Blue Flag Technologies
SPEC2000 Product Suite Information Pack

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Why Choose Blue Flag Technologies?

Blue Flag Technologies is **the** market leading provider of **SPEC2000 software** that complies with the A4A (ATA) **SPEC2000** standards to provide aerospace business messaging for customers and suppliers over existing linked VAN (Value Added Networks), or directly between **Blue Flag Technologies SPEC2000** sites.

We are the **first SPEC2000** software vendor to offer a full **XML SPEC2000 messaging solution and an integrated Message Portal option, both available within the existing SPEC2000 application.**
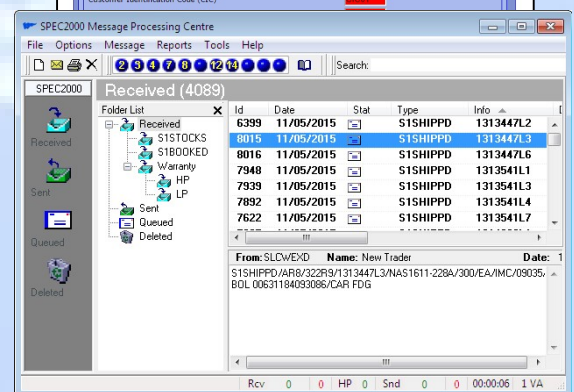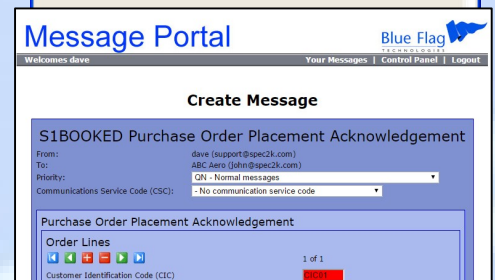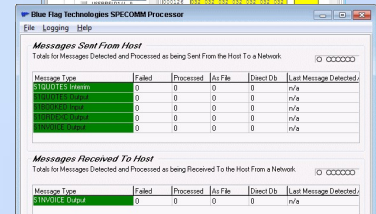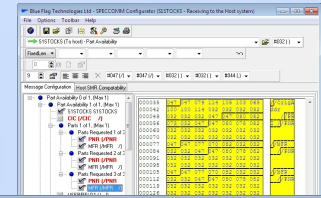
Our **SPEC2000** software is highly respected within the aviation industry and we are renowned for the high level of support we offer our customers.

We have dedicated experts to develop and maintain our **SPEC2000** software. We have a specialised **SPEC2000** support department to give you first class **SPEC2000** support. **Blue Flag Technologies** is flexible and responsive to your unique needs. Amongst our major aerospace customers are AAR Corporation, Air New Zealand, GE, Honeywell, IHI Corporation, BF Goodrich, Panasonic Avionics, Rockwell Collins and Rolls Royce who have all been using our software for a number of years.

Whilst the USA is our largest marketplace, followed by Europe, we also have a user base in the Middle East and Australasia and are geared up to provide world wide support whichever IATA network is chosen.

Our standard **SPEC2000** programs provide unrivalled functionality and flexibility and we are also able to provide specialised additional functionality if this is required by our customers.

Blue Flag Technologies has the reputation for being the safest and most reliable source for **SPEC2000** software around.

The SPEC2000 Suite of Software

Blue Flag Technologies offers a range of **SPEC2000** software to ensure that your organisation gets the most from **SPEC2000**.

The **SPEC2000** installation can be a standalone implementation to allow automatic receipt and acknowledgement of **SPEC2000** messages and also manual entry of messages. The **SPEC2000** messages will be automatically formatted and verified to ensure that your communications with your trading partners is quick and easy.

If you wish, **SPEC2000** messaging can be integrated into your host system using **Blue Flag Technologies SPECCOMM Plus**. This additional product is a versatile, flexible application allowing **SPEC2000** messaging to be integrated with the minimum fuss to any format that your host system already uses. This can be a flat-ASCII file of fixed or variable length, or even direct into your host system's database.
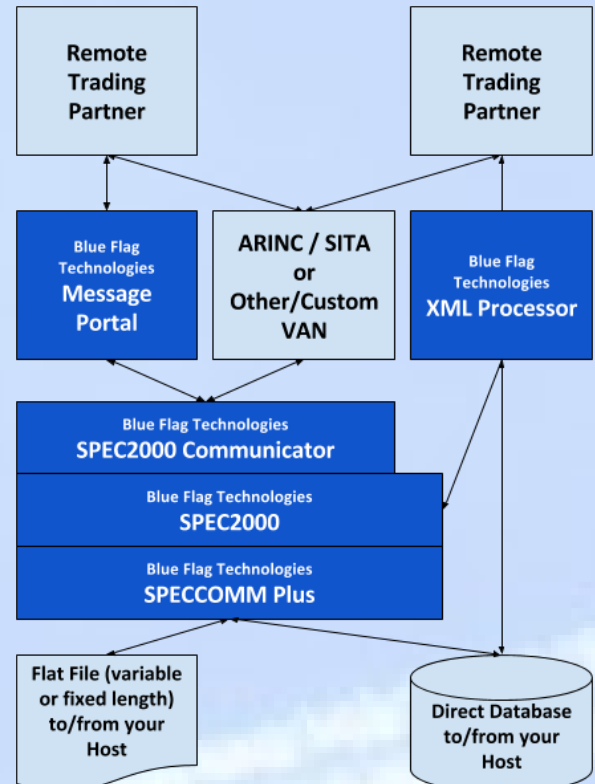
Blue Flag Technologies' SPEC2000 utilises a communications layer to send and receive messages across many transport Value Added Networks like ARINC, SITA, Aeroxchange (via ARINC or SITA), FTP, SFTP etc.

The **Blue Flag Technologies XML Processor** increases system value by allowing real time XML communications with your trading partners in real time. The traffic does not have to comply with the A4A's SPEC2000 Standard as separate business logic can be used. Optionally, the traffic can also be audited to your existing **SPEC2000** application's message summaries, where it can be viewed like a standard message.

The **Blue Flag Technologies Message Portal** allows your non **SPEC2000** customers to enquire on your stock levels, or to place orders directly into your **SPEC2000** system without the need for a conventional VAN (Value added Network).

The **Blue Flag Technologies SPEC2000** suite of software is designed to meet your needs now and into the future.

From a single user **SPEC2000** system processing a limited number of messages, to a multi-user **SPEC2000** **SPECCOMM Plus** direct database host integration system processing many thousands of messages, **Blue Flag Technologies** has the solution for you.
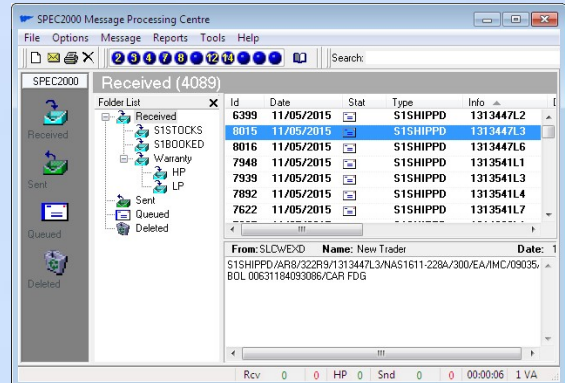
Blue Flag Technologies SPEC2000

Blue Flag Technologies is an approved, independent, **SPEC2000** software vendor, providing flexible and upgradeable **SPEC2000** messaging and database solutions for your immediate and long-term requirements.

Whether you are starting out with just one Trading Partner or requiring an automated integrated **SPEC2000** solution, **Blue Flag Technologies** can help you maximise your **SPEC2000** potential, supporting you all the way.

The application's strength lies in its extensive customisation facilities, enabling **SPEC2000** to fit comfortably into your office procedures.
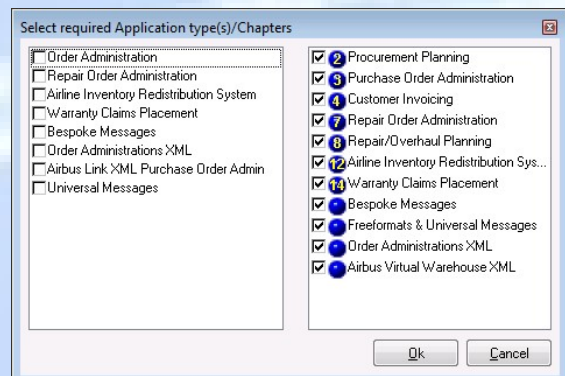
- ✈ Customisable main screen, offering sorted directional messages, with the ability to filter specific message types.

- ✈ Each user is assigned individual access rights to ensure only authorised personnel can access the system.

- ✈ Setting up Trading Partners allows you to indicate which message types each one can accept and which A4A (ATA) Simple Message Revision (SMR's) they have implemented.

- ✈ Message turnaround enables you to select incoming messages from the message summary and transfer the relevant data to your chosen outgoing message automatically, thus enhancing accuracy, reducing response time and re-keying.

What Areas of Business do you wish SPEC2000 to address?

SPEC2000 is broken down into modules; each module contains a number of A4A (ATA) **SPEC2000** Chapters. Each Chapter addresses a different type and/or area of business. We have grouped the Chapters and developed software to address the following areas:

- ✈ **Chapters 2,3 & 4 - SPEC2000 Order Administration** - Aircraft Parts or Spare Parts - Quotes, Orders, Invoices, Enquiries & Central Procurement Database Access

- ✈ **Chapters 7 & 8 - SPEC2000 Repair Order Administration** - Repair & Overhaul of Aircraft Parts - Quotes, Orders, Invoices, Enquiries & Central Repair Database Access

- ✈ **Chapter 11** – **Reliability Data Collection and Exchange** – Exchange part reliability, aircraft ownership changes, event and logbook data in the standardised A4A (ATA) format.

- → **Chapter 12 - SPEC2000 AIRS** - software to access the A4A (ATA) Airline Inventory Re-Distribution System Database. Allows subscribers to view data and part owners to update, delete and add information on aircraft parts. **AIRS** specifically addresses surplus stock and second hand aircraft parts.

- → **Chapter 14 - SPEC2000 Warranty Claim Placement** - Warranty Administration - Warranty Claim Placement, Progress Enquiries, Reporting the Outcome

The **SPEC2000** software enables you to choose any combination of **SPEC2000** modules and incorporate them into one fully integrated, cohesive package. You can purchase one, two, three or four modules, at increasing rates of discount. If at any time in the future you find you require any additional modules, these can be added to your current system, in a seamless manner.

Blue Flag Technologies Message Portal

The **Blue Flag Technologies SPEC2000 Message Portal** is a service fully developed and controlled by **Blue Flag Technologies** to allow message access to your **SPEC2000** installation by your trading partners with just an Internet connection.

Once login and security information has been established, your trading partner is given the option of entering message data for the message types that you have chosen to receive.

The entry screen will only allow a valid message that complies with the A4A (ATA) standard to be included in the message. The message will be displayed in your **SPEC2000** summary in the normal way, but clearly identified as originating from the **Blue Flag Technologies Message Portal**

Blue Flag Technologies SPEC2000 XML Modules

The **Blue Flag Technologies SPEC2000 XML** Module allows you to send and receive messages that adhere to the A4A's (ATA's) XML specification to and from your trading partners.

The XML module will function seamlessly within the standard **Blue Flag Technologies SPEC2000** environment and will be displayed in the usual way when opened and printed, but can be clearly identified by the XML data contents on the message display if required.

Blue Flag Technologies SPECCOMM Plus

The **SPECCOMM Plus** application automates your chosen **SPEC2000** messages, thus enabling direct file transfer to a selection of databases e.g. MS-SQL, Oracle, Informix, Sybase, Ingres, DB2, MS Access or ODBC compatible, otherwise creating an ASCII file for transfer into your application.

Link SPEC2000 into your Main Computer Application

SPECCOMM Plus completely automates **SPEC2000** by feeding messages directly to your main computer system, eliminating manual input operations**.**

SPECCOMM Plus is a generic product which has been designed to link to the maximum number of different platforms.

SPECCOMM Plus takes a **SPEC2000** message and gives you two main options on how to transfer the message (direct database or flat ASCII file):
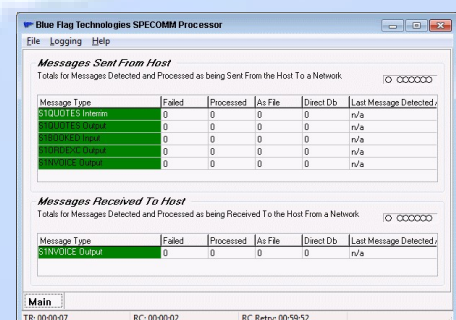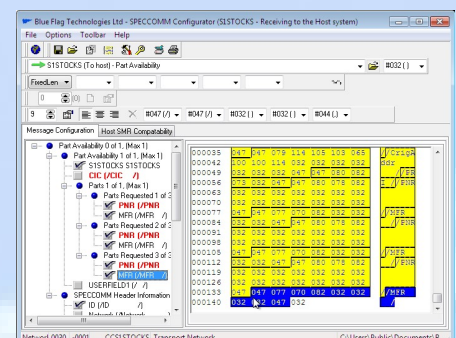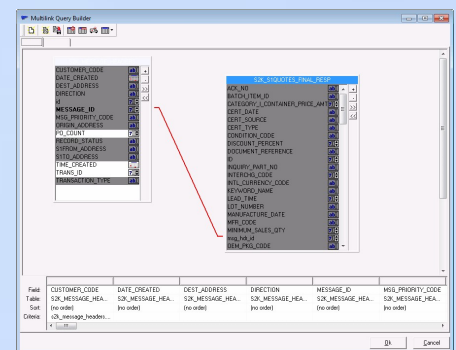
1. Direct Transfer into your host application

If your host application uses a compliant database (MS-SQL, Oracle, Informix, Sybase, Ingres, DB2, MS Access or ODBC compatible), **SPECCOMM Plus** will read or write **SPEC2000** messages directly to your Database.

2. Creating an ASCII file for your host to pick up and integrate

Alternatively, if your host does not use one of the compliant databases, **SPECCOMM Plus** can take a **SPEC2000** message and map each field into the ASCII format that your main computer system can understand. It will then deliver the ASCII message into a directory situated either within your main computer system, or on the PC for your main computer system to pick up and use. Your main computer system will then drop the message response (if any) ASCII file into another directory for **SPECCOMM Plus** to pick up and translate back into **SPEC2000** format and pass to the **SPEC2000** software for validation before being sent across the Value Added Network to your trading partner.
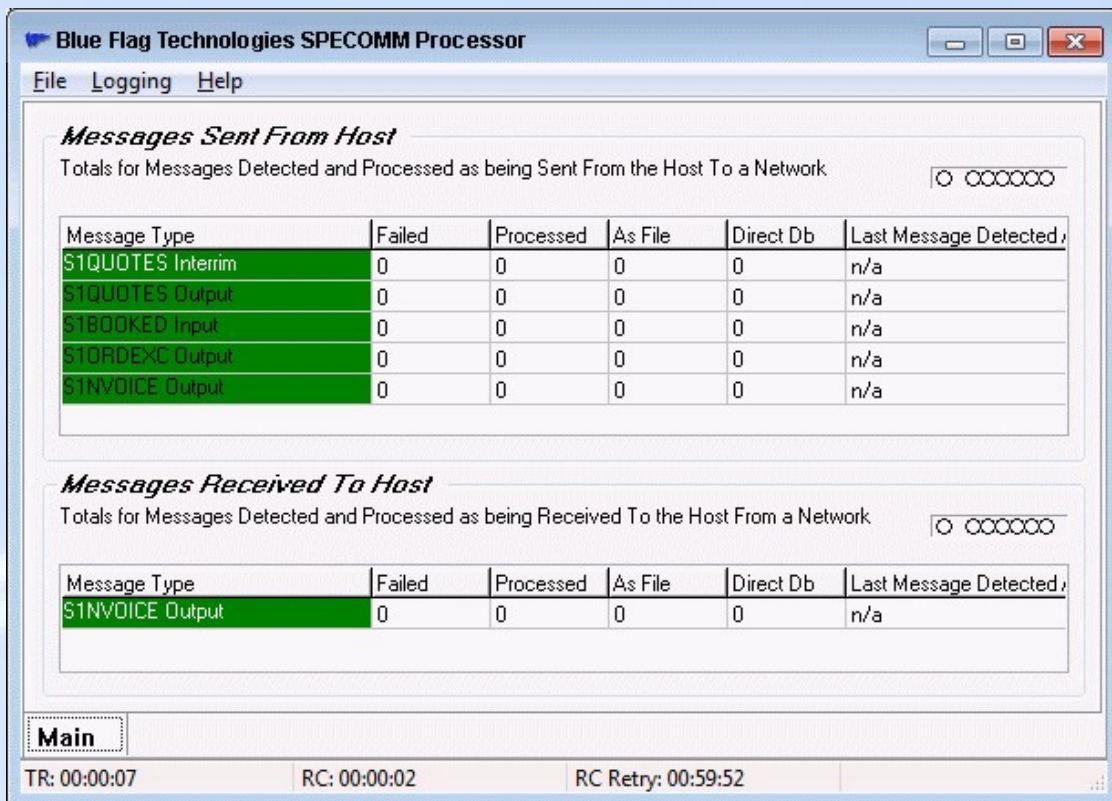
There is no risk of anyone from outside your organisation accessing your main computer system as **SPECCOMM Plus** merely offers the information to your main computer system and it is up to you what your computer does with it when it receives it.

SPECCOMM Plus minimises the amount of programming required within your main computer system. However, there will be an amount of programming required within your main computer system to enable your software package to pick up the **SPEC2000** ASCII file and integrate it, once it has been delivered into your main computer system by **SPECCOMM Plus**. Your main computer system will also have to deliver a response (if required) ready for **SPECCOMM Plus** to pick it up, configure it into a **SPEC2000** message and send it across the ARINC/SITA Network/**Blue Flag Technologies Message Portal** or direct if agreed with other trading partners.

As **SPECCOMM Plus** is user-configurable, if your software should change at any time, it is possible for you to reconfigure **SPECCOMM Plus** without further cost to you. What is more, if the **SPEC2000** specification should alter, most changes can be made within **SPECCOMM Plus** to reflect the alterations, thus insulating your main computer system from much further programming work. **Blue Flag Technologies** can offer support assistance for configurations or a full configuration service at standard daily rates.

SPECCOMM Plus allows you to choose which messages you wish to integrate with your main computer system. You can integrate one or any combination of messages and then, once you are happy with the way they are functioning, integrate further **SPEC2000** messages. **SPECCOMM Plus** allows you to build your integrated system at a speed that suits you.

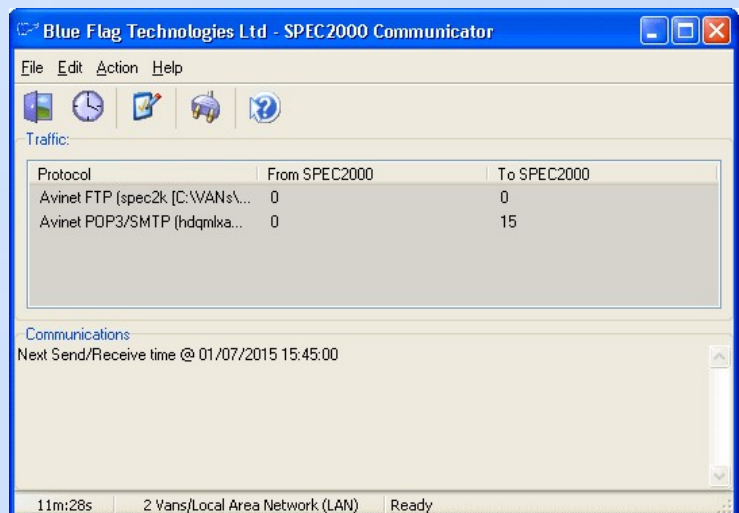## Blue Flag Technologies SPEC2000 Communicator

Blue Flag Technologies SPEC2000 Communicator handles the interfacing between **SPEC2000** and your choice of VAN (Value Added Network), host or branch office host via manual and timed connection schedules.

SITA VAN uses an alternate interface.

The **SPEC2000 Communicator** offers an easy to use interface that clearly shows the status of any communications between SPEC2000 and your Network VAN.

The **SPEC2000 Communicator** also implements standard FTP/FTPS/SFTP to compliment message traffic flows and ensure a good fit within your organisation.

With minimal setup, the **SPEC2000 Communicator** can handle talking to your choice of VAN

→ **ARINC Avinet via SMTP/POP3** – connect to your ARINC Avinet Type-B mailbox to send and receive your messages.

→ **ARINC Avinet via FTP (client)** – connect to your ARINC Avinet Type-B mailbox to send and receive your messages.

→ **Blue Flag Technologies Message Portal –** send and receive messages from the **Blue Flag Technologies Message Portal** online host.

→ **Standard FTPS (Secure FTP) –** use SSL/TLS protected FTP to move messages around your organisation, for example, to a central Type-B message store for alternative forwarding.

→ **Secure File Transfer Protocol (SFTP) -** use Secure File Transfer Protocol (SFTP) to move messages around your organisation, for example, to a central Type-B message store for alternative forwarding.

For ARINC Avinet SMTP/POP3 & FTP, **Blue Flag Technologies Message Portal,** Secure FTP or SFTP, the **SPEC2000 Communicator** is the only interface required.

Blue Flag Technologies XML Processor

Your messaging - your way!

If you can answer yes to one or more of the following, then the **Blue Flag Technologies XML Processor** can help you automate your messaging:

➤ Your messaging requirement does not fall within a "standard".

➤ You require real-time messaging.

➤ Your messaging requirements are unique per trading partner.

➤ You require a cost effective messaging solution.

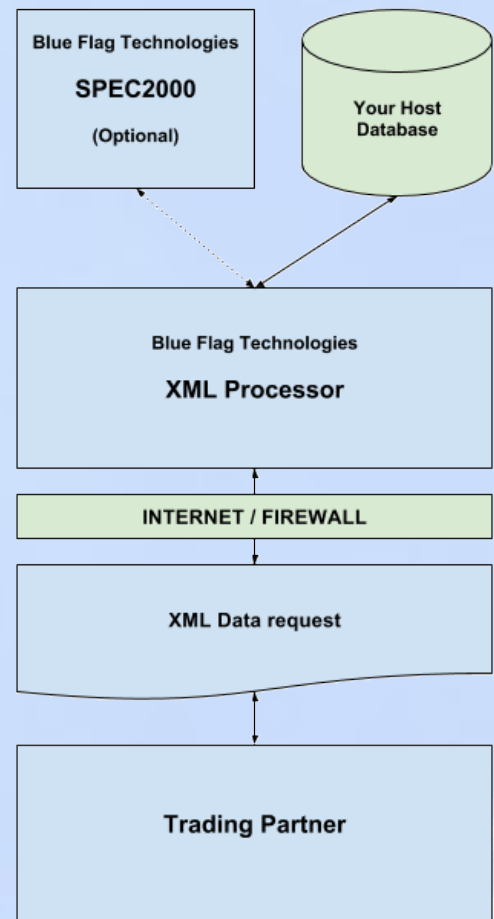➤ You wish to reduce or even eliminate manual message processing.

The Blue Flag Technologies XML Processor is designed as an interface between your host database (this could be your part catalogue or fleet information database) and your Remote Trading Partners. It allows your Trading Partners to seamlessly query your host database and allows real-time responses for those enquiry types.

Originally designed for use with the A4A's (ATA) XML Specification for Order Administrations via the HTTP protocol. **Blue Flag Technologies XML Processor** has rapidly proved to be flexible enough to solve a wide range of real-time messaging problems.

The **XML Processor** offers a safe and standard method for your Trading Partners to quickly and easily ascertain the information they need without the problems and security aspects associated with allowing direct access into your databases.

With the Blue **Flag Technologies XML Processor**, you can customise your real-time messaging solutions to suit. You can add message types at any time - as, and when you require. **Blue Flag Technologies** can work with you to advise, design and create and maintain the required Scripts and Schemas to encapsulate your business rules. This coupled with a standard Support and Upgrade Contract, will ensure that your automated business to business messaging runs smoothly and ensures that knowledge management isn't your problem.

The **Blue Flag Technologies XML Processor** is essential for your real-time business to business Electronic Data Interchange (EDI). With the **Blue Flag Technologies XML Processor**, the sky really is the limit!

Technical Overview

The **Blue Flag Technologies XML Processor** accepts XML messages via a HTTP/1.1 (or HTTPS/1.1 under MS-IIS) interface. This interface is the same protocol that everyday web-browsers use. Once an XML message is received, the XML Processor applies a predetermined set of business rules to the incoming XML message. These business rules take the form of an XML Schema and a Script, both of which, you have complete ownership of. The business rules determine the type of response message that is returned. This whole process is performed in real-time with the response provided on the same connection as the request.

Business Rules

Your business rules are defined using an XML Schema and a Script. The XML Schema is used to check that the incoming message request is perfectly structured and contains the expected data. Good message requests are then processed by the Script, which will then build an appropriate response - according to your business practices and rules.

Blue Flag Technologies can help with the development of (or completely develop) these business rules for you. Your Support and Upgrade Contract, if current will ensure that maintenance of these business rules is trouble free.

Database Connection

The business rules scripts have access to Microsoft ActiveX Data Objects (ADO). This means that your host systems database is available to query in whatever form you decide to allow access (this can be a copy of your live data, a read-only view, or even simply your live data). This means that no-matter what the database is, whether it's MS-SQL, MySQL, Oracle, SQLite or an ODBC compatible database, if Microsoft ActiveX Data Objects can connect to your database, so can the **Blue Flag Technologies XML Processor**. If desired, the **XML Processor** could also update or insert data, depending on your needs.

SPEC2000 Auditing

If you already have **Blue Flag Technologies SPEC2000** application, then any messaging received and responded to, can be audited within the **SPEC2000** application allowing for operators to examine any of the received messages, along with their responses in a data entry screen, ensuring that the operator does not need to understand XML and can focus on the data instead.

Logging

The **Blue Flag Technologies XML Processor** provides full logging facility, recording all traffic that it receives and the responses it returns. These logs are available to advanced users or administrators on the local machine, or to authorised personnel, via the Remote Status facility built right into the application.

Indirect Communication

For systems/networks where direct communications to the **XML Processor** is not possible, an implementation of the **Blue Flag Technologies HTTP Redirect** Interface will be required. This interface allows the relevant HTTP traffic to be redirected from the client, for example, through a firewall to the machine that runs the **XML Processor**.

Example Transaction

An **XML Processor** transaction might occur as follows:-

A remote trading partner is looking for part price information for a single part. The trader sends the following XML message:-

```xml
<?xml version="1.0" encoding="UTF-8"?>
<PartPriceRequest>
  <Customer>ACME01</Customer>
  <PartNumber>1234-5678</PartNumber>
</PartPriceRequest>
```

The Blue Flag Technologies XML Processor receives and validates the message against a previously agreed message schema and then uses a script that instructs it to look up the customer and part number in the host database.

Your implementation could check that the customer is allowed to lookup the information for the particular part or if the part is in stock and if not, offer a suitable alternative part.

You can use as many business processing rules as you need and they can be exactly tailored to your requirements. You can even use different messages or rules for different trading partners.

In this response, the requested part is found in the host database and the **XML Processor** returns the price, quantity on hand and the sales unit.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<PartPriceResponse>
  <Part Number="1234-5678">
    <Price>3.96</Price>
    <OnHand>10</OnHand>
    <SalesUnit>ea</SalesUnit>
  </Part>
</PartPriceResponse>
```

However, on another occasion, the requested part is out of stock, but the business rules are setup to offer an alternative part, in this case part "1234-5678-01" that is directly interchangeable with the requested part. This response is therefore returned to the trading partner, showing that there are zero on hand of the requested part, but offering a "AlternatePart" with interchangeability and unit price.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<PartPriceResponse>
  <Part Number="1234-5678">
    <Price>3.96</Price>
    <OnHand>0</OnHand>
    <SalesUnit>ea</SalesUnit>
    <AlternatePart Replacing="1234-5678-01" Interchangeability="1" Price="4.76"/>
  </Part>
</PartPriceResponse>
```

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This whole transaction is handled in real-time, so the client knows straight away the information they need, without having to wait.

Technical Specifications

Frontend Interface	HTTP/1.1 Protocol with Standalone and Service Version HTTPS/1.1 capable under MS-IIS
OS/Platform	Windows
Available Versions	Standalone, Native Service and IIS plugin (ISAPI)
Business Logic	Via bespoke Schemas and Scripts
Schema Definitions	XML XSD Schema files (DTD Schemas also supported)
Database Connection	Via Microsoft ADO (ActiveX Data Objects)
Max message types	Unlimited
Auditing	Traffic auditing via SPEC2000 Auditor & full auditing via log files / remote status

Blue Flag Technologies Message Portal

Blue Flag Technologies Message Portal allows your traders to communicate directly to your **SPEC2000** system, without the need for expensive VAN's. The **Message Portal** is competitively priced in line with our other **SPEC2000** modules available.

The **Message Portal** allows your traders to enter single **SPEC2000** messages via our hosted portal.

The **Message Portal** effectively becomes your on-line ordering system without any of the associated hosting hassles.

The **Blue Flag Technologies Message Portal**

- ➔ Receive orders and freeform messages from your non **SPEC2000** equipped customers directly into your **SPEC2000** system.

- ➔ Flexible pricing schemes.

- ➔ Seamlessly integrates into your existing **Blue Flag Technologies SPEC2000**.

- ➔ YOUR Zero maintenance message portal.

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Service & Support

Blue Flag Technologies places a high priority on service and support and achieves a consistently high standard - both pre-sale and post-sale. Our customer support is well known to be the most comprehensive and reliable within the **SPEC2000** industry.

Blue Flag Technologies provides a 3 tier approach to Customer Support. The first level of support is a detailed help option incorporated into the software, the second level is a selection of more detailed documents on various aspects of the software available as required and the third level of support is provided by our highly trained U.K. based support team, who can be contacted by phone, fax, freeform message or e-mail. All support issues are logged onto our help desk system to ensure your information is always on hand.

Software Upgrades

Whenever the A4A (ATA) **SPEC2000** Committee approves modifications to the **SPEC2000** Specification (an SMR), we will amend our software accordingly, update any necessary documentation and send the updated version of the software and documentation to every customer with a current Annual Support and Upgrade Contract.

Our Development Team are continually enhancing our **SPEC2000** software. We keep a "Wish List" where companies can suggest modifications to the software that will make it more effective in use. When released, the updated version of the software will include all enhancements to all customers with an Annual Support and Upgrade Contract.

Support Team

The Annual Support and Upgrade Contract purchased with the product gives unlimited access to our Support Team. We ship our software with a defect-free warranty and will speedily resolve any issues that may arise.

Historically, most of the issues have arisen from hardware or interface problems but nonetheless, our Support Team is available to give as much help as possible to make your use of **SPEC2000** as smooth as possible.

Disaster Recovery Assistance

In the event of an unforeseen catastrophe, **Blue Flag Technologies** can quickly assist in disaster recovery procedures to help you get **SPEC2000** up and running again in the shortest time possible.

To Summarise

There are many reasons why you should choose **Blue Flag Technologies** to provide your EDI requirements:

→ **Blue Flag Technologies** is the first **SPEC2000** software vendor to offer a full **SPEC2000** solution.

→ Our **SPEC2000** was independently certified to conform to the ATA (now A4A) specification.

→ **Blue Flag Technologies**, as a founder and long term representative of **SPEC2000**, has close links with the ATA (now A4A) to ensure your **SPEC2000** complies with the most current SPEC2000 standard.

→ **Blue Flag Technologies** has built in help and the necessary product documentation to help you get the best from **SPEC2000.**

→ **Blue Flag Technologies** provides the most comprehensive **SPEC2000** service and support available. Our support not only encompasses software issues but also general help and guidance on how **SPEC2000** works.

→ Our Annual Support and Update Contract provides upgraded software, free of charge.

In short we are offering our users the best and safest option.

Therefore, if you need a flexible and upgradeable solution to which you can add new **SPEC2000** Chapters in a seamless manner, without losing your initial investment, then **Blue Flag Technologies** has the solution for you.