Propose a change in the current definition of broadband service for either fixed or mobile broadband. The Deployment Report doesn’t propose changes in the definition of terrestrial or fixed broadband service as meeting speeds of 25/3 Mbps or establishing minimum speeds for mobile broadband service.

1. Identify Problem and Current Policy
   * **Identify the core problem that the Broadband Progress Report is intended to solve** 
     + “~~The Federal Communications Commission is charged with “encourage[ing] the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans,” by removing barriers to infrastructure investment and by promoting competition in the telecommunications market.” (page 2)~~
     + ~~“We remain committed to ensuring that all Americans, including those in rural areas, Tribal lands, and disaster-affected areas, have the benefits of a high-speed broadband connection.” (page 2)~~
     + ~~The report is used to show if “advanced telecommunications capability is being deployed on a reasonable and timely basis.”~~
     + ~~“With this report, the commission fulfills the Congressional directive to report each year on the progress made in deploying broadband to all Americans.” (page 2)~~
   * **Current Definition of broadband prior to the report as it relates to your proposed changes** 
     + ~~“advanced telecommunications capability as “high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology”~~
     + ~~Access to either fixed and mobile services~~
   * ~~Describe the nature and extent of the problem with clear evidence~~ 
     + ~~The Broadband Progress Report is responsible for providing the American population with access to broadband, including those in rural areas, Tribal Lands, and disaster-affected areas. Their goal is to provide this universal service while complying with common carrier regulations and obligations.~~
   * ~~Identify key players and affected populations~~ 
     + ~~The FCC is responsible for the deployment of advanced telecommunications capability for the American population. The commission is the key player in this while the affected populations is Americans who with and without access to broadband.~~
   * ~~Establish drivers and underlying causes~~
     + ~~Broadband is a universal service and therefore is top priority for the FCC. They are committed to “closing the digital divide between Americans with, and without, access to modern broadband networks” (page 2)~~
   * ~~Develop status quo (current policies, what will happen without new policy action)~~ 
     + ~~The report evaluates the availability of fixed and mobile services over a 5-year time period (2013-2017) using methods for determining access to broadband. (page 3)~~
     + ~~Methods for determining access to broadband: Access to both or either fixed or mobile LTE services (page 3)~~
     + ~~Mobile services are not a substitute for fixed service~~
     + ~~“We conclude that the current speed benchmark of 25 Mbps/3 Mbps remains an appropriate measure by which to assess whether a fixed service is providing advanced telecommunications capability.” (page 5)~~
     + ~~“We find that the use of various data points is still the best method to assess the extent to which American consumers have access to mobile advanced telecommunications capability… We use 4G LTE as our starting point and present 4G LTE coverage data based on the Form 477 minimum advertised speeds of 5 Mbps/1 Mbps.” (page 7)~~
     + ~~Current policies establish a minimum speed that isn’t enforced but is generally accepted.~~
     + ~~“The current criteria allow us to eliminate those areas where LTE may be less resilient, while providing a way of measuring improvement in those areas over time.” (page 8)~~
     + ~~“To close the digital divide, it is essential to remove regulatory barriers to investment. Regulatory barriers unnecessarily delay broadband buildouts, slow transitions from legacy networks and services to next-generation networks, and impeded wireless infrastructure projects to deploy advanced networks.” (page 32)~~ 
       - ~~Do not believe in strict regulations that prevent or slow down deployment~~
2. Define Policy Objectives
   * **Define the policy objectives of the “Advanced Telecommunications Capability” standard as articulated in the 2019 Deployment Report**
     + ~~“continue to meet the statutory definition of advanced telecommunications capability… “enable users to originate and receive high-quality voice, data, graphics, and video telecommunications” (page 6)~~
     + ~~Must serve underserved areas (page 10)~~
     + ~~Must include elementary and secondary schools and classrooms (page 10)~~
     + ~~Additional measures to track deployment on Tribal Lands (page 10)~~
     + ~~Service reliability and service restoration in Disaster Affected Areas (page 11)~~
   * ~~Describe objectives that correspond to main problem and its root causes that justify regulation~~ 
     + ~~The objectives of the advanced telecommunications standard are to continue deployment of broadband in order to close the divide between the American population. Their objectives include following universal service and common carrier regulations and obligations in order to deploy and provide access to broadband to essential areas. The FCC’s report on deployment and regulation of this deployment is a result of the Telecommunications Act of 1996 which “requires the Commission to annually ‘initiate a notice of inquiry concerning the availability of advanced telecommunications capable to all Americans (including, in particular, elementary and secondary schools and classrooms). The FCC accommodates the generally accepted 25 Mbps/3 Mbps fixed service speeds and 4G LTE 5 Mbps/1 Mbps mobile service speeds. They use data collected to report on the progress of deployment and use their criteria for determining access to broadband as a framework for regulation of broadband.~~
   * ~~Establish objectives at number of levels, going from general to specific/operational~~ 
     + ~~Universal Service (US)~~
       - ~~Must serve all~~
         * ~~Deploying broadband to as many areas of the U.S as possible~~
         * ~~Underserved areas, Tribal lands, rural areas, disaster-affected areas~~
       - ~~Essential services~~ 
         * ~~Fixed vs mobile services~~
         * ~~Fixed is considered more essential than mobile which cannot be substituted for fixed~~
     + ~~Common Carrier~~ 
       - ~~Regulations (CCR)~~ 
         * ~~Reserved for essential services that are public necessity/utility~~

~~Broadband is an essential service~~

~~Follows their objective of closing the divide in the American population~~

* + - * + ~~Competition not permitted~~
        + ~~Must offer “just and reasonable” rates~~
        + ~~Earn revenues sufficient to cover costs and reasonable rate of return, not monopoly returns~~
      * ~~Obligations (CCO)~~
        + ~~Rates must be non-discriminatory~~
        + ~~Control over market entry and exit~~
    - ~~“Wireless Infrastructure Second Report and Order” for Wireless Infrastructure (US) (page 32)~~ 
      * ~~Excluded from National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA) review certain small wireless facilities~~
      * ~~Clarified procedures for engaging Tribal Nations and Native Hawaiian Organizations (NHOs) in historic preservation review~~
      * ~~Exempted the NEPA review requirements certain structures placed on flood plains~~
    - ~~“Wireless Infrastructure Declaratory Ruling and Third Report and Order” for Wireless Infrastructure (page 32)~~ 
      * ~~Addressed state and local barriers to deployment such as zoning rules for erecting towers and other structures or attaching equipment to pre-existing towers and structures~~
      * ~~Effects timing and cost of deploying mobile wireless networks and can slow down entry (CCO)~~
      * ~~Local regulatory fees can represent sunk costs that can deter or diminish entry (CCR)~~
      * ~~Excessive one-time applications fees, annual recurring feeds, unreasonable or discriminatory gross revenue feeds, and franchise or use fees can be burdensome to smaller providers, prevent or discourage investment (CCR)~~
      * ~~Review process designed for large macros cells can be applied to small cell deployments posing barriers to entry or expansion. Smalls cell deployment causes less disruption and therefore review is less important. (CCO)~~
      * ~~State and local zoning requirements prevent or delay entry and expansion by requiring that all facilities along rights-of-way be underground (CCO)~~
    - ~~“Declaratory Ruling” (page 33)~~ 
      * ~~Standard in the context of certain fees charged in connection with the deployment of small wireless facilities, noting, for instance, that such fees may not exceed a reasonable approximation of the local government’s costs. (CCR)~~
    - ~~“Second Report and Order” for Wireline Infrastructure (page 33)~~ 
      * ~~eliminating unnecessary impediments and costs to timely network upgrades, while maintaining protections for consumers and enabling providers to invest in next-generation networks. (CCR)~~
      * ~~Commission continued to build on the work begun in 2017 to reform our copper retirement, network change disclosure, and discontinuance processes and remove regulatory barriers causing unnecessary costs or delay to deployment of next-generation networks. (CCO and CCR)~~
    - ~~Commission adopted revised model offers for rate-of-return carriers receiving model-based support and new model offers for rate-of-return carriers currently receiving legacy support… and adopted other measures to mitigate the regulatory burden on providers and encourage the efficient use of universal service support (CCR) (page 35)~~
    - ~~Improve connectivity for health care providers in rural areas including whether to lift the program’s funding cap to make additional money available for broadband to rural health care providers (US) (page 35)~~

1. Role of Technology
   * **Describe the role of technology in creating or driving changes in broadband**
     + “Commission has continued its efforts to expand access to spectrum to support or supplement wireless and satellite broadband services” (page 37)
     + “Commission streamlined, consolidated, and harmonized the rules governing earth stations used to provide satellite-based FSS services on ships, airplanes and vehicles. These actions simplify the regulatory approval process for this rapidly growing segment of the satellite communications market and expand the FSS frequency bands where these operations can be conducted.” (page 37)
       - The FCC announced and conducted application and bidding processes for the Spectrum Frontiers licenses in the 24 GHz and 28 GHz bands to speed the deployment of 5G services in these bands. Their involvement in continuously encouraging the expansion of access to spectrum is a driving factor in the growth of broadband.
     + “In addition, the Commission has initiated several proceedings aimed at facilitating the efficient and effective use of spectrum, such as the 2.5 GHz rulemaking proceeding, or increasing the amount of spectrum that may be used to enhance bandwidth and capacity” (page 37)
       - This continuation of expansion of broadband shows the FCC’s efforts to facilitate the growth of broadband.
     + “Commission approved the first U.S.-licensed satellite constellation to provide broadband services using a new generation of low-Earth orbit (LEO) satellite technologies in the SpaceX Authorization Order” (page 38)
       - The FCC’s approval of this project shows their efforts to create newer and more effective methods of providing broadband as a universal service.
   * **Describe the ability for the FCC to clearly classify the service** 
     + The FCC has focused on funding and encouraging expansion of spectrum as a means of supporting broadband.
   * Identify technology creating the problem
   * Identifying key technologies at number of levels, going from systematic to specific/operational
   * Maintain narrow range of technical focus
2. ~~Develop Policy Options for Analysis~~ 
   * **~~Develop at least three policy options of the definition of broadband (one option will be the status quo) that you will consider based upon your understanding of the capabilities of broadband technologies~~** 
     + ~~Status Quo: Fixed and mobile broadband that meets advanced telecommunication capabilities with a minimum speed.~~
     + ~~Option 1: Increase in minimum speed of mobile broadband services to better meet standards of advanced telecommunication capabilities, especially in rural and underserved areas to comply with Universal Service and Common Carrier Regulations and Obligations.~~
     + ~~Option 2: Expanding deployment of fiber optic lines for fixed internet services to better meet standards of advanced telecommunication capabilities. Subsidizing fixed fiber broadband in rural and underserved areas.~~
   * **~~Identify and define three important factors to evaluate these options~~** 
     + ~~Status Quo~~ 
       - ~~Minimum speeds for services that are mostly guaranteed and meet advanced telecommunication capabilities, therefore providing the Universal Service of broadband.~~
       - ~~Fixed wireless goes through radio waves, with possibly high latency based on traffic.~~
       - ~~Third factor~~
     + ~~Option 1~~
       - ~~Increased usage of mobile services amongst general population means higher speeds would allow for the service to better meet advanced telecommunication capabilities.~~
       - ~~Rural and underserved areas can have better access to broadband through mobile services compared to fixed since it is available outside of a fixed location such as a home or business.~~
       - ~~Since broadband is a universal service that complies with common carrier regulations and obligations, the availability of mobile services falls is an essential service and therefore should have speeds closer to fixed services.~~
     + ~~Option 2~~ 
       - ~~Fiber optic lines can provide fixed service download speeds up to 1000 Mbps. Light signals travel faster than the electrical signals commonly used for fixed services in cable and DSL or radio waves used in fixed wireless. Data travels much faster and therefore has lower latency, allowing for fixed services using fiber to better meet advanced telecommunication capabilities.~~
       - ~~Usage amongst populations in cities and suburban areas exponentially increases. High-speed internet and other services are expected to be available in most areas. Deploying fiber accommodates higher traffic, adapting to increasing levels of fixed service usage among populations.~~
       - ~~Subsidizing fiber in areas where deployment of broadband is crucial. These areas include rural and underserved areas, Tribal Lands, and disaster-affected areas.~~
   * **~~Analyze how each factor impacts each policy option~~**
   * ~~Using Factors to Evaluate Options~~ 
     + ~~(1) Identify key technical, economic and social impacts~~
     + ~~(2) Qualitative assessment of largest impacts~~
     + ~~(3) In-depth qualitative/quantitative analysis of largest impacts~~
3. Compare and Analyze Options
   * **Support how the factors should be prioritized relative to each other with this context of the policy objectives for the definition of broadband**
   * **Compare costs and benefits of the three options relative to each other given your prioritized list of factors**
   * **What is your final recommendation based upon the analysis of your three policy options?**
   * Clearly support prioritization of factors
   * Resulting analysis should clearly identify who or what is affected and in what way by each of the factors
   * Compare and present positive and negative impacts overall for each option based upon factors (cost benefit analysis)
   * Consider risks and uncertainties in policy choices
   * Identify preferred option

12 point Arial font, 1-inch margins, IEEE citation style

Step 1: Identify the core problem that the Broadband Progress Report is intended to solve, and the current definition of broadband prior to the report as it relates to your proposed changes.

Step 2: Define the policy objectives of the “Advanced Telecommunications Capability” standard as articulated in the 2019 Deployment Report.

Step 3: Describe the role of technology in creating or driving changes in broadband and the ability for the FCC to clearly classify the service.

Step 4: Develop at least three policy options of the definition of broadband (one option will be the status quo) that you will consider based upon your understanding of the capabilities of broadband technologies. Identify and define three important factors to evaluate these options. Analyze how each factor impacts each policy option.

Step 5: Support how the factors should be prioritized relative to each other with this context of the policy objectives for the definition of broadband. In qualitative fashion compare the costs and benefits of your three options relative to each other given your prioritized list of factors. What is your final recommendation based upon the analysis of your three policy options?