



# Aras Innovator Security

Protecting Your Product Assets



# ARAS INNOVATOR SECURITY

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## PROTECTING YOUR PRODUCT ASSETS

*Today's companies face a challenging dilemma. They must be able to share information extensively as part of their collaborative product development and manufacturing processes, while at the same time protecting their intellectual property rights and mitigating the legal, financial and business risks of security related issues. To meet this challenge, PLM systems must provide a secure working environment.*

## ARAS SECURITY OVERVIEW

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Aras Innovator is designed to run in environments where the highest levels of security are a necessity. The Aras security, authentication and data access rights model was defined by our defense industry customers to satisfy ITAR and other military-grade security compliance requirements.

The Aras Innovator security model is proven in mission-critical operation by multiple branches of the U.S. armed forces, numerous defense contractors, life sciences firms and other organizations subject to security compliance requirements.

### ARAS INNOVATOR ARCHITECTURE

Aras Innovator is designed from the ground up to provide a secure environment for managing critical information by combining a standards-based web architecture with proven technology:

- The n-tier, service-oriented architecture is composed of web clients, application server(s), database(s) and file server(s) and is based entirely on standard Internet protocols, including HTTP / HTTPS, XML and SOAP
- The application server and vault server are implemented using Microsoft .NET and the database is Microsoft SQL Server

This approach facilitates the use of standard security tools and practices already in use inside of enterprises.

### USER AUTHENTICATION

Aras Innovator determines the identity of every user attempting to access the system to ensure they are who they claim to be.

Aras Innovator uses web services protocols that support user authentication for both browser and mobile access. The use of SOAP ensures end to end security and the stateless implementation avoids the risk of session hijacking by authenticating every transaction.

The built-in Aras Innovator authentication mechanism allows password settings to be configured to manage: password encryption, password complexity rules, password aging, and password lock-out threshold and duration.

To fit into existing enterprise security approaches, Aras Innovator also supports single sign-on with Active Directory / LDAP for end-user authentication. Mixed-mode authentication schema are also available for management of supplier and customer access.

## **IDENTITY MANAGEMENT**

A user's identity determines what actions they will be allowed to do perform within the system. Aras Innovator provides a flexible, dynamic approach to efficiently manage the identity of authenticated users in real time. This includes assigning users to:

- Roles, including special system-managed identities
- Groups, which may be hierarchical and pass permissions by inheritance
- Teams, and their role within the team

As changes are made to the identity structure (for example removing a user), access permissions are updated automatically in real time.

## **AUTHORIZATION**

Aras Innovator determines what information each user is able to access by managing their access permissions.

Access Control Lists (ACLs) specify the permissions (including Get, Update, Delete, Discover and Change) available to one or more selected users or groups to access one or more Item types. Team roles can also be added to an ACL, in which case the permissions available to a user to access a specific item are determined at run time. Permissions for an Item type may change as it moves through its lifecycle – e.g. allowing a part to be deleted early in its lifecycle but not once it has been released.

Private permissions allow a user to override the access permissions for a specific Item and specify new ones.

## **EXTENDED ENTERPRISE SUPPORT**

To support collaboration with customers, partners and suppliers during the product lifecycle, organizations need to provide secure PLM access to their extended enterprise.

Because Aras Innovator uses standard web services, a number of widely available approaches can be used, including:

- Reverse proxy servers acting as intermediaries for the Aras servers to be contacted by an authorized client
- Virtual Private Networks (VPNs) allowing secure access via public networks
- The placement of the Aras Innovator server in a network DMZ

## **ITAR COMPLIANCE**

ITAR regulations dictate that information pertaining to defense and military related technologies may only be shared with U.S. persons unless authorization or a special exemption is provided. Aras Innovator can be configured to ensure ITAR compliance by means of:

- Identifying ITAR-controlled items
- Identifying the users' nationality status
- Monitoring the location of user requests by means of IP white lists

In this way Aras Innovator can ensure the security of ITAR-controlled items.

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**BY COMBINING A  
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BEST-IN-CLASS CAPABILITIES FOR  
SECURELY MANAGING CRITICAL  
PRODUCT INFORMATION.**

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## **MONITORING AND AUDIT**

To ensure a secure environment is being maintained and business rules are being complied with, system administrators and business managers need tools to monitor and audit PLM activities.

Taking advantage of Aras Innovator's web architecture, administrators can use standard web intrusion detection software to get real time alerts of system intrusions.

System audit can be performed by analyzing the logs maintained by Aras Innovator. For example:

- Analyzing the web services requests log allows detection of unauthorized system access
- Reviewing the history audit trail highlights user CRUD operations performed including viewing of files and forms (useful for FDA compliance or CMII reporting)

## **PLATFORM SECURITY**

System and network vulnerability are major concerns for IT security managers and maintaining a secure environment is a primary goal.

With its standards-based web architecture and use of proven technology Aras Innovator provides a secure platform for managing critical information assets. For example:

- Encryption at rest is achieved through a combination of Microsoft SQL Database encryption and Microsoft Windows Server file encryption
- Encryption in transit is achieved using SSL/HTTPS
- SQL injection and cross-site scripting prevention are achieved through a combination of adherence to good design practices and exhaustive testing

## **CONCLUSIONS**

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Businesses who depend on their ability to innovate rapidly, working closely with customers, partners and suppliers need a PLM infrastructure they can rely on to keep their information secure.

Aras has many years' experience working with leading organizations, many in defense and military related activities, building secure PLM systems.

By combining a standards-based web architecture, use of proven technology and powerful, flexible capabilities for managing permissions, Aras Innovator provides best-in-class capabilities for securely managing critical product information.

## ABOUT ARAS

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Aras® offers the best Product Lifecycle Management (PLM) software for global businesses with complex products and processes. Advanced PLM platform technology makes Aras more scalable, flexible and resilient for the world's largest organizations, and a full set of applications provide complete functionality for companies of all sizes.

By rethinking the way PLM is designed, Aras has taken a fundamentally different approach with a focus on the Business of Engineering. Aras solutions support processes for global product development, systems engineering, multi-site manufacturing, supply chain, quality and more.

Companies running Aras include Airbus, Boeing, Bombardier, GE, Hitachi, Honda, Kawasaki, Magna, Microsoft, Motorola, Nissan, TOSHIBA, Xerox, the US Army and hundreds of others worldwide.



300 Brickstone Square  
Andover, MA 01810  
USA  
[978] 691-8900 Phone  
[978] 794-9826 Fax  
info@aras.com  
www.aras.com

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