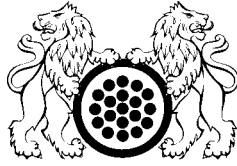


ATA Aviation Marketplace: The Next Generation of SPEC 2000 Databases



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Introduction

The Air Transport Association's SPEC 2000 was initiated more than three decades ago as a means of standardizing the exchange of parts pricing and availability information between Original Equipment Manufacturers (OEMs), suppliers and major airlines. The SPEC 2000 Centralized Databases have since evolved into the primary product and service catalog resource enabling Electronic Data Interchange (EDI), between the world's major airlines and their suppliers. The SPEC 2000 Centralized Databases serve as the cornerstone of the *ATA Aviation Marketplace*.

Today, the *ATA Aviation Marketplace* supports over 380 airline end users and their supplier trading partners, and contains more than 6 million total part records in the SPEC 2000 Procurement Parts, ATA Airline Inventory Redistribution System (AIRS) Surplus Parts, and Repair Capabilities databases that comprise the SPEC 2000 Centralized Databases. An average of 2 million update records are uploaded to the databases each month, and approximately 48 million records are distributed each month to end users via value-added networks, such as SITA and ARINC, and via magnetic media. Over two million EDI transactions a month are supported by the SPEC 2000 Centralized Databases.

SPEC 2000 AT A GLANCE



The SPEC2000.com Internet site was originally launched in 1997. Utilizing menu-based functionality and scrolling HTML screens, this first generation Web site enabled interactive inquiry into the AIRS, Procurement, and Repair databases.

A SPEC 2000 Centralized Databases reengineering project was later launched in October 1998. The resulting new second generation Web site, the *ATA Aviation Marketplace*, brings expanded functionality and vastly improved usability with a new user interface.

At present, the majority of *ATA Aviation Marketplace* participants utilize mainframe based systems, with communications conducted over the SITA/ARINC network. As a logical next step, the *ATA Aviation*

ATA Aviation Marketplace Today:

- *Currently supports over 380 major airlines and their suppliers.*
- *Contains more than 6 million total parts records in the centralized databases.*
- *Over 2 million update records are uploaded directly to the databases each month.*
- *Over 48 million records are distributed each month to end users via value-added networks and magnetic media.*
- *Over 2 million EDI transactions a month are supported by the SPEC 2000 Centralized Databases.*

Benefits of ATA Aviation Marketplace Internet Access Enhancements:

- *Improved access options for current users.*
- *Eliminates the significant investment in infrastructure and private communications networks required for EDI systems.*
- *Results in a broader community of trading partners, including smaller regional airlines, air charter operations, corporate aircraft operators, and smaller parts distributors and suppliers.*

Marketplace has been transformed to enable Internet-based services to take advantage of the benefits offered by the next generation technologies associated with the Internet. In alliance with its technology partner Continental DataGraphics, the ATA has established a state-of-the-art industry database platform capable of supporting the mainframe environment, while empowering Internet browser-based access to the much broader global aviation community.

With its extended Internet access functionality, the *ATA Aviation Marketplace* not only offers improved access options for its current users, but also significantly broadens the opportunities for the addition of new end users for the system. End users are no longer required to maintain expensive EDI systems and private communications lines in order to participate in the ATA SPEC 2000 trading network. This reduction in cost opens the door to a much broader community of trading partners, including smaller regional airlines, air charter operations, corporate aircraft operators, and smaller parts distributors and suppliers. The global aviation community as a whole will benefit as a result of this expanded marketplace.

The transformation of the *ATA Aviation Marketplace* from its mainframe roots to an Internet capable 3-tiered architecture enables con-

tinued support of existing legacy batch processes, while extending and scaling to high availability, high volume, interactive, on-line transaction processing. In addition to its new File Transfer Protocol-based data exchange capabilities, the next generation system continues to support the online inquiry by mainframes via the Class B SITA/ARINC network, resolving those inquiries and dispatching responses, and accommodating batch updates to the databases. The *ATA Aviation Marketplace* accommodates several data exchange scenarios, and will continue to accommodate all of those scenarios as organizations make technology and system transitions within their own infrastructures.

While it is believed that Internet-based technologies will eventually provide a solution for a much broader spectrum of participants, the *ATA Aviation Marketplace* will continue to support the legacy processes associated with the physical exchange of batch files for as long as those processes continue to be utilized.

Overview of the SPEC 2000 Centralized Databases

The SPEC 2000 Centralized Databases serve as the cornerstone of the *ATA Aviation Marketplace*. The SPEC 2000 Centralized Databases enable end users to access critical information required to conduct aviation-related business processes. The databases include:

AIRS DATABASE

(Airline Inventory Redistribution System)

A database of inventory surplus parts stocked by airlines, manufacturers and distributors. The AIRS Database includes available quantities, location, and condition of the parts. Users of the AIRS Database can post Request for Quote (RFQ) messages to suppliers.

PROCUREMENT DATABASE

(New Parts Pricing and Lead Time)

A database of new parts available from OEMs and suppliers. This database is generally used for provisioning and planning purposes. The Procurement Database includes current and future list prices and airline specific discounts for each part listed, as well as supply locations worldwide. Alternate supply locations are also included. Parts listing data displays can be customized according to a specific airline fleet.

REPAIR CAPABILITIES & PRICING

The Repair Database contains a listing of repair/overhaul information specific to repair price and mean shop processing time. Each supplier provides a listing of all available repair services for a specific part, including a description of the types of services offered and pricing for those services.

NEEDS

This database stores “needs” messages posted by *ATA Aviation Marketplace* participants who are seeking a particular part that is not listed on the current AIRS or Procurement Databases. When the part does become available and is posted to the SPEC 2000 Centralized Databases, the participant who posted the needs message is notified by e-mail. Likewise, parts distributors and brokers can utilize the needs database as a means of identifying potential customers for parts.

TOOLS, TEST AND GROUND EQUIPMENT

This database stores listings of tools, test and ground equipment products that are used in aircraft maintenance. These products generally do not have standardized part numbers for identification purposes, and usually only have associated text product descriptions. This database accommodates full-text searching for these products.

PARTICIPANT ADMINISTRATION

Designated system administrators at the *ATA Aviation Marketplace* user sites have the ability to enter and update user profiles, contact information and privileges, their company contact information (electronic business cards), database administration and configuration information (viewing rights—requests and grants), and *ATA Aviation Marketplace* system billing information.

SPEC 2000 SYSTEM REFERENCES

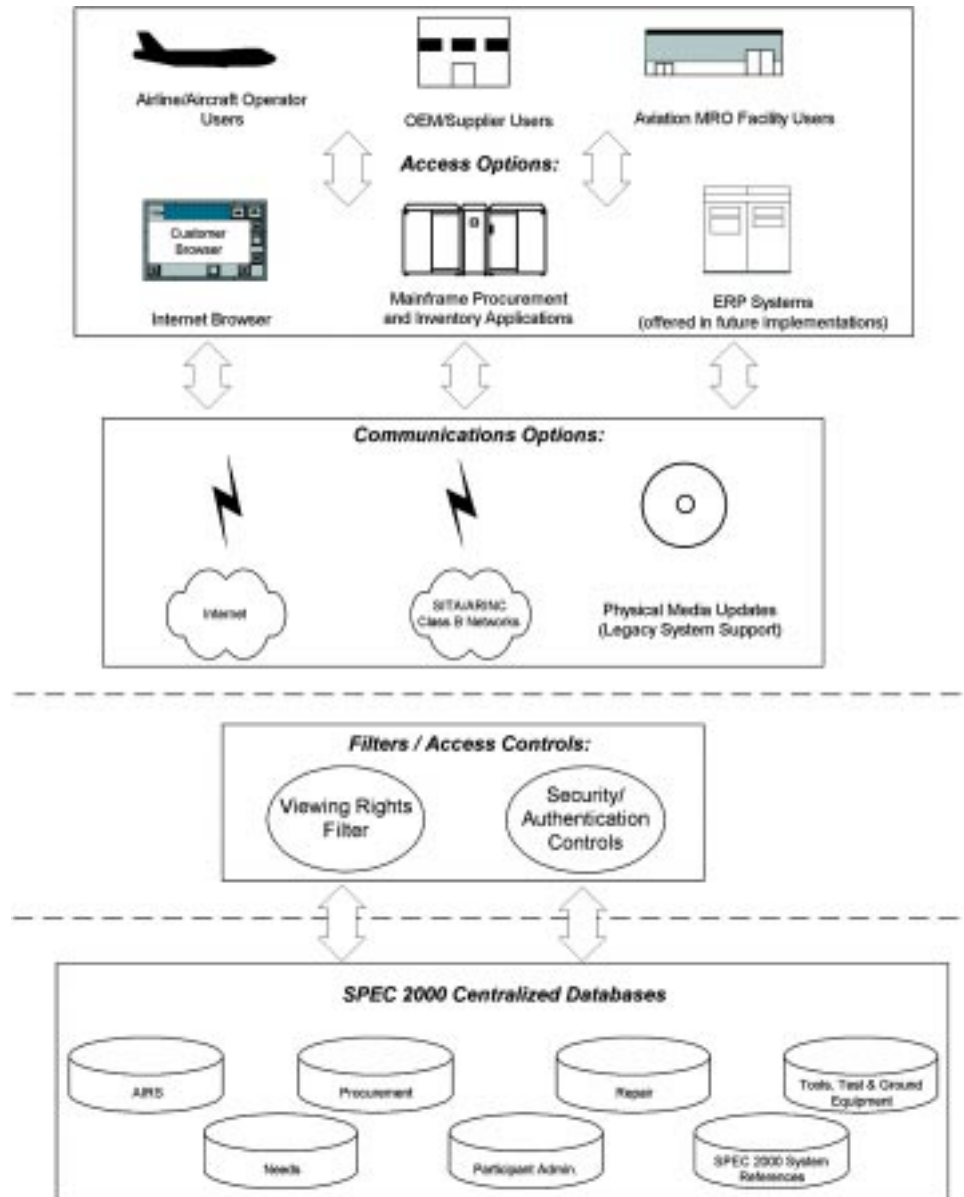
The SPEC 2000 System References Database includes:

- A copy of the complete ATA SPEC 2000 Standard, published in PDF format.
- The Common Support Data Dictionary Database. The Common Support Data Dictionary is directly hyperlinked to the field captions associated with every field in the databases. The captions link out to the data dictionary and return the entry's full name and Text Element Identifier (TEI), as well as the definition, business rules, and application remarks for each data entry field.

Enhanced Features of the ATA Aviation Marketplace

The *ATA Aviation Marketplace* features significant improvements in options for access methods and communications. End users can choose to continue to use main-frame applications and access the system via proprietary Class B networks (SITA/ARINC), or may choose to utilize the Internet browser access method. The system also continues to support batch updates via physical media exchange with the addition of Internet File Transfer Protocol (FTP). The following diagram outlines the access methods and data flow throughout the *ATA Aviation Marketplace*.

DATA FLOW IN THE ATA AVIATION MARKETPLACE

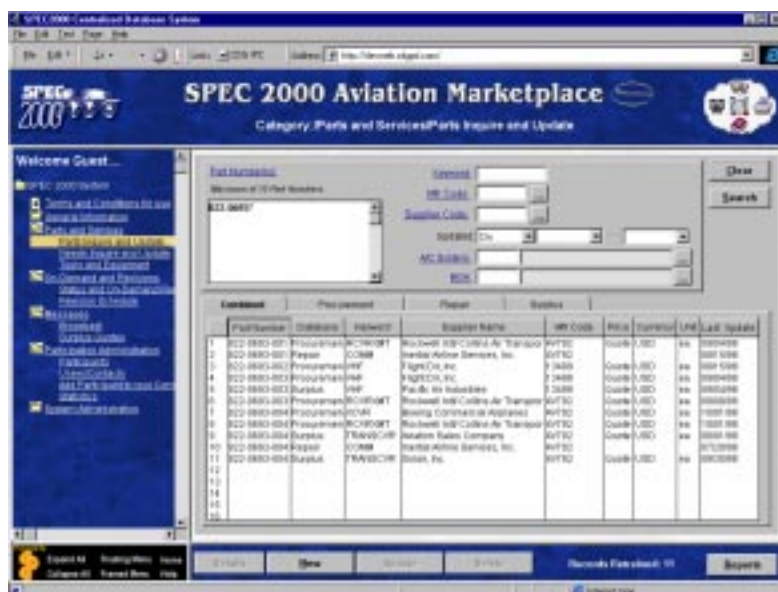


Some of the new features associated with the *ATA Aviation Marketplace* system include:

- Simplification of the sign-up process for new users, through the use of a sign-up wizard
- Single user log on screen, which enables a user to exercise all roles and access privileges
- Improved usability with a new user interface
- More flexible inquiry options
- Search filters for:
 - Part Number
 - Keyword
 - Supplier
 - Manufacturer
 - Aircraft System
 - Last Updated On, After, Before or Between Specified Dates
 - Model of Applicability
- Include up to 10 parts in a single interactive inquiry
- View all database responses in either a combined or database-specific list
- Generates reports customized according to user preferences
- Multiple report formats available (Word, Excel, Rich Text Format, Comma Delimited)
- Navigation improvements, with the ability to directly navigate between any two functions
- Secure authentication-utilize a fixed IP address or new software or hardware tokens
- Improved Help System, including on-line context sensitive help
- Integrated standards support:
 - Hyperlinks to the Common Support Data Dictionary from field names on data entry screens

On-Demand Functionality Enables Users To:

- ***Conduct On-Demand data exchanges (for both input and output)***
- ***Reduce revision cycle time and file size for updates***
- ***Input batch revisions***
- ***Extract data in SPEC 2000 and SPEC 2000 format***
- ***Monitor the status of both On-Demand and scheduled revisions***



Functionality Supported

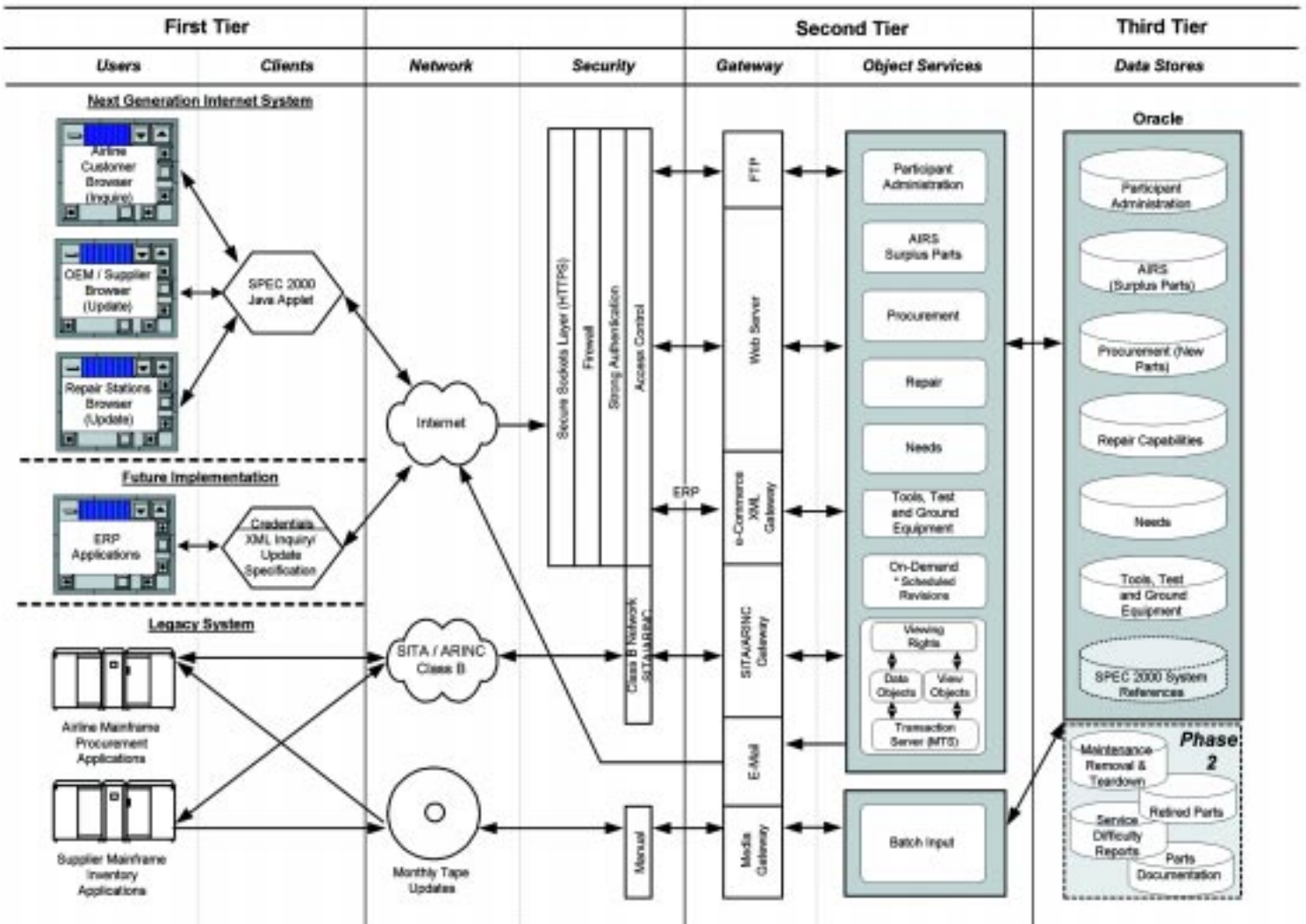
The *ATA Aviation Marketplace* supports three levels of functionality:

- (1) Legacy System Support
- (2) Internet System—Web Browser-Based Interactive Functionality and FTP
- (3) Future Implementations—Real-Time Updates and Integration with Back-Office and ERP Systems as well as Additional Databases.

Each level of functionality supports a number of typical interactions at the user level within an online database environment. Following is a description of the various interactions and activities supported by the system on each level.

The following diagram also outlines the system architecture that supports this functionality.

NEXT GENERATION ATA SPEC 2000 DATABASES



LEGACY SYSTEM SUPPORT

- Mainframe and SPEC 2000 EDI systems continue to utilize standard EDI inquiries to the system and are supported through the existing SITA/ARINC networks and gateway.
- Continued legacy system support of physical media (revision tape) updates generated by supplier and OEM mainframe inventory applications containing changed part records to update the Procurement and Surplus, AIRS databases in the SPEC 2000 Centralized Databases.
- Physical media (revision tape) updates of the Repair Capabilities database generated by overhaul and repair facilities.
- Customized catalogs produced for airlines and aircraft operators based upon viewing rights established between airlines, OEMs and suppliers. Catalogs are supplied in physical media (tape or CD-ROM) and are loaded (typically on a monthly basis) into airlines' mainframe procurement applications systems.

WEB BROWSER-BASED INTERNET SYSTEM

- End users at airline, OEM, supplier and overhaul and repair facility sites interact with the system via a Web browser running Java applets.
- OEMs and suppliers update airline-specific parts pricing and

lead time information both interactively and through on-demand FTP. Interactive data entry is accomplished by selecting decoded values from pick lists, enforced data validation and single click links to the Common Support Data Dictionary for every entry field.

- Overhaul and repair facilities update repair capabilities information and parts repair processes, airline-specific pricing, and mean shop time information both interactively and through either scheduled or on-demand FTP.
- Customized catalogs produced for airlines and aircraft operators based upon viewing rights established between airlines, OEMs and suppliers. Catalogs are downloaded through on-demand FTP.
- E-mail notification of system events to end-users is also supported (i.e. completed import and processing of FTP batch files).

FUTURE IMPLEMENTATIONS

Future functionality implementations will include access to back-office and Enterprise Resource Planning (ERP) systems via an XML-based gateway. These interfaces will enable real-time, on-line interactive data exchanges with back-end inventory management, pricing, order-entry and tracking systems.

In the next stage of development,

the SPEC 2000 Centralized Databases will also be extended to include four additional databases and related services:

Parts Documentation Database

The Parts Documentation Database will accommodate the supporting documentation for parts, including FAA 8130 forms, JAA-1 forms, and Parts Manufacturing Authority (PMA) documentation. This database will accommodate both electronic form data entry as well as raster images of this data, which can be faxed into the centralized database. Once data is loaded into the database, suppliers can create an association between the documentation and the specific parts records within the Procurement or AIRS Databases for further clarification of the condition, quality and parts manufacturing authority for parts that are listed.

Maintenance, Removal and Teardown Histories

This database contains reports filed by aircraft maintenance organizations which detail the maintenance and overhaul histories associated with specific parts. This database includes details such as when the removal/repair was done, how much time and how many cycles were on the part at the time of removal/repair, the condition of parts at time of removal/repair, records of parts returned to service, the cause determination of the maintenance

event, or if the part has reached the end of its useful life and is no longer serviceable.

Specification of the Maintenance Removal and Teardown Histories database for inclusion in SPEC 2000 is the result of recommendations of the Component Reliability Data Committee (CRDC). The CRDC is a consortium of 40 participating airlines and OEMs that have been involved in the development of a specification guideline for the exchange of reliability data. This proposed specification is expected to be ratified by the ATA SPEC 2000 Coordinating Committee during its Spring 2000 meeting. Upon ratification of the standard, the specification will be incorporated into the existing SPEC 2000, and the Maintenance Removal and Teardown Histories Database will be established and ready for loading of the new data soon thereafter.

Retired Parts Database

This database contains a complete listing of all parts that have reached the end of their serviceable life and are no longer considered airworthy for installation on an aircraft. The database will include information such as serial numbers and specific component markings associated with retired parts. This database attempts to address the problem of

“suspected unapproved” parts in the industry, by helping to insure that buyers are not purchasing unserviceable parts.

Service Difficulty Reports Database

This database contains Service Difficulty Reports that have been filed with regulatory agencies. The reports are associated with specific parts or components that generated noteworthy or unusual service problems. This database can be used to identify potential maintenance problem trends associated with a specific part. The migration of these service difficulty reports to the SPEC 2000 Centralized Databases will enable bi-directional links between the reports and any related parts and repair capabilities records for a more comprehensive extension of known problems associated with specific parts. This information can be used to guide purchasing decisions or aid in the maintenance troubleshooting process.

Airline/Operator Parts Pooling Inventories

Aircraft operators, including scheduled carriers, charter operators and airfreight companies, have joined together to pool aircraft and ground support equipment in pooled inventory listings, with the primary intent of cost reduction. The basic premise is that an operator will provide specified units at particular locations to other operators in exchange for the other operators providing like units at various other selected locations. This pooling system reduces the number of units purchased by each operator.

Continental DataGraphics (CDG) is the designated agency that records and reports the individual agreements made between the 96 aircraft operators who are members of the International Airlines Technical Pool (IATP). CDG has maintained the IATP database and tracked all activities in the pool between the member companies for over 20 years. In the past, all transactions within the pooling system have been manually processed based upon reports provided by CDG. These inventory databases are currently being modified with new enhancements to enable Internet access. A number of aircraft operators who participate in the IATP have recently expressed interest in making their parts pooling inventories accessible via the *ATA Aviation Marketplace*.

Summary

The next generation of the *ATA Aviation Marketplace* provides a solid information resource for the aviation community, with vastly improved access options and functionality for end users. As a part of the next step in the evolution of the *ATA Aviation Marketplace*, the SPEC 2000 Centralized Databases will serve as the foundation for new e-Commerce and technical data hosting services to be offered within the *ATA Aviation Marketplace*.

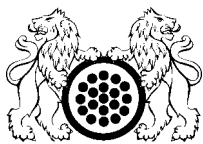
The evolution of the SPEC 2000 Centralized Databases, to accommodate next generation Internet capabilities, marks a significant milestone in the development of the *ATA Aviation Marketplace*. The utilization of an Internet-based system architecture for the *ATA Aviation Marketplace* for the first time provides a truly open marketplace environment, where both large and small aviation companies from around the world can come together to establish new trading relationships. Expanding access for the *ATA Aviation Marketplace* to a broader participant pool will serve to reinforce the original objectives behind the creation of the SPEC 2000 standards: standardized communications and data exchanges within the aviation community.

For more information, visit the SPEC 2000 Web site at: <http://www.spec2000.com>

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