

Leading standards for a truly connected sky.



Want to be sure your investment converts into a great connectivity experience for passengers?

The Seamless Air Alliance (SAA) was founded by Airbus, Delta, OneWeb, Sprint and Airtel. The Alliance now includes some of the biggest global names in technology, communications, and aerospace.

SAA published the world's first inflight connectivity standard, empowering airlines to build open systems that connect to a marketplace of providers for inflight connectivity technology and services.

Our mission is to allow airlines to continually provide the best possible passenger connectivity experience. We define interoperability standards and approval programs that drive innovation, economies of scale, differentiated performance, and enable airlines access to the most cost-effective, efficient, and flexible solutions.

We envision a new inflight connectivity experience that will seamlessly connect passengers, enable new engagement opportunities for airlines, and extend mobile network operator relationships from gate-to-gate, anywhere in the world.

To learn more about the Seamless Air Alliance, and how to become a member, please visit us at www.seamlessalliance.com

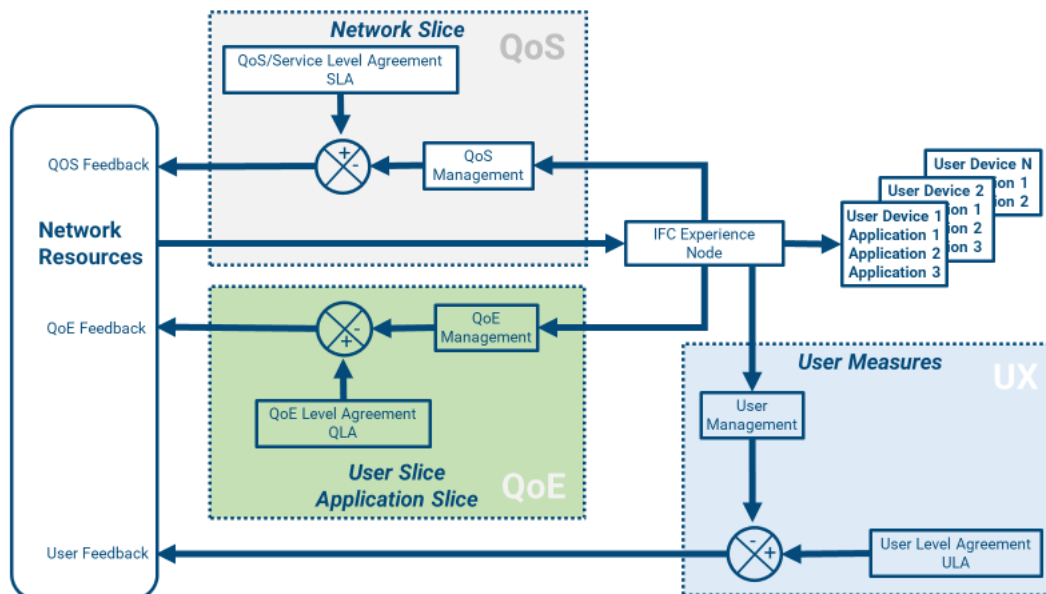
Seamless Certified IFC Experience

Airlines have pivoted to wholesale session purchases from their IFC service provider (SkyMNO). Typical IFC session types include Messaging, Browsing and Streaming.

Today, the industry operates around a Service Level Agreement (SLA) that professes a forward channel (downlink to the airplane) committed data rate (for either each device or for the entire airplane) and a target for the maximum data rate. There is neither an agreement on the return (uplink) channel performance nor any aggressive plan for session size growth. Ultimately, Airlines cannot rely on an SLA to ensure session quality.

The ability to deliver a great connectivity experience requires a deeper look at the infrastructure required (e.g., deep packet inspection and machine learning) to accomplish application filtering, protocol acceleration, streaming resolution management, cache, throttling, and heavy-user management. An onboard N+1 agent may be applied to exercise the IFC service periodically to verify the SLA. The onboard N+1 agent may include scripted “client-like” internet actions, such as loading selected web pages and noting the web page load time. The N+1 agent is an excellent method to validate the SLA but does not reflect individual IFC experience.

The effectiveness of QoE features should relate to how well a product performs as perceived by the User. To address this, Seamless Air Alliance is developing the first open standard for measuring and managing the IFC experience using a collection of new measures and a closed-loop feedback system.



Seamless Air Alliance Release 4 (SR4) is in development to provide a toolkit for certifying or assuring IFC experience. The IFC Analysis Toolkit will provide consistent measurement definitions, assessment tools, and absolute measures that allow an airline to do a qualitative and quantitative comparison of features and performance across their fleet, other airline fleets, and across more than one supplier.

SR4 IFC experience measures will related directly to QoS SLA provisioning. The Airline and the SkyMNO will be able to relate network slice provisioning to a function of product and number users.

Seamless Roaming

Existing IFC products are mostly sold “pay as you go” over an open SSID. Existing take rates are only a fraction of the passengers onboard. Making the IFC product can boost take rates, but currently they are less than 50%. The issue is that the user must take action to connect to the onboard network themselves and make a product purchase, but both are barriers.

Cellular operators provide a roaming service that allows user devices to automatically attach to available networks as part of their service offering. Customers may acknowledge a roaming service, but otherwise it is fully transparent to them – the purchase was pre-approved, and no user action was necessary to activate the service. The same capability is available onboard, using either Wi-Fi or a cellular base station as the radio interface. The cellular device uses the embedded Subscriber Identity Module (SIM) for authentication and the cellular subscription for IFC product purchase. Open Wi-Fi using Passpoint opens the door to non-cellular devices.

Seamless Roaming is the only reliable path towards engaging the majority of passengers and also delivers a far more secure network. Airlines can issue a secure profile to users to securely logon to the onboard Wi-Fi network and at the same time associate their airline loyalty status and account. Roaming providers, including cellular mobile network operators (MNO), can offer carrier-billing based on their cellular subscription, providing continuous connectivity on the ground and in the air.

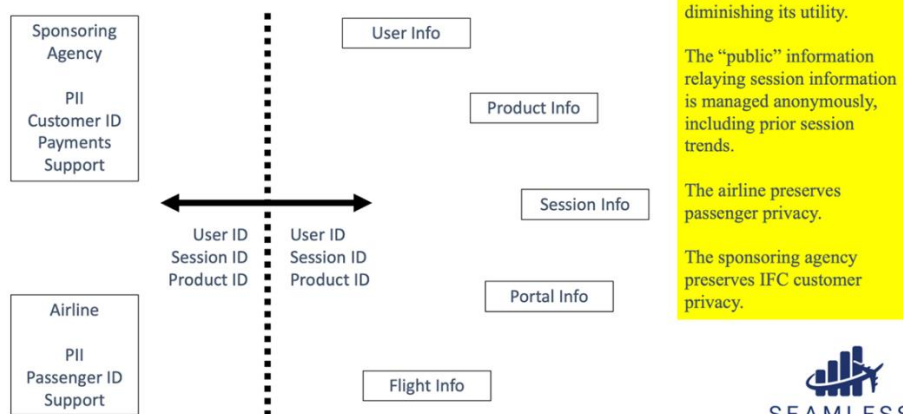
Personalization

IFC offers much more than a connection to the ground. The onboard Portal is a gateway to airline value-added products and services with the potential for ancillary revenue and brand reinforcement. Impressions, Click-through, concierge services, duty free sales, cabin food and drink, commissioned online catalog sales are some of the many opportunities.

Building a passenger profile to match their interests involves connecting dots without either violating privacy or revealing personally identifiable information without permission. Information collected needs to be tracked, correlated, stored, and processed from diverse sources and end-systems.

SR4 Personalization Expert Group is developing an information base to empower the other opportunities presented by a connected passenger. The airline passenger and the roaming subscriber can influence and tailor one or more anonymous profiles for travel, whether for business or leisure.

Sheltering privacy



A “curtain” shelters personally identifiable information without diminishing its utility.

The “public” information relaying session information is managed anonymously, including prior session trends.

The airline preserves passenger privacy.

The sponsoring agency preserves IFC customer privacy.

SPOTLIGHT
SERIES

"As someone that is passionate about IFC and **understands first-hand** the challenges that airlines and our customers face on a day-to-day basis, **participation in this group has been important**"

MARK CHEYNEY
Inflight Connectivity Development Manager, Virgin Atlantic



SPOTLIGHT
SERIES

"Vodafone is **proud to be part of the standardisation work** that will make it possible to roll out inflight connectivity services in an efficient and cost-effective manner for all the players involved in the eco-system"

SHERIF BAKIR
CEO of Vodafone Roaming Services



SPOTLIGHT
SERIES

"The work we have carried out at the Seamless Air Alliance is **a massive step forward for the industry**. Being able to be part of this process is **huge**."

GEORGE NICOLA
Aero UT Product Delivery Manager, OneWeb



SPOTLIGHT
SERIES

"I believe the work the Seamless Air Alliance is doing is going to lead to the creation of **a solid standard that is going to be followed by the key players in the industry**"

ALEJANDRO WAINSHOK
Senior Product Architect, SES Networks



SPOTLIGHT
SERIES

"As a former employee at both an **airline** and a **connectivity provider**, I have **experienced the challenges** involved with providing a reliable connectivity experience to passengers"

BRIAN KIRBY
Senior Technical Product Manager, Telesat



SPOTLIGHT
SERIES

"Gilat sees the Seamless Air Alliance group as **one of the leading committees** in contributing and defining technologies to be used onboard airplanes"

GIL ELIZOV
Head of Products, Gilat Satellite Networks



SPOTLIGHT
SERIES

"The need to enhance the **customer experience** through effective **QoS and QoE management** is what I'm most interested in with the Seamless Air Alliance."

ERIC LI
Senior Principal VSAT Systems Engineer, Intelsat



SPOTLIGHT
SERIES

"SAA will bring various benefits to MNOs by **standardizing** Inflight connectivity (IFC) and **accelerating the growth** of the IFC industry"

YOSUKE ISHIHAMA
Non-Terrestrial Network solutions, SoftBank Corp.



SPOTLIGHT
SERIES

"We're serving a large portion of the mobility market, so we really think **it's our responsibility to be part of Seamless Air Alliance** to ensure that the onboard experience exceeds expectations"

ANDREW FAIOLA
Head of Mobility, ST Engineering iDirect



SPOTLIGHT
SERIES

"Seamless Air Alliance Working Groups allow Thales to have **genuine exchanges with key players in the IFC industry** to consolidate important positions"

ARNAUD TONNERRE
VP, Technical Director, Thales Group

