securaplane®
TECHNOLOGIES INC

Tucson, Arizona U.S.A. Cage Code: 0TMJ9

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Used on: N/A   Next Assembly: N/A

STANDARD OPERATION PROCEDURE
PDMWORKS RULES AND GUIDELINES OF
SOLIDWORKS AND NON-SOLIDWORKS FILES

PROPRIETARY NOTICE

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Prepared By: _____   Engrg Div Apvd: _____

Checked By: _____   Mfg Apvd: _____

Engrg Proj Apvd: _____   QA Apvd: _____

REVISION HISTORY

Rev	ECO No.	Description	Date	Apvd
-	---	Initial Release		

1. **PURPOSE**

   This procedure defines consistent "best" practices and guidelines for the PDMWorks vault filing system at Securaplane Technologies Inc. This includes file and description naming conventions, and location of these files in the PDM vault.

2. **DEPARTMENTS AFFECTED**

   R & D / Sustaining/Mfg Engineering

   Document Control

3. **DEFINITIONS AND REFERENCE DOCUMENTS**

   Reference Documents:

SW Office	Solidworks Essentials: Parts & Assemblies
SW Office	Solidworks: Advanced Part Modeling
SW Office	PDMWorks Workgroup
290-0001-01	Eng Dwg / Documentation Numbering Sys
290-0021-11	Naming Convn for Eng Parts, Mat'ls and Doc's

   Definitions and Abbreviations:

STI	Securaplane Technologies Inc.
PDM	Product Data Management
ECO	Engineering Change Order
SW	Solidworks
MDT	Mechanical Desktop
DC	Document Control

4. **SCOPE**

   This procedure applies to filing and location of documentation in the PDM vault for STI design products in their development and production phase of each program. Refer to the PDMWorks manual for step-by-step instructions.

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5. **POLICY**

All drawings, parts, assemblies and any other applicable documents shall be filed at the end of the working day in the PDM vault. This will ensure proper back up of all files and let other PDM users know that all the data is current and to date. It is prohibited to keep company data on your hard drive that is applicable to a STI design. If your hard drive crashes all your files will be lost. This policy complies with the Danaher's "Disaster Recovery Plan" and shall be followed at all times.

Do not rename, revise or delete the *$windowslogin* folder on your PC's hard drive. This local folder is used in conjunction with the Solidworks PDM vault system. The folder might be located in your C:\ or D:\ hard drive depending how your PC is configured. Remember to use this as your main local working folder with PDM software.

Use of revision letters or revision numbers in the filename is prohibited. This also applies to using a description (title of a part) as a filename. All filenames and part descriptions must be UPPERCASE format.

All parts, assemblies and drawings must be designed from the "STI Templates" tab in Solidworks. The default templates have Custom Properties that will be used in association with the PDM vault. All Custom Properties in SW parts, assemblies and drawings fields must be filled out 100% and at no time deleted from these standard templates. DO NOT alter or change other features of the default templates. They contain STI standards fonts, line types, formats and many other standards. Altered templates/documents will be returned to the designer/engineer to correct, and to comply with the STI standard.

Standard hardware download from www.3dcontentcentral.com or used from SW toolbox, must be copied and have a STI part no. or Mfg no. assign before filing into the PDM vault. At no time can these generic filenames be used. It is preferred the SW user to create Design Tables for future configurations, but not required. The STI standard hardware WILL NOT be revision control in the development or production phases. The SW users shall search the PDM vault for common hardware to reduce redundancy of creating new hardware. Use of Vendor part no.(s) is prohibited.

5.1   R & D / SUSTAINING/MFG ENGINEERING

R & D / Sustaining / Mfg Engineering will design all Solidworks (SW) parts, assemblies, drawings and will be responsible for filing the documentation in the PDM vault in their applicable file folder locations. This will also include all non-SW documentation such as MDT, AutoCAD, Excel and Word documents etc. R & D/ Sustaining Engineering will control the "revision numbers" (example: E1-99) schemes for all non-released documents.

5.2   DOCUMENT CONTROL

Document Control (DC) maintains all master files, life cycles and folders of the PDM vault, and will assign an administrator (s) for all new and current users. DC maintains and tracks custody of the original released documents as well as PDM file access and permissions to project folder locations. DC will control the "revision letters" (example: A-Z) schemes for all released documents.

6. PROCEDURE

6.1 Part Numbering SCHEME for Development/Production:

All STI engineering production drawings, parts and assemblies filed in PDM shall be named by part number only. See SOP 290-0001-01 for detailed part number schemes.

6.1.1 The STI programs top level assembly shall be file as the 101 filename with the associated subassemblies, parts and drawings as follows:

Example:

>> **101-1032-02.sldasm** (SW ASSEMBLY)
>>> **100-1032-02.slddrw** (SW DRAWING)
>>> **101-1032-02.slddrw** (SW DRAWING)
>>>> **160-2866-01.sldprt** (SW ASSEMBLY)
>>>> **160-2866-01.slddrw** (SW DRAWING)
>>>> **120-2885-01.sldprt** (SW PART)
>>>> **120-2885-01.slddrw** (SW DRAWING)
>>>> **120-2886-01.sldprt** (SW PART)
>>>> **120-2886-01.slddrw** (SW DRAWING) ETC….

6.1.2 All SW parts that have the same filename as the assembly filename shall be as follows:

Example 1:

>> **120-2886-01.sldasm** (SW ASSEMBLY)
>>> **120-2886-01.slddrw** (SW DRAWING)
>>> **120-2886-01_AC1.sldprt** (SW PART)
>>> **120-2886-01_AC2.sldprt** (SW PART)
>>> **120-2886-01_AC3.sldprt** (SW PART)

Note: This is common when building a sheet metal part with multiple detail components of that assembly. The "AC" labeled in the filename means an accessory to that assembly.

Example 2:

340-0004-01.sldasm (SW ASSEMBLY)
340-0004-01_AC1.sldprt (SW PART)
340-0004-01_AC2.sldprt (SW PART)
340-0004-01_AC3.sldprt (SW PART)

Note: This is common when building or using vendor hardware with multiple detail components such as a body, nut and washer. The "AC" labeled in the filename means an accessory to that assembly.

6.1.3 Use of revision letters or revision numbers in the filename is prohibited. This also applies to using a description (title of a part) as a filename.

Example:

120-4103-01.slddrw
~~120-4103-01A.slddrw~~ (WRONG)

OR

347-0130-01.sldprt
~~HEADER CONNECTOR.sldprt~~ (WRONG)

6.1.4 Use of 3DContentCentral.com hardware & SW toolbox parts must be copied and renamed before filing in the PDM vault. Copied SW toolbox parts shall be renamed to a STI prefix series part number. It is recommended that toolbox configurations to be renamed as well, but not required.

Example:

500 SERIES.sldprt
~~Pan Cross Head_Al.sldprt~~ (WRONG)

OR

347-0004-01
~~SW3DPS-BNC Connector.sldprt~~ (WRONG)

6.1.5 All SW drawings must be associated (linked) to their applicable parts and assemblies. This will assure associativity when making changes to your part models and assemblies, so that all affected parts by a change are automatically kept current. It is required to have one drawing file per part or assembly that contains multiple drawing sheets. In some cases, multiple drawing files need to be created due to complexity which effects hardware performance. The drawing filenames will be as follows:

Example:

> **101-2609-02_01 OF 11.slddrw** (SW DRAWING)
> **101-2609-02_02 OF 11.slddrw** (SW DRAWING)
> **101-2609-02_03 OF 11.slddrw** (SW DRAWING)
> **101-2609-02_04 OF 11.slddrw** (SW DRAWING)
> ETC…

6.2   Description Scheme for all STI Designs:

All STI engineering development and production drawings, parts and assemblies shall have a description identified when filed in the PDM vault. See SOP 290-0021-11 for detailed description schemes.

Example:

> **TOP ASSEMBLY, PCU-01**
> ~~PCU-01 TOP ASSEMBLY~~ (WRONG)
>
> OR
>
> **BRACKET, BATTERY HOLD**
> ~~BATTERY HOLD BRACKET~~ (WRONG)

6.3   PDM Note fields:

The PDM vault contains a field called "Enter Note" that shall be used when checking in parts, assemblies and drawings. The note field allows users to tell other users what the change is to the document. This also creates an electronic history of the document and stores it in the PDM vault. Use this field for Initial Releases as well as Revisions.

Examples:

> **INITIAL RELEASE PER ECOXXXX**
>
> OR
>
> **REVISED PER ECOXXXX**

The "Enter Note" field can also be used for purposes besides Releasing or Revisions of ECO's. This field is useful when working on new designs that require checking in multiple times during the working day. Applying comments in the note field is very useful and gives you design history.

Examples:

> **CHANGED SPU POWER BOARD DESIGN BY ADDING TRANFORMER**
>
> OR
>
> **ADDED A (6) BOLT FLANGE PER CUSTOMER SPEC**

6.4 PDM Vault File Locations and Project Folders:

The DC department has defined Project Folders and Subfolders in PDM vault applicable to various product lines of STI. This will include miscellaneous file folders for standard hardware and other company documents. All Designers/Engineers must file all work daily in there appropriate folders in the PDM vault. DC will also control the revisions and life cycles of these files.

7. SUMMARY

Keep all naming conventions of files and format of user notes consistent. This will assure a clean, manageable PDM system. If a PDM user is having any problems, errors or access issues, see your PDM administrator in DC for assistance.

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8. STANDARD OPERATING PROCEDURE EFFECTIVITY

This Procedure becomes effective at the date of last approval signature and becomes mandatory for use.

8.1 Signatures

_____	_____
Engineering	Date
_____	_____
Quality Assurance	Date
_____	_____
Production	Date
_____	_____
Marketing/Sales	Date
_____	_____
Finance	Date
_____	_____
President	Date