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"The growth expected in civil aviation is huge and we can't continue to build more airports to handle the extra capacity," says Rolf Felkel, the chairman of the ACRIS group, and senior vice president of applications development and support services at Frankfurt Airport. "Standards and interoperability for data exchange are required so that we can operate more efficiently. The industry can only operate optimally if we achieve interoperability between business partners' IT systems.

"Once ACRIS defines the standards of interoperability we can create a virtuous circle. It leads to evermore interoperability, which supports the whole aviation community to manage growth."

Partnership works

Although ACRIS is defining standards that will benefit the whole aviation industry,



The ACRIS working group is building bridges between the IT communities of airports, airlines and suppliers for the benefit of passengers



the working group is dominated by a core of large airports, mainly because very few small airports can afford to send IT specialists to the meetings. The regular participants include Frankfurt, Schiphol, Munich, Singapore, Hong Kong, San Francisco, London Heathrow, Phoenix and the Scandinavian airport groups Swedavia and Avinor. A handful of airlines also usually attend. The other major group present is IT vendors and suppliers, such as SITA, who usually make up around half of the attendees.

Lorenzo Belicchi, airport strategy director for SITA, believes that the ACRIS project will be of enormous benefit to IT suppliers. "We have products at most airports and it costs a lot to integrate them with other vendors' systems. If ACRIS can determine single interfaces, it will be far easier to integrate our services and reduce costs. We can also provide practical help to ACRIS by explaining what is possible from a technical and operational point of view," he says.

At a typical ACRIS meeting, the participants propose single IT interfaces for airport systems using a model that was developed in 2010. Suggestions could be about almost any aspect of aviation that requires the exchange of data. Once an area is agreed, Felkel appoints a project leader, allocates the necessary resources and sets a development timeframe. After the ACRIS meeting concludes, project sub-committees operate under their own organizational structures and reports back to the ACRIS working group when finished.

RIGHT: ACRIS members include airlines and suppliers

Baggage standard

There have already been some notable triumphs. The earliest project, introduced at the inception of ACRIS in 2009, was the development of a web-based interface for self-bag-drop solutions

Simpler systems at Dubai

Over the past 12 months Dubai Airports has been simplifying its IT system to improve data consistency, according to the guidelines provided by the ACI's ACRIS working group. The company has upgraded its operational database to enable real-time data exchange.

"Our new API will enable a secure, standardized and cost-effective means of exchanging data with third parties. It makes it easier for stakeholders to share data and also enforces data governance and common standards," says Lloyd Gozzett, Dubai Airports' vice president of business technology.

Dubai Airports has also installed flow measurement sensors for passengers across a number of touchpoints. Gozzett says that this will help improve the customer experience

ABOVE: Dubai Airports' real-time data is used by its flight display system

If ACRIS can determine **single interfaces**, it will be far easier to integrate our services and **reduce costs** at key processing points such as immigration, making them "swift and seamless". The goals are to halve queueing times at transfer screening points and to identify passengers at risk of missing connections.

Dubai Airports has also made an investment in Splunk software as its business analytics platform. The software allows structured and unstructured data to be brought together from multiple sources to produce dashboards that deliver real-time analytics, says Gozzett: "We have over five billion data points in Splunk and we plan to expand its use. Our recent integration with the baggage system allows us to predict within a couple of seconds when a passenger's bag will arrive at reclaim."

in conjunction with an IATA working group. ACRIS named the standard Common Use Web Services (CUWS) and IATA's technical term is Recommended Practice 1741. The results of the standard have been highly encouraging. "CUWS has been one of our biggest success stories to

date. More and more airports, airlines and solution suppliers are implementing it. It's a great example of how standards help reduce time to market and integration complexity," says Felkel.

SITA's Belicchi works closely with the ACRIS group, and says that the bag drop-off project was important for the aviation industry as a whole because it represented a major collaboration between an ACI working group and



IATA, bridging the traditional divide between airports and airlines.

"That was the biggest change for me. In the past this kind of collaboration never happened," he says. "There are representatives of IATA on the ACRIS working group and the two major stakeholders are working together closely for the first time. It speeds up the creation of solutions as both parties have so much information that is valuable to the other in creating a better customer experience."

A second important ACRIS initiative that has benefited airlines is airport collaborative decision making (A-CDM). Many airports have introduced online portals that show data on aircraft movements, to enable common situational awareness between users of the airport. The airlines receive all their alerts about traffic from these portals, but managing the data is becoming an increasingly complex and time-consuming task as the number of portals proliferates. "For the airlines it's a big problem as they can end up having to switch between portals all the time to get the information they need," says Felkel.

ACRIS set up a group to define a common set of web services for A-CDM to enable stakeholders to connect to an airport's local A-CDM platform. Four airports – Schiphol, Frankfurt, Madrid Barajas and Munich – and three IT suppliers – T-Systems, SITA and Indra – demonstrated after only a few weeks of implementation that the B2B integration using the web services delivered the time and cost savings that were initially anticipated at the start of the project.

BELOW:

ACRIS is set up to facilitate the quicker development of common standards for aviation data

"The benefits of the A-CDM web services we developed for the proof of concept, as well as afterwards in a version 2.0, are that they reduce implementation cost and time





ABOVE: The latest Leo moveable bag-drop system RIGHT: One of the first bag drops at Heathrow, in 2012, enabled by ACRIS data standards

Lots of airports offer **free apps**, but each one may address only a **small part** of an overall journey

 especially when the web services are implemented in COTS products from suppliers," says Felkel.

There are further trials ongoing at Oslo and Frankfurt airports, after which Felkel expects the standard to be rolled out widely.

Enabling apps

One of the largest ACRIS projects is called Seamless Travel. Launched at Munich Airport in 2015, the Seamless Travel project aims to make it easier for airports and airlines to provide detailed information about things such as flights and airport services to passengers through smartphone apps.

"The problem is that lots of airports offer free apps, but each one may address only a small part of an overall journey, especially when a flight is operated via a transfer hub," says Felkel. "A passenger travelling from airport A to airport B via airport C might not even see any real point in installing airport C's app."

A suggested solution to the problem was to create multi-airport apps, but the idea was unpopular with both airports and airlines, which want to address their customers with their

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own branding. Many airports also use their smartphone apps to provide commercial services, such as the online retail shop module provided by Frankfurt Airport.

The ACRIS Seamless Travel project solved these issues using ReST (Representational State Transfer) web service technology. ReST places constraints on web services to induce desirable properties for things such as performance, scalability, and modifiability. This allows individual airports to continue to offer a wide range of services through their own smartphone app and lets them integrate information available from other airports and airlines on a different digital channel within

the same app. For a passenger traveling from airport A, via airport B, to airport C, any information from airports B and C can be received through airport A's app.

"It makes it much easier for passengers because they only need to use one app to access all services. All of the the airports benefit, as the number of potential users for their services increases,"says Felkel.

In the age of the Internet of Things and high levels of aviation security, we all benefit from working more closely together



Going Dutch with data

As part of its ambition to become a leading 'digital airport', Amsterdam Airport Schiphol has published its API, offering access to non-critical business data for developers from airlines and other travel companies. The portal can be accessed at developer.schiphol.nl.

The data includes information about flights and waiting times, as well as localization and wayfinding, and is available to everyone involved in traveler services. Schiphol aims to open the way for developers to build new apps and websites, so as to improve passengers' travel experiences. Developers who have expressed an interest in Schiphol's published API include airlines and travel agents as well as navigation service TomTom, car makers and Dutch public transport information service 9292.

Conference

ABOVE: Munich Airport

handles up to 4.4 million

RIGHT: Munich Airport's

app displays flight times

passengers a month

ONFERENCE

Don't miss Martin Boyer, VP

and CIO. Greater Toronto

Airports Authority, present

dissemination for a better customer experience' at the

2018 Passenger Terminal

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'Real-time data analysis and

Albert van Veen, chief digital officer at Schiphol Airport, says, "We want to support the traveler as much as possible with personal and relevant information about the airport. Our API and data sharing is a key element in our best digital airport strategy."

Schiphol's API initiative conforms to ACRIS data exchange standards, which adhere to existing messaging and several other relevant information exchange standards. The viability of the Seamless Travel approach was shown in a trial with Munich Airport, Schiphol and SITA in 2015. A ReST web service providing flight data was implemented by Schiphol and SITA, and linked successfully to a test version of Munich Airport's smartphone app.

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The app's capacity to provide accurate and up-to-date flight information was then validated during a hackathon in Frankfurt, in 2016. During the event more than 80 developers made use of the ReST web service functionality. The next step in the Seamless Travel project is the development of a generalized service interface that can be used for any commercial or non-commercial service.

"The ACRIS initiatives deal with any number of issues, and there could be hundreds more projects to come on a case-by-case basis. It's a continuous process of evolution.

"At the moment we're working on a new standard for airport apps that provide maps to guide passengers through terminals," says Felkel. "We also have to keep on top of all the technologies available to design interfaces, such as SOAP (Simple Object Access Protocol) as well as ReST."

Future collaboration

Despite the relatively recent development and the spirit of collaboration among airports, Felkel says that there have never been any issues in the ACRIS group about withholding sensitive commercial information. "If you stick a group of techies in a room and ask them to solve some technical problems, they will solve them and leave the politics to one side. But everyone realizes that in the age of the Internet of Things, as well as high levels of aviation security, we all benefit from working more closely together."

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