

## WHITE PAPER:

# Simplifying Airport Integration

## The rise of the RESTful API within the airport environment

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Any company who has integrated legacy systems into a new environment will be familiar with the issue of ensuring the existing 3<sup>rd</sup> party vendors respond to their required actions in the timescales appropriate to the implementation programme. It is undoubtedly one of the first items that get entered onto the project risk register. As a company who markets and implements Airport Operational Performance Systems into complex airport environments, Ultra Airport Systems (Ultra) lives with these issues every day.

Being the company that implemented the world's first airport specific ESB, we have an excellent track record of solving these problems over many years; but the world has moved on. Global shifts in the way information is accessed such as the Worldwide Web, Internet of things and cloud based solutions means it is time for the next generation of airport systems integration.

### About API Technologies

In the simplest of terms, API is the acronym for Application Programming Interface, an interface that allows applications to securely communicate with each other.

There are many types of APIs. Along with program-centric APIs, such as Java APIs, which are interfaces within classes that let objects talk to each other in the Java programming language, there are also Web APIs such as the Simple Object Access Protocol (SOAP), Remote Procedure Call (RPC), and more recently Representational State Transfer (REST).

Ultra has chosen REST as the preferred Data Access API.

Now the most popular choice for API development, REST or RESTful APIs have been designed to take advantage of existing protocols. While REST can be

used over nearly any protocol, it typically takes advantage of HTTP(S) when used for Web APIs. This means that developers do not need to install libraries or additional software in order to take advantage of a REST API; it can be used using a browser.

Unlike SOAP, REST is not constrained to XML, but instead can return XML, JSON, YAML or any other format depending on what the client requests and the server supports. And unlike RPC, users aren't required to know procedure names or specific parameters in a specific order.

### REST concepts

The REST architectural style is based on a set of constraints and principles. There are no standards, rather a set of recommendations or best practices that are followed in order to comply with the constraints.

There are six constraints:

- Uniform Interface.
- Stateless.
- Cacheable.
- Client-Server.
- Layered System.
- Code on Demand.

There are numerous resources available that describe REST practices and Ultra has selected the following source as the primary set of recommendations on which the Ultra RESTful APIs are designed:

<http://www.restapitutorial.com/>

### Ultra's REST API library

Ultra has a library of 6 RESTful API specifically designed to target the key areas of airport integration. As an initial set, they cover all use cases necessary to enable the implementation of Ultra's existing

offerings; however this initial set is only a base to enable the expansion of many more API.

The 6 API are as follows:

- **Flight** – retrieve and update flight data
- **Baggage** – retrieve baggage data
- **Event** – retrieve and raise events
- **Billing** – access to flight, aircraft parking and related resources for the purposes of billing
- **Resource Usage** – provide resource usage data for the purposes of billing or potential update of flight information where the flight identity is not known
- **Passenger** – provide passenger data for the purposes of collecting totals

As with all of Ultra's integration mechanisms, the RESTful API suite is supplied with a System Development Kit (SDK) consisting of all the code and tools necessary to enable 3<sup>rd</sup> part vendors to quickly create the necessary connectivity and test the integration of their system with the Ultra suite.

Already in use within a number of airports in North and South America, Ultra's RESTful API suite is set to become the new benchmark for airport systems integration.

## About Ultra

Ultra Airport Systems is a global provider of Airport software solutions. Over 75% of people who travel by air every year do so through airports served by Ultra's solutions. Our comprehensive suite of offerings meets the key business drivers of both airports and airlines; each has the capability and proven track record to underpin operational improvement initiatives and vision for future progression. Our systems are in use with more than 100 airlines and at more than 150 airports worldwide and are consistently selected by the world's best airports to ensure smooth and efficient operation.

For more details on Ultra's aviation solutions, visit [www.ultra-as.com](http://www.ultra-as.com)

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