AS4: What’s in it for you?

4 ways the new web services interoperability standard can benefit your digital business

How you integrate your applications and data flows with your suppliers, customers, partners and regulators is more than an IT issue. It is also a critical business issue, since B2B processes (such as order fulfillment, delivery, invoicing and payments) impact everything from revenue and expenses, to risk management and compliance, to growth strategies and multi-national M&A.

If your B2B and EDI infrastructure is disjointed and outdated, then it’s basically a cost center that can do little to help your business expand, improve efficiency or respond quickly to problems, regulatory changes and windows of opportunity in the era of digital business. But if your infrastructure is integrated, agile and based on the latest standards, it can do all of those things and more.

AS4 ensures standardized interoperability for B2B web services

AS4 — an applicability statement implemented using web services and SOAP-based specifications — is a modern incarnation of previous applicability statements that were implemented using SMTP (AS1), HTTP (AS2) and FTP (AS3). AS4 represents the state-of-the-art for secure data exchange and interoperability with a simple mechanism of acknowledgment, non-repudiation of data origin, and non-repudiation of receipt — the central requirements for secure data exchange.
At a high level, the OASIS Standard defines AS4 as a combination of:

- Three primary conformance profiles (CP) that define three subsets of ebMS 3.0 features:
  - The AS4 ebHandler CP supports both Sending and Receiving roles, and for each role both message pushing and message pulling.
  - The AS4 Light Client CP supports both Sending and Receiving roles, but only message pushing for Sending and message pulling for Receiving. In other words, it does not support incoming HTTP requests, and may have no fixed IP address.
  - The AS4 Minimal Client CP does not support the push transport channel binding for the Receiving role and therefore does not require HTTP server capabilities. As its name indicates, this CP omits all but a minimal set of features.
- An optional complementary CP that specifies how to use AS4 endpoints with ebMS 3.0 intermediaries. This CP is based on a simplified subset of the multi-hop messaging feature defined in ebMS 3.0 Part 2, Advanced Features specification (ebMS3ADV).
- An AS4 usage profile that defines how the standard should be configured and used by a community of users to ensure best compatibility with business practices and interoperability. A usage profile usually points at required or compatible conformance profile(s).

Here are 4 ways the new AS4/ebMS interoperability standard can benefit your digital business:

1. Comply with government and industry mandates in your country or region

In 2013, the Australian government designated AS4 as the mandatory messaging standard for all B2G and B2B data exchange for its federal superannuation industry project, SuperStream. Also in 2013, ENTSOG (the European Network of Transmission System Operators for Gas) announced that it would use AS4 as the common data exchange protocol to facilitate and enhance cooperation between national gas transmission system operators across Europe.

Why are large entities like these choosing AS4 over more widely implemented alternatives like AS2, FTP and general web services? Part of the answer is that AS4 both simplifies web services adoption for B2B interactions (by constraining the ebMS standard) and provides new functionality, including the latest security algorithms, a message-pulling capability, a built-in receipt mechanism and simplified profiles that enable organizations to implement only the features they require. But the other part of the answer, and perhaps the most important, is that AS4 paves the way for international interoperability for decades to come.
AS4 is ready for the era of digital business

While older protocols are reaching the end of their useful lives or cannot comply with current security standards, AS4 is implemented using modern web services standards (WS-*), including WS-Security. The standardized B2B web services profiles make it easier (and safer) to integrate internal services with external parties via web, cloud, mobile and partner channels. So, rather than building on aging B2B/EDI infrastructure or hiring programmers to create custom web services profiles, organizations are seizing the opportunity to start with a clean slate, and establish a new interoperability platform for B2B integration using forward-looking technology that is ready for the era of digital business.

In addition to SuperStream and ENTSOG, other governmental bodies and industry communities are moving closer to adopting the AS4 messaging standard, including:

- **Aerospace**: to connect more than 8,000 freight forwarders with large companies
- **EU e-government**: to enable cross-border data exchange among governments
- **Retail**: to connect suppliers, distributors and stores
- **Building and construction**: to connect general contractors, plumbers, wholesalers, electricians, etc.
- **Electricity**: to connect distributors and suppliers across borders

2. Extend the reach of your internal SOA architecture to include customers and partners

Even if you aren’t facing a current government regulation or industry mandate to comply with AS4, it probably won’t be long before a) at least some of your customers and partners make it a requirement and/or b) you want to extend internal web services to your external trading community.

For example:

- Financial institutions are focused on improving the customer experience with omni-channel digital services, immediate payments and straight-through processing.
- Healthcare providers need to secure mobile health services.
- Pharmaceutical companies are required to implement collaborative track-and-trace capabilities to ensure regulatory compliance.
- Supply chain organizations need to consolidate infrastructures to improve visibility and manage SLAs.
- All kinds of enterprises are exploring ways to improve interactive apps using REST APIs for real-time request/response communications.

And the list goes on and on.

Companies that adopt AS4 can accomplish these kinds of objectives by using web services to seamlessly exchange information with customers and partners anywhere in the world. In addition to providing a simplified on-ramp to digital business, AS4 maximizes investments in new and existing web services with a standardized method for secure and document-agnostic exchange of B2B payloads.

*The accounting shakeup is set to start January 1, 2017, but officials at the FASB received roughly 1,400 comment letters from companies that are spending millions to update computer software, recalculate contracts and rejigger past financial results.*

For those already using web services for internal integration, AS4 for B2B integration will be a natural and immediate fit in the data center. It enables organizations to share their own internal services and applications beyond the firewall and allow all parties involved in a transaction to view and participate in digital business processes in unprecedented ways.

3. Guarantee interoperability for cloud-to-cloud information exchange

For inter-cloud integration, AS4 has real potential, because it complies perfectly with functional and non-functional requirements — including security. To put it simply: AS4 moves data between clouds like a champ. But what about interoperability? What happens when the data finally gets where it’s going? This is when the benefits of standardized interoperability really kick in.

Companies don’t want to go to the expense of implementing multiple interoperability approaches, one for each of the clouds they interact with. They want to be more collaborative more quickly, and reduce the number of protocols to a small set that provides the security and reliability they need without alienating their customers and partners. Fortunately, AS4 meets this challenge: It implements common security, reliability and acknowledgment requirements while fully supporting robust interoperability.

In the near future, users will need to be able to exchange data between clouds. If communities hope to enable interoperable data exchange with security and non-repudiation specifically for cloud environments, the need for inter-cloud data exchange will inevitably grow. And when it does, AS4’s digital-business-quality security and reliability will be ready to power those interactions.

4. Enable all partners with asynchronous “pull” data exchange patterns not available with AS2

Clearinghouses, gateways and large organizations will typically have the IT and financial resources to implement a high-end AS4 ebHandler profile that supports 24x7 pushing and pulling for both sending and receiving. But what about geographies with spotty Internet service, and small businesses that can’t (or choose not to) keep a server continuously online?

This is one of the beauties of AS4: the Light Client conformance profile ensures that no one will be left behind. Businesses anywhere, of any size, can implement the profile to push data to partners just as with AS2, but they can also asynchronously pull data from a business partner’s server when a connection is available.

In addition to the Light Client CP for pulling data, AS4 also includes the Minimal Client conformance profile for data exchanges that do not need the more advanced capabilities of AS2 and ebMS 3.0, such as support for multiple payloads, message receipts, and signing or encryption of messages and receipts.
Ready to make the move to AS4? Axway can help.

AS4 can ensure interoperability with business partners, associations, regulators, financial institutions, networks and exchange hubs. A low-risk upgrade to your existing B2B information exchange infrastructure is a good approach for achieving AS4 compliance in the near term, while also gaining a comprehensive B2B platform for all external information exchanges and integrations going forward.


Part of Axway 5 Suite for B2B & EDI Integration, Axway B2Bi is an advanced B2B gateway and integration solution that guarantees Drummond-Certified™ AS4 compliance right out of the box. It includes easy-to-use, wizard-driven implementation for both the ebHandler and Light Client conformance profiles, and provides all of the capabilities you need to establish connections and manage information flows between your internal applications and your B2B community — on premise, in the cloud and in hybrid environments.

Simplify, speed and lower the cost of integration

Axway B2Bi provides a unique packaged integration approach that supports any type of business application and application integration pattern. With a single solution, you can implement pre-defined integration processes that support a rich variety of EDI, XML and other B2B formats and messaging protocols out of the box, minimizing setup time and costs.

You can also reduce operating costs and business fragility by consolidating manual data exchanges, unmanaged FTP and existing B2B gateways with a truly reliable B2B gateway, and use managed file transfer, message brokering and direct application connectivity to lower application integration costs, leverage existing investments and extend any business application (such as Oracle, SAP, Lawson, and more) for B2B transactions.

Full protocol and format compliance in a single platform

Axway B2Bi provides rich mediation and B2B connectivity options — including B2B messaging protocols like AS4 and built-in B2B managed file transfer — so you can connect to any partner using any protocol, any format and any application.

Reliable and secure integration enables you to orchestrate any multi-enterprise business process — such as order-to-cash, procure-to-pay, replenishment, planning and forecasting, transportation and logistics, provider-payers exchanges, and B2G and G2G exchanges.

Axway knows AS4

• We helped to define and test AS4, just as we served as a major contributor/author for previous standards including AS2, OFTP2 and SSL.
• We are one of the first vendors to earn Drummond certification for AS4 interoperability, and the only vendor today to be certified for compliance with both the ebHandler and Light Client profiles.
• We implemented the SuperChoice intermediation platform for the Australian superannuation scheme — one of the first AS4-compliant platforms in the world.
• We were at the heart of the interoperability proof-of-concept for ENTSOG.
• We offer Drummond Certified™ AS4 compliance on premise and in a cloud managed service.
In addition to AS4, Axway B2Bi supports EDIINT AS1, AS2 and AS3, RosettaNet RNIF, OFTP, ebXML ebMS and dozens of other standards and protocols.

**Audit compliance to avoid financial penalties and losses**

Centralized support for detailed audit logging optimizes dispute-resolution processes while simplifying and lowering the cost of compliance with government regulations, such as HITECH/HIPAA, GLBA, PCI, SOX and FISMA.

**SLA compliance to improve partner relationships and brand image**

Axway Sentinel works with Axway B2Bi to provide consolidated, real-time visibility into what is happening between all applications inside your enterprise and throughout your B2B ecosystem.

IT operations staff can monitor server activity and technical issues, line-of-business managers can view events involved in a business process from beginning to end, and both can troubleshoot exceptions to meet SLAs and avoid non-compliance penalties.

**On premise, cloud and managed service deployment options with full reversibility**

If your organization has complex regulatory requirements, unpredictable processing loads, or intricate integration needs, you can maintain maximum flexibility by deploying Axway B2Bi in your own data center.

You can also take advantage of our quality-certified (ISO and SSAE16), SLA-driven cloud offerings:

- Let Axway host your B2Bi deployment in a private cloud that meets your enterprise security requirements while minimizing hardware requirements.
- Choose the Axway Cloud B2B Managed Service, and let our highly trained B2B integration service experts manage the environment and processes, while giving you the necessary visibility, notifications, alerts and reporting. You get a single point of contact, 24/7 service and extensive reporting, alerting and monitoring capabilities that provide visibility and control.

**Axway and SuperChoice: Powerful, versatile, reliable and secure**

SuperChoice provides Australian employers and pension funds with a cloud-based pension-fund management and clearinghouse service that automates the flow of pension fund transactions. In operation for more than 15 years, SuperChoice today serves over 100,000 employers, nearly 3 million employees and thousands of pension funds.
SuperStream, the Australian government’s groundbreaking program designed to automate the country’s pension fund system and reduce costs by up to A$1 billion per year, imposes the use of AS4/ebMS v3. Facing a strict timetable for compliance, SuperChoice chose Axway B2Bi and Axway Sentinel to get the job done.

SuperStream At A Glance

**Business Objectives**
- Automate the flow of pension fund transactions and payments for Australian employers, employees and pension funds
- Provide support for AS4/ebMS v3, in compliance with Australian government regulations
- Reduce the cost of managing customers, while simplifying operations

**Challenges**
- In a highly complex ecosystem, use AS4/ebMS v3 to provide gateway and clearinghouse services for pension fund transactions and payments
- Integrate existing bespoke solutions to consolidate all point-to-point transactions onto a single platform
- Ensure security and reliability via a DMZ-router, active-active clusters and end-to-end monitoring of all transactions
- Use AS4/ebMS v3 to provide gateway and clearinghouse services

**Axway B2Bi & Sentinel Solution**
- Consolidates disparate point-to-point connections onto a single platform
- Provides support for AS4/ebMS v3, as mandated by the Australian Tax Office
- Significantly lowers implementation risk and cost
- Provides major uplift in operational/administrative support and implements a rigorous security framework

SuperChoice acts as a gateway and clearing house for employers and pension funds

Under SuperStream, all pension funds (called “superannuation funds” in Australia) and all employers are required to send and receive pension fund transaction data and contributions using AS4 for communications and ebMS v3 for messaging.

Instead of doing so themselves, however, they can delegate this responsibility to specialist providers: gateways that stand in the middle of the two parties. All of Australia’s 350 largest pension funds decided to use gateways, as have most of the 300,000 active Self-Managed Super Funds. Virtually all employers do the same.

Depending on the configuration, SuperChoice uses Axway B2Bi to:

- Act as a gateway to translate and route pension data, working either on the employer side, the pension-fund side, or both sides of a single transaction
- Act as a clearinghouse to process pension contributions, on the employer side or pension-fund side — or both
- Act as both gateway and clearinghouse for employer and pension fund alike

“We didn’t have AS4. We needed to be able to support it, and we had to do it in a reliable, cost-effective way. We also had to upgrade our administration capabilities. We used bespoke administration, which had become very costly for us. Historically, we built everything ourselves.”

Ian Gibson
Chief Information Officer
SuperChoice
“With Axway as our SuperStream partner, we can focus on our core mission to fully automate pension fund transactions, confident in the knowledge that Axway is focused on the information exchange platform and on compliance with standards as they evolve.”

Ian Gibson
Chief Information Officer
SuperChoice

Results

Since going live with SuperStream in July 2013, SuperChoice now:

- Handles 28 million electronic transactions per year, increasing to 40 million by 2016
- Provides online contribution processing systems to over 40% of Australia’s largest pension providers
- Handles contributions from over 100,000 employers on behalf of nearly 3 million employees
- Processes an estimated 56% of all electronic pension fund contributions from employers
- Handles nearly 20% of all contributions to active Self-Managed Super Funds (these are similar to Personal Pension Schemes in the UK and Self-Directed 401Ks in the U.S.)

Contact us to learn more about what AS4 compliance can do for you.