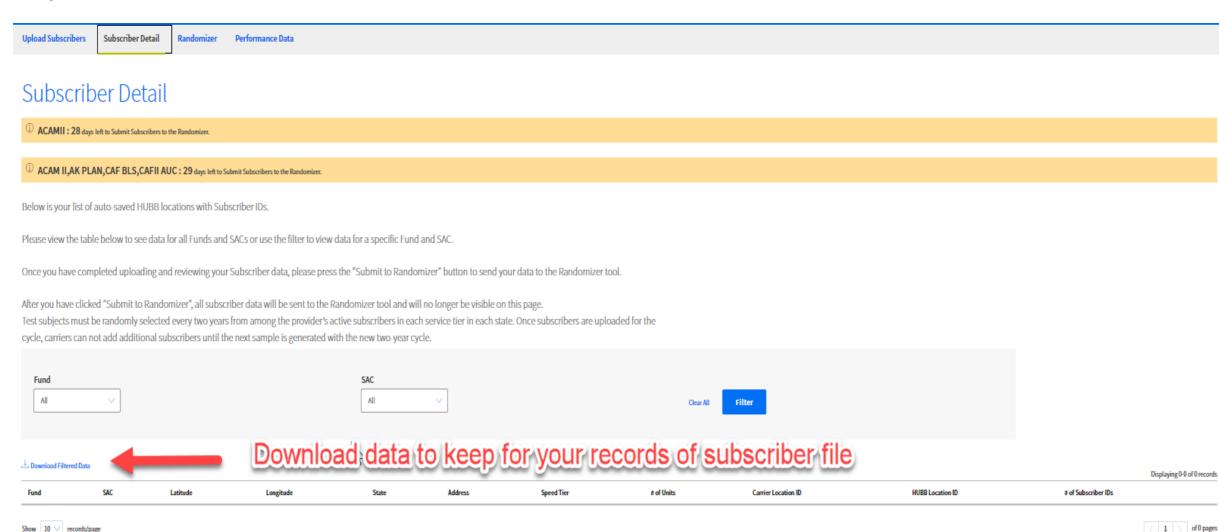
	Α	В	С	D
1	Row #	HUBB Location ID	Subscriber	Issue Code
2	2		1	HUBB_LOCATION_ID_REQUIRED
3	3	3871280aaa8	2	HUBB_LOCATION_ID_INVALID_FORMAT
4	4	38712809	3	HUBB_LOCATION_ID_INVALID_DUPLICATE
5	5	38712809	4	HUBB_LOCATION_ID_INVALID_DUPLICATE
6	6	38712811		SUBSCRIBER_ID_REQUIRED
7				

Indicates that no Subscriber ID was submitted. If no subscriber is available delete this row

Tips:

- 1. When using the HUBB Generated file, delete any rows without subscribers by right clicking and selecting delete rows
- The HUBB Location ID and Subscriber ID are the only required fields for uploading subscriber data into the PMM system.
- 3. HUBB does not contain personally identifiable information (PII). For this reason, when assigning SINs, carriers should not use their subscriber's PII.

Step 4 – Submit to Randomizer



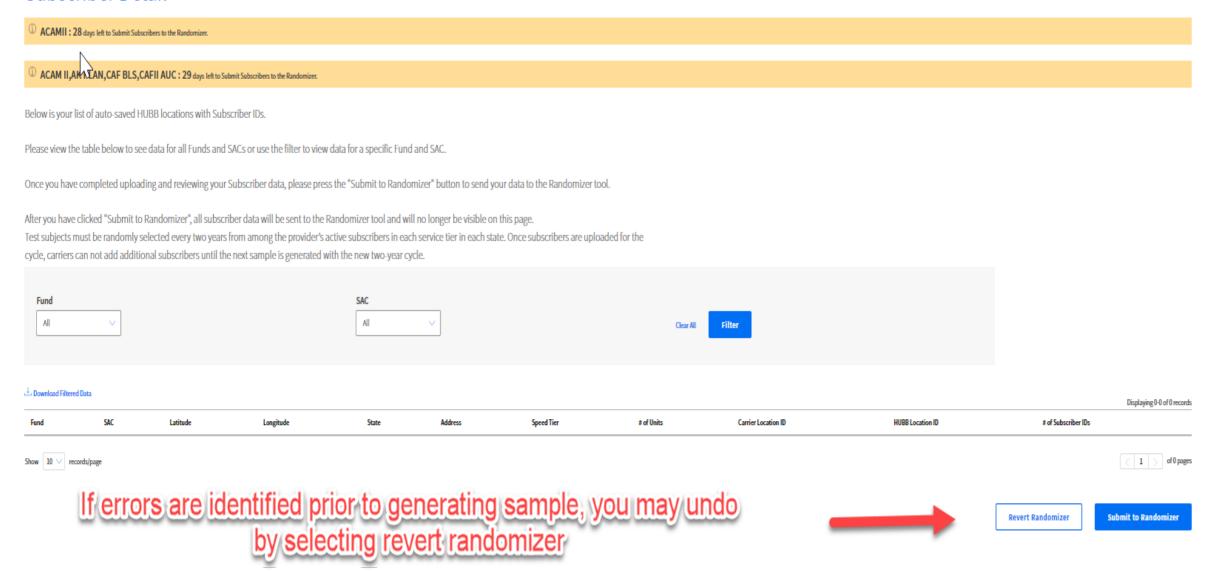
Once reviewed and no errors select submit to randomizer



Submit to Randomizer

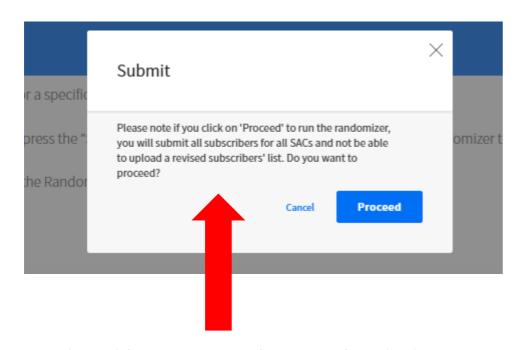
Step 4– Submit to Randomizer

Subscriber Detail

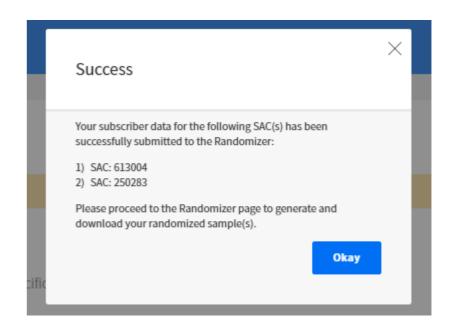


Step 4 – Submit to Randomizer

Important



Read and be sure you have uploaded All subscribers for All SACs before clicking Proceed



Step 5 – Generate Samples



Performance Measures Module

Upload Subscribers

Subscriber Detail

Randomizer

Randomizer Samples

Generate your randomized data samples below. The amount of subscribers listed in each sample is based on the total number of subscribers in each state for a speed tier.

Sample List

5 days left to make changes to your randomized samples for Q3 2019.

Select State VA ∨

Generate Sample	SAC	State	Speed Tier	Created On	Created By	Status	Replace Subscribers ①	Actions	No Valid Subscribers ①
Generate	250283	VA	6	-	-	-	-		-
Generate	613004	VA	6	-	-	-	-		-

Once you submit to randomizer, click here to generate your samples

Step 6 – Download Samples



Performance Measures Module

Upload Subscribers

Subscriber Detail

Randomizer

Randomizer Samples

Generate your randomized data samples below. The amount of subscribers listed in each sample is based on the total number of subscribers in each state for a speed tier.

Sample List

5 days left to make changes to your randomized samples for Q3 2019.

Select State



Generate Sample	SAC	State	Speed Tier	Created On	Created By	Status	Replace Subscribers ①	Actions	No Valid Subscribers ①
-	250283	VA	6	09/26/2019 02:47:29 PM	uat.test@usac.org	Ready for Download	Replace	± +	-
Generate	613004	VA	6	-	-	-			-

Download sample file(s)

Step 6 – Download Samples

Subscriber Sample Data File

	Α	В	C	D	Е	F	G	Н	I	J
1	SAC	Latitude	Longitude	State	Address	Speed Tier	# of Units	Carrier Location ID	HUBB Location ID	Subscriber ID
2	250283	33.91935	-86.4103	VA	ADDRESS A	6	15600	6010201	38712813	7
3	250283	33.89576	-86.3793	VA	ADDRESS A	6	200	6010202	38712814	8
4	250283	33.89783	-86.3591	VA	ADDRESS A	6	6300	6010203	38712815	9
5	250283	33.89566	-86.3798	VA	ADDRESS A	6	200	6010202	38712820	14
6	250283	33.89784	-86.3591	VA	ADDRESS A	6	6300	6010203	38712821	15

Manage Sample



Performance Measures Module

Upload Subscribers

Subscriber Detail

Randomizer

Randomizer Samples

Generate your randomized data samples below. The amount of subscribers listed in each sample is based on the total number of subscribers in each state for a speed tier.

Sample List

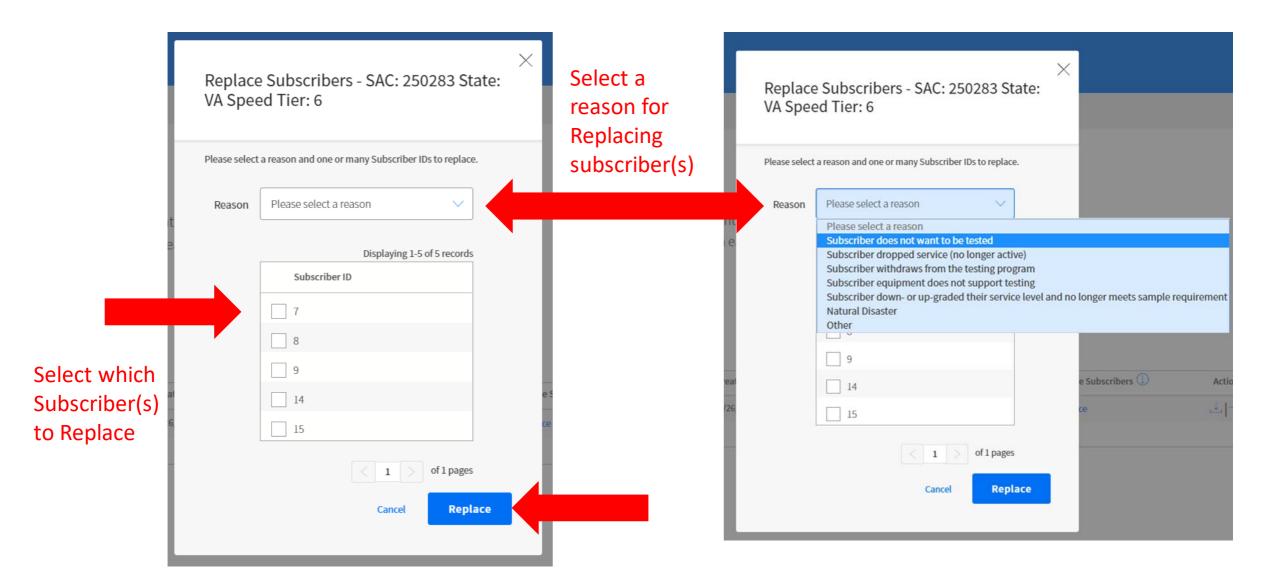
5 days left to make changes to your randomized samples for Q3 2019.

Select State VA

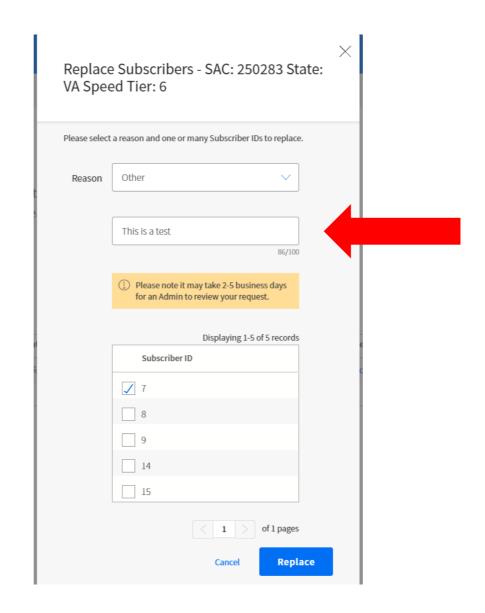


Generate Sample	SAC	State	Speed Tier	Created On	Created By	Status	Replace Subscribers ①	Actions	No Valid Subscribers ①
-	250283	VA	6	09/26/2019 02:47:29 PM	uat.test@usac.org	Ready for Download	Replace	± +	-
Generate	613004	VA	6	-	-	-			-
					Click her	e to Replace Subscribe			Click here to Supplement Subscribers

Replace Subscriber(s)



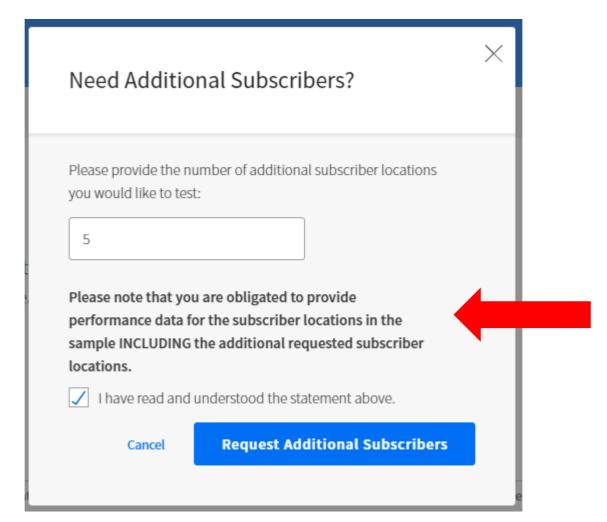
Replace Subscriber(s) – Other Reason Code



When using the Other reason code; provide a text description of the reason

Supplement Subscribers

Tip: Supplement subscribers increases the sample size. It does **NOT** allow you to add more subscribers to select from the replacement process. For that use No Valid Subscriber Process

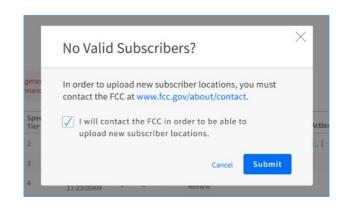


Important

If you add Additional Subscribers, you will be required to submit data for those subscribers in addition to your original sample

No Valid Subscribers (No more subscribers available for replacement)

- Click the icon for 'No Valid Subscribers' when there are no more subscribers to supplement or replace within a SAC, State and Speed Tier.
- 2. There will be a modal informing you to contact the FCC. You are not required to contact the FCC, the process is automated once the checkbox is selected and submit action is taken.
- 3. Check the checkbox.
- 4. Click 'Submit' button to submit the request and exit the screen.
- 5. Click 'Cancel' to cancel the No Valid Subscriber request and exit the screen.



No Valid Subscribers (No more subscribers available for replacement)

- Once the no valid process is initiated, navigate back to the randomizer page.
- 2. The status column will indicate pending upload.
- 3. Follow the subscriber upload process and upload additional subscribers.
- 4. Once the subscriber upload process is complete, the status column will indicate pending review.
- Upon review and approval of the subscriber replacement, the status column will update to Ready.
- 6. The new random sample is available for download

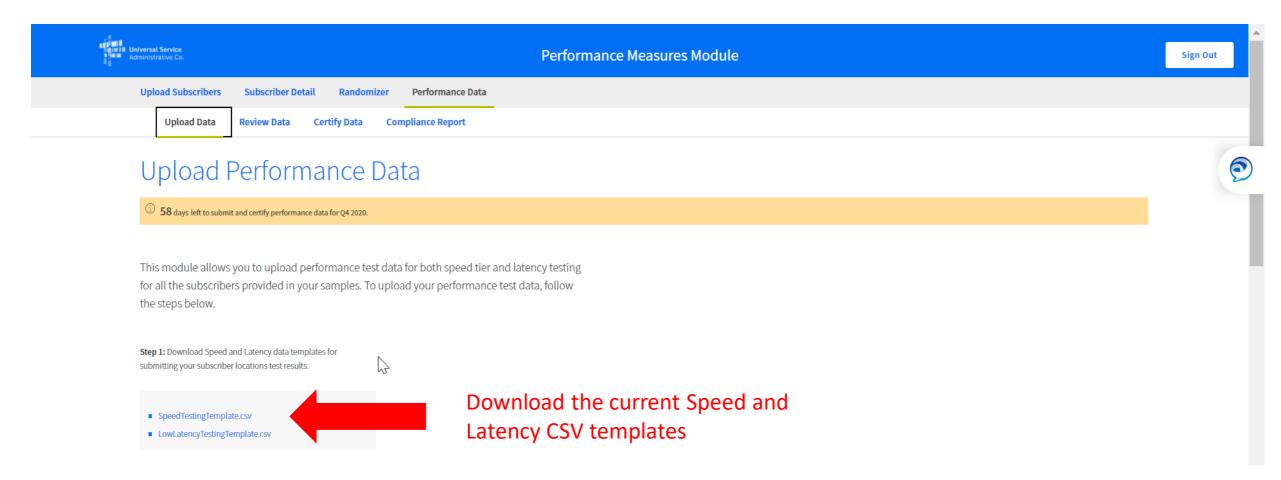
Performance Measurement Process - Subscriber Replacement

Able to Collect Data for all Subscribers in Quarter

- First Submit and Certify data for the Quarter
- Then Request replacement of subscriber with the next randomly selected one
- Provide a reason for Replacing the Subscriber
 - See list of valid replacement reasons

Unable to Collect Data for Subscriber in Quarter

- Request replacement of subscriber with the next randomly selected one
- Provide a reason for Replacing the Subscriber
 - See list of valid replacement reasons
- Submit all available data for active subscribers
- Last Step: Certify data for Quarter



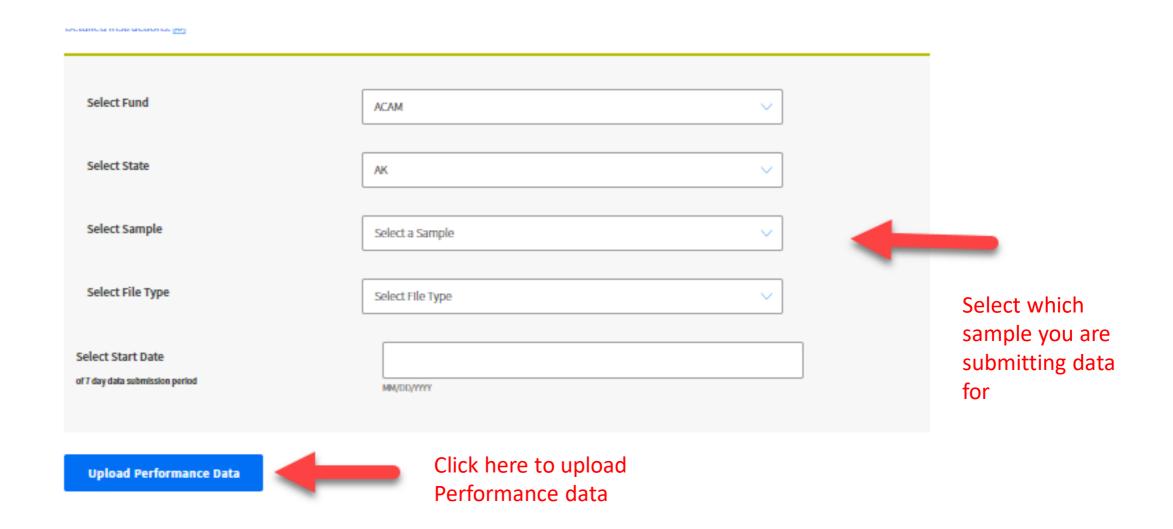
Step 7 – Submit Performance Data – Speed Test Results

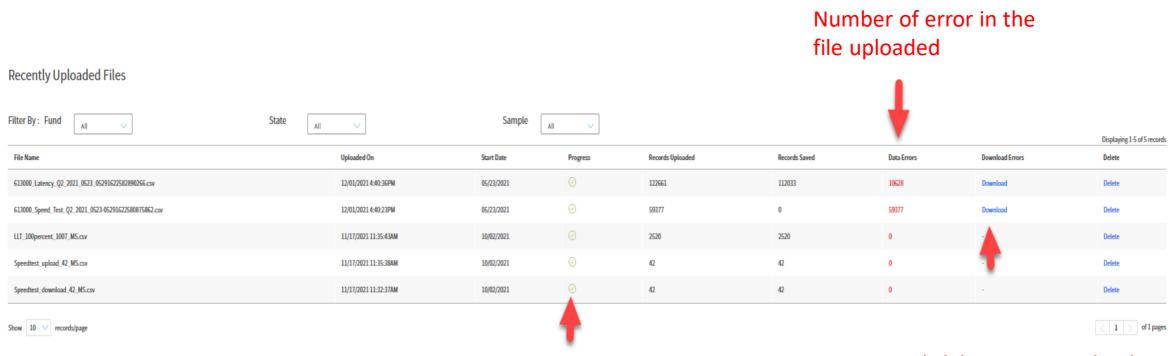
Speed Testing Template Sample

	А	В	C	D	E	F	G	Н	I	J
1	HUBB Location ID	Subscriber ID	Speed Type	IP Target	Start Test	End Test	Bytes	Test Status	Comment	
2	12345678	2	1	64.XXX.X.X	2020-10-03 23:00:03:000-06:00	2020-10-03 23:00:05:000-06:00	1	1		
3	12345678	2	1	64.XXX.X.X	2020-10-04 23:00:03:000-06:00	2020-10-04 23:00:05:000-06:00	1	1		
4	12345678	2	1	64.XXX.X.X	2020-10-10 23:00:03:000-06:00	2020-10-10 23:00:05:000-06:00	1	1		
5	12345678	2	1	64.XXX.X.X	2020-10-06 23:00:03:000-06:00	2020-10-06 23:00:05:000-06:00	1	1		
6	12345678	2	1	64.XXX.X.X	2020-10-07 23:00:03:000-06:00	2020-10-07 23:00:05:000-06:00	1	1		
7	12345678	2	1	64.XXX.X.X	2020-10-08 23:00:03:000-06:00	2020-10-08 23:00:05:000-06:00	1	1		
8	12345678	2	1	64.XXX.X.X	2020-10-09 23:00:03:000-06:00	2020-10-09 23:00:05:000-06:00	1	1		
9	12345678	3	1	64.XXX.X.X	2020-10-03 23:00:03:000-06:00	2020-10-03 23:00:05:000-06:00	1	⇔ 1		
10	12345678	3	1	64.XXX.X.X	2020-10-04 23:00:03:000-06:00	2020-10-04 23:00:05:000-06:00	1	1		
11	12345678	3	1	64.XXX.X.X	2020-10-10 23:00:03:000-06:00	2020-10-10 23:00:05:000-06:00	1	1		
12	12345678	3	1	64.XXX.X.X	2020-10-06 23:00:03:000-06:00	2020-10-06 23:00:05:000-06:00	1	1		
13	12345678	3	1	64.XXX.X.X	2020-10-07 23:00:03:000-06:00	2020-10-07 23:00:05:000-06:00	1	1		
14	12345678	3	1	64.XXX.X.X	2020-10-08 23:00:03:000-06:00	2020-10-08 23:00:05:000-06:00	1	1		
15	12345678	3	1	64.XXX.X.X	2020-10-09 23:00:03:000-06:00	2020-10-09 23:00:05:000-06:00	1	1		
16	12345678	4	1	64.XXX.X.X	2020-10-03 23:00:03:000-06:00	2020-10-03 23:00:05:000-06:00	1	1		
17	12345678	4	1	64.XXX.X.X	2020-10-04 23:00:03:000-06:00	2020-10-04 23:00:05:000-06:00	1	1		
18	12345678	4	1	64.XXX.X.X	2020-10-10 23:00:03:000-06:00	2020-10-10 23:00:05:000-06:00	1	1		
19	12345678	4	1	64.XXX.X.X	2020-10-06 23:00:03:000-06:00	2020-10-06 23:00:05:000-06:00	1	1		
20	12345678	4	1	64.XXX.X.X	2020-10-07 23:00:03:000-06:00	2020-10-07 23:00:05:000-06:00	1	1		
21	12345678	4	1	64.XXX.X.X	2020-10-08 23:00:03:000-06:00	2020-10-08 23:00:05:000-06:00	2075900	1		
22	12345678	4	1	64.XXX.X.X	2020-10-09 23:00:03:000-06:00	2020-10-09 23:00:05:000-06:00	2075900	1		
4	SpeedTest	tingTemplate-s	sample (+		1	4			

Latency Testing Template Sample

	А	В	С	D	Е	F	G	Н	1	J
1	HUBB Location ID	Subscriber ID	IP Target	Start Test	Latency	Packets sent	Packets received	Test Status	Comment	
2	12345678	2	64.XXX.X.X	2020-10-03 23:00:03:000-06:00	75	3	3	1		
3	12345678	2	64.XXX.X.X	2020-10-04 23:00:03:000-06:00	75	3	3	1		
4	12345678	2	64.XXX.X.X	2020-10-10 23:00:03:000-06:00	75	3	3	1		
5	12345678	2	64.XXX.X.X	2020-10-06 23:00:03:000-06:00	75	3	3	1		
6	12345678	2	64.XXX.X.X	2020-10-07 23:00:03:000-06:00	75	3	3	1		
7	12345678	2	64.XXX.X.X	2020-10-08 23:00:03:000-06:00	75	3	3	1		
8	12345678	2	64.XXX.X.X	2020-10-09 23:00:03:000-06:00	75	3	3	1	₽	
9	12345678	3	64.XXX.X.X	2020-10-03 23:00:03:000-06:00	75	3	3	1		
10	12345678	3	64.XXX.X.X	2020-10-04 23:00:03:000-06:00	75	3	3	1		
11	12345678	3	64.XXX.X.X	2020-10-10 23:00:03:000-06:00	75	3	3	1		
12	12345678	3	64.XXX.X.X	2020-10-06 23:00:03:000-06:00	75	3	3	1		
13	12345678	3	64.XXX.X.X	2020-10-07 23:00:03:000-06:00	75	3	3	1		
14	12345678	3	64.XXX.X.X	2020-10-08 23:00:03:000-06:00	75	3	3	1		
15	12345678	3	64.XXX.X.X	2020-10-09 23:00:03:000-06:00	75	3	3	1		
16	12345678	4	64.XXX.X.X	2020-10-03 23:00:03:000-06:00	75	3	3	1		
17	12345678	4	64.XXX.X.X	2020-10-04 23:00:03:000-06:00	75	3	3	1		
18	12345678	4	64.XXX.X.X	2020-10-10 23:00:03:000-06:00	75	3	3	1		
19	12345678	4	64.XXX.X.X	2020-10-06 23:00:03:000-06:00	75	3	3	1		
20	12345678	4	64.XXX.X.X	2020-10-07 23:00:03:000-06:00	75	3	3	1		
21	12345678	4	64.XXX.X.X	2020-10-08 23:00:03:000-06:00	75	3	3	1		
22	12345678	4	64.XXX.X.X	2020-10-09 23:00:03:000-06:00	75	3	3	1	-	
4	LowLaten	cyTestingTemp	olate (7)	(+)				! [4]	,	



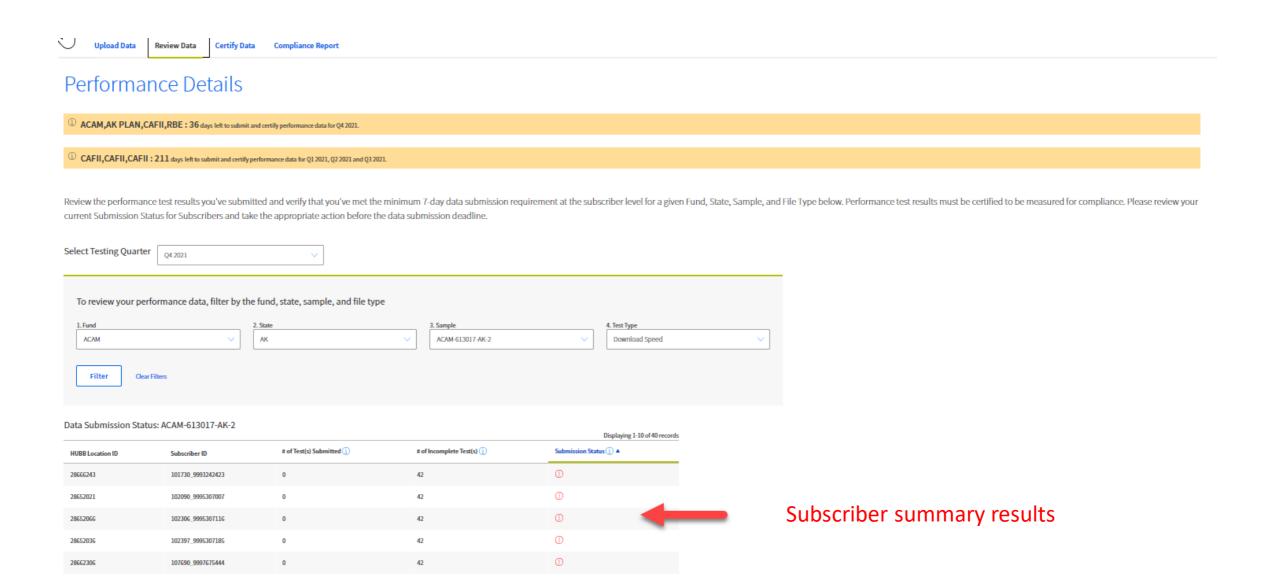


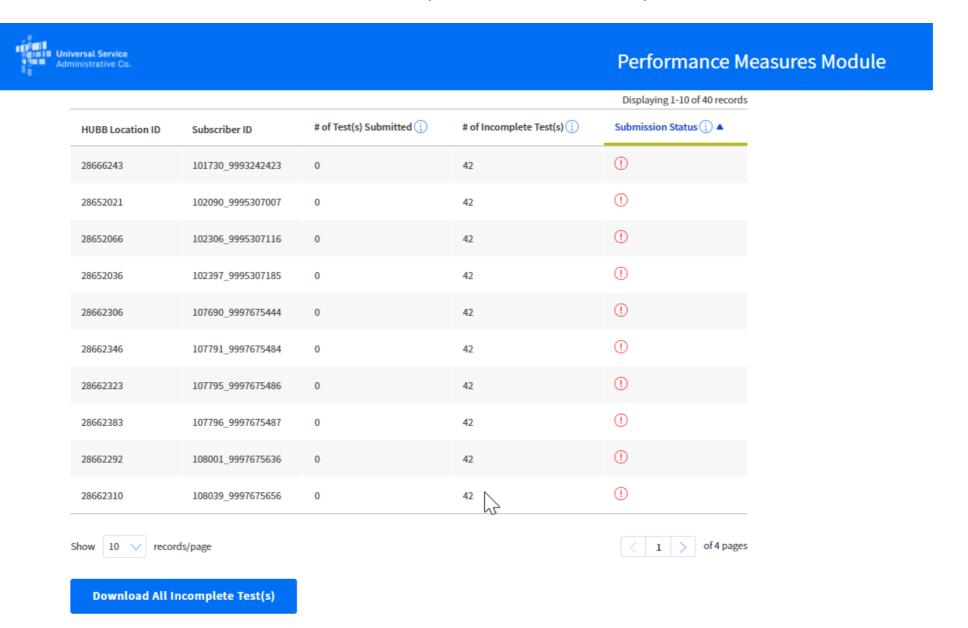
Green check when upload is complete

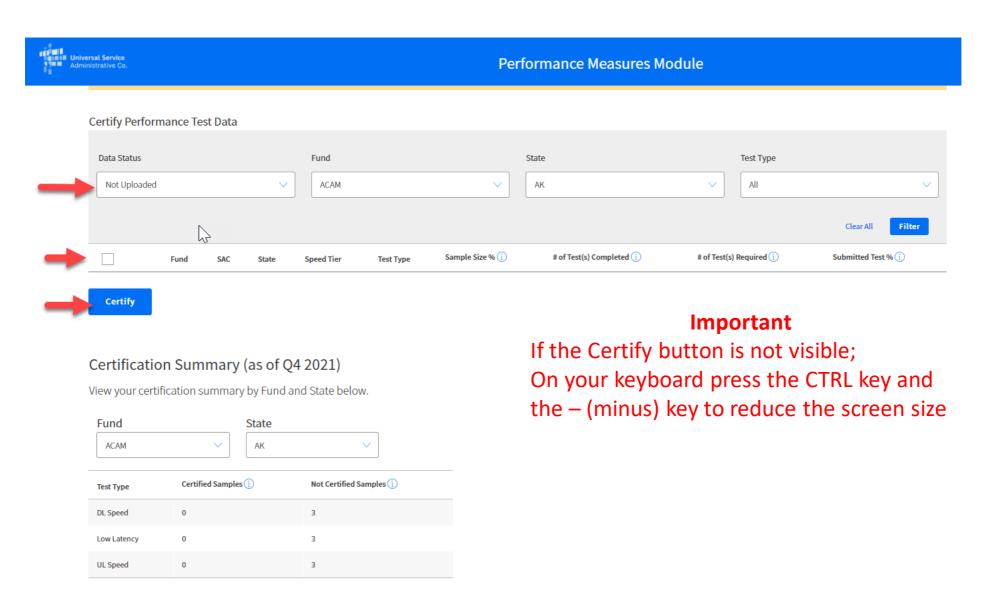
Click here to Download Error file

Performance Data Download Errors Export

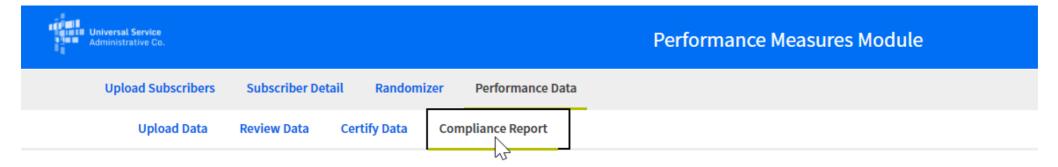
	Α	В	С	D	E		F		G	н		1	K	1	N	1	N	0	Р
1 Ro		HUBB Location ID				Start Test	1	End Test	G .	Bytes	Test Statu	Comment		nde (s)	IV		IV	0	r
2	7	12345678					23.00.03.000-06.0		23:00:05:000-06:00	,		Comment		riMESTAN	AD INIVA	IID: END	TIMEST	AMD IN	/ALID
3	13	12345678							23:00:05:000-06:00					TIMESTAN		•			
4	19							-	23:00:05:000-06:00		_			MESTAMP	_	•	_	_	
5	25	12345678							23:00:05:000-06:00					TIMESTAN					
6	31	12345678							23:00:05:000-06:00					TIMESTAN					
7	37	12345678							23:00:05:000-06:00					TIMESTAN	_	•	_		
8	43	12345678							23:00:05:000-06:00					TIMESTAN	_	•	_		
9	49	12345678							23:00:05:000-06:00		_		_	TIMESTAN			_		
10	55	12345678							23:00:05:000-06:00					TIMESTAN		•	_		
11	61	12345678							23:00:05:000-06:00					MESTAMP		•	_		
12	67	12345678	3						23:00:05:000-06:00		. 1			MESTAMP	_		_		
13	73	12345678	3		1 64.XXX.X.X	2020-10-07	23:00:03:000-06:0	0 2020-10-07	23:00:05:000-06:00	1	1			TIMESTAN	_	•			
14	79	12345678	3		1 64.XXX.X.X	2020-10-08	23:00:03:000-06:0	0 2020-10-08	23:00:05:000-06:00	1	1		END TI	MESTAMP	INVALII	D; START	TIMEST	AMP IN	/ALID
15	85	12345678	3		1 64.XXX.X.X	2020-10-09	23:00:03:000-06:0	0 2020-10-09	23:00:05:000-06:00	1	1		END TI	MESTAMP	INVALII	D; START	TIMEST	AMP IN	/ALID
16	91	12345678	4		1 64.XXX.X.X	2020-10-03	23:00:03:000-06:0	0 2020-10-03	23:00:05:000-06:00	1	1		END TI	MESTAMP	INVALII	D; START	TIMEST	AMP_IN	/ALID
17	97	12345678	4		1 64.XXX.X.X	2020-10-04	23:00:03:000-06:0	0 2020-10-04	23:00:05:000-06:00	1	1		END_TI	MESTAMP	_ _INVALII	D; START	_ _TIMEST.	AMP_IN	/ALID
18	103	12345678	4		1 64.XXX.X.X	2020-10-10	23:00:03:000-06:0	0 2020- 10	23:00:05:000-06:00	1	1		END_TI	MESTAMP	_INVALII	D; START	TIMEST	AMP_IN	/ALID
19	109	12345678	4		1 64.XXX.X.X	2020-10-06	23:00:03:000-06:0	0 2020-10-06	23:00:05:000-06:00	1	1		END_TI	MESTAMP	_INVALII	D; START	_TIMEST	AMP_IN	/ALID
20	115	12345678	4		1 64.XXX.X.X	2020-10-07	23:00:03:000-06:0	0 2020-10-07	23:00:05:000-06:00	1	1		END_TI	MESTAMP	_INVALII	D; START	_TIMEST	AMP_IN	/ALID
21	121	12345678	4		1 64.XXX.X.X	2020-10-08	23:00:03:000-06:0	0 2020-10-08	23:00:05:000-06:00	2075900	1		START_	TIMESTAN	1P_INVA	LID; END	_TIMEST.	AMP_IN	/ALID
22	127	12345678	4		1 64.XXX.X.X	2020-10-09	23:00:03:000-06:0	0 2020-10-09	23:00:05:000-06:00	2075900	1		END_TI	MESTAMP	_INVALII	D; START	_TIMEST	AMP_IN	/ALID
23	133	12345678	5		1 64.XXX.X.X	2020-10-03	23:00:03:000-06:0	0 2020-10-03	23:00:05:000-06:00	2075900	1		END_TI	MESTAMP	_INVALII	D; START	_TIMEST.	AMP_IN	/ALID
24	139	12345678	5		1 64.XXX.X.X	2020-10-04	23:00:03:000-06:0	0 2020-10-04	23:00:05:000-06:00	2075900	1		START_	TIMESTAN	1P_INVA	LID; END	_TIMEST	AMP_IN	/ALID
25	145	12345678	5		1 64.XXX.X.X	2020-10-10	23:00:03:000-06:0	0 2020-10-10	23:00:05:000-06:00	2075900	1		END_TI	MESTAMP	_INVALII	D; START	_TIMEST	AMP_IN	/ALID
26	151	12345678	5		1 64.XXX.X.X	2020-10-06	23:00:03:000-06:0	0 2020-10-06	23:00:05:000-06:00	2075900	1		END_TI	MESTAMP	_INVALII	D; START	_TIMEST.	AMP_IN	/ALID
27	157	12345678	5		1 64.XXX.X.X	2020-10-07	23:00:03:000-06:0	0 2020-10-07	23:00:05:000-06:00	2075900	1		END_TI	MESTAMP	_INVALII	D; START	_TIMEST	AMP_IN	/ALID
28	163	12345678	5		1 64.XXX.X.X	2020-10-08	23:00:03:000-06:0	0 2020-10-08	23:00:05:000-06:00	2075900	1		START_	TIMESTAN	1P_INVA	LID; END	_TIMEST	AMP_IN	/ALID
29	169	12345678	5		1 64.XXX.X.X	2020-10-09	23:00:03:000-06:0	0 2020-10-09	23:00:05:000-06:00	2075900	1		END_TI	MESTAMP	_INVALII	D; START	_TIMEST.	AMP_IN	/ALID
30	170	12345678	2		1 64.XXX.X.X	2020-10-03	18:00:03:000-06:0	0 2020-10-03	18:00:05:000-06:00	2075900	1		HUBB_I	OCATION	_ID_INV	ALID_SU	BSCRIBER	R_ID_ASS	OCIATION
31	171	12345678	2		1 64.XXX.X.X	2020-10-03	19:00:03:000-06:0	0 2020-10-03	19:00:05:000-06:00	2075900	1		HUBB_I	OCATION	_ID_INV	ALID_SU	BSCRIBE	R_ID_ASS	OCIATION
32	172	12345678	2		1 64.XXX.X.X	2020-10-03	20:00:03:000-06:0	0 2020-10-03	20:00:05:000-06:00	2075900	1		HUBB_I	OCATION	_ID_INV	ALID_SU	BSCRIBER	R_ID_ASS	OCIATION
33	173	12345678	2		1 64.XXX.X.X	2020-10-03	21:00:03:000-06:0	0 2020-10-03	21:00:05:000-06:00	2075900	1		HUBB_I	OCATION	_ID_INV	ALID_SU	BSCRIBER	R_ID_ASS	OCIATION
3/	17/					_	23·00·03·000-06·0	U 3U3U-1U-U3	22-00-05-000-06-00	2075000	1		HIIRR I	OCATION	TD TVIV	VIID SII	RSCRIRE	S ID V	COCIATION
4)	SpeedTestin	<u>g Datalssuel</u>	Log1111	202	\oplus						4							







Compliance Report



Compliance Report

Performance data for fully compliant samples is due annually. However, it is recommended that performance data is submitted quarterly for fully compliant samples. Performance data for incomplete performance data submissions and for Levels 1-4 is due quarterly until a sample is fully compliant. See **compliance levels and support reduction** or **Performance Measures Order** for more information.



Compliance Report

Displaying 1-10 of 351 records

Fund	SAC	State ▲	Speed Tier	Test Type	Sample Size Met	# of Tests Compliant	# of Tests Non-Compliant	# of Missed tests	Compliance %	Compliance Level A	History
ACAM	613017	AK	2	UL Speed	Passed	1775	2	0	100 %	Fully Compliant	
ACAM	613017	AK	3	UL Speed	Passed	2130	5	0	100 %	Fully Compliant	
ACAM	613017	AK	4	UL Speed	Passed	1889	0	0	100 %	Fully Compliant	
ACAM	613017	AK	2	DL Speed	Passed	1619	73	0	100 %	Fully Compliant	
ACAM	613017	AK	3	DL Speed	Passed	1869	233	0	100 %	Fully Compliant	
ACAM	613017	AK	4	DL Speed	Passed	1098	771	0	73 %	Fully Compliant	
ACAM	613017	AK	2	Low Latency	Passed	48985	637	0	100 %	Fully Compliant	
ACAM	613017	AK	3	Low Latency	Passed	67952	270	0	100 %	Fully Compliant	
ACAM	613017	AK	4	Low Latency	Passed	45956	118	0	100 %	Fully Compliant	
ACAM	250304	AL	2	UL Speed	Passed	152	0	85	80 %	Fully Compliant	

Show 10 v records/page

< 1 > of 36 page

Performance Data Status Codes

Status Code 1 - Successful

• Successful test submitted to the PMM System are assigned status code 1. A successful test is defined as a single, discrete observation of speed or latency conducted from the customer premises of an active subscriber within the criteria above.

2. Status Code 2 – Failed Due to Cross-Talk

- Deferred test, due to cross-talk, submitted to the PMM System are assigned status code 2. If the consumer load is greater than 64 Kbps downstream for download tests or 32 Kbps upstream for upload tests, the provider may defer the affected test for one minute and reevaluate whether the load exceeds the relevant 64 Kbps or 32 Kbps threshold before retrying the test.
- This load check and-retry must continue at one-minute intervals until the speed test can be run or the one-hour test window ends. For speed tests, a carrier that begins attempting speed tests within the first fifteen minutes of a testing hour, and repeatedly retries and defers the test at one-minute intervals due to consumer load meeting the adopted cross-talk thresholds may report that no test was successfully completed during the test hour because of cross talk.
- 3. Status Code 3 Failed (modem off, etc.)
 - Failed test submitted to the PMM System are assigned status code 3. For a failed test, a carrier was unable to conduct a single, discrete observation of speed or latency from an active subscriber within the criteria above.

Performance Data Status Codes (Continued)

- 1. PMM totals all test status records (statuses 1, 2 and 3) to determine if the correct number of test records have been submitted
 - Credit is given for subscribers replaced during the quarter
 - Missing test records are added into the compliance calculations as zero records
- 2. PMM uses Only test status 1 records to calculate speed and latency compliance
- 3. Reminders
 - Collect and submit ALL test records to PMM
 - When cross-talk or failed tests are detected, continue testing at 1 minute intervals to ensure all data records are collected
- 4. Review the Performance Measures System Compliance Calculations document on the USAC website for specific details:
 - https://www.usac.org/wp-content/uploads/high-cost/documents/Tools/PMM-Compliance-Calculations.pdf

Speed Test Conversion Calculations

Upload Speed

- Calculated_Mbps = (((Bytes * 8) / (End Test Start Test in seconds)) / (1000000)))
- Formulaic Steps:
 - A Take the value in the Bytes column and multiply by 8.
 - B Take the difference in End Test and Start Test and convert the time unit to seconds.
 - C Take the value returned in A and divide by the value returned in Step B.
 - D Take the result returned in C and divide it by 1000000.

Speed Test Conversion Calculations

- Download Speed
- Calculated_Mbps = (((Bytes * 8) / (End Test Start Test in seconds)) / (100000)))
- Formulaic Steps:
 - A Take the value in the Bytes column and multiply by 8.
 - B Take the difference in End Test and Start Test and convert the time unit to seconds.
 - C Take the value returned in A and divide by the value returned in Step B.
 - D Take the result returned in C and divide it by 1000000.

Performance Measures Testing

For more information about performance measures testing,

please visit the Performance Measures Page on the High Cost Website:

https://www.usac.org/high-cost/annual-requirements/performance-measures-testing/

Resources include:

FCC information about the performance measures testing program

<u>Charts</u> showing acceptable test paths and remote server locations

List of <u>vendors</u> that are helping carriers with speed and latency testing

Quick tips guide to the PMM

PMM <u>user guide</u>

A <u>document</u> explaining how the PMM calculates compliance

Other CAF Resources

HUBB Resources Page

HUBB FAQs

Guide to Geolocation Practices

Verification Resources page

<u>Multifactor Authentication Troubleshooting Steps</u>
(for E-File access)

Questions?