



## **Network Management Policy (“Policy”) <sup>1</sup>**

This Policy describes Viasat’s network management procedures. Additional terms relevant to your use of Viasat’s services are contained in your applicable customer agreement, terms of service, and/or other related policies (referred to collectively as the “Viasat Terms of Service”), which are available on our website at <https://www.viasat.com/legal/>. Depending on where you receive Viasat’s service, you may be subject to additional terms which are not listed on at <https://www.viasat.com/legal/>. Please review your Viasat customer agreement for more details.

### **I. OVERVIEW**

Viasat’s broadband network (“Network”) is a shared network; at any given time, subscribers within a given geographic area must share available network capacity. Viasat aims to provide each subscriber with a “fair share” of that capacity, while providing all subscribers with a high-quality online experience. To achieve these goals, Viasat employs network management practices designed to prevent any subscriber from placing a disproportionate demand on Network resources. Certain practices are used only when the Network is congested and others are used more generally.

Traffic levels on the Network are usually below a congestion point that would have a significant impact on the user experience. Viasat has designed its Network to reduce congestion. Generally, under normal traffic conditions, it is not necessary for Viasat to employ congestion management practices. That said, while network capacity is robust, it is not unlimited. At times, simultaneous transmissions from multiple subscribers result in a total demand for capacity exceeding that available on the Network, resulting in congestion. Stated differently, the Network can be expected to experience some level of congestion, necessitating congestion management practices, including, but not limited to, prioritizing Network traffic during periods of congestion based on subscribers’ data usage. These practices are explained in further detail in Section III below.

### **II. NETWORK ARCHITECTURE**

Viasat’s Network incorporates space-based components (satellites) and ground-based components (e.g., subscriber terminals, “gateway” earth stations, and fiber “back-haul” connectivity). The communications links between space-based and ground-based components use a pre-defined amount of radiofrequency spectrum to communicate without wires.

The satellites in the Network utilize a “bent-pipe” spot-beam architecture. Signals are transmitted from ground facilities to the satellite through a wireless link. The satellite then operates as a “bent pipe” and retransmits those signals back to the ground, through another wireless link. Transmissions occur within individual “spot” beams, each of which covers a defined geographic area.

The traffic of each subscriber is associated with a single spot beam. Viasat strives to load its system so that at any given time the traffic load across different subsets of the capacity available on a spot beam (each a “Channel”) within a given spot beam is roughly comparable. Available capacity within any given spot beam or Channel is largely fixed; subscribers assigned to a Channel share the available bandwidth in that Channel.

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<sup>1</sup> This Policy applies to Viasat’s broadband network in which Viasat provides residential and business Internet services, including through all Viasat subsidiaries and affiliates. As Viasat’s network management practices evolve, Viasat will update this Policy and post any updates on our website, effective upon such posting, at [www.viasat.com/legal](http://www.viasat.com/legal).

Subscriber traffic is routed to and from the Internet (and other public networks) through a designated ground-based facility known as a “gateway” earth station. At each gateway, traffic is processed through a satellite modem termination system (“SMTS”) and other terrestrial networking equipment, which then interconnects with a terrestrial fiber optic network and, eventually, the Internet.

Subscribers are required to utilize certain Viasat equipment, including an antenna and modem, in order to obtain a Network connection at their locations. Once they have that Network connection, almost any computer device with an Ethernet port can be connected to Viasat’s modem. Viasat does not restrict the ability of subscribers to connect devices of their choice to the Network in this fashion (other than as described in the Viasat Terms of Service).

### **III. CONGESTION MANAGEMENT PRACTICES**

#### **A. Congestion Management Overview**

During times of network congestion, Viasat’s congestion management practices strive to treat traffic in a manner that minimizes adverse impacts on the user experience while preventing a subscriber from exceeding his or her “fair share” of available capacity. Congestion typically occurs in the link between the subscriber terminal and the gateway earth station via the satellite. In order to determine if the link is congested, Viasat continuously monitors the traffic load in each Channel. If the instantaneous traffic load exceeds the available capacity of the spot beam Channel, Viasat invokes a congestion management algorithm described below.

#### **B. Mitigating the Impact of Network Congestion on the User Experience**

Internet traffic is “bursty” in nature; traffic flows generally are not continuous, but rather are characterized by staccato “bursts” of data. On occasion, simultaneous transmissions from multiple subscribers in a given spot beam Channel result in a total instantaneous demand for capacity exceeding, on a temporary basis, the capacity available within the Channel. On such occasions, the Network can experience congestion. Congestion may vary by region, but typically occurs during the network’s “peak” usage hours (which generally can be expected to be from about 5:00 PM to 2:00 AM local time at the subscriber location, depending on the day of the week). Congestion may also occur during certain periods when usage is “unmetered” (such as during a “Free Zone”).

Network congestion, and the resulting transmission delay, impacts the user experience with respect to some types of applications more than others. For example, a delay in the rendering of a web page may be noticeable to a subscriber waiting for the content to appear on his/her screen. On the other hand, a subscriber downloading a bulk file (*e.g.*, a software update) may be less impacted if the download takes longer during congestion than it otherwise would, since the subscriber may already know that the download requires some time to complete.

Viasat’s goal is to manage its Network to minimize the impact of congestion on traffic that is otherwise consistent with the Viasat Terms of Service. To accomplish this objective, Viasat’s congestion management algorithm is designed to reduce the traffic load during periods of congestion. Viasat determines the nature of relevant traffic using a technique called deep-packet inspection. During periods of congestion, bandwidth intensive applications, such as video streaming and file downloading, may be slowed more than other applications that require less transmission bandwidth. As a result, the quality of video streaming may be reduced and/or buffering may occur. In addition, file downloads may take longer to complete during periods of congestion. Under more severe congestion, all applications may need to be slowed, and in those instances, the time to download web pages may take longer.

In addition, Network traffic may be prioritized during periods of congestion based on subscribers’ data usage. Some Viasat service plans provide subscribers with unlimited use of the internet or continued use of the internet even after exceeding the monthly data allowance or other usage threshold set forth in the relevant Viasat Terms of Service.

Viasat does not intentionally block any particular form of traffic or reset a subscriber connection that otherwise complies with the Viasat Terms of Service, except that Viasat may block certain Transmission Control Protocol (“TCP”), User Datagram Protocol (“UDP”) ports that it reasonably believes may be a security risk to the Network, or traffic that is unlawful based on local regulations and laws. Internet traffic contains data packets that include TCP or UDP port designations identifying the type of data in the packets. Some ports commonly known to contain malicious data packets are generally considered to be a security risk to the Network.

### **C. Other Forms of Network Management**

In addition to its congestion management practices, Viasat utilizes a number of other techniques designed to preemptively prevent or reduce periods of Network congestion, enhance the user experience, enhance security, and enhance the reliability of the Network. For example, Viasat actively works to: (i) reduce streaming video quality to optimal resolutions based on the type of device used to stream video (for example, but not limited to, reducing the video resolution quality on devices that do not necessitate high-quality video resolution, such as devices with small screens); a customer may have the option to turn off this feature depending on the customer’s selected service plan; (ii) suspend accounts to block outbound transmissions of spam; (iii) manage the risk of viruses, worms and similar intrusions from harming the Network; (iv) thwart denial-of-service attacks; and (v) reduce the risk of an intruder gaining access to a subscriber’s computer system. The specific techniques used by Viasat for items (ii) – (v) above are not disclosed here, in order to ensure that these practices remain effective and cannot be deliberately circumvented. The goal of these measures is for subscribers, on the whole, to enjoy a better overall service experience than they otherwise would without these practices.

### **IV. QUESTIONS**

If you have any questions about the Viasat broadband Network, or the Viasat Terms of Service, please visit our website at [www.viasat.com/legal](http://www.viasat.com/legal) or contact customer service at 1-855-463-9333.