Federal Communications Commission
Broadband Data Collection

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March 11, 2021
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The Broadband DATA Act
Pub. L. No. 116-130

- **Enacted March 23, 2020**
- **Key BDA Requirements**
  - Issue rules for:
    - collecting granular broadband availability and service quality data from providers
    - data verification
    - challenges to provider data, crowdsourcing
    - creation of the Fabric
    - accepting verified deployment data from Tribes, state, local governments, Federal agencies, 3rd parties
  - Create and publish maps of broadband deployment
  - Conduct challenge process, data verification, regular audits of provider data
  - Provide technical assistance to stakeholders on reporting and challenges

Consolidated Appropriations Act

- In December 2020, Congress passed the Consolidated Appropriations Act, a $1.4 trillion omnibus package that allotted $7 billion to fund broadband initiatives
  - $98 million was appropriated to fund the Broadband DATA Act and the FCC's associated broadband mapping efforts
  - FCC now engaged in implementing the BDA and the three Reports and Orders issued in WC Docket 19-195

Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, H.R. 133, Div. E, Tit. V, Div. N, Tit. V, § 906(1) (Dec. 27, 2020)

Timing of Availability Data Filings

- OEA will issue a Public Notice announcing the initial filing deadline at least six months prior to that deadline
  - Fixed and mobile broadband service providers must submit their initial filings by that deadline.
- Schedule will follow Form 477 filing schedule
  - Data as of December 31 will be due March 1
  - Data as of June 30 will be due September 1

Filing Certification

- The Broadband DATA Act requires providers to have a corporate officer certify the accuracy of their submissions
- The new rules also require that providers have a qualified engineer certify the accuracy of their submissions
  - If a corporate officer is also an engineer and has the requisite knowledge under the Broadband DATA Act, a provider may submit a single certification that fulfills both requirements

Broadband Serviceable Location Fabric

- A database of all locations in the U.S. where fixed broadband internet access can be installed
- Will be combined with fixed availability data
- Each location will have unique identifier, lat/long, other attributes
- FCC will contract with an outside vendor for the creation of the Fabric
  - Will follow FAR rules as required by the Act

Availability Reporting Standards for Fixed Wired & Satellite Service

- Providers report polygons or lists of addresses, locations where the provider:
  - Currently provides service, or
  - Could provide service within a "standard broadband installation"
    - within 10 business days from a request, and
    - with no charges or delays resulting from extending the provider's network

Availability Reporting Standards for Fixed Wired & Satellite Service

- **Maximum Buffers**

Technology	Maximum Buffer	From / To	Drop Distance
DSL at Speeds > 25/3 Mbps	6,600 route feet	From DSLAM to premises	500 feet
Cable/HFC	12,000 route feet	From aggregation point to premises	500 feet
Fiber/FTTP	196,000 route feet (37.1 miles)	From OLT to ONT	500 feet

  - **Buffers are maximums, not safe harbors**; if actual service areas are smaller, those should be reported
  - Four exceptions in *Second R&O*

Availability Reporting Standards for Terrestrial Fixed Wireless Service

- Providers can submit propagation maps and model details, or a list of addresses or locations
- Propagation map parameters:
  - 75% cell edge probability
  - 50% cell loading factor
  - Receiver height of 4 to 7 meters
- Exceptions apply
- Providers also must submit information: the radio network planning tool used, height and power values, base station locations, and terrain and clutter data

Collection of Mobile Data: Propagation Model Details and Link Budget Parameters

- **Propagation Model Details**:
  - **Upload/Download Speeds**: Providers must submit coverage maps reflecting 3G, 4G LTE, and 5G-NR data and voice coverage areas where users should expect to receive minimum download and upload speeds with not less than a 90% cell edge coverage probability and cell loading of not less than 50%

Collection of Mobile Data: Propagation Model Details and Link Budget Parameters

- **Propagation Maps:**
  - Providers will need to submit at least two propagation maps for 3G, two maps for 4G, and four maps for 5G (two speeds for 5G) to account for: (i) on-street or pedestrian stationary usage; and (ii) in-vehicle mobile usage
    - Technology-specific user download and upload speeds that users should expect are as follows:
      - 3G: at least 200/50 kbps at the cell edge
      - 4G LTE: at least 5/1 Mbps at the cell edge
      - 5G-NR: at least 7/1 Mbps at the cell edge AND 35/3 Mbps at the cell edge
    - Voice Maps

Collection of Mobile Data: Propagation Model Details and Link Budget Parameters

- **Other Required Details and Parameters:**
  - ***Clutter***: The coverage maps must take into account clutter and have a spatial resolution of 100 meters or better
  - ***RSRP/RSSI Heat Maps***: For each 4G LTE or 5G-NR propagation map that a provider submits, the provider must also submit a second set of maps showing RSRP in dBm as would be measured at the industry-standard of 1.5 meters above ground level from each active cell site
    - RSRP value should be provided in 10 dB increments or finer beginning with a max value of -50 dBm and continuing to -120 dBm
    - RSSI: in areas where they offer only 3G service, mobile providers must submit a second set of maps depicting signal levels associated with 3G service
  - ***Format***: Maps must be submitted in vector format

Mobile Link Budget Disclosure

- Providers must disclose to the Commission details of their propagation models and of the link budgets they use for modeling cell edge network throughput (both uplink and downlink)
- Additionally, all providers must submit:
  - All applicable link-budgets used to design their networks and provide service at the defined speeds, and all parameters and parameter values included in those link budgets, including:
    - A description of how the carrier developed its link budget(s) and the rationale for using specific values in the link budget(s); and
    - The name of the creator, developer or supplier, as well as the vintage of the terrain and clutter datasets used, the specific resolution of the data (subject to the minimum requirements adopted in this Order), a list of clutter categories used, a description of each clutter category, and a description of the propagation loss due to clutter for each

Verifying Mobile Data

- Additional Information Requests: Commission staff may request additional data as needed to verify providers' coverage maps, including:
  - *Infrastructure information:* Specifications for the type of infrastructure information include: latitude/longitude, cell site ID number, ground elevation AMSL, frequency bands used to provide service, radio technologies used on each band for each site, capacity (Mbps) and backhaul used at each site, number of sectors at each cell site, and EIRP of the sector at the time the mobile provider creates its map of the coverage data
  - *On-the-ground data:* OEA, WTB, and OET will develop and administer specific requirements and methodologies for providers to use while conducting on-the-ground tests

Third Party Data Submissions

- The Commission will collect verified *data* from: (1) State, local, and Tribal governmental entities primarily responsible for mapping or tracking broadband Internet access service coverage; (2) third parties (subject to public interest finding); and (3) other federal agencies
- OEA and WTB are conducting a pilot with USPS to test the feasibility of partnering with another federal agency to collect on-the-ground data to verify and supplement providers mobile submissions

Maps

- The Commission is required to create, after consultation with the Federal Geographic Data Committee:
  - **"The Broadband Map"** which depicts availability of broadband internet access service in the U.S. (mobile and fixed) based on provider data
  - A **Fixed Service Map** that depicts availability of broadband service based on fixed standards
  - A **Mobile Broadband Map** that depicts the coverage availability of mobile broadband based on mobile standards

Maps

- The Broadband DATA Act requires the Commission to use the maps:
  (1) to determine availability of broadband service; and
  (2) when making any new award of funding for deployment of broadband service
- The maps will be updated at least biannually with data submitted by providers and periodically based on updates/corrections

Fixed Challenge Process

- Challenges may be made to provider availability data or to the Fabric and may be initiated by consumers, government entities, others
- Process begins with certified submission of key information about location[s] and basis for challenge
- All elements of challenge must be included to initiate process

Fixed Challenge Process

- Challenges to availability data
  - Providers have 60 days to respond to challenge by:
    - Agreeing – provider updates to coverage data within 30 days to remove location
    - Disagreeing – provider has 60 days to resolve with challenger; if no agreement is reached, Commission decides
  - Burden of proof:
    - providers responding to consumer challenges must show availability by preponderance of evidence,
    - non-consumer challengers must show lack of availability by clear and convincing evidence

Fixed Challenge Process

- Challenges to Fabric Data
  - Bases:
    - Geographic placement of location incorrect
    - Location incorrectly identified as serviceable
    - Absence of serviceable location
  - Affected providers will be notified automatically and may, but are not required to, submit a response.
  - Goal is 60-days to resolve challenges

Mobile Challenge Process

- The Commission will implement a mobile challenge process that allows consumers, State, local, and Tribal governmental entities, and others to challenge the accuracy of provider coverage data
  - **Consumers**:
    - Must provide identifying information and submit speed test data taken outdoors through an application approved by OET (which may include the FCC Speed Test app).
  - **Governments and Other Third Parties**:
    - Can use an OET approved app or their own software to collect data so long as the data meets criteria laid out by the Commission, along with a complete description of the methodologies used to collect and substantiate data through certification by a qualified engineer or official.

Mobile Challenge Process

- Commission staff will aggregate speed test results received from multiple consumer challengers in the same area and, after aggregating results and confirming they reach an appropriate threshold, determine whether a challenge is cognizable and thus requires a provider response.
- **Rebuttals**:
  - After being notified, providers have 60 days to rebut or concede.
  - Providers must submit either on-the-ground test data or infrastructure data.
  - OEA will notify challengers and providers of the results of the challenge.
  - The burden will be on the provider to verify their coverage maps in the challenged area using "preponderance of the evidence" standard.

Mobile Challenge Process

- **Updating Maps**: Providers must file new data showing the challenged area lacking service within 30 days if they lose or concede a challenge.
- **Public Availability of Challenge Data**: Location of the challenge, the name of the provider, and other relevant details concerning the basis for the challenge will be made public.

Crowdsourced Data

- Pursuant to the Broadband DATA Act, the Commission adopted a process to collect crowdsourced information from third parties and consumers.
  - Crowd-sourced data will be submitted through an FCC data portal. Mobile data will be collected by apps that are "highly reliable" and "have proven methodologies for determining network coverage and network performance."
  - Filings must contain contact information, the location of the filing, name of provider, relevant details about deployment and availability of broadband at the location, and a certification.

Crowdsourced Data

- **Treatment of Crowdsourced Submissions**:
  - Help identify trends/trouble-spots that warrant further investigation.
  - Portal will notify a provider of a crowdsourced data filing against it, but a provider is not required (in the first instance) to respond to a crowdsourced data filing.
  - Once staff have evaluated crowdsourced data submissions, staff may contact the provider and offer it an opportunity to explain any discrepancies between its data and the Commission's analysis.
  - If staff conclude that the provider's filing is not reliable with respect to the areas covered by the crowdsourced filing, staff will require the provider to refile its fixed or mobile coverage data excluding the locations or areas in question.
  - Crowdsourced information will be made public, with the exception of personally identifiable information.

Other Means of Verifying Fixed and Mobile Data

- **Commission Audits**: The Commission will conduct regular audits involving all types of information submitted by broadband providers. This will include field surveys, investigations, and annual random audits to verify accuracy.

Technical Assistance

- Workshops for Tribal governments for each of the 12 Bureau of Indian Affairs regions to assist with submitting verified deployment data (Commission will review need for continued workshops in consultation with Tribes);
- Process to assist small providers [<100,000 active connections] who request with respect to GIS data processing; and
- Assistance (detailed tutorials, webinars, help desk) to consumers and State, local, and Tribal governmental entities on the challenge process.
- The Commission will release notice of upcoming workshops and webinars as it begins the implementation of these new broadband data collections.