PP-Module for Redaction Tools

Version: 1.0-Draft
2022-04-29
National Information Assurance Partnership

Revision History

Version	Date	Comment
1.0-Draft	2022-04-29	Initial publication

Contents

1 Introduction

1.1 Overview

The scope of this Protection Profile Module (PP-Module) is to describe the security functionality of redaction tools in terms of [CC] and to define functional and assurance requirements for such products. This PP-Module is intended for use with the following Base-PPs:

- Protection Profile for Application Software, Version 1.4 (App PP or PP_APP_V1.4)

This Base-PP is valid a redaction tool is a specific type of software application and can therefore be reasonably expected to implement security functionality that is typical of application software. Redaction is the process of selectively removing and replacing information from a document or other logical container of data for release to an audience not intended to view that information. Redacted information is not limited to classified material; other examples include privacy data, proprietary information, trade secrets, and legal strategy. Instances of redaction include replacing classified text with a black box to release a document to an unclassified environment, replacing privacy-related data such as telephone numbers with all Xs to release a database to a contractor, converting a proprietary format document to Portable Document Format (PDF) to release a what-you-see-is-what-you-get (WYSIWYG) document. The risk from improper or incomplete redaction is the inadvertent disclosure of classified or sensitive data.
Redaction is not sanitization. In the sanitization process, information is removed with no indication that the sanitization process took place. In the redaction process, selected visible information is removed and replaced with something innocuous (e.g. black box or text) so that the reader knows redaction took place. This replacement is a critical part of the process not shared with sanitization. Redaction is not sanitization. In the sanitization process, information is removed with no indication that the sanitization process took place. In the redaction process, selected visible information is removed and replaced with something innocuous (e.g. black box or text) so that the reader knows redaction took place. This replacement is a critical part of the process not shared with sanitization.

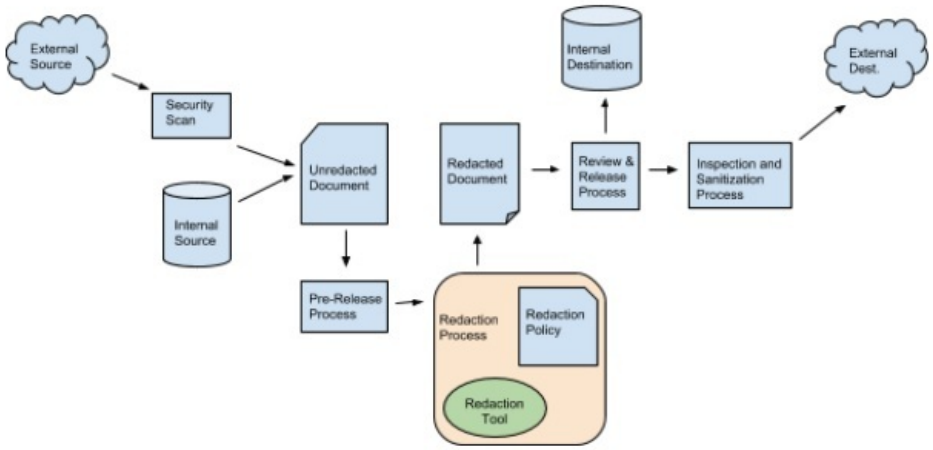


Figure 1: Figure 1: One possible workflow of an electronic document through the redaction process.

Figure 1 shows the typical workflow of a document from source to destination and through the redaction process. Other workflows are possible. Software vendors have the flexibility to devise their own workflow solutions for their target consumer. However, in any workflow, this PP-Module applies only to the part of the workflow that is performed by the redaction tool and only to the redaction functionality in that tool. Other functionality in the redaction tool, other tools used in the workflow, the organization's redaction policy as well as security requirements and security policies that apply to other parts of the workflow are beyond the scope of this PP-Module.

1.2 Terms

The following sections list Common Criteria and technology terms used in this document.

1.2.1 Common Criteria Terms

Assurance	Grounds for confidence that a TOE meets the SFRs [CC].
Base Protection Profile (Base-PP)	Protection Profile used as a basis to build a PP-Configuration.
Collaborative Protection Profile (cPP)	A Protection Profile developed by international technical communities and approved by multiple schemes.

Common Criteria (CC)	Common Criteria for Information Technology Security Evaluation (International Standard ISO/IEC 15408).
Common Criteria Testing Laboratory	Within the context of the Common Criteria Evaluation and Validation Scheme (CCEVS), an IT security evaluation facility accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) and approved by the NIAP Validation Body to conduct Common Criteria-based evaluations.
Common Evaluation Methodology (CEM)	Common Evaluation Methodology for Information Technology Security Evaluation.
Distributed TOE	A TOE composed of multiple components operating as a logical whole.
Extended Package (EP)	A deprecated document form for collecting SFRs that implement a particular protocol, technology, or functionality. See Functional Packages.
Functional Package (FP)	A document that collects SFRs for a particular protocol, technology, or functionality.
Operational Environment (OE)	Hardware and software that are outside the TOE boundary that support the TOE functionality and security policy.
Protection Profile (PP)	An implementation-independent set of security requirements for a category of products.
Protection Profile Configuration (PP-Configuration)	A comprehensive set of security requirements for a product type that consists of at least one Base-PP and at least one PP-Module.
Protection Profile Module (PP-Module)	An implementation-independent statement of security needs for a TOE type complementary to one or more Base-PPs.
Security Assurance Requirement (SAR)	A requirement to assure the security of the TOE.
Security Functional Requirement (SFR)	A requirement for security enforcement by the TOE.
Security Target (ST)	A set of implementation-dependent security requirements for a specific product.
Target of Evaluation (TOE)	The product under evaluation.
TOE Security Functionality (TSF)	The security functionality of the product under evaluation.
TOE Summary Specification (TSS)	A description of how a TOE satisfies the SFRs in an ST.

1.2.2 Technical Terms

Attachments	An electronic document or data file that is part of the main file but is logically distinct and separable from the main electronic document.
Complex Objects	Objects that may have their own static or functional metadata and may differ between the stored and visible form, such as images, attachments, Microsoft OLE objects, Microsoft ActiveX controls, and temporal objects.
Functional data	Forms, scripts, link Uniform Resource Locators (URLs), workflow data, action buttons, formulas in a spreadsheet, macros or any type of executable content.
Images	The actual image data stored in the file as opposed to what is visible; the visible image can be

	cropped or resized but the full image could still be retained in the file format and may or may not match the visible image; some image formats can have their own metadata, such as Joint Photographic Experts Group (JPG) and Tagged Image File Format (TIFF).
Metadata of objects or embedded objects	Data associated with an object to describe or identify the contents of the object such as exchangeable image file format (EXIF) data of images; images themselves can contain other images and their own metadata.
Obscured visible data	Content that could be visible but is obscured in some way such as content that runs off an edge of the container, text in a black font on black background (or any color of font on a similar color background), very small fonts, cropped or clipped graphics or images, hidden layers, portions of an embedded object (e.g. Microsoft Object Linking and Embedding (OLE)) that are outside the view container.
Remnant data	Artifacts of the original application or source file format such as remnant or unreferenced data from fast saves, unreferenced or unused elements, malformed elements that cannot be fixed, garbage data in the file structure.
Static data or metadata	File properties such as author or creation date, stored form field data, undo cache or any data kept to revert to a prior version of an element or the document itself, incremental updates, collaboration data such as comments, tracked changes, workflow data, embedded search indexes, bookmarks, document info added by 3rd-party apps, accessibility data such as alternate text, etc.
Structual data	Data that is part of the file format structure, such as a file header or fonts, and is necessary to interpret the file properly for display or print.
Temporal Objects	A particular type of complex object whose representation extends through a time interval, such as video, audio, flash animation, slide shows, etc. References to “complex objects” in the requirements section of this paper include temporal objects.
Visible contents	The visible contents of the file; the visual representation of text, images and complex objects.

1.3 Compliant Targets of Evaluation

The Target of Evaluation (TOE) described by this PP-Module is limited to the redaction of electronic documents defined in standards such as the series International Organization for Standards (ISO)/International Electrotechnical Commission (IEC)-29500 (Office OpeneXtensible Markup Language (XML), e.g. Microsoft Word, PowerPoint, and Excel documents) and ISO/IEC-32000 (PDF), or the definitive standard for a format. Mail guards, filters, and batch redaction tools are beyond the scope of this PP_module. Requirements that apply to features such as administrative control over particular redaction settings, multi-person review prior to release, etc., are outside the scope of this PP-Module. The TOE may have those features but is not required to have them and their use and enforcement is governed by the organization’s redaction policy.

This PP-Moudle covers the software functionality of the redaction process; it does not include requirements for how users should decide what to redact or other policy issues. Analysis of documents for covert data transfer is part of the decision-making process for what to redact and so occurs prior to the redaction itself. The requirements in this document are independent of requirements levied on document release by statute or the judiciary.

Data execution risks inherent in some file formats are beyond the scope of this PP-Module. This PP-Module assumes that scanning for such risks occurs prior to the document entering the redaction functionality of the TOE.

Documents to be redacted may contain objects that are vulnerable to steganography, such as images or video. Functional data such as scripts can contain strings or images that may not be accessible to the redaction tool. Analysis of such objects for attacks or covert data transfer will occur outside of the redaction process. An organization’s security policy will determine whether such objects are released or redacted in their entirety.

1.3.1 TOE Boundary

The physical boundary for a TOE that conforms to this PP-Module is a software application that installed on top of a general-purpose or mobile operating system. The TOE’s logical boundary includes all functionality required by the claimed Base-PP as well as the redaction functionality and related capabilities that are defined in this PP-Module. Any functionality that is provided by the application that is not relevant to the security requirements defined by this PP-Module or the Base-PP is considered to be outside the scope of the TOE.

1.4 Use Cases

Redaction Tools perform tasks associated primarily with the following use case.

[USE CASE 1] Content Redaction

Redaction tools are used for the redaction of user selected content from a document.

2 Conformance Claims

Conformance Statement

This PP-Module inherits exact conformance as required from the specified Base-PPs and as defined in the CC and CEM addenda for Exact Conformance, Selection-Based SFRs, and Optional SFRs (dated May 2017).

CC Conformance Claims

This PP-Module is conformant to Parts 2 (extended) and 3 (extended) of Common Criteria Version 3.1, Revision 5 [CC].

PP Claim

This PP-Module does not claim conformance to any PP.

Package Claim

This PP-Module does not claim conformance to any packages.

3 Security Problem Description

The security problem is described in terms of the threats that the TOE is expected to address, assumptions about its operational environment (OE), and any organizational security policies that the TOE is expected to enforce.

3.1 Threats

The following threats defined in this PP-Module extend the threats defined by the Base-PP.

T.CLUES_TO_ORIGINAL_DATA
Text or graphics placed in the redacted area by the TOE may contain clues to the nature of the original redacted information.

T.UNREDACTED_DATA
A failure of the redaction tool to remove user selected visable or hidden data could reuslt in the inadvertant dissemination of information.

3.2 Assumptions

These assumptions are made on the Operational Environment (OE) in order to be able to ensure that the security functionality specified in the PP-Module can be provided by the TOE. If the TOE is placed in an OE that does not meet these assumptions, the TOE may no longer be able to provide all of its security functionality. This PP-Module defines assumptions that extend those defined in the supported Base-PP.

A.KNOWLEDGEABLE_USER
The user is knowledgeable concerning document management and has appropriate training with the redaction tool. Part of this knowledge and training includes how to prepare a document for the redaction tool, e.g. resolve and turn off tracked changes prior to redaction, work with a copy of the document and preserve the original file, remove passwords and decrypt files, etc.

A.INFORMATION_RELEASE_POLICY
There is a redaction or information release policy in place for the organization which the user follows.

A.PRESERVE_DOCUMENT_LAYOUT
The TOE will preserve the layout of the document.

4 Security Objectives

4.1 Security Objectives for the TOE

O.INSPECTION
The TOE will analyze the file content for metadata and elements, to include any that are purposely hidden or not immediately visible to the naked eye. This metadata and elements includes, but is not limited to those that are obstructed from view such as shapes on top of text, hidden objects (manual direct formatting or programmatically hidden), and text that is positioned off the margins, and/or is located in header and footer sections of the file.

O.MANAGEMENT
placeholder

O.QUALITY
placeholder

O.REDACTION
The TOE will provide the capability to completely remove any data selected for redaction.

O.REPORT
The TOE will provide the capability to produce a report of all data redacted and any errors during redaction.

4.2 Security Objectives for the Operational Environment

The OE of the TOE implements technical and procedural measures to assist the TOE in correctly providing its security functionality (which is defined by the security objectives for the TOE). The security objectives for the OE consist of a set of statements describing the goals that the OE should achieve. This section defines the security objectives that are to be addressed by the IT domain or by non-technical or procedural means. The assumptions identified in Section 3 are incorporated as security objectives for the environment. This PP-Module defines environmental security objectives that extend those defined in the supported Base-PP.

OE.PLACEHOLDER
placeholder

4.3 Security Objectives Rationale

This section describes how the assumptions, threats, and organizational security policies map to the security objectives.

Table 1: Security Objectives Rationale

Threat, Assumption, or OSP	Security Objectives	Rationale
T.CLUES_TO_ORIGINAL_DATA	O.PLACEHOLDER	placeholder
T.UNREDACTED_DATA	O.PLACEHOLDER	placeholder
A.KNOWLEDGEABLE_USER	OE.PLACEHOLDER	placeholder
A.INFORMATION_RELEASE_POLICY	OE.PLACEHOLDER	placeholder
A.PRESERVE_DOCUMENT_LAYOUT	OE.PLACEHOLDER	placeholder

5 Security Requirements

This chapter describes the security requirements which have to be fulfilled by the product under evaluation. Those requirements comprise functional components from Part 2 and assurance components from Part 3 of [CC]. The following conventions are used for the completion of operations:

- **Refinement** operation (denoted by **bold text** or ~~strikethrough text~~): is used to add details to a requirement (including replacing an assignment with a more restrictive selection) or to remove part of the requirement that is made irrelevant through the completion of another operation, and thus further restricts a requirement.
- **Selection** (denoted by *italicized text*): is used to select one or more options provided by the [CC] in stating a requirement.
- **Assignment** operation (denoted by *italicized text*): is used to assign a specific value to an unspecified parameter, such as the length of a password. Showing the value in square brackets indicates assignment.
- **Iteration** operation: is indicated by appending the SFR name with a slash and unique identifier suggesting the purpose of the operation, e.g. "/EXAMPLE1."

5.1 Application Software PP Security Functional Requirements Direction

Placeholder

5.1.1 Modified SFRs

This PP-Module does not modify any SFRs defined by the Application Software PP.

5.2 TOE Security Functional Requirements

The following section describes the SFRs that must be satisfied by any TOE that claims conformance to this PP-Module. These SFRs must be claimed regardless of which PP-Configuration is used to define the TOE.

5.2.1 Security Audit (FAU)

FAU_ALR_EXT.1 Redaction Failure Notification

FAU_ALR_EXT.1.1

The TOE must make the user aware when redaction fails for any reason.

Evaluation Activities

FAU_ALR_EXT.1
TSS
The evaluator shall examine the TSS to ensure it describes how the TOE notifies the user when redaction fails. The evaluator shall ensure that the TSS' description complies with the requirement that the user is notified when redaction fails for any reason.

Guidance
There are no guidance EAs for this component.

Tests
The evaluator shall acquire or create test files that should fail the redaction, apply the TOE and verify that the TOE alerts the user that the redaction failed.

FAU_REP_EXT.1 Report Generation

FAU_REP_EXT.1.1

The TOE must be able to generate a report entry that contains metadata about each element that was redacted, including at least the following: the type of the element that was removed, the location if it was a visible element, and whether the element was selected by the user or removed automatically.

Application Note: The report can be a configurable feature that is only generated on user request. Location can be a page number, a cell number for a spreadsheet, or some other indication that allows the user to easily locate the visible element.

Evaluation Activities

FAU_REP_EXT.1

TSS
The evaluator shall examine the TSS to ensure it describes the TOE's reporting feature and the metadata that is included for each report entry.

Guidance
The evaluator shall examine the operational guidance to ensure it contains instructions for the configuration of the reporting feature in accordance with this requirement.

Tests
The evaluator shall create test files with specific elements to redact, apply the TOE to the test files, and observe that there is a report for each element expected to be redacted. This assurance activity can be done in conjunction with FAU_SAR_EXT.1.

FAU_SAR_EXT.1 Report Review

FAU_SAR_EXT.1.1

The TOE must allow the user to access a report of the data that was redacted.

Application Note: This can be satisfied with a dialog box or other simple list of items that were redacted. The report can be a configurable feature that is only generated on user request.

Evaluation Activities

FAU_SAR_EXT.1
TSS
There are no TSS EAs for this component.

Guidance
There are no guidance EAs for this component.

Tests
The evaluator shall create test files with specific elements to redact, apply the TOE to the test files, and observe that there is a report entry for each element expected to be redacted.

5.2.2 User Data Protection (FDP)

FDP_DID_EXT.1 Identification of Data

FDP_DID_EXT.1.1

The TOE must identify all hidden data in the document, except remnant data and undo or tracked change buffers, and allow the user to review and select each hidden data element individually for redaction.

Application Note: Remnant data and undo or tracked change buffers are removed automatically according to FDP_RIP_EXT.1. If the file or part of the file is encrypted, the TOE will have to reject the file or decrypt it so that the tool and the user can review the hidden data.

FDP_DID_EXT.1.2

The TOE must identify all obscured data and must [**selection**: *remove the obscured data automatically*, *allow the user to redact the obscured data*].

Application Note: Obscured data is anything that could be visible but is obscured in some way, such as the cropped portion of an image or graphic. While the user sees only the portion of the graphic in the view container, the document contains the data in the cropped area. The tool must either remove the obscured data automatically or give the user the choice to remove or retain the obscured area.

FDP_DID_EXT.1.3

The TOE must identify images where the visible representation is reduced in size or resolution from the representation stored in the file format and must [**selection**: *automatically replace the stored data with the visible representation*, *allow the user to replace the stored data with the visible representation*, *allow the user to leave the image unaltered*].

Evaluation Activities

FDP_DID_EXT.1

TSS
The evaluator shall examine the TSS to ensure it specifies the hidden data that it identifies and allows the user to select for redaction. The evaluator shall ensure that the TSS' description complies with the requirement for the TOE to identify all hidden data and allow the user to review and select each hidden data element for redaction.

The evaluator shall examine the TSS to ensure it describes how the TOE handles all obscured data. The evaluator shall ensure that the TSS' description complies with the requirement that all obscured data is identified and either removed automatically or redacted by the user.

There are no TSS EAs for this element.

Guidance
There are no guidance EAs for this element.

There are no guidance EAs for this element.

There are no guidance EAs for this element.

Tests
The evaluator shall create test documents with various types of hidden data apply the TOE, and verify that it identifies each expected element and allows the user to select and redact each. The evaluator shall create test documents with various forms of obscured data, apply the TOE, and verify that the tool identifies the obscured data and either removes the obscured data automatically or gives the user the choice to remove or retain the obscured data. The evaluator shall create a test document with an image that is stored in a larger size and resolution than the visible image and apply the TOE without selecting the image for redaction. The evaluator shall verify that the TOE either

- *gives the user a choice to retain the image unaltered or replace the stored data with the visible data. For the choice to replace the image, the evaluator shall examine the output file to locate the image and verify its size and resolution, or extract the image with an appropriate tool for that format and compare the size and resolution of the extracted image to the visible image to determine if they match.*
- *resizes the stored image. To determine this, the evaluator shall examine the output file to locate the image and verify its size and resolution, or extract the image with an appropriate tool for that format and compare the size and resolution of the extracted image to the visible image to determine if they match.*

FDP_DIN_EXT.1 Deep Inspection

FDP_DIN_EXT.1.1

For each element of the file format that can contain its own metadata, other elements, or hidden data, the TOE must [**selection**: *recurse through the element chain and apply the PP to each layer, simplify the element, redact the element*].

Application Note: For example, JPG images can contain metadata called EXIF data. Some image formats can contain the same image in another format, such as raw which can contain a complete jpg version of the image. A complex object can contain other complex objects (e.g. Microsoft OLE). The tool must apply the requirements to each layer of every element and identify hidden/metadata not just at the top layer of the document but in each element and in all layers within that element. If the TOE cannot recurse through the layers, it must simplify the element at the top level.

Evaluation Activities

FDP_DIN_EXT.1
TSS
The evaluator shall examine the TSS to ensure it lists and describes the methods used to replace redacted elements that contain metadata, other elements, or hidden data. The evaluator shall ensure that the TSS' description complies with the requirement that each element is handled by either recursing through the element chain and applying the TOE to each layer, simplifying the element, or redacting the element.

Guidance
There are no guidance EAs for this component.

Tests
The evaluator shall create or acquire test files that contain elements that themselves contain other elements and hidden data. The evaluator shall examine the document to identify these elements in the structure, apply the TOE, and examine the output to verify that the elements were handled properly via either redaction or simplification in accordance with the requirement.

FDP_LOC_EXT.1 Redact Content from Every Location

FDP_LOC_EXT.1.1

The TOE must remove redacted content from every location in the file format where it is stored.

Evaluation Activities

FDP_LOC_EXT.1
TSS
There are no TSS EAs for this component.

Guidance
There are no guidance EAs for this component.

Tests
The evaluator shall create or acquire test files that contain content in multiple places and examine the files to locate the content. The evaluator shall apply the TOE and examine the output to verify that it has been removed from every location.

FDP_NND_EXT.1 No New Data Introduced by TOE

FDP_NND_EXT.1.1

The TOE itself must not introduce new hidden data that was not requested by the user without warning the user of the addition.

Application Note: If the redaction process changes the format of an object, such as converting a complex object to an image, the conversion must not introduce new metadata.

The TOE can modify or add structural data, including fonts, without alerting the user if the modification is necessary for the proper display or print of the file.

Evaluation Activities

FDP_NND_EXT.1
TSS
The evaluator shall examine the TSS to ensure it describes the actions taken by the TOE when removing, simplifying, or redacting an element. If structural data is added, the TSS shall specify what structural data is added and the purpose of the structural data. If non-structural hidden data is added, the TSS shall detail the added hidden data and describe how the user is notified of the addition. The evaluator shall ensure that the TSS' description complies with the requirement to not introduce new hidden data, other than structural data, without warning the user.

Guidance
There are no guidance EAs for this component.

Tests
The evaluator shall create or acquire test files with complex objects or other elements and examine the files to locate those items in the structure. The examiner shall apply the TOE and examine the output to verify that no new hidden/metadata was introduced.

FDP_OBJ_EXT.1 Removal of Objects and Corresponding References

FDP_OBJ_EXT.1.1

The TOE must remove all references and indicators in the structural data to objects that are completely redacted by the TOE.

Application Note: In some formats, there are references in the structural data to objects, such as a name dictionary in PDF. If an object in a PDF document, such as an image, is completely redacted (i.e. the user has selected the entire image to be redacted), then not only must the image data be removed, but references to it in a name dictionary as well as all structural references to the image must be removed. If only part of the object is selected for redaction, then the references necessarily remain in the file since the object remains in the file.

Evaluation Activities

FDP_OBJ_EXT.1

TSS
The evaluator shall examine the TSS to ensure its description of the removal of redacted objects includes the removal of all references and indicators to the redacted objects in conformance with the requirement.

Guidance
There are no guidance EAs for this component.

Tests
The evaluator shall create or acquire test files that contain objects and examine the files to locate these objects in the file format and all references to them in the structural data. The evaluator shall apply the TOE and select elements for complete redaction. The evaluator shall examine the output files to verify that the objects and all references to them have been redacted.

FDP_REM_EXT.1 Removal of Redacted Data

FDP_REM_EXT.1.1

All data that is either selected by the user for redaction or identified by the TOE for redaction must be removed from the document.

Application Note: Selected content must be removed, not obscured by encryption, encoding, conversion to a proprietary format, or any other method.

Evaluation Activities

FDP_REM_EXT.1
TSS
The evaluator shall examine the TSS to ensure it describes the removal of all data selected for redaction and verify that no encryption, encoding or proprietary process is used to obscure selected data. The evaluator shall ensure that the TSS' description complies with the requirement to remove all data selected by the user or identified by the TOE for redaction.

Guidance
There are no guidance EAs for this component.

Tests
The evaluator shall acquire or create test files that contain text, images and other elements. The evaluator shall examine the test files to locate the content in the format. The evaluator shall apply the TOE, marking some of the content for redaction, and examine the output to verify that the marked content was removed and not obscured through encryption, encoding, or conversion to a proprietary format.

FDP_RIP_EXT.1 Residual Information Removal

FDP_RIP_EXT.1.1

The TOE must automatically remove all remnant data, undo buffers, tracked changes buffers, multiple versions of the same object, and any buffer or cache type container of data.

Application Note: The user does not have to select this data for removal.

Evaluation Activities

FDP_RIP_EXT.1
TSS
The evaluator shall examine the TSS to ensure it specifies the residual data and objects (e.g., remnant data, undo buffers, tracked changes buffers, multiple versions of the same object, and any buffer or cache type data container) that the TOE will remove from files without any user interaction. The evaluator shall ensure that the TSS' description complies with the requirement to automatically remove all such data.

Guidance
There are no guidance EAs for this component.

Tests
The evaluator shall create or acquire test files that contain the types of data described in the requirement and examine the files to locate the data. The evaluator shall apply the TOE and not select anything for redaction, and examine the files to verify that this data has been removed automatically.

FDP_RPL_EXT.1 Visible Space Replace

FDP_RPL_EXT.1.1

The TOE must replace the visible space of redacted content in such a way that the visible space conveys no information about the previous contents.

Application Note: A vendor may use several different methods to replace content, such as opaque blocks, text, whitespace or some other vendor-defined method. These methods must not convey information about the content being replaced. For example, if text is replaced with text, the replacement text must not indicate length of component words. Blocks of color used to replace parts of images must not show variations in intensity that could convey information about the image content.

Evaluation Activities

FDP_RPL_EXT.1
TSS
The evaluator shall examine the TSS to ensure it lists and describes the content used to replace redacted elements. The evaluator shall ensure that the TSS' description complies with the requirement to convey no information about the previous contents.

Guidance
There are no guidance EAs for this component.

Tests
The evaluator shall create or acquire a test file with an image, mark part of the image for redaction and apply the TOE, and examine the image in the output to verify that the visual appearance does not provide any indication of the content that was redacted. If the TOE allows text content to be replaced with text, the evaluator shall create or acquire a test file with some text as content, apply the TOE, and verify that the replacement text does not preserve word length or other identifying information that could allow recovery of the original content.

FDP_RVW_EXT.1 Element Review

FDP_RVW_EXT.1.1

The TOE must allow the user to review and select each element of visible data in whole or in part for redaction.

Application Note: If the file or part of the file is encrypted, the TOE will have to reject the file or decrypt it so that the user can review the data.

Evaluation Activities

FDP_RVW_EXT.1
TSS
There are no TSS EAs for this component.

Guidance
There are no guidance EAs for this component.

Tests
The evaluator shall create test documents that contain images, text, and complex objects, apply the TOE and verify that each element is selectable for redaction in whole or in part.

FDP_SEL_EXT.1 Selected Redaction

FDP_SEL_EXT.1.1

The TOE must [**selection**: *simplify*, *remove*] any complex object, embedded object or graphic image which is selected for redaction.

Application Note: The selection may be of either the whole element or only part of the element. If part of an element is selected, only that part must be simplified or removed.

Evaluation Activities

FDP_SEL_EXT.1
TSS
The evaluator shall examine the TSS to ensure it describes in detail which complex objects can be simplified by the TOE and how they are simplified (e.g. whether the object or the whole page is converted to another format and what that format is). The TSS shall also list those complex objects or images that cannot be simplified and will be removed.

Guidance
There are no guidance EAs for this component.

Tests
The evaluator shall create or acquire test documents that contain complex objects and examine the documents to identify where those objects are in the format. The evaluator shall then apply the TOE and examine the output to verify that the objects have been simplified or removed. The evaluator shall test all objects that can be simplified as well as all objects that should be removed according to the TSS.

The evaluator shall also create or acquire test documents with complex objects that are not documented in the TSS, apply the TOE, and verify that those objects are removed from the document.

FDP_VAL_EXT.1 Validation of Data

FDP_VAL_EXT.1.1

The TOE must remove unrecognized data, unexpected data, and extraneous structural data.

Application Note: Structural data is extraneous if it is unnecessary for the printing or display of the document contents, or unnecessary for the functionality of the document.

Example - many formats include comments, e.g. PDF allows file format comments which are preceded by %. When these comments are unnecessary, unrelated to the printing or display of the content of the document, or provide no functionality whatsoever they must be removed.

Example – some formats expect a header structure starting at the first byte of a file, but a tool may be able to interpret a file where the header starts at a later byte by ignoring the data that precedes the header structure. In this case, the preceding data must be removed since it is unexpected.

FDP_VAL_EXT.1.2

The TOE must [**selection**: *simplify*, *remove*] any element which it cannot completely interpret.

Application Note: For example, if the tool cannot recurse through a stream with embedded OLE objects, it must convert the stream to a single layer image with no metadata or remove it. If the redaction tool cannot interpret or process temporal objects, it must remove the temporal object and replace it with a simplified object or other placeholder. If a stream of data is compressed, encoded or encrypted and the redaction tool cannot uncompress, decode or decrypt the data, the tool must delete the stream.

Evaluation Activities

FDP_VAL_EXT.1
TSS
There are no TSS EAs for this element.

The evaluator shall examine the TSS to ensure that it describes how the TOE handles data that it cannot completely interpret.

Guidance
There are no guidance EAs for this element.

There are no guidance EAs for this element.

Tests
The evaluator shall create or acquire test files that contain unrecognized data, unexpected data, and extraneous structural data. The evaluator shall examine the files prior to redaction to identify the data. The evaluator shall apply the TOE but make no visible redactions and save the output files. The evaluator shall examine the output files, comparing it to the originals, to verify that the data has been removed.The evaluator shall create or acquire test files with data that the

TOE should not be able to completely interpret, apply the TOE and examine the output to verify that the TOE handled the data according to the requirement.

5.2.3 Protection of the TSF (FPT)

FPT_FLS.1 Failure with Preservation of Secure State

FPT_FLS.1.1

The TSF shall preserve a secure state when the following types of failures occur: [**assignment**: *list of types of failures in the TSF*].

Application Note: If the redaction functionality fails for any reason, the TOE must not produce a partially redacted file.

Evaluation Activities

FPT_FLS.1
TSS
The evaluator shall examine the TSS to ensure it describes what actions the TOE performs upon any failure. The evaluator shall ensure that the TSS' description complies with the requirement to not produce a partially redacted file.

Guidance
There are no guidance EAs for this component.

Tests
The evaluator shall create or acquire test files that cause the TOE to fail and observe that the TOE fails and does not produce partially redacted files.

5.3 TOE Security Functional Requirements Rationale

The following rationale provides justification for each security objective for the TOE, showing that the SFRs are suitable to meet and achieve the security objectives:

Table 2: SFR Rationale

Objective	Addressed by	Rationale
O.INSPECTION	FDP_DID_EXT.1	placeholder
	FDP_DIN_EXT.1	placeholder
O.MANAGEMENT	FDP_RVW_EXT.1	placeholder
O.QUALITY	FDP_NND_EXT.1	placeholder
	FDP_VAL_EXT.1	placeholder
	FPT_FLS.1	placeholder
O.REDACTION	FDP_LOC_EXT.1	placeholder
	FDP_OBJ_EXT.1	placeholder
	FDP_REM_EXT.1	placeholder
	FDP_RIP_EXT.1	placeholder
	FDP_RPL_EXT.1	placeholder
	FDP_SEL_EXT.1	placeholder
O.REPORT	FAU_ALR_EXT.1	placeholder
	FAU_REP_EXT.1	placeholder
	FAU_SAR_EXT.1	placeholder

5.4 TOE Security Assurance Requirements

This PP-Module does not define any SARs beyond those defined within the Base-PP to which it can claim conformance. It is important to note that a TOE that is evaluated against this PP-Module is inherently evaluated against the Application Software PP as well. This PP includes a number of EAs associated with both Security Functional Requirements (SFRs) and SARs. Additionally, this PP-Module includes a number of SFR-based EAs that similarly refine the SARs of the Base-PP. The evaluation laboratory will evaluate the TOE against the chosen Base-PP and supplement that evaluation with the necessary SFRs that are taken from this PP-Module.

6 Consistency Rationale

6.1 Protection Profile for Application Software

6.1.1 Consistency of TOE Type

When this PP-Module is used to extend the App PP, the TOE type for the overall TOE is still a software application. The TOE boundary is simply extended to include redaction functionality that is provided by the application.

6.1.2 Consistency of Security Problem Definition

The threats, assumptions, and organizational security policies (OSPs) defined by this PP-Module (see sections 3.1 through 3.3) supplement those defined in the App PP as follows:

PP-Module Threat, Assumption, OSP	Consistency Rationale
T.CLUES_TO_ORIGINAL_DATA	Placeholder
T.UNREDACTED_DATA	Placeholder
A.KNOWLEDGEABLE_USER	Placeholder
A.INFORMATION_RELEASE_POLICY	Placeholder
A.PRESERVE_DOCUMENT_LAYOUT	Placeholder

6.1.3 Consistency of Objectives

The objectives for the TOEs are consistent with the Application Software PP based on the following rationale:

PP-Module TOE Objective	Consistency Rationale
O.INSPECTION	Placeholder
O.MANAGEMENT	Placeholder
O.QUALITY	Placeholder
O.REDACTION	Placeholder
O.REPORT	Placeholder

The objectives for the TOE's OE are consistent with the Application Software PP based on the following rationale:

PP-Module OE Objective	Consistency Rationale
OE.PLACEHOLDER	placeholder

6.1.4 Consistency of Requirements

This PP-Module identifies several SFRs from the Application Software PP that are needed to support Redaction Tools functionality. This is considered to be consistent because the functionality provided by the Application Software PP is being used for its intended purpose. The rationale for why this does not conflict with the claims defined by the Application Software PP are as follows:

PP-Module Requirement	Consistency Rationale
Modified SFRs	
This PP-Module does not modify any requirements when the Application Software PP is the base.	
Additional SFRs	
This PP-Module does not add any requirements when the Application Software PP is the base.	
Mandatory SFRs	
FAU_ALR_EXT.1	Placeholder
FAU_REP_EXT.1	Placeholder
FAU_SAR_EXT.1	Placeholder
FDP_DID_EXT.1	Placeholder

FDP_DIN_EXT.1	Placeholder
FDP_LOC_EXT.1	Placeholder
FDP_NND_EXT.1	Placeholder
FDP_OBJ_EXT.1	Placeholder
FDP_REM_EXT.1	Placeholder
FDP_RIP_EXT.1	Placeholder
FDP_RPL_EXT.1	Placeholder
FDP_RVW_EXT.1	Placeholder
FDP_SEL_EXT.1	Placeholder
FDP_VAL_EXT.1	Placeholder
FPT_FLS.1	Placeholder
Optional SFRs	
This PP-Module does not define any Optional requirements.	
Selection-based SFRs	
This PP-Module does not define any Selection-based requirements.	
Objective SFRs	
This PP-Module does not define any Objective requirements.	
Implementation-based SFRs	
This PP-Module does not define any Implementation-based requirements.	

Appendix A - Optional SFRs

A.1 Strictly Optional Requirements

This PP-Module does not define any Strictly Optional SFRs.

A.2 Objective Requirements

This PP-Module does not define any Objective SFRs.

A.3 Implementation-dependent Requirements

This PP-Module does not define any Implementation-dependent SFRs.

Appendix B - Selection-based Requirements

This PP-Module does not define any Selection-based SFRs.

Appendix C - Extended Component Definitions

This appendix contains the definitions for all extended requirements specified in the Module.

C.1 Extended Components Table

All extended components specified in the Module are listed in this table:

Table 3: Extended Component Definitions

Functional Class	Functional Components
Security Audit (FAU)	FAU_ALR_EXT Redaction Failure Notification FAU_REP_EXT Report Generation FAU_SAR_EXT Report Review
User Data Protection (FDP)	FDP_DID_EXT Identification of Data FDP_DIN_EXT Deep Inspection FDP_LOC_EXT Redact Content from Every Location FDP_NND_EXT No New Data Introduced by TOE FDP_OBJ_EXT Removal of Objects and Corresponding References FDP_REM_EXT Removal of Redacted Data FDP_RIP_EXT Residual Information Removal FDP_RPL_EXT Visible Space Replace FDP_RVW_EXT Element Review FDP_SEL_EXT Selected Redaction FDP_VAL_EXT Validation of Data

C.2 Extended Component Definitions

C.2.1 Security Audit (FAU)

This Module defines the following extended components as part of the FAU class originally defined by CC Part 2:

C.2.1.1 FAU_ALR_EXT Redaction Failure Notification

Family Behavior

Placeholder

Component Leveling

FAU_ALR_EXT ——— 1

FAU_ALR_EXT.1, Redaction Failure Notification, Placeholder

Management: FAU_ALR_EXT.1

Placeholder

Audit: FAU_ALR_EXT.1

Placeholder

FAU_ALR_EXT.1 Redaction Failure Notification

Hierarchical to: No other components.

Dependencies to: Placeholder

FAU_ALR_EXT.1.1

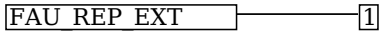
The TOE must make the user aware when redaction fails for any reason.

C.2.1.2 FAU_REP_EXT Report Generation

Family Behavior

Placeholder

Component Leveling



FAU_REP_EXT.1, Report Generation, Placeholder

Management: FAU_REP_EXT.1

Placeholder

Audit: FAU_REP_EXT.1

Placeholder

FAU_REP_EXT.1 Report Generation

Hierarchical to: No other components.

Dependencies to: Placeholder

FAU_REP_EXT.1.1

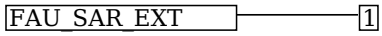
The TOE must be able to generate a report entry that contains metadata about each element that was redacted, including at least the following: the type of the element that was removed, the location if it was a visible element, and whether the element was selected by the user or removed automatically.

C.2.1.3 FAU_SAR_EXT Report Review

Family Behavior

Placeholder

Component Leveling



FAU_SAR_EXT.1, Report Review, Placeholder

Management: FAU_SAR_EXT.1

Placeholder

Audit: FAU_SAR_EXT.1

Placeholder

FAU_SAR_EXT.1 Report Review

Hierarchical to: No other components.

Dependencies to: Placeholder

FAU_SAR_EXT.1.1

The TOE must allow the user to access a report of the data that was redacted.

C.2.2 User Data Protection (FDP)

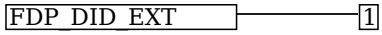
This Module defines the following extended components as part of the FDP class originally defined by CC Part 2:

C.2.2.1 FDP_DID_EXT Identification of Data

Family Behavior

Placeholder

Component Leveling



FDP_DID_EXT.1, Identification of Data, Placeholder

Management: FDP_DID_EXT.1

Placeholder

Audit: FDP_DID_EXT.1

Placeholder

FDP_DID_EXT.1 Identification of Data

Hierarchical to: No other components.

Dependencies to: Placeholder

FDP_DID_EXT.1.1

The TOE must identify all hidden data in the document, except remnant data and undo or tracked change buffers, and allow the user to review and select each hidden data element individually for redaction.

FDP_DID_EXT.1.2

The TOE must identify all obscured data and must [**selection**: *remove the obscured data automatically*, *allow the user to redact the obscured data*].

FDP_DID_EXT.1.3

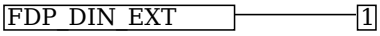
The TOE must identify images where the visible representation is reduced in size or resolution from the representation stored in the file format and must [**selection**: *automatically replace the stored data with the visible representation*, *allow the user to replace the stored data with the visible representation*, *allow the user to leave the image unaltered*].

C.2.2.2 FDP_DIN_EXT Deep Inspection

Family Behavior

Placeholder

Component Leveling



FDP_DIN_EXT.1, Deep Inspection, Placeholder

Management: FDP_DIN_EXT.1

Placeholder

Audit: FDP_DIN_EXT.1

Placeholder

FDP_DIN_EXT.1 Deep Inspection

Hierarchical to: No other components.

Dependencies to: Placeholder

FDP_DIN_EXT.1.1

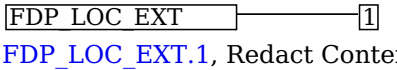
For each element of the file format that can contain its own metadata, other elements, or hidden data, the TOE must [**selection**: *recurse through the element chain and apply the PP to each layer*, *simplify the element*, *redact the element*].

C.2.2.3 FDP_LOC_EXT Redact Content from Every Location

Family Behavior

Placeholder

Component Leveling



FDP_LOC_EXT.1, Redact Content from Every Location, Placeholder

Management: FDP_LOC_EXT.1

Placeholder

Audit: FDP_LOC_EXT.1

Placeholder

FDP_LOC_EXT.1 Redact Content from Every Location

Hierarchical to: No other components.

Dependencies to: Placeholder

FDP_LOC_EXT.1.1

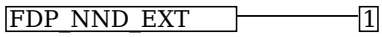
The TOE must remove redacted content from every location in the file format where it is stored.

C.2.2.4 FDP_NND_EXT No New Data Introduced by TOE

Family Behavior

Placeholder

Component Leveling



FDP_NND_EXT.1, No New Data Introduced by TOE, Placeholder

Management: FDP_NND_EXT.1

Placeholder

Audit: FDP_NND_EXT.1

Placeholder

FDP_NND_EXT.1 No New Data Introduced by TOE

Hierarchical to: No other components.

Dependencies to: Placeholder

FDP_NND_EXT.1.1

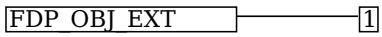
The TOE itself must not introduce new hidden data that was not requested by the user without warning the user of the addition.

C.2.2.5 FDP_OBJ_EXT Removal of Objects and Corresponding References

Family Behavior

Placeholder

Component Leveling



FDP_OBJ_EXT.1, Removal of Objects and Corresponding References, Placeholder

Management: FDP_OBJ_EXT.1

Placeholder

Audit: FDP_OBJ_EXT.1

Placeholder

FDP_OBJ_EXT.1 Removal of Objects and Corresponding References

Hierarchical to: No other components.

Dependencies to: Placeholder

FDP_OBJ_EXT.1.1

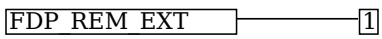
The TOE must remove all references and indicators in the structural data to objects that are completely redacted by the TOE.

C.2.2.6 FDP_REM_EXT Removal of Redacted Data

Family Behavior

Placeholder

Component Leveling



FDP_REM_EXT.1, Removal of Redacted Data, Placeholder

Management: FDP_REM_EXT.1

Placeholder

Audit: FDP_REM_EXT.1

Placeholder

FDP_REM_EXT.1 Removal of Redacted Data

Hierarchical to: No other components.

Dependencies to: Placeholder

FDP_REM_EXT.1.1

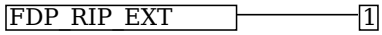
All data that is either selected by the user for redaction or identified by the TOE for redaction must be removed from the document.

C.2.2.7 FDP_RIP_EXT Residual Information Removal

Family Behavior

Placeholder

Component Leveling



FDP_RIP_EXT.1, Residual Information Removal, Placeholder

Management: FDP_RIP_EXT.1

Placeholder

Audit: FDP_RIP_EXT.1

Placeholder

FDP_RIP_EXT.1 Residual Information Removal

Hierarchical to: No other components.

Dependencies to: Placeholder

FDP_RIP_EXT.1.1

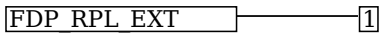
The TOE must automatically remove all remnant data, undo buffers, tracked changes buffers, multiple versions of the same object, and any buffer or cache type container of data.

C.2.2.8 FDP_RPL_EXT Visible Space Replace

Family Behavior

Placeholder

Component Leveling



FDP_RPL_EXT.1, Visible Space Replace, Placeholder

Management: FDP_RPL_EXT.1

Placeholder

Audit: FDP_RPL_EXT.1

Placeholder

FDP_RPL_EXT.1 Visible Space Replace

Hierarchical to: No other components.

Dependencies to: Placeholder

FDP_RPL_EXT.1.1

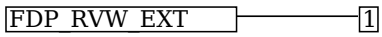
The TOE must replace the visible space of redacted content in such a way that the visible space conveys no information about the previous contents.

C.2.2.9 FDP_RVW_EXT Element Review

Family Behavior

Placeholder

Component Leveling



FDP_RVW_EXT.1, Element Review, Placeholder

Management: FDP_RVW_EXT.1

Placeholder

Audit: FDP_RVW_EXT.1

Placeholder

FDP_RVW_EXT.1 Element Review

Hierarchical to: No other components.

Dependencies to: Placeholder

FDP_RVW_EXT.1.1

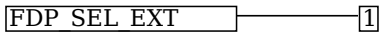
The TOE must allow the user to review and select each element of visible data in whole or in part for redaction.

C.2.2.10 FDP_SEL_EXT Selected Redaction

Family Behavior

Placeholder

Component Leveling



FDP_SEL_EXT.1, Selected Redaction, Placeholder

Management: FDP_SEL_EXT.1

Placeholder

Audit: FDP_SEL_EXT.1

Placeholder

FDP_SEL_EXT.1 Selected Redaction

Hierarchical to: No other components.

Dependencies to: Placeholder

FDP_SEL_EXT.1.1

The TOE must [**selection**: *simplify*, *remove*] any complex object, embedded object or graphic image which is selected for redaction.

C.2.2.11 FDP_VAL_EXT Validation of Data

Family Behavior

Placeholder

Component Leveling

FDP_VAL_EXT.1, Validation of Data, Placeholder

Management: FDP_VAL_EXT.1

Placeholder

Audit: FDP_VAL_EXT.1

Placeholder

FDP_VAL_EXT.1 Validation of Data

Hierarchical to: No other components.

Dependencies to: Placeholder

FDP_VAL_EXT.1.1

The TOE must remove unrecognized data, unexpected data, and extraneous structural data.

FDP_VAL_EXT.1.2

The TOE must [**selection**: *simplify*, *remove*] any element which it cannot completely interpret.

Appendix D - Acronyms

Acronym	Meaning
Base-PP	Base Protection Profile
CC	Common Criteria
CEM	Common Evaluation Methodology
EP	Extended Package
EXIF	Exchangeable Image File Format
FP	Functional Package
JPG	Joint Photographic Experts Group
OE	Operational Environment
OLE	Object Linking and Embedding
PP	Protection Profile
PP-Configuration	Protection Profile Configuration
PP-Module	Protection Profile Module
SAR	Security Assurance Requirement
SFR	Security Functional Requirement
ST	Security Target
TIFF	Tagged Image File Format
TOE	Target of Evaluation
TSF	TOE Security Functionality
TSFI	TSF Interface
TSS	TOE Summary Specification
cPP	Collaborative Protection Profile

Appendix E - Bibliography

Identifier	Title
[App PP]	Protection Profile for Application Software, Version 1.4, October 2021
[CC]	Common Criteria for Information Technology Security Evaluation - • Part 1: Introduction and General Model, CCMB-2017-04-001, Version 3.1 Revision 5, April 2017. • Part 2: Security Functional Components, CCMB-2017-04-002, Version 3.1 Revision 5, April 2017. • Part 3: Security Assurance Components, CCMB-2017-04-003, Version 3.1 Revision 5, April 2017.