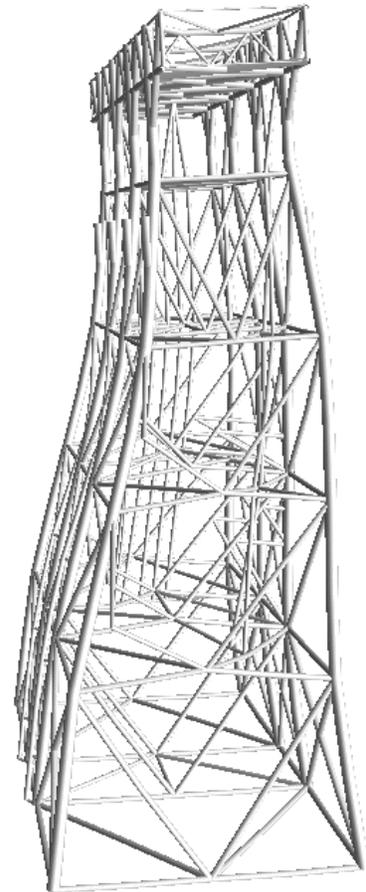


**USFOS Xact**  
**one-click-sharing**  
**of**  
**simulation results**



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## 1 Introduction

USFOS Xact supports collaboration and sharing of simulation results with your client, supervisors, and engineering peers in your preferred browser on any computer and handheld device. No additional installation or plug-ins are needed. This allows you to share your models - no matter how large they are – with anyone – no matter where they are.

By creating your own account and obtaining the necessary credentials, you may upload simulation results easily and swiftly from USFOS Xact to Ceetron Cloud. Storage is free for up to 20 models and 2 Gigabytes. Additional storage is available by upgrading your account. Security is provided by authentication and sharing levels as described below.



**Figure 1:** *USFOS Xact supports collaboration and sharing via web browser.*

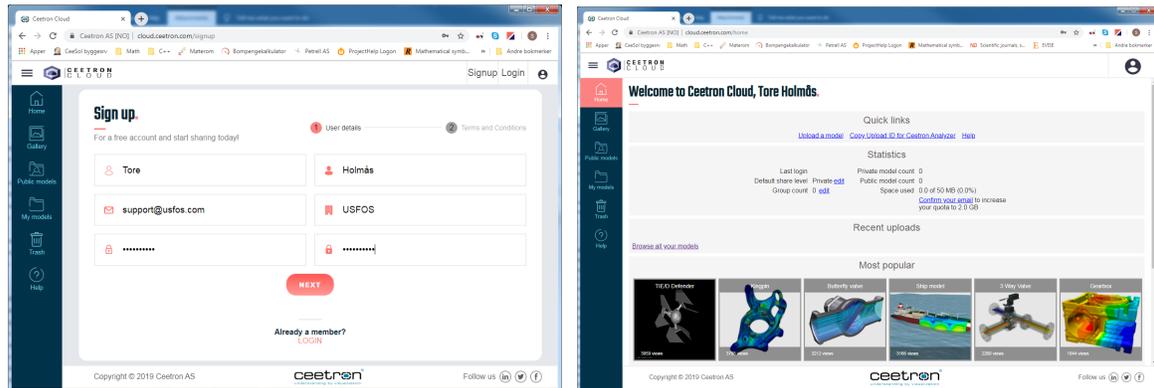
## 2 Creating your account on Ceetron Cloud

Follow these steps to create your account on Ceetron Cloud, c.f. Figure 2:

1. Go to *cloud.ceetron.com* and press *Signup*
2. Sign up for a free account providing details as prompted

This creates your own account on Ceetron Cloud and displays the *Welcome Page* (Figure 2). Initial storage quota is 50 MB. However, confirming your e-mail address increases your storage quota to 2 GB, c.f. Figure 2 *Welcome page* and the link *Confirm your email*.

The sharing level of models defaults to *Private* (c.f. Section 4). The default sharing level can be changed via the *Edit-link* of *Default share level* (Figure 2) or via your account settings (Figure 3).



**Figure 2: Ceetron Cloud sign-up and welcome page.**

### 3 One-click-sharing of USFOS simulation models

The following briefly describes the procedure for one-click-sharing of results from USFOS Xact. Further details are provided in Section 5 which describes a complete example of use.

1. Use Xact to load actual simulation model, results and visualization
2. For first time usage, log in to Ceetron Cloud and fetch your Upload ID
  - a. Select Settings of your account by the  -button
  - b. Press copy icon  to the right of your Upload ID, see Figure 3.
3. Upload model to Ceetron Cloud
  - a. Select USFOS Xact menu option *File*→*Send to CeetronCloud*
  - b. When prompted, enter your Upload ID by pasting from Ceetron Cloud
4. Access Ceetron Cloud to verify the model
  - a. Navigate the model (rotate/pan/zoom) by mouse/mouse wheel or use the buttons of the Ceetron Cloud graphics window
  - b. Press the buttons at top to start, pause, and stop an animation

As mentioned, the sharing level for an uploaded model will be according to set default, see Figure 3. See Section 4 for more information on sharing levels and the use of links for sharing models.

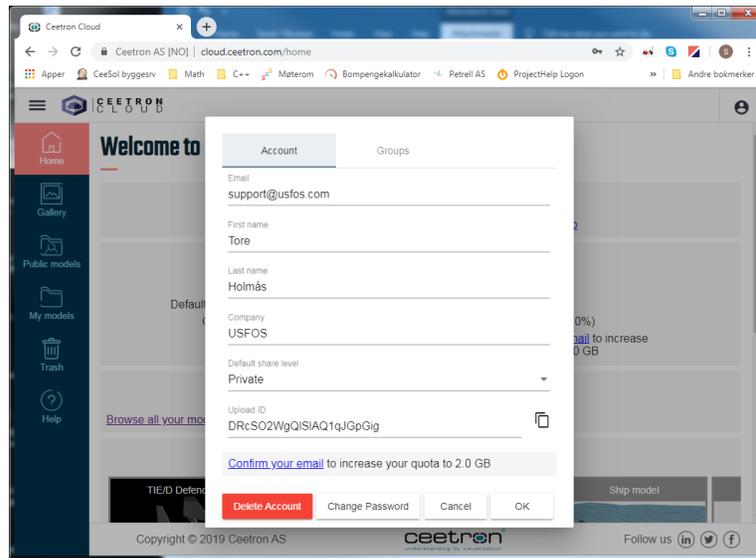


Figure 3: Account settings, sharing level and Upload ID.

## 4 Security and sharing levels

Ceetron Cloud is built on a [highly secure platform](#) [2]. Four standard sharing levels are provided which range from 100% public to 100% private:

- *Public models*: can be found through browsing or searching Ceetron Cloud, and can be seen by everyone.
- *Shareable models*: can be seen only by those who have the required link. The security of the link itself is appropriate as the link is a GUID (base64 encoded) that is virtually impossible to guess. However, users must remember that anyone receiving such a link by email/chat may look at the model.
- *Team models*: Users on Ceetron Cloud can create a Team. All Team members must be logged in and authenticated by Ceetron Cloud, and only members of that Team can look at the model. Someone who has the right link, but who is not logged in and authenticated, cannot see the model.
- *Private models*: Only the owner of the model can look at the model. This is ensured by requiring the user to be logged in and authenticated by Ceetron Cloud before viewing the model. Having a link to a private model is not enough.

## 5 Example of using USFOS Xact one-click-sharing

### 5.1 Example model

In 1980, Zayas et al. reported the first large scale frame test for two one-sixth scale 2D X-braced double-bay frames, which stood more than 8 meters high under cyclic loading. The frame test contributed substantially to offshore engineering research and is part of the USFOS archive of sample models.

### 5.2 Load simulation and results

By design, only data that have been loaded into USFOS Xact will be uploaded to Ceetron Cloud. For instance, an actual result needs to be loaded into USFOS Xact to be uploaded to Ceetron Cloud. Furthermore, an animation has to be performed in USFOS Xact in order to be uploaded. Thus, the user is able to restrict the amount of data uploaded to Ceetron Cloud. The USFOS Graphical User Interface – User’s Manual [1], Chapter 4 describes how to load result files and results into USFOS Xact.

For the purposes of this example, USFOS Xact has been used to load the Zayas frame with an animation of von Mises stress throughout all available time steps.

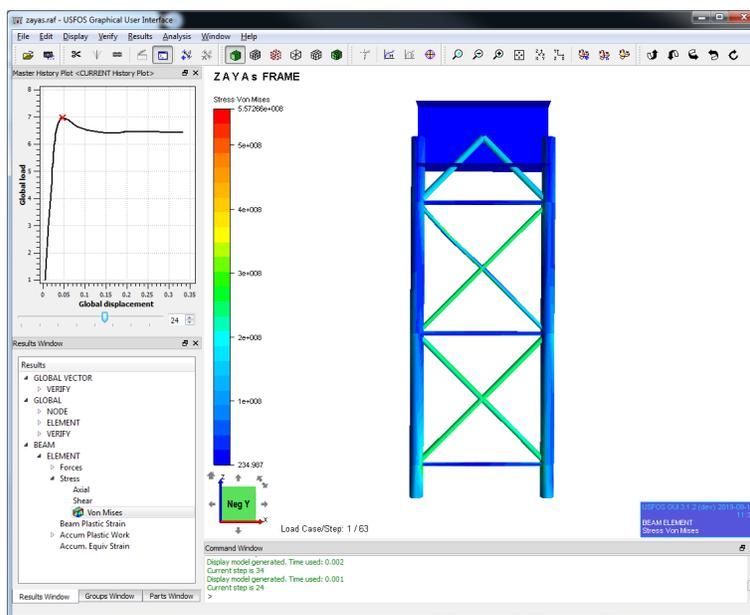


Figure 4: Visualization of Zayas frame and von Mises stress.

### 5.3 Access your Upload ID

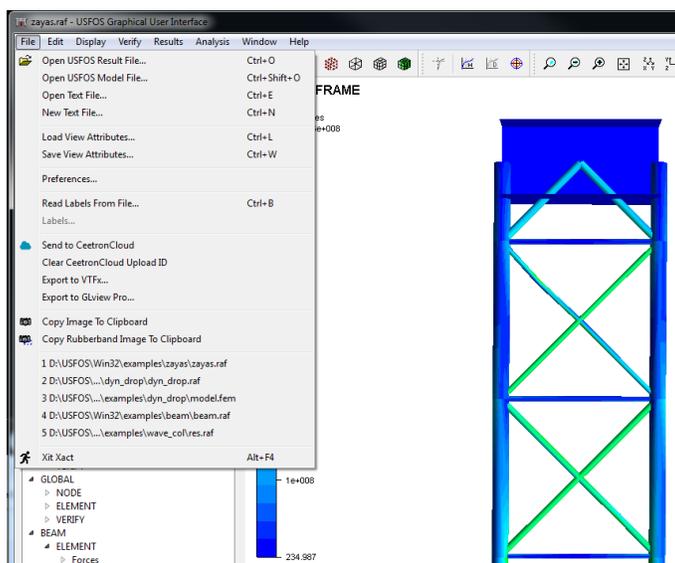
Prior to first time usage of USFOS Xact one-click-sharing, you may fetch your Upload ID from Ceetron Cloud:

- Log in to your account on Ceetron Cloud ([cloud.ceetron.com](http://cloud.ceetron.com))
- Select Settings of your account by the  button (Figure 2)
- Press the  button to copy your Upload ID to clipboard (Figure 3)

### 5.4 Upload simulation results to Ceetron Cloud

From USFOS Xact, simulation results may be uploaded to Ceetron Cloud by a single menu click, c.f. Figure 5:

*File*→*Send to CeetronCloud*



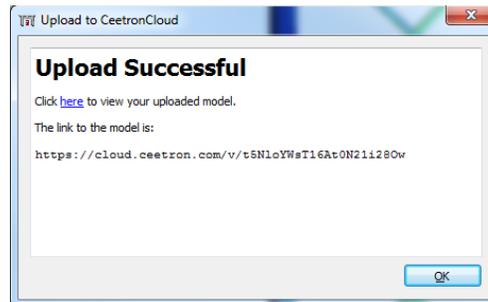
**Figure 5: USFOS Xact menu option File→Send to CeetronCloud.**

However, first time usage will initiate a dialog to prompt for your Upload ID, c.f. Figure 6. Press *Ctrl-V* to paste your Upload ID from clipboard as obtained from Ceetron Cloud. Subsequent model uploads do not require Upload ID as USFOS Xact registers it for later use.



**Figure 6: Dialog for entering your Upload ID.**

A successful upload is confirmed by the dialog shown in Figure 7. As seen, the dialog provides a link to swiftly access the model on Ceetron Cloud.

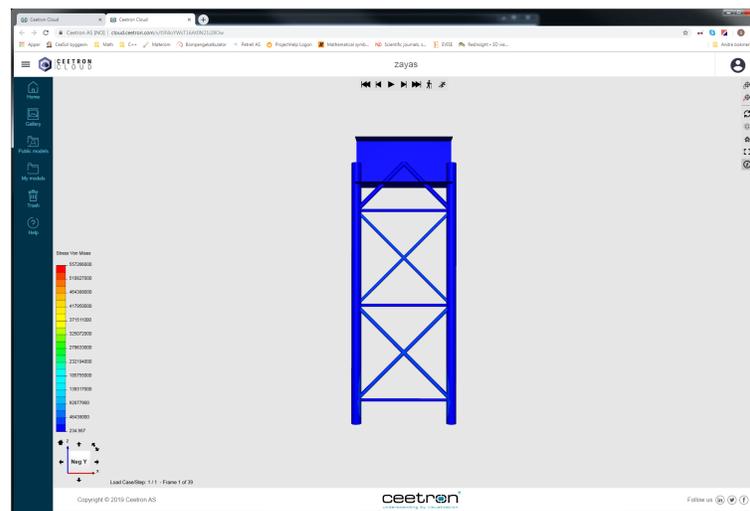


**Figure 7: Successful upload with link to view model.**

## 5.5 Verification of model on Ceetron Cloud

You may view an uploaded model either by using the link provided by USFOS Xact (Figure 7) or logging into Ceetron Cloud.

You may navigate a model (rotate/pan/zoom) by mouse/mouse wheel and/or use of the buttons on the righthand side of the Ceetron Cloud graphics window, c.f. Figure 8. Press the buttons at top to start, pause, step, and stop animation.



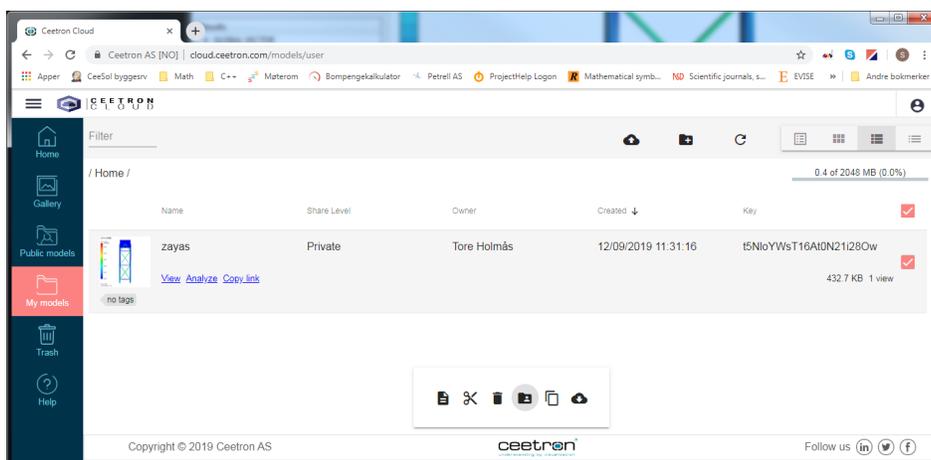
**Figure 8: Visualization of Zayas frame and von Mises stress on Ceetron Cloud.**

## 5.6 Change model settings and sharing

Figure 9 shows how to change settings for a model on Ceetron Cloud. By selecting *My models* and checking the rightmost button, a set of options appear by the following selectable icons at bottom:

-  edit metadata, i.e. model name, description, and image snapshot
-  cut model
-  discard model
-  change sharing level, c.f. Section 4
-  copy model link, c.f. Section 4
-  download model

Checking more than one model implies that the changes will be applied to all of them. Discarded models can be found by menu item *Trash* .



**Figure 9: Review of uploaded models and settings.**

## 6 Organizing models on Ceetron Cloud

Models on Ceetron Cloud can be organized into folders. Reorganizing models is done by:

- Creating a subdirectory by using the button *New Folder*, , in top of window
- Moving one or more models from top level to sub-folder:
  - o Select model(s) by checking button to the right, c.f. red marker in Figure 10
  - o Press *Cut*, i.e. button 
  - o Go to target folder by clicking the actual folder
  - o Press *Paste*, i.e. button 

As seen in Figure 10, models may be discarded by pressing . Discarded models can be found by menu item *Trash* . From here you may restore one or more models or press *Empty trash*, , to permanently delete the models in trash to free storage space.

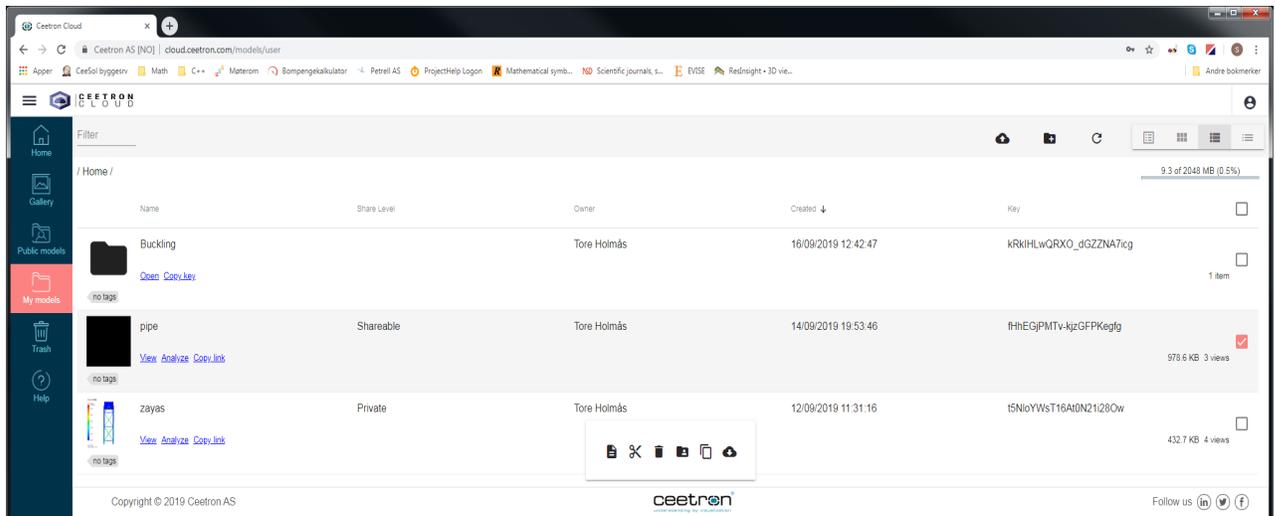


Figure 10: Select model to move.

## 7 “Duration” of the Upload ID

The Upload ID identifies you as user of the Ceetron Cloud and will be remembered by Xact after the first model upload to Ceetron Cloud.

The ID is stored permanently as a user setting both on Windows and LINUX. The user may use the same Upload ID from multiple computers.

In case you decide to change your Upload ID in Ceetron Cloud, the new Upload ID has to be changed in Xact by the following menu options:

*File -> “Clear CeetronCloud Upload ID”*: To clear previous Upload ID stored by Xact

*File -> “Send-to-Cloud”* Will ask for the new Upload ID upon next model upload to Ceetron Cloud

## 8 References

- [1] USFOS Graphical User Interface – User’s Manual. USFOS Release Notes 8-9, GUI Version 3.1. USFOS AS. [www.usfos.com](http://www.usfos.com).
- [2] Cloud Security. Ceetron AS. <https://ceetron.com/cloud-security-for-cae-models/>