Getting the right Spec

Christian Kabbas, a senior at Fairfield University in Fairfield, Connecticut, looks at how ATA Spec 2500 will change the transfer of aircraft records.

Just as the Tower of Babel allegory chronicles humanity mired by divergent languages and left unable to communicate with one another, the process of transferring aircraft records has followed a similar path of incompatibility, resulting in onerous resources and costs to the aviation industry.

Growth gives way to movement

With tremendous growth in the past few decades, aviation has seen a rising trend in aircraft leasing as opposed to owning. According to the International Air Transport Association (Iata), about 37% of the world fleet was leased in 2015, compared with wholly owned in 1965. Boeing predicts an even split in the percentage of the world fleet owned versus leased by the end of the decade.

This changing ownership structure indicates increased movement throughout an aircraft's lifetime and, subsequently, elevates the importance of record keeping and data. With more and more transitions taking place, an aircraft's records need to be transferred from one operator to another through the owner.

Flawed system

Today, airlines use various maintenance and engineering systems to keep record of their fleet's operational and maintenance information. While these programmes traditionally work well within regions and for an airline's data collection purposes, their cross-functionality with other record systems is severely lacking, or non-existent altogether.

To bridge the gap between differing record systems, lessors traditionally appeal to the lowest common denominator, and require airlines to record aircraft data on paper. To complicate the situation further, 91% of these operator records are usually some mixture of scanned documents and physical paper. More

importantly for operators, this obsolete record transfer process is expensive, estimated at $120,000 for each aircraft transition, not to mention time-consuming.

With 3,801 aircraft transitions a year and countless assets of which to keep record, a solution to the issue of data and record exchange is imperative, and ideally through a uniform, digital medium.

Enter the ATA Spec 2500

Aimed at mitigating issues of cost, complexity and risk with the current largely paper-based process, the ATA Spec 2500 is designed to standardise the interchange of aircraft records between relevant parties or systems worldwide. Compliant with the transfer guidance of the ICAO, Iata and AWG, the ATA Spec 2500 is designed to cater to all types of transferrable aircraft records, including data-heavy datasets, such as AD Status Reports, and basic records, such as a certificate of registration.

Previously, no standard on record formatting was available, rendering one system's output generally incompatible with another's input format. To solve this, the specification uses extensible markup language (XML), a text-based coding language known for its simplicity and usability, particularly when coding on the internet. This coding setup allows for the output and input of information to be saved using a specific naming convention and format, ensuring uniformity for both parties' data programmes.

It is all in the Crates

The Spec 2500 adopts the usage of a Crate, an XML file itself, to host many separate datasets inside, both full and partial, XML and non-XML. The notion of the Crate serves multiple purposes. First, it allows for the singular description of parent assets, along with the submitting company and operator information, ensuring highlevel information remains unchanged.

Second, through the use of IDs, the Crate allows references in other XML records to be linked to individual content items, such as PDFs of the "dirty finger prints". Last, and in the interest of efficiency, the Crate also facilitates the implementation of digital signatures for future release.

The soft Crate is intended to carry information about one or more "top level assets", such as an aircraft, engine, or other major airframe components, such as an auxiliary power unit or landing gear. Further, soft Crates allow content items to be tied to these assets, including information such as: general status of the asset; status of regulator airworthiness directive implementation;

status of original equipment manufacturer (OEM) service bulletins and modifications; installed parts lists; maintenance event last completed; next scheduled maintenance; damage history; and repair history.

Further, the breadth of the ATA Spec 2500 allows for the streamlined transmission of both complex and simple data. This can include records for one or more assets, full or partial datasets, as well as the potential to combine multiple Crates. Moreover, the complexity of the files can vary greatly from the standardised XML format for intricate records with multiple fields, to simple links to other documents.

How the industry benefits

The depth of the ATA Spec 2500's capabilities make it poised to become an industry standard for the exchange and transfer of digital aircraft records. This enhanced and efficient system for uniform, standard aircraft records aids both parties involved in an aircraft transfer. The sending party benefits by removing the need for resource allocation to manually extract information from technical systems, and the receiving party benefits by replacing a lengthy manual data entry process with an automated data validation and upload procedure.

Moreover, the specification has a use for stakeholders in nearly every record transfer situation, including operators who are buying or selling aircraft, lessors and lessees during the leasing process, and manufacturers during initial delivery. With a rapidly growing industry characterised by constant movement, the Spec 2500 fulfills a desperate market need for the simplification and standardisation of valuable recordkeeping information.

GE Capital Aviation Services (GECAS) is one of the lessors involved in the ATA Spec 2500's maintenance by the Aircraft Transfer Records Working Group, a team comprised of airlines, aircraft servicers, OEMs and fellow lessors. The ATA Spec 2500 is now available to all ATA members via the e-Business Program website (www. ATAeBiz.org).

According to Anton Tams, senior vicepresident and manager, GECAS, "moving to electronic records to support aircraft transitions will save the airline community more than $450 million of unnecessary cost annually". Tams is encouraging customers to adopt the ATA Spec 2500 effectively to improve aircraft transitions.

Additionally, the Spec 2500 is compliant with many existing digital record systems, meaning airlines will not have to abandon their existing programmes, resulting in administrative cost savings for both parties involved in a transfer. Digital record and M&E system providers began to go live with the ATA Spec 2500 from January 2018.