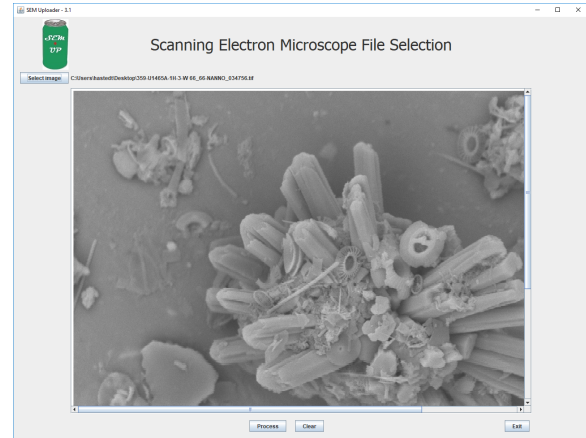


# SEM File Uploader Quick Start Guide

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Scanning Electron Microscope (SEM) Show up to

Image ID	Image Name	Image Date	Image Time	Image Path	Image Size	Image Type	Image Format	Image Resolution	Image Magnification	Image Category	Image Observation	Image Acquisition Date	Image Acquisition Time	Image Acquisition Location	Image Acquisition Operator	Image Acquisition Instrument	Image Acquisition Method	Image Acquisition Parameters	Image Acquisition Comments	
1515-11-01-00001	1515-11-01-00001	2015-11-01	00:00:00	C:\Users\jtrn\Documents\SEM\1515-11-01-00001_00001.tif	1024x1024	TIFF	16-bit	1024x1024	1000x	SEM	1515-11-01-00001	2015-11-01	00:00:00	1515-11-01-00001	1515-11-01-00001	1515-11-01-00001	1515-11-01-00001	1515-11-01-00001	1515-11-01-00001	1515-11-01-00001
1515-11-01-00002	1515-11-01-00002	2015-11-01	00:00:00	C:\Users\jtrn\Documents\SEM\1515-11-01-00002_00002.tif	1024x1024	TIFF	16-bit	1024x1024	1000x	SEM	1515-11-01-00002	2015-11-01	00:00:00	1515-11-01-00002	1515-11-01-00002	1515-11-01-00002	1515-11-01-00002	1515-11-01-00002	1515-11-01-00002	1515-11-01-00002
1515-11-01-00003	1515-11-01-00003	2015-11-01	00:00:00	C:\Users\jtrn\Documents\SEM\1515-11-01-00003_00003.tif	1024x1024	TIFF	16-bit	1024x1024	1000x	SEM	1515-11-01-00003	2015-11-01	00:00:00	1515-11-01-00003	1515-11-01-00003	1515-11-01-00003	1515-11-01-00003	1515-11-01-00003	1515-11-01-00003	1515-11-01-00003

## Introduction and method overview

This user guide contains standard operational procedures for the Scanning Electron Microscope Image Uploader (SEM Uploader). The workflow for working with the SEM is as follows: 1) take pictures on the Scanning Electron Microscope, 2) save the pictures and the associated metadata on the PC that runs the SEM software 3) transfer pictures and metadata to the IODP LIMS database using SEM Uploader and MUT.

## Upload

After taking the images on the SEM and saving them on the PC (please follow the image naming convention below) the user is ready to upload the pictures to LIMS. These are the steps for preparing the files for upload and initializing the upload:

1. Open MegaUpload or Tron5001 (MUT), login to the current expedition or project. If more information is needed, refer to the MUT manual.
2. Check if the correct uploader directory is set (go to **File, Set Upload Directories**). By default, files to be uploaded by MUT are saved to C:\DATA\in.
3. Open the SEM Uploader (*Figure 1*).

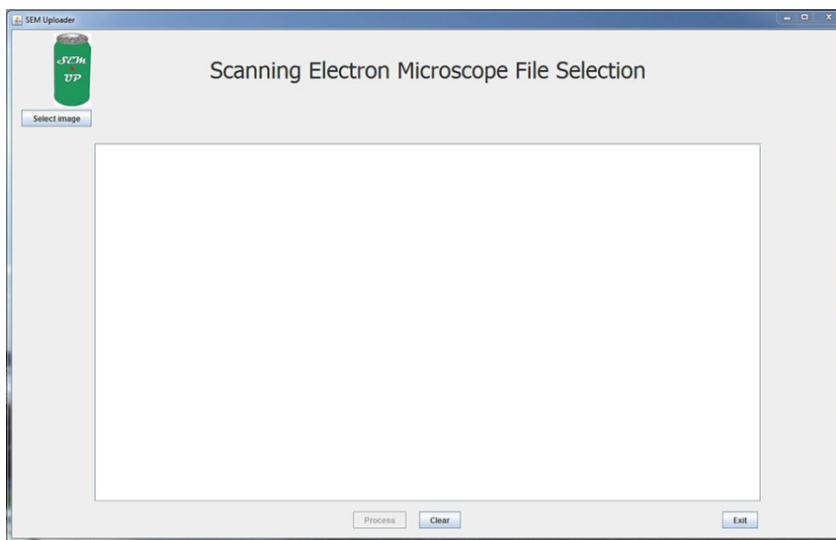


Figure 1. SEM Uploader user interface.

4. **Select image** and click **Process**, OR click **Exit** if you decide to upload later, OR click **CLEAR**, which will clear out the image from the selection. Select another image right away if the one chosen is not the one that you wanted to upload.

### Potential errors:

- Image type is one that is not produced by the SEM (*Figure 2*)



Figure 2. SEM Uploader message if a NON-image file (JPG, PNG, or TIF) is selected.

- Image has no metadata .txt file (*Figure 3*):

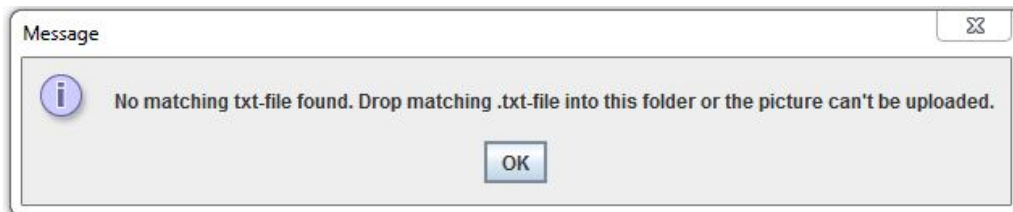


Figure 3. SEM Uploader message if a selected image file has no metadata file

### Associating images with samples:

The second window is designed to associate the sample with the image. There are two ways of assigning the sample – **hierarchy search** or **Text ID search** (*Figure 4*).

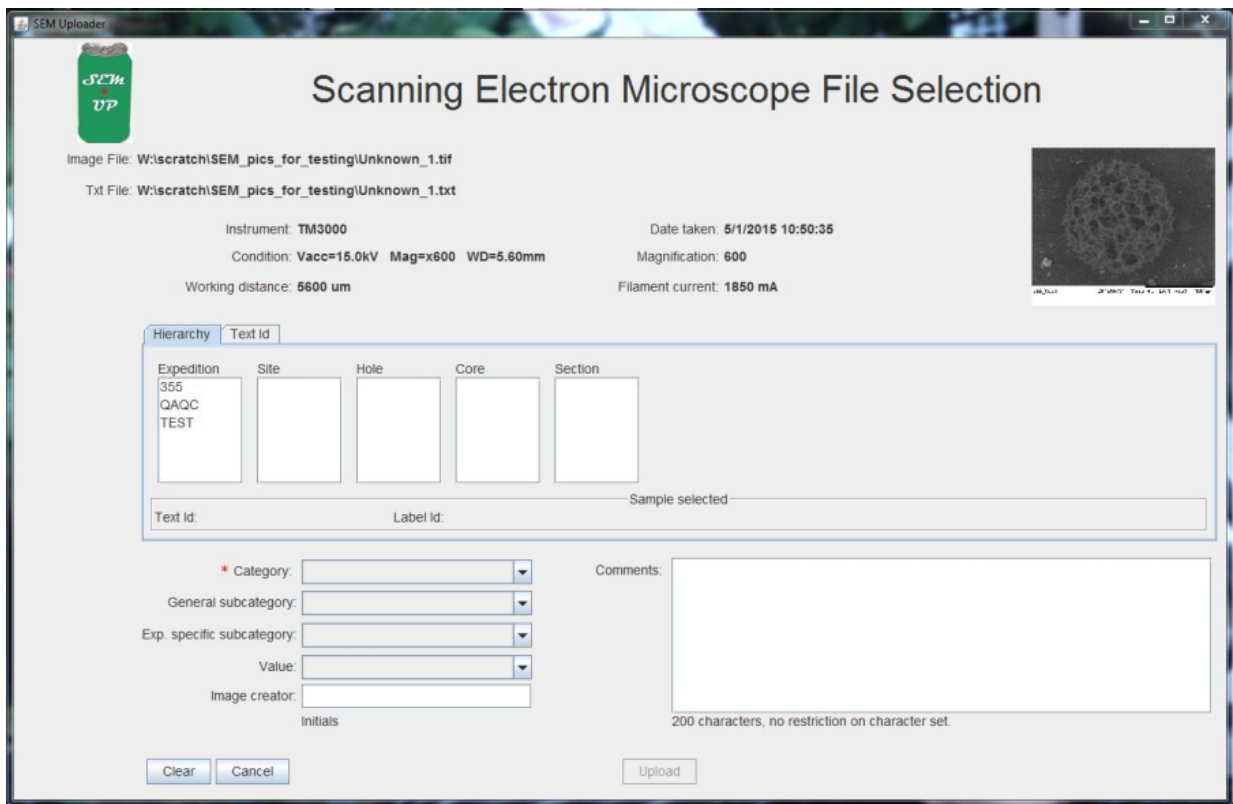


Figure 4. The second SEM Uploader window.

In **Hierarchy** search, click through Expedition/Site/Hole/Core/Section/Section Half down to the sample that the SEM picture was taken from. The sample will be validated automatically with Text Id and Sample Id. In the **Text ID** search, the user enters the known Text ID into the blank field and clicks **Validate Text Id**. If the user picks an invalid Text ID, the SEM Uploader will tell the user (Figure 5).



Figure 5. Text ID search validation of an invalid Text ID will notify the user of the mistake.

## Adding sample categories and comments

The user now needs to pick a **Category** from the drop-down list. The red asterisk next to the category field indicates that this field is mandatory information. The rest of the information is not. The user can pick a **general subcategory** and if the expedition has an **expedition specific subcategory** associated with it this field will auto populate. If there is no expedition specific subcategory, the field will be greyed out. The user will then be able to select a **value** from the drop-down list. However, if the desired value is not in the list, it cannot be added by the user. The user will need to ask the description technician to add it to the drop-down list. The user has the option to add **comments** as well. The comment field allows up to 200 characters without restrictions on special characters. There is also an option to enter initials in the **Image creator** field.

## Uploading to the database

The **Upload** button is activated once the user has filled out the sample selection and picked a category. **Clear** will clear the sample selection as well as the selection of descriptive parameters. **Cancel** will navigate the user back to the first file selection window where the image was chosen. MUT should display the ".SEM" uploader file in the user interface after the user clicks upload. If the directories are set correctly and MUT is working properly the files should be uploaded to LIMS right away. Contact a technician if you see any issues.

## Download from the database

The SEM report can be found as part of the image reports in the LORE interface: <http://web.ship.iodp.tamu.edu/LORE/>

To select an SEM image the user must click on 'Images' under 'Select report' and then select the Scanning Electron Microscope (SEM) option. Users can decide to use the **standard** (commonly used for viewing and downloading data report) or an **expanded** report (used for data review to see all information captured). To use the **hierarchy search**, click the "Select by Hierarchy" tab on any sample module. The hierarchy search allows the user to progress through the sample hierarchy tree (expedition, site, hole, core, section, section half, etc.) to focus the search to the desired level. A **hierarchy search** can be combined with a parameter search (such as sample type). Once the hierarchy is picked, click "View data" – all the available SEM images for that sample will be listed. Each sample has a unique **Text Id** that can be found on the sample label in both barcode and human-readable format. To search for samples by Text Id, click the "Text ID Search" tab on any sample module. Enter one Text Id manually or paste from a list into the entry field. Once the Text Id is entered, click "View data" – all the available SEM images for that sample will be listed. A **Text Id search** can be combined with a parameter search.

## Naming and Saving Conventions

Naming convention for SEM files:

1. EXP number
2. Site
3. Hole
4. Core
5. Section
6. Sample
7. Taxa/specimen/piece
8. No. 1, 2, 3, ....

E.g.

349\_U1431A\_1H\_1\_10-11cm\_Emiliania\_huxleyi\_1,  
349\_U1431A\_1H\_1\_10-11cm\_Emiliania\_huxleyi\_2,  
349\_U1431A\_1H\_1\_10-11cm\_Emiliania\_huxleyi\_3, ...

Storage convention for SEM files on the local PC:

- SEM
- 1. Site
- 2. Hole
- 3. Sample

E.g.

Folder SEM  
Folder 1431  
Folder 1341A  
Folder U1341A\_1\_H\_1\_1-11cm (all files for this SEM sample)

**All those files need to be moved to USERVOL and DATA1 before the end of the expedition.**

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