

Image Plate Scanning Parameters

March 24, 2016

Bob Ehrlich



The TD Factory will scan image plates using default parameters unless told otherwise

- A spreadsheet of default IP scanning parameters is available on the User Office's website: <https://lasers.llnl.gov/for-users>
- The parameters are specific to types of instruments (Ross pairs, NXS, standard time-integrated imaging, etc.) and the instrument they're held by (DISC2, GXD4, HGXD6, etc.)
- If the experimenter wants an IP scanned with parameters that differ from the default (or if no relevant default exists), please add an annotation in AppMan, prior to hitting the Shot RI approval button
- If the experimenter cares about the direction of the scan, add that information in the annotation
- Please contact Gary Stone with specific questions or input for the spreadsheet

The TD Factory's default IP scanning parameters are based on user input

Here are some examples:

Ross Pair on a DT shot	Standard Spatial Resolution :	25 microns
	Standard Sampling Area:	75mm x 75mm
	PMT Voltage :	S4000

TARDIS	Standard Spatial Resolution :	100 microns
	Standard Sampling Area:	150mm x 75mm
	PMT Voltage :	S10000

NXS	Standard Spatial Resolution :	25 microns
	Standard Sampling Area:	50mm x 150mm
	PMT Voltage :	S1272



Backup Target Considerations and The Meaning of Diagnostic Priorities

March 24, 2016

Kevin B. Fournier
for the NIF User Office



Background

- In FY15 70 out of 356 target shots had backup targets assigned: ~ 20% of all shots
 - 50 of those 70 backup targets were shot (but not always as a backup, sometimes as primary target for a subsequent shot)
- To date (as of 3/20/2016): 14 of 185 target shots have had a backup target assigned, which is < 8%, a significant reduction from the FY15 rate
 - Of those 14, apparently 8 have been shot

Rule set for backup shots and backup targets

- The definition of an experiment includes the target, diagnostics, and laser setup
- Backup targets are allowed only for experiments where:
 - The shot data is high value to the program or the impact of losing the shot is high
 - The primary target is high risk
- A single CMT setup may be used with both the primary and backup target provided the laser and target setup, beam pointing, and TAS positioning matches
- A backup shot setup is required if differences in the as-built target require different alignment parameters or laser set-up
- A backup shot is accepted if the only difference is in the alignment details due to as-built target variations
 - This is by agreement with the expert groups to manage overall work load to support the reviews
- What is not a backup target:
 - A target with a different machine safety risk, e.g. different LPI/backscatter risk is not considered a backup target
 - A target that requires different beam selection is not considered a backup target

Corrective actions to minimize the risk of executing an experiment with an unintended target

- Review process [proposal]
 - Request identification of plans for backup target at T-6 months
 - A T-3 month gate, consistent with final target package sign-off, is a natural time to freeze the option to carry a back-up target on an experiment
 - Reject any change to identify a backup target after T-6 weeks when the experiment details are submitted for expert group assessment
 - Confirm the details of the backup target at the set-up review (T-3 weeks) and review differences for two experiments if the “back-up” is different
- The following corrective actions will minimize the risk of executing an experiment with an unintended target:
 - Expert Groups review all setups including explicit consideration of any assigned backup target (*already occurring*)
 - Shot setup tool enables a view that shows metrology data from an RVP with associated beam pointing location (*SRE implementation*)
 - AppMan enables a view of an integrated mini-campaign (*SRE implementation*)

Notes on implementation and issues

- **CMT allows the back-up target to have a different part number than the primary target for a given experiment**
 - This was implemented intentionally to manage backup targets during NIC
 - Similar targets were defined with different names for initially different purposes.
 - This also enables managing the targets for the Gatling campaigns.
 - **We have no intention to change this.**
 - The part number is not sufficient to identify a target as back-up
- **A back-up target must be identical to the primary target for beam selection, pulse shape, fill pressure, backscatter risk, alignment strategy**
 - **A back-up target needs Expert Group review just like the primary target**
 - If the configuration is not identical for the primary and back-up targets, then two separate experiments should be set up in CMT.
- **We are not currently asking RI's if they are using a back-up target.**
 - We should ask at T-6 months, we *must* have the information at T-6 weeks
 - A T-3 month gate, consistent with final target package sign-off, is a natural time to freeze the option to carry a back-up target on an experiment
 - The set-up review (T-3 weeks) is the right place to *confirm* the final details of a back-up target, or to review differences for two experiments if the “back-up” is different



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Backup Target Considerations and The Meaning of Diagnostic Priorities

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Kevin B. Fournier
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A RI has a choice of three diagnostic priorities to assign while setting up an experiment in CMT

The screenshot displays the CMT interface. At the top, there are tabs for 'Campaign' and 'Experiment Table'. Below this, a 'Target Diagnostics' window is open, showing a tree view of diagnostic categories on the left and a list of diagnostic items on the right. The right-hand list includes items like 'Turn Off All Target Diagnostics', 'Secondary', 'Used', 'Not Used', 'PRIMARY', 'Tertiary', 'TERTIARY', 'SECONDARY', and 'TERTIARY'. Three red arrows point from the text 'Golden templates automatically assign priority, which (usually) can be changed later while staying "golden"' to the 'PRIMARY', 'SECONDARY', and 'TERTIARY' entries in the list. Below the list are buttons for 'Save as a FABS Template' and 'Withdraw FABS from Review'. At the bottom, the 'Experiment Info' tab is active, showing a 'Summary' section with fields for 'Experiment ID: 9', 'Experiment Alias: E09', 'Experiment RI: may, Mark', 'Supporting RI 1: None', 'Supporting RI 2: Non', and 'Expected Yield: 0.0'.

Golden templates automatically assign priority, which (usually) can be changed later while staying "golden"

Experiment ID: 9 Locked by: fournier2
Experiment Alias: E09
Experiment RI: may, Mark Supporting RI 1: None Supporting RI 2: Non
Expected Yield: 0.0

Diagnostic Priorities – a RI's point of view

- Primary – must have it for main physics result
 - Won't take the shot without it
- Secondary – must have it for potentially corroborating physics results
 - Will fight pretty hard to keep it on the shot
- Tertiary – nice to have, data may never be looked at (i.e., could be useful to investigate an unlikely failure), could be a ride along for someone else
 - First thing to go if it interferes with the shot cycle
- Risk: a program can lose a valuable target if a shot auto-aborts due to a failure of a primary diagnostic – my understanding is as a hedge RI's put all necessary diagnostics as secondary on high-value DT shots

IF a diagnostic is “primary” to a shot's purpose, but is secondary or tertiary for operational reasons [e.g., it's ride along to dial in a setting for primary operation on a subsequent shot, it's secondary to avoid risk of auto-abort], a RI must make clear its importance through an annotation.

Diagnostic Priorities – The Target Diagnostic Factory’s point of view

- Primary – we have to build it to requirements and deliver in time
- Secondary – we have to build it to requirements and deliver in time
- Tertiary – we have to build it to requirements and deliver in time

If a diagnostic is primary or secondary by definition it’s a must have. For most cases we don’t run into problems, however if the diagnostic is a spectrometer (primary or secondary) we need to be careful in the planning process not to over subscribe them. We have a limited number of these so if we find we’re over-subscribed the scheduling folks, shot RI’s and myself will discuss to determine if a plan can be worked out with a common configuration to support the RI’s physics expectations – Tim Sarginson

Diagnostic Priorities – The Target Diagnostic Engineering's point of view

- Primary – we have to configure and operate it to requirements and deliver in time
- Secondary – we have to configure and operate it to requirements and deliver in time
- Tertiary – we have to configure and operate it to requirements and deliver in time

The support organizations treat all diagnostics equally

Diagnostic Priorities – Shot Operation’s point of view

- Primary – we will convene a MRB if it looks like we’ll have to take the shot without it
 - Requirement: any change to a primary diagnostic (strip timing, delay, voltage settings, etc.) during the shot cycle requires a subsequent rod shot to confirm performance.
 - An additional rod shot is required if any primary diagnostic setting changes have been made following the first rod shot.
- Secondary – we’ll ask the RI if he/she is willing to drop it or make an effort during the shot cycle, bounded by the rules of engagement for the shot week, to get it to participate in the event of any problem
 - Shot RI concurrence is required to drop a secondary diagnostic
 - No additional rod shot requirement on dry runs to confirm performance following a settings change
 - A dry run may be performed after final rod shot at the shot director’s discretion – i.e., in between rod shot and system shot
- Tertiary – we’ll drop it without consulting the RI if it won’t operate normally during the shot cycle
 - As a matter of courtesy every effort is made to consult with the RI before making this kind of decision

These statements are consistent with the actual implementation in ICCS ... (next slide)

ICCS implementation – in the end, it's only what the control system does automatically that matters

- Primary:
 - Requirement: any change to a primary diagnostic (strip timing, delay, voltage settings, etc.) during the shot cycle requires a rod shot to confirm performance.
 - ICCS will hold the countdown prior to critical region timing window (T-126 sec) or abort the shot inside the critical region if a problem with a primary diagnostic is detected.
- Secondary:
 - No additional rod shot requirement on dry runs to confirm performance following a settings change
 - ICCS will alarm for Failed Health and Readiness issues during countdown.
 - ICCS will **not** put a hold on, or abort during the shot countdown if a problem with a secondary diagnostic is detected.
- Tertiary:
 - ICCS will alarm for Health issues during countdown in the shot cycle
 - ICCS will ignore a problem during the shot cycle

ICCS doesn't "see" timing errors during countdown as those are manually entered by the operator. The ICCS issues that are "seen" during countdown involve things like voltage set points, hardware issues, and communication issues. - Korbie Killebrew

Ride along \neq tertiary

- A RS's need for commissioning participation on a shot is not necessarily scope that a RI will accept as a meaningful priority, and often doesn't even think about as part of the primary shot activities
 - We've been burned by this several times (Bob Ehrlich)
 - Ride-along requests need to have their priority made clear at:
 - The beginning: the RI for the shot has to accept that a ride along may be more than "non perturbing"
 - With clear annotations in AppMan made by the owner of the ride along that spell out the purpose and value of the ride along activity
 - Set-up review (owner of the ride along should be there as well as the RI)
 - Shot RI brief (the reason and importance of a ride along needs to be made clear to the shift taking the shot) – the ride along will, by definition, not be covered as part of the goals of the shot...

It is crucial to the success of the ride along diagnostic activity that the owner of the ride along makes the shot RI aware of the priority and that either the owner or the RI, or both, communicate that broadly



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ELM-U

Basic information and access

NIF User Forum

March 24, 2016

Scott Burns
ELM-U Lead
1000935503-AA



ELM-U

LLNL, NIF's Information System for Product Life Cycle Management

- Enterprise Lifecycle Management - Unclassified
- Utilized by not only NIF, but all of Engineering Directorate.
- Provides for a common business practice

Provides Lifecycle and Product Management

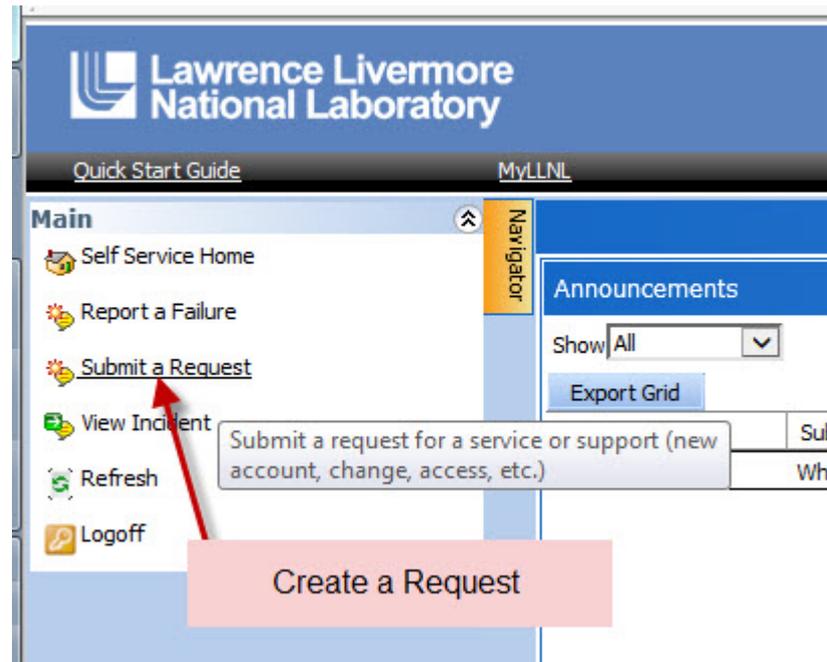
Obtaining an ELM-U Account

- PreRequisite – Access to LLNL computer Systems
 - Sponsored Account, LLNL Employee
 - Need an OUN (Official User Name), i.e. burns7
 - Best if you have an LLNL Email Account
 - From Offsite requires a VPN (-B or -C), also if you use WiFi Laptop
 - If you're a Foreign National, a Cyber Security Plan will need to be approved
- How to request an ELM-U Account
 - Use Front Range to Request an account
 - May need to be originated by your LLNL Sponsor
 - URL is; <https://frweb01.the-lab.llnl.gov>

Need an OUN before an ELM-U account can be established

Obtaining an ELM-U Account

- Front Range Selections for Account Request;



Creating A Request

Obtaining an ELM-U Account

- Front Range Selections for Account Request;

Lawrence Livermore National Laboratory FrontRange Self Service

Quick Start Guide MyLLNL answers.llnl.gov WBT Training Help Self Help

Incident: 1046801 ← Unique Incident Number, please reference in any email requests

PLEASE NOTE: All fields with BOLD labels are required

This Incident Is For

OUN	burns7
Full Name	Scott Burns
Support Unit	Business Applications
Category	ELM-U (Product Lifecycle Management)
SubCategory	User Accounts
Component	
Environment	User
Impact	Medium (Multiple-Users)
Urgency	Medium

Send All Notifications To (if different)

OUN	
Full Name	

Summary

Create a New User Account

Description

Please create a new user account for;
Jane Doe
doe12 ← Please include the User Name (OUN)

She should have write access to the NIF Product Line.
Her sponsor is K. Fournier. ← Please include the Sponsor Name

Alternate Work Location - If Not In: B671 R2132

Save

Created by: burns7 On: 3/22/2016 9:49 AM
Last Mod by: burns7 On: 3/22/2016 9:49 AM

Assignment(s): 0 Journal: 0 Attachment(s): 0 DOE/Property Number

Grid Export Grid

Type	Assignee	Summary	Created On	Status	Modified On
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Selections to be Made

Once all the information is added hit Save

Add a brief summary

An email will be sent to you upon establishing your Account

Accessing ELM-U

- The URL for ELM-U is;
 - elm-u.llnl.gov/Windchill (Must be Capital W, for Windchill)
 - All other characters are lower case
- Can be Accessed from anywhere as long as you connect to the LLNL Intranet
 - From Offsite requires VPN access
 - Best viewed with Internet Explorer, does work with Mozilla (Firefox) and Google Chrome

The URL is; elm-u.llnl.gov/Windchill

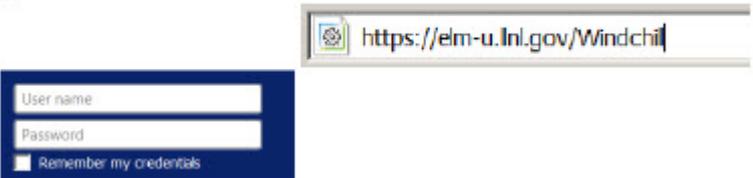
Accessing ELM-U

- Upon successful connection to ELM-U you will be challenged to authenticate using your OUN and Password.
 - The Information regarding your password is included in the email sent to you after your account has been established.

Logging on to Windchill

1) Open Internet Explorer and type <https://elm-u.llnl.gov/Windchill> in the address line.

2) Enter your OUN for username and AD password.



The URL is; elm-u.llnl.gov/Windchill

ELM-U Account Home Page

PTC Windchill
burns7

All Types Search ... Quick Links Recently Accessed

Welcome to Windchill

Easily find the information you care about

Home
Displays the information specific to you – assignments, checked-out work, and more. Customize your Home page to show only the information that you need.

Breadcrumb Trail
See where your object is located in the system. Click anywhere in the breadcrumb to quickly navigate to that location.

Simple Search
Quickly perform a keyword search on selected object types.

Advanced Search Tab
Most of the time, the simple search will be enough. Use the Search tab when you need more options, and to view your search history and saved searches.

Browse Tab
Look through the information stored in the system. Select Recent Contexts to see the locations you visited recently.

Navigator (Opened)
The Navigator slides on and off the page, taking up space only when you need it. Click off the Navigator to close it.

Navigator (Pinned)
Pin the Navigator open by clicking the pin icon in the Navigator bar. This keeps the Navigator open after you click away.

Navigator (Closed)
With the navigator closed, you have more space to work on the Windchill page. Click the Navigator to reopen it.

Help
Under Quick Links, the Help menu displays options to open the Windchill Help Center, What's New, Quick Start, and more.

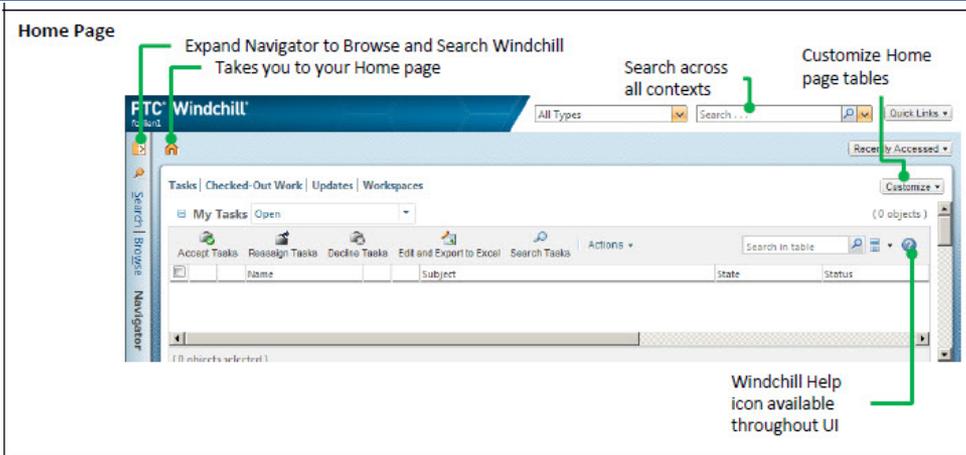
Customize
Personalize pages or tabs to display only the content you want.

You may wish to select this Do not show this page upon startup

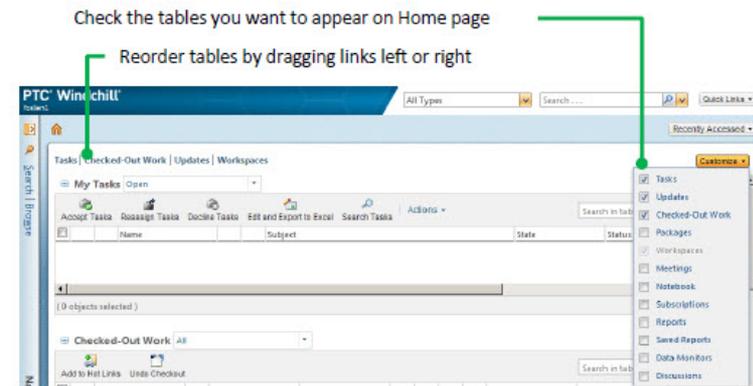
For more information, visit the [Windchill Help Center](#) or the [Quick Start Guide](#).

The Home Page Can be customized

Customize Your Home Page



Customize Home Page



Choose Customize to add/remove topics

Types of Containers in ELM-U

- ELM-U uses Products to contain Objects pertaining to an effort, such as NIF
 - Products are Access controlled, You can only view those products that you have permissions
- ELM-U uses Libraries to contain effort which is to used by anyone with an ELM-U account
 - Objects such as Commercial Off The Shelf Items or Documents, Policies, Procedures, Notes
 - Everyone can view the contents of all Libraries

The URL is; elm-u.llnl.gov/Windchill

Types of Containers in ELM-U

Browse

Recent Context type icons

- Product
- Library
- Project
- Changes
- Etrage

PTC® Windchill®
foslien1

All Types Search ... QuickLinks

Search Browse

Recently Accessed

Recent Products View All

- ELM - Training
 - Details
 - Folders
 - Workspaces
 - Packages
 - Tasks
 - Change Monitor
 - Discussions
 - Reports
- LSEO_2014, LSEO

Search | Browse Navigator

Open and close the Navigator

Expand context to access page specific to that context.

See all contexts of type selected

Resize Navigator as needed

Part New Change Request Copy Add to Workspace Actions - >>

Number	Name
	SYMBOL
	START_P
	FORMAT
	UDF

Products, Libraries and Projects

Searching for Objects in ELM-U

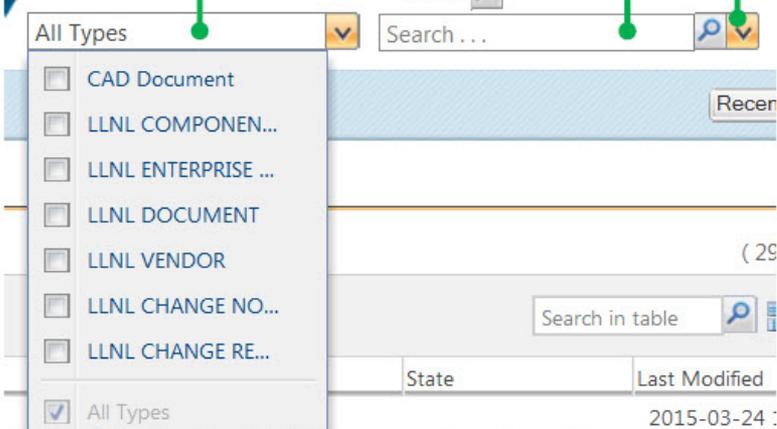
- Basic Search... All Types.. Searching on Name and Number Only

Global Search- Performs a keyword search across all contexts (Products and Libraries). Takes longer due to depth and breadth of search.

Search through all types (default) or select one or more specific object types from drop-down menu

Type Search criteria and click 

Click drop-down arrow to see search history



Keyword search: Search criteria typed in Search... field is compared against object name and number. You may use wildcards such as * and ?. ? replaces 1 character in search string. * replaces one or more characters in search string. See Windchill Help Center topic called *Search Wildcards* for more information. *Note: Index Search will be enabled after go-live which will enable content search and broader attribute searching from Global Search and Keyword field.*

The URL is; elm-u.llnl.gov/Windchill

Search Results

- Basic Search... All Types.. Searching on Name and Number Only

Object I am looking for...

I use the format 10*XXXXXX*
or
aaayy?XXXXXX*

WT Part

Assembly Model

Drawing

	Number	Name	Context	Location	Version
	1000462125	1000462125	LSEO_2015	/LSEO_2015	AA.8 (Design)
	1000462125	1000462125	LSEO_2015	/LSEO_2015	AA.8
	1000462125.DRW	1000462125.drw	LSEO_2015	/LSEO_2015	AA.7
	1000462125_W01.PRT	1000462125_w01.prt	LSEO_2015	/LSEO_2015	AA.11
	1000462125_W02.PRT	1000462125_w02	LSEO_2015	/LSEO_2015	AA.6

Searching is powerful and can be customized to fit needs

Obtaining a Drawing PDF

- Selecting the Information Icon, provides the Information Page

The image shows a software interface with a search results table and an information page for a drawing. A red arrow points from the 'Information Icon' in the search results to the 'Information Page of Drawing' window. A green arrow points from the 'Information Page of Drawing' window back to the search results table. A red arrow points from the 'Content' tab to the 'Content' tab in the information page. A red arrow points from the 'Creo View Image' to the drawing image in the information page.

Number	Name	Context	Location
1000462125	1000462125	LSEO_2015	/LSEO_2015
1000462125	1000462125	LSEO_2015	/LSEO_2015
1000462125.DRW	1000462125.drw	LSEO_2015	/LSEO_2015
1000462125_W01.PRT	1000462125_w01.prt	LSEO_2015	/LSEO_2015
1000462125_W02.PRT	1000462125_w02	LSEO_2015	/LSEO_2015

Information Page of Drawing

Drawing - 1000462125.drw, AA.7

Details Content Related Objects Changes History Traceability Relationship Explorer

Visualization and Attributes | More Attributes

Visualization and Attributes

File Name: 1000462125.drw
Number: 1000462125.DRW
Name: 1000462125.drw
Status: Checked in
Modified By: IAN SCOTT
Last Modified: 2016-03-14 06:23 PDT

Creo View Image
Not the Drawing PDF

Selecting the Content Tab, provides access to the Drawing PDF

Downloading the Drawing PDF

- Once you've selected the Drawing you want, the Drawing PDF can be found on the Contents Tab, in the Attachments Section

The screenshot shows a software interface with a breadcrumb path: Products > LSEO_2015 > Folders. The main title is "Drawing - 1000462125.drw, AA.7". Below the title are several tabs: Details, Content, Related Objects, Changes, History, Traceability, and Relationship Explorer. The "Content" tab is selected. Underneath, there are sub-sections: Primary Content, Attachments, and Representations/Annotations. The "Primary Content" section contains a table with the following data:

File Name ↑	Actions	Category	File Size	Last Modified
1000462125.drw	[Icon]	Creo UGC	224.29 KB	2016-03-14 0

The "Attachments" section contains a table with the following data:

File Name ↑	Actions	Status	Download Automatically	Category
1000462125.pdf	[Download Icon]	Current	No	Watermarked PDF

A red arrow points from the "Content" tab to the "Primary Content" section. Another red arrow points from the "Download" icon in the "Attachments" table to a text box that says "Downloads the Watermarked PDF of the Drawing". At the bottom, a file dialog box is open with the text: "Do you want to open or save 1000462125.pdf (256 KB) from elm-u.lnl.gov?". The dialog box has buttons for "Open", "Save", "Cancel", and a close button (X).

Download the Watermarked PDF

Support for ELM-U

- There are Quick Reference guides, which provide useful How-To's on many common topics
 - They can be found in ELM-U, 1000055808
- Please utilize Front Range to submit Requests for service
- If need be I can be contacted at;
 - burns7@llnl.gov
 - 925-423-6989

Seeking Additional Help

