

Software Bill of Material

Corridor4DM

Revision: 3.3
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Approvals:

Role	Signature / Date
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1. Purpose

This document acts as a top-level report, listing all the Off the Shelf (OTS) software components used in *Corridor4DM*.

2. Scope

The document applies to the *Corridor4DM* family. Specific differences across versions are noted within the document itself.

3. Definitions, Acronyms, and Abbreviations

3.1. OTS - Off-the-Shelf Software (OTS software). A generally available software component used by a medical device manufacturer for which the manufacturer cannot claim complete software life cycle control.

4. References

5. NoneLicensed Software

5.1. Development Tools

These tools are used to create the Corridor4DM software application. These Development Tools are installed on each developer's workstation.

5.1.1. VS Studio

Microsoft Visual Studio to compile written code into an application

5.1.1.1. Usage

- VS2008: C4DM v2010, v2012, v2013
- VS2012: C4DM v2015, v2016, v2017.0.0/1
- VS2015: C4DM v2017.0.2, v2018
- VS2017: C4DM v2023 and later

5.1.1.2. Installed Components

VC Runtime libraries. See OTS Software Component section.

5.1.1.3. Validation Plan

Since this tool is used to create the product / device, its validation is not necessary because it is validated during Software Verification and Validation.

5.1.1.4. Cybersecurity Surveillance

No issues. Nothing is installed requiring monitoring for risk.

5.1.2. InstallShield

Tool to create and installation package for simpler deployment of product.

5.1.2.1. Usage

- IS v2009: C4DM v2010

- IS v2011: C4DM v2012, v2013, v2015, v2016
- IS v2015: C4DM v2017 and later

5.1.2.2. Installed Components

None

5.1.2.3. Validation Plan

Since this tool is used to create the product / device, its validation is not necessary because it is validated during Software Verification and Validation.

5.1.2.4. Cybersecurity Surveillance

No issues. Nothing is installed requiring monitoring for risk.

5.1.3. Intel IPP Library

Since there are runtime components installed with the Corridor4DM device, this is described under OTS Software Components.

5.1.4. TX Text Control

Since there are runtime components installed with the Corridor4DM device, this is described under OTS Software Components.

5.2. OTS Software Components

These components are included as part of the Corridor4DM software application.

5.2.1. VC Runtime

Purpose
<p>Microsoft Visual Studio C/C++ runtime Part of the application runtime environment for 4DM</p> <p>Safety Classification: B</p> <ul style="list-style-type: none"> The C Runtime libraries are involved with numerical computations. Since they are involved in the computation of diagnostic values that could affect a clinical decision, they are Class B with the potential for non-serious injury. <p>Usage / Installed Libraries Location: \Program Files\INVIA\Corridor4DM</p> <ul style="list-style-type: none"> v2010, v2012, v2013, v2015: msvcm90.dll, msvcp90.dll, msxcr90.dll (9.0.21022.8) v2016: vcomp110.dll (11.0.51106.1) v2017, v2018: msvcp140.dll, vcomp140.dll, vcruntime140.dll (14.00.24210.0) v2023: msvcp140.dll, vcomp140.dll, vcruntime140.dll (14.16.27033.0) v2023 (for TxTextControl): msvcp120.dll, msxcr120.dll (12.00.40664.0) v2024: msvcp140.dll, vcomp140.dll, vcruntime140.dll (14.16.27012.2) v2024 (for TxTextControl): msvcp120.dll, msxcr120.dll (12.00.21005.1) <p>Location: \Windows folder – part of OS</p> <ul style="list-style-type: none"> v2010, v2012, v2013.0: msvcm90.dll, msvcp90.dll, msxcr90.dll (9.0.21022.8) v2013.1/2, v2015, 2016: msvcp110.dll, msxcr110.dll, vccorlib110.dll (11.0.51106.1) v2017: 2015 Redistributable Package (14.00.24215.1) v2018: 2015 Redistributable Package (14.00.23026.0) v2023: 2015 Redistributable Package (14.16.27033.0) v2023 (for TxTextControl): 2013 Redistributable Package (12.00.40664.0) v2024: 2015 Redistributable Package (14.36.32523.0) v2024 (for TxTextControl): 2013 Redistributable Package (12.00.40664.0)

5.2.1.1. Validation

This component is validated during Software Verification and Validation.

5.2.1.2. Cybersecurity Surveillance: No issues

It is susceptible to Windows Updates. The review of this software falls under the area of Cybersecurity as defined in the Risk Management Plan.

5.2.1.3. Anomaly Review: No issues

Currently, there are no anomalies have been reported in the components that are used by Corridor4DM (reference Cybersecurity Surveillance Log).

5.2.2. .NET Framework

Purpose	
<p>Microsoft .NET Framework, Part of the application runtime environment for 4DM</p>	
<p>Safety Classification: A</p> <ul style="list-style-type: none"> The .NET Framework is used to construct the User Interface Corridor4DM. It is not involved in the computation of diagnostic values that could affect a clinical decision and present risk. 	
<p>Usage / Installed Components:</p> <ul style="list-style-type: none"> Location: \Windows folder – part of OS v2010, v2012, v2013.0.0/1: 2.2.30729.1 v2013.0.2, v2015, v2016, v2017.0.0/1: 4.0.30319.1 v2017.0.2, v2018: 4.5.51209.34209 v2023, v2024: 4.7.3081.0 	

5.2.2.1. Validation

This component is validated during Software Verification and Validation.

5.2.2.2. Cybersecurity Surveillance: Yes

It is susceptible to Windows Updates. The review of this software falls under the area of Cybersecurity as defined in the Risk Management Plan.

5.2.2.3. Anomaly Review: No issues

Currently, there are no anomalies have been reported in the components that are used by Corridor4DM (reference Cybersecurity Surveillance Log).

5.2.3. Window Media Player

Purpose	
<p>Microsoft Windows Media Configuration Utility Used by 4DM to create screen captures in WMV format</p>	
<p>Safety Classification: A</p> <ul style="list-style-type: none"> Windows Media Player is used to create movie captures of display data that is changes with time (cineable). Since these movie captures are not intended for clinical diagnostic review, there is no clinical risk with this component. 	
<p>Usage / Installed Components:</p> <p>Location: \Windows folder – part of OS</p> <ul style="list-style-type: none"> v2010, v2012, v2013, v2015: 11.0.5721.5145 v2016, v2017, v2018, v2023, v2024: Not installed. 	

5.2.3.1. Validation

This component is validated during Software Verification and Validation.

5.2.3.2. Cybersecurity Surveillance: Yes

It is susceptible to Windows Updates. The review of this software falls under the area of Cybersecurity as defined in the Risk Management Plan.

5.2.3.3. Anomaly Review: No issues

Currently, there are no anomalies have been reported in the components that are used by Corridor4DM (reference Cybersecurity Surveillance Log).

5.2.4. Adobe Acrobat Reader

Purpose								
<p>Used by 4DM to display User Guides and IFUs</p> <p>Safety Classification: A</p> <ul style="list-style-type: none"> The Adobe Acrobat Reader is used to present the User’s Guide and Instructions for Use to the user. These documents are primarily text based and any error in the application to present the text information to the user would not present any potential risk for injury. <p>Usage / Installed Components:</p> <p>Location: \Program Files\Adobe\Reader (only if not present on system)</p> <table> <tr> <td>• v2010:</td> <td>Not Installed</td> </tr> <tr> <td>• v2012, v2013, v2015, v2016:</td> <td>10.1.0.0</td> </tr> <tr> <td>• v2017, v2018, v2023:</td> <td>15.17.20050.61080</td> </tr> <tr> <td>• v2024:</td> <td>Not Installed</td> </tr> </table>	• v2010:	Not Installed	• v2012, v2013, v2015, v2016:	10.1.0.0	• v2017, v2018, v2023:	15.17.20050.61080	• v2024:	Not Installed
• v2010:	Not Installed							
• v2012, v2013, v2015, v2016:	10.1.0.0							
• v2017, v2018, v2023:	15.17.20050.61080							
• v2024:	Not Installed							

5.2.4.1. Validation

This component is validated during Software Verification and Validation.

5.2.4.2. Cybersecurity Surveillance: No issues

While this OTS application is susceptible to Windows Updates, its sole use is to display a PDF file. In the event of a failure, it cannot incur risk to the end user or patient.

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found no issues related to INVIA

5.2.4.3. Anomaly Review: No issues

Currently, there are no anomalies have been reported in the components that are used by Corridor4DM (reference Cybersecurity Surveillance Log).

5.2.5. Intel IPP Library

Purpose																	
<p>Used by 4DM for enhanced performance and algorithms (bicubic interpolation, affine transforms, jpeg lossless support, ...).</p> <p>INVIA libraries only use the Image Processing APIs related to filtering, transforms and imaging. Specifically, the use of IPP libraries is limited to the following:</p> <table border="0"> <thead> <tr> <th style="text-decoration: underline;">Library used</th> <th style="text-decoration: underline;">Header used</th> <th style="text-decoration: underline;">Function</th> </tr> </thead> <tbody> <tr> <td>ipps_t.lib</td> <td>ipps.h</td> <td>Signal Processing</td> </tr> <tr> <td>ippi_t.lib</td> <td>ippi.h</td> <td>Image Processing</td> </tr> <tr> <td>ippr_t.lib</td> <td>ippr.h</td> <td>Realistic Rendering Library</td> </tr> <tr> <td>ippcore_t.lib</td> <td>ippcore.h</td> <td>Core utilities</td> </tr> </tbody> </table>			Library used	Header used	Function	ipps_t.lib	ipps.h	Signal Processing	ippi_t.lib	ippi.h	Image Processing	ippr_t.lib	ippr.h	Realistic Rendering Library	ippcore_t.lib	ippcore.h	Core utilities
Library used	Header used	Function															
ipps_t.lib	ipps.h	Signal Processing															
ippi_t.lib	ippi.h	Image Processing															
ippr_t.lib	ippr.h	Realistic Rendering Library															
ippcore_t.lib	ippcore.h	Core utilities															
<p>Safety Classification: B</p> <ul style="list-style-type: none"> The Intel IPP libraries are involved with numerical computations. Since they are involved in the computation of diagnostic values that could affect a clinical decision, they are Class B with the potential for non-serious injury. 																	
<p>Usage / Installed Libraries:</p> <ul style="list-style-type: none"> v2010 through v2018: Compiled directly into Corridor4DM v2023, v2024: libiomp5md.dll (5.0.2011.606) 																	

5.2.5.1. Validation

This component is validated during Software Verification and Validation.

5.2.5.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found 3 IPP items all related to the cryptography libraries which are not used by INVIA.

5.2.5.3. Anomaly Review: No issues

Currently, there are no anomalies have been reported in the components that are used by Corridor4DM (reference Cybersecurity Surveillance Log).

5.2.6. Ceres Solver

Purpose
<p>Library used by 4DM for non-linear least squares curve fitting during kinetic analysis on the Reserve screen.</p> <p>Safety Classification: B</p> <ul style="list-style-type: none"> The Ceres library is involved with numerical computations specific to Reserve. Since they are involved in the computation of diagnostic values that could affect a clinical decision, they are Class B with the potential for non-serious injury. <p>Usage / Installed Libraries: Location: \Program Files\INVIA\Corridor4DM</p> <ul style="list-style-type: none"> v2010 through v2015: Not used. v2016 through v2023: ceres.dll

5.2.6.1. Validation

This component is validated during Software Verification and Validation.

5.2.6.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found no issues related to INVIA

5.2.6.3. Anomaly Review: No issues

A review of the open issues listed here (http://ceres-solver.org/version_history.html) shows no security issues. Each release report since our supported version was reviewed and there are no reported anomalies.

5.2.7. Eigen

Purpose
<p>Linear algebra template library used internally by Ceres Solver.</p> <p>Safety Classification: B</p> <ul style="list-style-type: none"> The Eigen library is involved with numerical computations specific to Reserve. Since they are involved in the computation of diagnostic values that could affect a clinical decision, they are Class B with the potential for non-serious injury. <p>Usage / Installed Libraries: Location: \Program Files\INVIA\Corridor4DM</p> <ul style="list-style-type: none"> v2010 through v2015: Not used. v2016 through v2023: ceres.dll

5.2.7.1. Validation

This component is validated during Software Verification and Validation.

5.2.7.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found no issues related to INVIA

5.2.7.3. Anomaly Review: No Risk

A review of the open issues listed here (<https://gitlab.com/libeigen/eigen/-/issues>) shows no security issues. Each release report since our supported version was reviewed and there are no reported anomalies.

5.2.8. ExpertPDF Creator (Deprecated)

Purpose
Used by 4DM to convert exported reports from RTF to PDF
<p>Safety Classification: A</p> <ul style="list-style-type: none"> The Export PDF Creator is used to create Reports from RTF. Since this is simply a format conversion (RTF to PDF), there is no risk that clinical data will be compromised resulting in clinical risk. <p>Usage / Installed Libraries: Location: \Program Files\INVIA\Corridor4DM</p> <ul style="list-style-type: none"> v2010 through v2015: epdfcreator.dll (5.0.0.0) Deprecated, replaced by TX TextControl in v2016 and later.

5.2.8.1. Validation

This component is validated during Software Verification and Validation.

5.2.8.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found no issues related to INVIA

5.2.8.3. Anomaly Review: No issues

A review of the company website (<https://www.expert-pdf.com/>) found no security issues.

5.2.9. Ultimate PDF Viewer

Purpose
<p>Used by 4DM to display PDF data extracted from DICOM Encapsulated PDF files on the PDF Viewer screen.</p> <p>Safety Classification: A</p> <ul style="list-style-type: none"> The Ultimate PDF Viewer is used to display PDF files within 4DM. Since this is simply a reader with a conversion to a bitmap for display, there is no risk that clinical data will be compromised resulting in clinical risk. <p>Usage:</p> <ul style="list-style-type: none"> v2010 through v2015: Not used. v2016 through v2024: 6.2.40.50425 <p>Installed Libraries</p> <p>Location: \Program Files\INVIA\Corridor4DM</p> <ul style="list-style-type: none"> ComponentPro.PdfViewer.XML ComponentPro.PdfInspector.dll ComponentPro.PdfViewer.dll ComponentPro.Windows.Common.dll

5.2.9.1. Validation

This component is validated during Software Verification and Validation.

5.2.9.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found no issues related to INVIA

5.2.9.3. Anomaly Review: No issues

A review of the company website (<https://www.componentpro.com/products/pdf-viewer/>) found no security issues.

5.2.10. TX Text Control

Purpose	
Used by Reporting and Admin to create, edit, preview, print, and save reports and report templates in RTF and PDF format.	
Safety Classification: A	
<ul style="list-style-type: none"> TX Text Control is used to display and format clinical reports for export. There is no risk that clinical data will be compromised in this process that can result in clinical risk. 	
Usage:	
<ul style="list-style-type: none"> v2016, v2017, v2018 	22.0.2200.500
<ul style="list-style-type: none"> v2023, v2024: 	26.0.730.500
Installed Libraries ()	
Location: \Program Files\INVIA\Corridor4DM	
v2016, v2017, v2018	v2023, v2024
tx22_css.dll tx22_doc.dll tx22_dox.dll tx22_htm.dll tx22_pdf.dll tx22_rtf.dll tx22_xml.dll TXDocumentServer.dll TXDocumentServer.Windows.Forms.dll txic.dll txkernel.dll txpdf.dll TXTextControl.dll TXTextControl.Windows.Forms.dll txttools.dll	tx26_css.dll tx26_doc.dll tx26_dox.dll tx26_htm.dll tx26_pdf.dll tx26_rtf.dll tx26_xml.dll TXDocumentServer.dll TXDocumentServer.Windows.Forms.dll TXDrawing.dll TXDrawing.Windows.Forms.dll txic.dll txkernel.dll txpdf.dll TXTextControl.dll TXTextControl.Server.dll TXTextControl.Windows.Forms.dll txttools.dll

5.2.10.1. Validation

This component is validated during Software Verification and Validation.

5.2.10.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found no issues related to INVIA

5.2.10.3. Anomaly Review: No issues

A review of the company website (<http://www.textcontrol.com/>) found no security issues.

5.2.11. Tiff Library (Deprecated)

Purpose
Used by 4DM to create screen captures in TIFF format
<p>Safety Classification: A</p> <ul style="list-style-type: none"> The Tiff library is used to create static captures of display data. Since these static captures are not intended for clinical diagnostic review, there is no clinical risk with this component. Base TIFF code is v4.2 (1994)
<p>Usage:</p> <ul style="list-style-type: none"> v2010,v2012,v2013,v2015,v2016,v2017.0/1: v4.2 (1994) Deprecated in v2017.0.2. Replaced by .NET code.
<p>Installed Libraries</p> <ul style="list-style-type: none"> None. Compiled directly into Corridor4DM.

5.2.11.1. Validation

This component is validated during Software Verification and Validation.

5.2.11.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found no issues related to INVIA use of this product.

5.2.11.3. Anomaly Review: No issues

Monitoring anomalies is not necessary since this software has been deprecated and is not in the product any longer.

5.2.12. JPEG Library (Deprecated)

Purpose
Used by 4DM to create screen captures in JPEG format
<p>Safety Classification: A</p> <ul style="list-style-type: none"> The JPEG library is used to create static captures of display data. Since these static captures are not intended for clinical diagnostic review, there is no clinical risk with this component. Base TIFF code is 6b (1998)
<p>Usage:</p> <ul style="list-style-type: none"> v2010,v2012,v2013,v2015,v2016,v2017.0/1: v6b (1998) Deprecated in v2017.0.2. Replaced by .NET code.
<p>Installed Libraries</p> <ul style="list-style-type: none"> None. Compiled directly into Corridor4DM.

5.2.12.1. Validation

This component is validated during Software Verification and Validation.

5.2.12.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found no issues related to INVIA use of this product.

5.2.12.3. Anomaly Review: No issues

Monitoring anomalies is not necessary since this software has been deprecated and is not in the product any longer.

5.2.13. MyDICOM Toolkit

Purpose
<p>DICOM Toolkit Used to implement DICOM network services in Browser</p> <p>Safety Classification: A</p> <ul style="list-style-type: none"> The MyDICOM library is used to communicate and transfer image files between DICOM compliant devices. Since it is not used to rewrite the image data, there is no clinical risk with this component. <p>Usage / Installed Libraries (Corridor4DM) Location: \Program Files\INVIA\Corridor4DM</p> <ul style="list-style-type: none"> v2013 through v2024: MyDICOM.SDK.6.X.dll (6.0.0.0) <p>Usage / Installed Libraries (Corridor4DM(Personal)) Location: \Program Files\INVIA\CorridorBrowser</p> <ul style="list-style-type: none"> All versions: MyDICOM.SDK.6.X.dll (6.0.0.0)

5.2.13.1. Validation

This component is validated during Software Verification and Validation.

5.2.13.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found no issues related to INVIA.

5.2.13.3. Anomaly Review: No issues

A review of the company website (<http://www.mydicom.net/>) found no security issues.

5.2.14. HASP Runtime (Deprecated)

Purpose
<p>Licensing Software using HASP Dongles Used by Corridor4DM to support SafeNET HASP dongles for licensing</p> <p>Safety Classification: A</p> <ul style="list-style-type: none"> • The HASP Runtime library is used to license the Corridor4DM product. Since it is not involved with clinical data, there is no clinical risk with this component. <p>Usage:</p> <ul style="list-style-type: none"> • v2010, v2012: haspdinst.exe (5.90.15164.1) <ul style="list-style-type: none"> ○ Installed only on request. ○ Not used on Vendor Integrations for GE, Philips, and Siemens. • Deprecated in v2013, replaced by Reprise License Manager. <p>Installed Components</p> <ul style="list-style-type: none"> • Service is installed that monitors port 1947

5.2.14.1. Validation

This component is validated during Software Verification and Validation.

5.2.14.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found no issues related to INVIA use of this product.

5.2.14.3. Anomaly Review: No issues

Monitoring anomalies is not necessary since this software has been deprecated and is not in the product any longer.

5.2.15. Reprise License Manager

Purpose
<p>Licensing Software Used by 4DM to support software-based concurrent licensing</p> <p>Safety Classification: A</p> <ul style="list-style-type: none"> • The RLM software is used to license the Corridor4DM product. Since it is not involved with clinical data, there is no clinical risk with this component. <p>Usage:</p> <ul style="list-style-type: none"> • v2012 and higher <ul style="list-style-type: none"> ○ Installed ONLY for License Managers. ○ Not used on Vendor Integrations for GE, Philips, and Siemens. <p>Installed Components (License Managers only)</p> <ul style="list-style-type: none"> • Service is installed that monitors ports 5053, 5054, and 5055 <p>Installed Libraries (since v2023) Location: \Program Files\INVIA\ <ul style="list-style-type: none"> • rlm1242.dll </p>

5.2.15.1. Validation

This component is validated during Software Verification and Validation.

5.2.15.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found no issues related to INVIA

5.2.15.3. Anomaly Review: No issues

A review of the company website (<http://www.reprisesoftware.com/support/>) found no security issues.

5.2.16. Xceed Toolkit for WPF

Purpose
<p>Used by Reporting and Admin for UI controls, such as numeric spinners or color controls.</p> <p>Safety Classification: A</p> <ul style="list-style-type: none"> • Xceed Toolkit is used to give a user a better experience when assigning or changing data. There is no risk that clinical data will be compromised that can result in clinical risk. <p>Usage / Installed Libraries: Location: \Program Files\INVIA\Corridor4DM <ul style="list-style-type: none"> • v2023,v2024: Xceed.Wpf.Toolkit.dll (3.8.0.0) </p>

5.2.16.1. Validation

This component is validated during Software Verification and Validation.

5.2.16.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found no issues related to INVIA

5.2.16.3. Anomaly Review: No issues

A review of the company website (<https://xceed.com/en/our-products/product/toolkit-plus-for-wpf#>) found no security issues.

5.2.17. Microsoft Windows APICodePack

Purpose
Used by 4DM and Admin for folder selection.
<p>Safety Classification: A</p> <ul style="list-style-type: none"> This is used to give a user a better experience when choosing a folder. There is no clinical risk.
<p>Usage:</p> <ul style="list-style-type: none"> v2023, v2024
<p>Installed Libraries</p> <p>Location: \Program Files\INVIA\Corridor4DM</p> <ul style="list-style-type: none"> Microsoft.WindowsAPICodePack.dll (1.1.0.0) Microsoft.WindowsAPICodePack.Shell.dll (1.1.0.0)

5.2.17.1. Validation

This component is validated during Software Verification and Validation.

5.2.17.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found no issues related to INVIA

5.2.17.3. Anomaly Review: No issues

A review of the source website (<https://github.com/contre/Windows-API-Code-Pack-1.1/issues>) found no security issues.

5.2.18. Microsoft Xaml Behaviors

Purpose
<p>Used by 4DM and Admin and Reporting for minor UI effects (e.g., mouse wheel scrolling in a control).</p> <p>Safety Classification: A</p> <ul style="list-style-type: none"> This is used to give a user a better experience. There is no clinical risk. <p>Usage / Installed Libraries: Location: \Program Files\INVIA\Corridor4DM</p> <ul style="list-style-type: none"> v2023, v2024: Microsoft.Xaml.Behaviors.dll (1.1.19.35512)

5.2.18.1. Validation

This component is validated during Software Verification and Validation.

5.2.18.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found no issues related to INVIA

5.2.18.3. Anomaly Review: No issues

A review of the source website (<https://github.com/microsoft/XamlBehaviors/issues>) found no security issues.

5.2.19. Newtonsoft Json.net

Purpose
<p>Used by 4DM to translate XML to Json and read Json formatted files. Also used by 4DM to create and parse Json formatted data exchanged with DicomWeb servers.</p> <p>Safety Classification: A</p> <ul style="list-style-type: none"> A data storage and exchange format. The data is not modified so there is no risk that clinical data will be compromised resulting in clinical risk. <p>Usage / Installed Libraries: Location: \Program Files\INVIA\Corridor4DM</p> <ul style="list-style-type: none"> v2023, v2024: Newtonsoft.Json.dll (12.0.3.23909)

5.2.19.1. Validation

This component is validated during Software Verification and Validation.

5.2.19.2. Cybersecurity Surveillance: No issues

A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found one issue but it was not in the code exercised in the INVIA products.

5.2.19.3. Anomaly Review: No issues

A review of the source website

(<https://stackoverflow.com/questions/tagged/json.net>) found no security issues.

5.3. Items specific to Corridor4DM(Personal)

5.3.1. SQLite

Purpose
Used by Browser to implement SQL database for browser databases.
Safety Classification: A <ul style="list-style-type: none">The SQLite library is used to store demographic and relational links to the image files. Since it is not involved with clinical data, there is no clinical risk with this component.
Usage: <ul style="list-style-type: none">All: v2010 through v2024Not part of any Vendor Integrated release.
Installed Components Location: \Program Files\INVIA\Corridor4DM <ul style="list-style-type: none">SQLite.Interop.dll, System.Data.SQLite.dll (1.0.113.0)

5.3.1.1. Validation

This component is validated during Software Verification and Validation.

5.3.1.2. Cybersecurity Surveillance: No issues


A search of the NVD vulnerability database (<https://nvd.nist.gov/vuln>) found several issues with SQLite but, there are none with the version or modules accessed by INVIA software.

5.3.1.3. Anomaly Review: No issues

A review of the source website (<https://sqlite.org/chronology.html>) found no open security issues.

6. Licensed Software Requirements

6.1. VC Runtime

Licensors	Microsoft Corporation
Version	See Section on OTS Software Components.
System Requirements	Windows OS
Licensing requirements	To redistribute the Visual C++ Runtime files, INVIA must have a valid licensed copy of Visual Studio. INVIA maintains valid licensing for the Microsoft Visual Studio application.
Cost implications	None
Labeling & packaging requirements	None
Reference	N/A
Notes	Redistributable agreement is attached. INVIA redistributes unmodified versions of the provided installers that run as prerequisites during the installation of 4DM.  redist_vs2012.htm

6.2. .NET Framework

Licensors	Microsoft Corporation
Version	See Section on OTS Software Components.
System Requirements	Windows OS
Licensing requirements	To redistribute the .NET Framework with an application, INVIA must have a valid licensed copy of the Microsoft .NET Framework SDK or Visual Studio. INVIA has multiple valid licensed copies of Visual Studio.
Cost implications	None
Labeling & packaging requirements	None
Reference	http://msdn.microsoft.com/en-us/library/ee942965(v=vs.100).aspx
Notes	N/A


6.3. Windows Media Player

Licensors	Microsoft Corporation
Version	See Section on OTS Software Components.
System Requirements	Windows OS
Licensing requirements	Windows Media Player is redistributed as a convenience to systems where it was not installed as part of the OS.
Cost implications	None
Labeling & packaging requirements	None
Reference	N/A
Notes	The presence of Windows Media Player is checked when attempting a wmv screen capture. All other functionality is unaffected if Windows Media Player is not installed.


6.4. Adobe Acrobat Reader

Licensors	Adobe Systems Incorporated
Version	See Section on OTS Software Components.
System Requirements	Windows OS
Licensing requirements	We may distribute the software as a part of our distributed product through electronic means, such as electronic download, for example bundled in our installer and on physical media
Cost implications	None
Labeling & packaging requirements	None
Reference	http://www.adobe.com/
Notes	https://www.adobe.com/products/clients/all_dist_agreement.html


6.5. Intel IPP Library

Licensor	Intel Corporation
Version	See Section on OTS Software Components.
System Requirements	Microsoft Windows 10 and Windows Server 2016, or a higher version.
Licensing requirements	INVIA has a license to develop and distribute applications using the Intel IPP (Image Processing Primitives) library. Each developer has a separate license. No runtime licensing is required.
Cost implications	None
Labeling & packaging requirements	None
Reference	https://software.intel.com/content/www/us/en/develop/tools/integrated-performance-primitives.html
Notes	<p>A copy of the licensing agreement is attached.</p> <div style="text-align: center;">  clicense.rtf </div>


6.6. Ceres Solver

Licensor	Google Inc.
Version	See Section on OTS Software Components.
System Requirements	The ceres.dll is compiled and linked using Visual Studio. Ceres doesn't have any dependencies other than the C++ standard library.
Licensing requirements	<p>Ceres Solver - A fast non-linear least squares minimizer Copyright (c) 2014 Google Inc. All rights reserved.</p> <p>Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:</p> <p>Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. Neither the name of Google Inc., nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.</p> <p>This software is provided by the copyright holders and contributors "AS IS" and any express or implied warranties, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose are disclaimed. In no event shall Google Inc. be liable for any direct, indirect, incidental, special, exemplary, or consequential damages (including, but not limited to, procurement of substitute goods or services; loss of use, data, or profits; or business interruption) however caused and on any theory of liability, whether in contract, strict liability, or tort (including negligence or otherwise) arising in any way out of the use of this software, even if advised of the possibility of such damage.</p>
Cost implications	None
Labeling & packaging requirements	See "Licensing requirements" above
Reference	http://ceres-solver.org/
Notes	 license.txt


6.7. Eigen

Licensors	http://eigen.tuxfamily.org/
Version	See Section on OTS Software Components.
System Requirements	The ceres.dll is compiled and linked using Visual Studio. Eigen doesn't have any dependencies other than the C++ standard library.
Licensing requirements	Based on Q8 of the MPL2 FAQ (https://www.mozilla.org/en-US/MPL/2.0/FAQ/) we must inform recipients of where they can get the source for the MPLed code (Eigen). See section 3.6.
Cost implications	None
Labeling & packaging requirements	None
Reference	http://eigen.tuxfamily.org/
Notes	Built with the "EIGEN_MPL2_ONLY" compiler flag so that only options licensed under the MPL2 license (https://www.mozilla.org/en-US/MPL/2.0/) are included.  COPYING.MPL2


6.8. ExpertPDF PDF Creator

Licensors	ExpertPDF Components
Version	See Section on OTS Software Components.
System Requirements	Windows OS (XP and later)
Licensing requirements	INVIA has a Company/Redistributable license to distribute this component. No runtime licensing is required.
Cost implications	None
Labeling & packaging requirements	None
Reference	http://www.html-to-pdf.net/
Notes	A copy of the licensing agreement is attached.  eula.rtf

6.9. Ultimate PDF Viewer

Licensor	ComponentPro
Version	See Section on OTS Software Components.
System Requirements	<p>Windows OS (XP and later)</p> <p>Developers can use the library in any .NET languages like C#, VB.NET, J#, C++, and F#. The following are supported platforms:</p> <ul style="list-style-type: none"> .NET Framework: 2.0, 3.5, 4.0, 4.5, 4.5.1
Licensing requirements	<p>INVIA has a license to distribute this component. No runtime licensing is required. However, according to section 7 of the licensing agreement we are required to inform end users that they are not allowed to use the software independently from our product. See section 3.3.</p> <p>“The end user will not use the ComponentPro DLLs independently from Corridor4DM unless they obtain appropriate licenses from ComponentPro.”</p>
Cost implications	None
Labeling & packaging requirements	See “Licensing requirements” above
Reference	http://www.componentpro.com/
Notes	 <p>License Agreement.pdf</p>

6.10. TxTextControl

Licensor	Text Control GmbH
Version	See Section on OTS Software Components.
System Requirements	Windows OS (7 and later) TX Text Control .NET supports the following development environments or scripting engines: <ul style="list-style-type: none"> • Microsoft Visual C# .NET TX Text Control .NET supports the following Microsoft .NET Frameworks: <ul style="list-style-type: none"> • .NET 4.0 • .NET 4.5
Licensing requirements	INVIA has a license to develop and distribute applications using the TxTextControl library. Each developer has a separate license. No runtime licensing is required.
Cost implications	None
Labeling & packaging requirements	None
Reference	http://www.textcontrol.com/
Notes	 tx_dotnet_license.pdf f


6.11. libtiff

Licensor	Silicon Graphics, Inc., Sam Leffler
Version	See Section on OTS Software Components.
System Requirements	None. The package is highly portable C code.
Licensing requirements	Copyright statement must be included with software documentation/distribution. The TIFF file capture option utilizes a TIFF binary library Copyright © 1988, 1989, 1990, 1991, 1992, 1993, 1994 Sam Leffler Copyright © 1991, 1992, 1993, 1994 Silicon Graphics, Inc.
Cost implications	None
Labeling & packaging requirements	See “Licensing requirements” above
Reference	N/A
Notes	N/A

6.12. libjpeg

Licensors	Independent JPEG Group, Thomas G. Lane
Version	See Section on OTS Software Components.
System Requirements	None. The package is highly portable C code.
Licensing requirements	Copyright statement must be included with software documentation/distribution. The JPEG file capture option is based in part on the work of the Independent JPEG Group Copyright © 1991-1998, Thomas G. Lane.
Cost implications	None
Labeling & packaging requirements	See "Licensing requirements" above
Reference	N/A
Notes	N/A


6.13. MyDICOM Toolkit

Licensors	MyDICOM, LLC
Version	See Section on OTS Software Components.
System Requirements	None. This is a C# Software Development Kit (SDK).
Licensing requirements	INVIA has a license to distribute this component. No runtime licensing is required.
Cost implications	None
Labeling & packaging requirements	None
Reference	http://www.mydicom.net/
Notes	A copy of the licensing agreement is attached.  MyDICOMLicenseAgreement.rtf

6.14. HASP Runtime

Licensor	SafeNet, Inc
Version	See Section on OTS Software Components.
System Requirements	Windows OS (XP and later)
Licensing requirements	SafeNet confirmed that there are no restrictions.
Cost implications	None
Labeling & packaging requirements	None
Reference	http://www.safenet-inc.com/products/software-rights-management/sentinel-hasp-hl/
Notes	N/A

6.15. Reprise License Manager

Licensor	Reprise Software, Inc.
Version	V10.0: C4DM v2012 - v2017 V12.0: C4DM v2017.0.2 -
System Requirements	Windows OS (7 and later)
Licensing requirements	INVIA has a license to distribute the license server and programs linked against the license client APIs. No runtime licensing is required.
Cost implications	None
Labeling & packaging requirements	None
Reference	http://www.reprisesoftware.com/
Notes	A copy of the licensing agreement is attached.  Reprise_SLA.pdf

6.16. Xceed Toolkit for WPF

Licensor	Xceed
Version	See Section on OTS Software Components.
System Requirements	Windows OS (XP and later)
Licensing requirements	No runtime licensing is required.
Cost implications	None
Labeling & packaging requirements	None
Reference	https://xceed.com/en/our-products/product/toolkit-plus-for-wpf
Notes	We purchased the blueprint license which includes source.

6.17. Microsoft Windows APICodePack

Licensor	Microsoft Corporation
Version	See Section on OTS Software Components.
System Requirements	Windows OS
Licensing requirements	This software is available to use with the MIT license which has no restrictions.
Cost implications	None
Labeling & packaging requirements	None
Reference	https://www.nuget.org/packages/Microsoft-WindowsAPICodePack-Core/
Notes	N/A


6.18. Microsoft Xaml Behaviors

Licensor	Microsoft Corporation
Version	See Section on OTS Software Components.
System Requirements	Windows OS
Licensing requirements	This software is available to use with the MIT license which has no restrictions.
Cost implications	None
Labeling & packaging requirements	None
Reference	https://github.com/Microsoft/XamlBehaviors
Notes	N/A

6.19. Json.net

Licensor	Newtonsoft
Version	See Section on OTS Software Components.
System Requirements	None. The package is highly portable code.
Licensing requirements	Copyright statement must be included with software documentation/distribution. Copyright (c) 2007 James Newton-King
Cost implications	None
Labeling & packaging requirements	See “Licensing requirements” above
Reference	https://www.newtonsoft.com/json
Notes	N/A

6.20. SQLite

Licensor	Intel Corporation
Version	See Section on OTS Software Components.
System Requirements	Visual Studio (any version)
Licensing requirements	SQLite is public domain.
Cost implications	None
Labeling & packaging requirements	None
Reference	http://www.sqlite.org/
Notes	<p>A copy of the licensing agreement is attached.</p> <div style="text-align: center;">  license.doc </div>

7. License Text

The license text that is required is identified under Labeling and Packaging requirements for each application in Section 6.

8. Anomaly Review

Anomaly reviews each licensed OTS software is noted in Section 6.

Currently, there are no known anomalies with any of the OTS items listed here that affect **Corridor4DM**.