

AIRLINE PASSENGER

experience

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Fresh Takes

Airlines and vendors are planting the seeds for more mindful flying

Quality Control

Defining the metrics needed to monitor and measure in-flight connectivity is a tall task. APEX and its member companies are making progress on multiple fronts.

BY SETH MILLER

The performance of an in-flight Wi-Fi connection is about far more than just bandwidth delivered to a device. APEX continues to work with its member companies toward the development of standards for measuring Quality of Experience (QoE), and with it a new way of thinking around service monitoring and service-level agreements.

Data flows differ dramatically between a device owned by a user keen on gaming and one keeping in touch with friends via

messaging or social media applications. On the back of this changing QoE dynamic is a new set of companies aiming to help airlines evaluate the connectivity performance their customers are receiving on board.

One such offering is the QMap solution from NetForecast. Built as an extension to the company's long-standing terrestrial network monitoring service, QMap helps identify congestion points for data flows by measuring latency, loss, jitter, domain name system (DNS) response and effective bandwidth. "Just because you measured every part of the network separately doesn't mean that the path running through them all is performing well," says NetForecast founder and CTO Peter Sevcik.

The company claims that not only can it track the end-to-end performance of traffic, but it can also identify potential

LATENCY

The round-trip time (RTT) for a data packet to travel from device to server and back.

LOSS

A data packet lost in transit from device to server or server to device in any segment of the communication and that needs to be retransmitted.

JITTER

The variation in one-way network transit time.

DOMAIN NAME SYSTEM (DNS) RESPONSE

The reply to a query for access to a website, for example, through the hierarchical naming system for computers and other resources connected to the Internet.

EFFECTIVE BANDWIDTH

Number of bits per second successfully transferred from sender to receiver.

problem points mid-route, with Internet backbone providers or peering exchanges. As Sevcik explains, "We can combine that knowledge with our other data to determine which one of the segments was causing a problem when there's a performance issue."

Other companies intent on qualifying the connectivity experience include P3 Group and Alethea, and connectivity providers are, of course, also paying attention to network performance, tracking data between the aircraft and points across the Internet. "With our network partners, we are always monitoring – we have to be. We're looking at traffic, ground stations and issues that are evolving, and we are constantly optimizing our networks in response," says Dominic Walters, vice-president of Marketing Communications and Strategy, Inmarsat Aviation, adding that "the idea of an audit is not a bad one."

For now, Sevcik sees the ideal implementation via integration with the airline app, either for passengers or crew on board. This would use a relatively small amount of bandwidth, so the impact to performance should be minimal. And he suggests that airlines are interested: No named customers yet, but the company is gaining traction and could help redefine the way traffic is monitored in the sky. ■

How Do Connectivity-Dependent Activities Perform in Flight?


	Latency	Loss	Jitter	DNS Response	Bandwidth
Messaging (WhatsApp, Snapchat, text, etc.)	Neutral	Neutral	Neutral	Low	Low
Multiplayer Gaming (Fortnite, etc.)	High	High	Neutral	Neutral	High
Streaming (Netflix, Hulu, etc.)	Neutral	High	Neutral	Neutral	Low
Social Media (Facebook, Instagram, etc.)	Low	Low	Neutral	Low	Low
Real-Time Communications (FaceTime, video conferencing, etc.)	Low	High	High	Neutral	Low

Source: NetForecast

Neutral: No or negligible QoE impact

Low: Moderate QoE impact

High: Noticeable QoE impact



**What frustrates airline passengers
more than no Wi-Fi?**

Bad Wi-Fi.

Don't be bad.

Studies show that the quality of inflight Wi-Fi is more important than ever, even impacting which carriers customers choose. With more applications and online content available, you'll want to ensure you're providing the best inflight experience possible.

NetForecast's **QMap** lets you understand, in near-real-time, the inflight Wi-Fi experience by application type. So whether they're sending emails, shopping online, or streaming the latest kids' videos, you'll have a way to know what the experience is likely to be on a given flight. **LEARN MORE** contactus@netforecast.com

NetForecast[®] QMap

Measuring the quality of inflight communications.