CPO Statement of Aras

Following the prerequisites of ProSTEP iViP's Code of PLM Openness (CPO) IT vendors shall determine and provide a list of their relevant products and the degree of fulfillment as a "CPO Statement" (cf. CPO Chapter 2.8).

This CPO Statement refers to:

Product Name	**Aras Innovator**
Product Version	**Version 11**
Contact	**Peter Schroer** **pschroer@aras.com**

This CPO Statement was created and published by Aras in form of a self-assessment with regard to the CPO.

Publication Date of this CPO Statement: 22 May 2015

Content

1 Executive Summary

Aras is a signatory member of Code of PLM Openness (CPO), confirming our long term commitment to openness.

We believe that every company has unique and complex data & process models, and that software should be adapted to fit those models, rather than the business compromised to fit the software.

We also firmly believe that healthy companies change, in fact they should be changing frequently to grow, compete and improve. Businesses must constantly adapt to new market conditions, customer demands, competitive pressures, new technologies, regulatory changes and other factors. Our approach is to enable corporate process change for continuous improvement through highly flexible and open enterprise software solutions.

We believe that openness is critical to the long term success and sustainability of your company's enterprise software environment, especially for Product Lifecycle Management (PLM). To enable true interoperability, portability and extensibility we provide an open architecture which features an open data model and open interfaces, and we are committed to open Web standards in our technology implementations.

Company Name:	Aras	**Contact Person:**	Peter Schroer
Product Name:	Aras Innovator		

CPO Term	**Fulfilled (100%)**	**Comments because of deviations**
2.1 Interoperability	☒	
2.2 Infrastructure	☒	
2.3 Extensibility	☒	
2.4 Interfaces	☒	
2.5 Standards	☒	
2.6 Architecture	☒	
2.7 Partnership	☒	

List of inherent supported neutral standards	API: ☐C/C++ / ☐Java / ☒.NET / ☒Web Services 3D: ☒IGES / ☒JT / ☒STL / ☒STEP / ☒VRML / ☒PDF / ☒PRC (ISO Std.) DX: ☐eCl@ss / ☐FMI / ☐IDX / ☒PDF / ☒ReqIF / ☒STEP / ☐VEC Others: ☒HTML / ☒XML

2 Details of Self-Assessment

The following chapters summarize the results of the CPO-related self-assessment of Aras with regard to Aras Innovator.

2.1 CPO Chapter 2.1: Interoperability

2.1.1 Authoring Tool Integrations

We provide high performance, open APIs with a published data dictionary for authoring tool integrations, and offer a full suite of packaged connectors for a wide variety of authoring tools, such as leading CAD applications. These point-to-point connectors embed Aras menus and toolbars into the user interface of the integrated tools. Using this approach, the PLM user interface is encapsulated within the desktop application, reducing training and keeping users in their own environments. All of our MCAD and ECAD integrations from Aras certified partners, as well as the Microsoft Office integration from Aras, follow this model. Our packaged authoring tool integrations use the same APIs that are available to any end user company that wants to create their own connectors.

2.1.2 Enterprise System Integrations

For integration with legacy business applications we use a core service in the Aras Innovator platform called Federation. With Federation, business objects and properties stored in the target application or database are defined as properties on Items in Aras, at which point the remote data is treated as data in Aras Innovator. The data can be securely displayed and edited in forms, used in workflows, added to versioned configurations and more allowing data in the remote system to be securely viewed and updated seamlessly and transparently to end users.

2.1.3 Web Services Integrations

For other systems that require access to data or files stored in Aras, such as an online catalog or a shop floor MES system, we offer a complete set of open web services. You can interface to the Aras Innovator server directly using XML/SOAP, or you can create a WSDL (Web Services Description Language) for the specific business objects you want to interface with.

2.1.4 Other Integrations

While the native integration layer of Aras is XML/SOAP web services, we recognize that not all developers and applications use web services. The Aras Innovator Object Model (IOM) is a comprehensive, documented and freely distributed DLL version of the API that presents a comfortable programming interface for anyone that has development experience in environments such as Visual Studio or VBA. In addition, Aras supports all the .NET data exchange methods. Integration capabilities available in Aras Innovator include ODBC, ADO, flat file or direct API. Use of integration infrastructure (EAI/ESB) such as Oracle Fusion, BizTalk, Mule Sonic and other integration hubs/buses is also supported.

2.2 CPO Chapter 2.2: Infrastructure

Aras utilizes Microsoft products as the infrastructure platform for the operating system, web server and database including Windows Server, SQL Server, .NET and IIS. For details view the Aras Innovator – Platform Specification at http://www.aras.com/support/documentation/

2.3 CPO Chapter 2.5: Standards

2.3.1 Visualization

Aras takes an open approach to visualization allowing your company to use current viewing technologies, such as JT, AutoVue or others, and in addition Aras Innovator natively embeds technology for PDF visualization.

The PDF family of open ISO standards provides a unified way to support 3D models, 2D drawings, Microsoft Office files, images & scans and other data types. Use of PDF in Aras Visual Collaboration

makes viewing a CAD model or drawing easy for everyone throughout the enterprise and across the supply chain. For additional details visit http://www.aras.com/technology/visualization.aspx

2.3.2 Digital Mockup

Aras Digital Mockup supports many 3D CAD formats like CATIA V5, NX, CreoElements/Pro-Engineer, SolidWorks, Inventor, Solid Edge, Parasolid and neutral formats like STEP, 3D-PDF and JT. Export in 3D is supported in various formats including STEP, 3D PDF and JT.

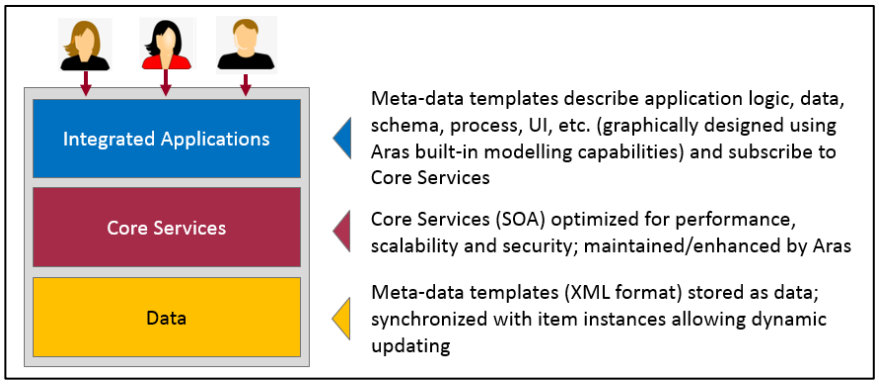
2.3.3 Data Exchange

Aras supports a range of data exchange standards including STEP, PDF, ReqIF, XML and others. We also offer the Multi-CAD Gateway for Aras from Elysium which supports concurrent design in multiple CAD systems with embedded CAD model translation, validation and geometry comparison.

2.4 CPO Chapter 2.6: Architecture

The IT system's architecture is conforming CPO 2.6 Yes ☒ / No ☐

From the outset Aras has taken a fundamentally different approach to create the Aras Innovator platform. Instead of implementing a hard-coded object model with compiled logic, we chose to separate system definition from the core services. The result is a run-time web application framework consisting of loosely coupled / federated web services optimized for performance and scalability which form a service-oriented architecture (SOA). In other words, Aras Innovator is a Web-based, n-tier, service-oriented architecture 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 (Simple Object Access Protocol).



We use meta-data templates to describe system definition, application functionality, business logic, data schema, screens, workflows… literally everything. The meta-data templates, or models, define the objects in the system and those objects then "subscribe" to the services that they need. We call it a "model-based SOA" and it's the basis for creating resilient applications.

For dynamic access the meta-data templates (which are defined entirely in XML) are normalized into tables and columns within the database along with the end user instance data. At start-up the schema is cached to optimize system performance.

The use of XML templates is significant for several reasons. Working with XML is widely understood and XML files are easy to manipulate at the text level as well as with graphical editors such as those in Aras Innovator, and most notably, XML files are portable.

Portability is of specific importance because the sharing of enterprise applications is made fast and easy. All that is required to move an application between two different Aras Innovator systems is to simply export the XML templates from one system and import them into the other. This capability is significant because even extensively customized applications can be moved from one environment to another quickly and with minimal effort. This allows highly customized Aras implementations to be upgraded to new releases in a matter of weeks. In contrast traditional approaches to PLM require months and sometimes years of complex and costly work to perform upgrades.

2.5 CPO Chapter 2.7: Partnership

2.5.1 Data Generated by Users

Data generated by IT users with an IT system is and remains the intellectual property of these IT users, according CPO 2.7.4 Yes ☒ / No ☐

With Aras data always belong to the customer. We enable your company to access, use, customize, integrate, export and move the data that you generate at any time and without restrictions or fees.

With Aras your company also owns the processes, data models, business rules and system definition that you create.

2.5.2 Partnership Models

Partnership models are offered according CPO 2.7.7 Yes ☒ / No ☐

Aras openly partners with a wide variety of different providers around the world. Our partners include leading professional services firms and solution technology companies that range from solution deployment, systems integration, application development, independent software vendors (ISVs) and more.

Aras has a structured partner program with contractual agreements for partnering.

2.5.3 Support of User and Innovation Groups

Supported groups are:

Aras Community

ProSTEP iViP

OASIS-OSLC

3D PDF Consortium

CMII

CMPIC

CIMdata PLM Community

2.6 Additional Information

2.6.1 CPO Chapter 2.3: Extensibility

The Aras Innovator platform and applications are openly extensible. We provide access to all of our APIs along with source code to many of our applications. We encourage application customization and the extension of our applications to create innovative, new solutions to complex business problems.

Our open approach enables corporate process change for continuous improvement and transformation through highly flexible and extensible enterprise solutions. We believe that openness and extensibility are critical to the long term success and sustainability of your company's enterprise PLM backbone. Your company must have control over your own destiny, and the only way to truly achieve this is through openness and extensibility in your enterprise systems environment, especially in PLM.

2.6.2 CPO Chapter 2.4: Interfaces

All Aras interfaces are fully documented, maintained and are fully compatible between revisions.

Our published interfaces are equally available to customers, partners and open users without restriction. Our internal developers use the same interfaces as our customers, partners and open users.

All interfaces are available on both batch and direct mode and provide the same capabilities.

To date, no Aras interfaces have been subject to cancellation however, were this to ever happen, customers would be provided with adequate notice.