U.S. Cellular's Mobile Broadband Internet Access Service and Open Internet Practices

Effective November 2019

U.S. Cellular supports our country's national broadband goals by helping to preserve the Internet as an open platform for innovation, investment, job creation, economic growth, competition and free expression. The purpose of this disclosure is to provide transparency into U.S. Cellular's network management practices, performance characteristics and terms and conditions of our mobile broadband internet access service so that customers can make informed choices about mobile broadband internet access service and providers; and so that content, application, service and device providers have the information needed to develop, market, and maintain Internet offerings.

Frequently asked questions:

A. What is mobile broadband internet access service?
B. What are U.S. Cellular's mobile broadband network management practices?
C. What are the performance characteristics of U.S. Cellular's mobile broadband internet access service for speed and latency?
D. What are U.S. Cellular's device management practices?
E. What are U.S. Cellular's application management practices?
F. Does U.S. Cellular ever reduce speeds (throttle) of the mobile broadband internet access service
it provides to customers?
G. What are the current terms and conditions that pertain to U.S. Cellular's mobile broadband access service?
H. What are U.S. Cellular's privacy policies concerning mobile broadband internet access service?
I. Does U.S. Cellular block access to websites or applications or provide preferential treatment for the internet traffic of either affiliated companies or other content providers applications or websites?
J. Does U.S. Cellular prioritize any customer's data traffic?
K. How do I contact you if I have questions or concerns about U.S. Cellular's mobile broadband open internet practices?
L. Does U.S. Cellular provide usage notifications?

A. What is mobile broadband internet access service?

Mobile broadband internet access service refers to any of our data services that a customer may use with a Smartphone, aircard modem, tablet, or other wireless device that is appropriately configured to work on our network for connection to the Internet utilizing either the 4G LTE or 3G EVDO network. It provides the capability to transmit data to and receive data from all or substantially all Internet endpoints,

including any capabilities that are incidental to and enable the operation of the service. Mobile broadband internet access service does not include services that use the internet for connectivity but which only provide access to limited Internet endpoints such as is common with many M2M services.

B. What are U.S. Cellular's mobile broadband network management practices?

U.S. Cellular employs reasonable network management practices that are appropriate and tailored to achieving a legitimate network management purpose. Legitimate network management purposes typically include reasonable security practices by providing: confidentiality, integrity and availability of network services, reasonable measures to address traffic that is harmful to the network and providing services or capabilities consistent with customer's choices regarding services offered.

In order to manage our 4G LTE network resources efficiently so as to enhance the experience of the largest number of our customers on the U.S. Cellular network, U.S. Cellular employs congestion management techniques that may result in a degradation of service for some customers. For example, if you are connected to a cell site that begins to experience customer impacting demand during your session, your data speeds may be slowed so as to provide a more consistent experience to the largest number of customers possible. Whether your data speeds will be slowed depend on a myriad of factors, including but not limited to, the amount of data you are consuming at a given point in time, the purpose for which the data is being consumed (video vs e-mail for example) and the data plan you are on. As speeds are reduced, it can cause increased latency and cause downloads to take longer or videos to buffer. Congestion management technology automatically adjusts speeds to address the amount of congestion, which can vary depending on the amount of devices connected to the site and what type of data intensive applications are being used. Congestion can often be limited to a very short period of time (often measured in fractions of a second). Because the amount of congestion at a cell site can vary significantly, the performance impact for affected customers may also vary significantly, but such impact will last only as long as the site is congested. Once the high demand on the cell site lessens, or if you connect to a different non-congested site, your speed will return to normal.

Video Optimization

In order to optimize the video viewing experiences of our customers over our 4G LTE network while ensuring a high-quality experience for other users of the network, U.S. Cellular limits the maximum speeds of video streams to deliver a particular video quality (e.g. – 480p, 720p or 1080p resolution). Video quality is plan specific and is defined in the plan terms and conditions. This practice does not make any distinction based on the content of the video or the provider, it is applied to all video streaming. This practice results in the video provider's content server sending the appropriate resolution video file for that speed, if available.

C. What are the performance characteristics of U.S. Cellular's mobile broadband internet access service for download and upload speeds and latency?

U.S. Cellular gathers data about the performance of its Mobile Broadband Internet Access Service periodically for both the 4G LTE and 3G EVDO networks it operates within its licensed footprint. Recent network performance for download and upload speeds and latency can be reviewed by Cellular Market Areas using the chart below. U.S. Cellular will update this data periodically.

Technology	Long Term Evolution (4G LTE)							
Quarter-Year	Second Quarter 2019							
Peak Usage Period	6:00-12:00 A.M CST							
			Downlink Throughput in Mbits/sec		Uplink Throughput in Mbits/sec		Latency in msecs	
CMA_Market_Name	CMA-FCC_Name	CMA_State	25th Percentile	75th Percentile	25th Percentile	75th Percentile	25th Percentile	75th Percentile
Appleton	CMA125	WI	2.66	11.68	1.62	5.35	37	48
Cedar Rapids	CMA195	IA	2.68	14.05	2.37	8.79	42	62
Columbia	CMA278	MO	2.45	7.69	1.9	5.41	40	51
Des Moines	CMA102	IA	1.95	10.47	2.09	8.29	45	61
Green Bay	CMA186	WI	2.86	17.47	2.6	7.99	36	47
Hagerstown	CMA257	MD	2.64	3.47	0.25	4.8	46	62
Kenosha	CMA244	WI	0.95	5.72	2.15	7.89	33	41
Knoxville	CMA079	TN	2.76	11.93	1.64	7.26	38	52
Lincoln	CMA172	NE	2.73	18.26	4.19	15.03	52	62
Madison	CMA113	WI	1.96	14.93	1.99	8.51	33	46
Manchester	CMA133	NH	2.85	10.78	1.6	5.69	46	56
Milwaukee	CMA021	WI	2.2	12.17	2.08	7.48	33	42
Oklahoma City	CMA045	OK	2.7	15.68	1.95	7.35	67	76
Omaha	CMA065	NE	2.62	9	2.2	6.49	50	58
Portland	CMA152	ME	2.89	18.8	3.31	10.81	53	60
Racine	CMA189	WI	2.84	17.55	2.3	11.91	33	42
Rockford	CMA131	IL	0.15	10.51	1.88	6.47	28	38
Springfield	CMA163	MO	2.85	18.53	2.26	7.41	58	81
Wilmington	CMA218	NC	2.77	12.5	2.35	7.72	56	66
All Others*	CMA999		2.46	13.15	2.29	8.07	39	58
Notes:								
All Others*	All other CMAs within the U.S. Cellular footprint have a population density of less than 250 people per square mile and the results for these CMAS and have been combined							

Generally, over 95% of U.S. Cellular's data traffic is carried by our 4G LTE network. Only approximately 5% of our data traffic is carried by our 3G-EVDO network. When customers' devices use our 3G EVDO network, the typical speed range that can be expected is between 600 kbps and 1.2 Mbps download and between 400 kbps and 600 kbps upload throughputs. This information is the best approximation available to U.S. Cellular of the actual speeds experienced by our customers.

The network performance is expressed as a range of speeds, based on actual network performance as measured by a third-party vendor. The speed within the range that an individual customer should expect to receive is influenced by many factors, including but not limited to, the customer's distance from a cell site, the number of customers accessing the network or a specific cell site at a given point in time, the amount of data consumed by applications run by a customer, and other factors affecting mobile wireless network performance. Performance may also drop below speed range at peak usage times. Also, certain price plans provide data services that are capped at the speeds provided for in the terms and conditions associated with such plans and so such plans should not exceed the advertised caps. The usage from plans with speed caps are included in the matrix disclosed above and so it is possible for customers on non-speed cap plan to experience speeds in excess of what is disclosed in the above charts.

D. What are U.S. Cellular's device management practices?

Customers may activate devices on our network that have been purchased though U.S. Cellular or one of its agents or that they have acquired elsewhere, but which were originally purchased through U.S. Cellular or one of its agents. Customers may also activate certain unlocked devices on our network that were purchased elsewhere. All devices must be unlocked and approved by us as being compatible with our network. To determine whether a device is eligible to be activated on the U.S. Cellular network please go to https://www.uscellular.com/bring-your-own-device

E. What are U.S. Cellular's application management practices?

U.S. Cellular's application management practices apply to three types of business models:

i. Third-party applications where U.S. Cellular has a direct relationship with the application developer are selected based on a business case that includes consideration for customer needs and customer experience. U.S. Cellular-specific applications are tested by us for customer experience and device compatibility.

ii. U.S. Cellular also distributes third-party Android applications through a partnership with Digital Turbine Inc., using their DT Ignite platform. We have a direct relationship with Digital Turbine, who shares with us the revenue generated through such application marketing campaigns. These applications are tested for customer experience by a third-party vendor, WMC Global.

iii. U.S. Cellular manages an Open API Platform that makes available a limited set of APIs for third-party application developers to use in their apps and services – SMS, MMS, Location, Customer Profile, and Payment. U.S. Cellular requires all developers to sign and agree to U.S. Cellular's standard terms and conditions. Additionally, developers using the

Location, Customer Profile, and Payment APIs must also agree to and adhere to testing for customer experience, usability, and device compatibility.

There are other mechanisms for third-party applications that are not selected by U.S. Cellular to be distributed on devices that have Android™, Apple, Windows® Mobile, or BlackBerry® operating systems. These applications are certified through the following parties:

Android™ – certified by Google Inc.
Apple – certified by Apple, Inc.
Windows® Mobile – certified by Microsoft®
BlackBerry® – certified by Blackberry, Inc.

We will promptly inform device and application providers of any decisions to deny access to our network or of a failure to approve their particular devices or applications.

F. Does U.S. Cellular ever reduce speeds for the mobile broadband internet access service it provides to customers?

U.S. Cellular may intentionally reduce speeds for mobile broadband internet access service under the following circumstances;

i. When the terms and conditions of the data plan that the customer has subscribed to provides that data usage will be provided at a reduced or capped speed. By way of example and not limitation, U.S. Cellular currently offers postpaid plans that include a certain amount of prioritized data that may be slowed during periods of congestion and slowed further after the amount of prioritized data is consumed. See the terms and conditions of your service plan for more details.

ii. When the terms and conditions of the data plan that the customer has subscribed to permits U.S. Cellular to reduce speeds after a specified amount of data usage has occurred. For example, U.S. Cellular offers a pre-paid plan with unlimited voice and text and a fixed amount of high-speed data. When the amount of high speed data contained in the plan is consumed, any remaining data consumed in the month, both downloads and uploads, may be reduced to a slower speed.

iii. In the exercise of reasonable network management practices to address network congestion as further described in Section B and J.

iv. When the customer exceeds a certain amount of data while roaming as provided for under the terms and conditions of the plan that the customer has subscribed to, or as specified in the customer service agreement that governs the provisioning of mobile broadband internet access service by U.S. Cellular.

G. What are the current terms and conditions that pertain to U.S. Cellular's mobile broadband access service?

Terms, conditions and details regarding U.S. Cellular plans and services may be found at www.uscellular.com/plans and www.uscellular.com/legal.

H. What are U.S. Cellular's privacy policies concerning mobile broadband internet access service?

See www.uscellular.com/privacy to review U.S. Cellular's privacy statement.

I. Does U.S. Cellular block access to websites or applications or provide preferential treatment for the internet traffic of either affiliated companies or other content providers applications or websites?

No, U.S. Cellular does not block customers from accessing lawful websites or applications nor does it favor access to certain applications or websites over others. Customers may elect to block access to certain websites or applications through their device settings. Further, U.S. Cellular does not provide preferred access to any websites or applications through its mobile broadband internet access service, including for any internet traffic of affiliated companies. U.S. Cellular does, however, reserve the right to take all actions it deems appropriate to protect its network and customers from malicious Internet-based attacks and other cybersecurity risks which may include blocking access to websites and applications deemed to provide an unacceptable level of risk.

J. Does U.S. Cellular prioritize any customer's data traffic?

Yes, U.S. Cellular prioritizes Voice over LTE traffic over other data traffic. Additionally, U.S. Cellular may prioritize data traffic of certain first responders and public safety personnel who elect to receive prioritized service. Also, U.S. Cellular has service plans that contemplate that certain data traffic will be prioritized over other data traffic on other plans during times of congestion on the network. See our data plans for additional details about the circumstances when data traffic may be prioritized and its effect on your network experience. Our network is constantly being monitored to operate as efficiently as possible and to provide the best possible experience for our customers and so, in the ordinary course of the operation of the network, traffic is always being prioritized to some extent. In most circumstances such prioritization will have a negligible effect on the customer experience. However, in times of cell site congestion, data prioritization may be more noticeable and traffic that is not prioritized may receive slower speeds than normal. Once the congestion abates, data speeds will return to what the customer typically experiences within the geographic area covered by that cell site.

K. How do I contact you if I have questions or concerns about U.S. Cellular's mobile broadband open internet practices?

U.S. Cellular welcomes customer comments regarding our mobile broadband open Internet practices. If customers have questions, comments or complaints, please contact us via email at the following address:

legaldept@uscellular.com

L. Does U.S. Cellular provide usage notifications?

Yes, Overage Protection is a service that provides U.S. Cellular customers with a text message alert prior to the close of their billing cycle when overage charges may be incurred. Alerts for Voice, Messaging and Data are sent notifying customers that they have reached 75% and/or 100% of their respective plan allotments. These alerts are intended to help customers monitor their usage and avoid unexpected overages. For more detail on usage notifications see https://uscellular.com/overage-protection