 USFOS Reality Engineering USFOS AS Phone: +47 905 05 717 www.USFOS.com Enterprise No.: NO 986 827 374 MVA		MEMO						
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*Release notes
USFOS 8-4, Apr 2008*

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1 Introduction

The current official version of USFOS is version 8-4 with release date 2008-04-01. The release contains following:

- ❑ Release Notes (this MEMO)
- ❑ Updated software on www.usfos.com
- ❑ Extended examples library on www.usfos.com
- ❑ Updated manuals on www.usfos.com

Except for this MEMO, no written information will be distributed in connection with this release. All information is stored on the WEB.

2 News in USFOS version 8-4 - 2008.

2.1 Introduction

Some of the new features are described by examples located on the web site, and reference to the actual example(s) will be given for the different new options.

2.2 How to upgrade your USFOS version

From release 8-3 USFOS could be upgraded in two different ways:

- ❑ Alt 1: Download the new “*setup.exe*” and u-install/install USFOS, (same as for release 8-3). This operation requires administrator rights on the PC.
- ❑ Alt 2: Download module by module and copy into the application folder, (typical “*C:\Program Files\USFOS\bin*”). This operation requires write access on C:, but no administrator rights are required since no installation operations are performed, (just file copy).

With alternative 1, all modules and the on-line manuals are updated. For (the manual) alternative 2, following should be done:

- ❑ Download USFOS module , unzip and copy into *C:\Program Files\USFOS\bin*
- ❑ Download xact, (complete package) , unzip and copy into *C:\Program Files\USFOS\bin*
- ❑ Download USFOS and xact user’s manuals. Copy into *C:\Program Files\USFOS\bin*

Alternative 2 means that the existing files located on the Application folder will be over-written, (take a backup copy of the actual files if you want to keep your existing USFOS modules).

Similar procedure for other USFOS modules (for example STRUMAN).

Download

USFOS

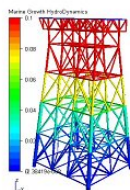
Used by leading oil companies and engineering consultants all over the world, and has proved significant cost savings in areas such as inspection planning, lifetime extension / reassessment of ageing structures, and in fire protection assessment for new designs.

[Download USFOS](#)

SOFTWARE MODULES

The different software modules and Utility Tools could be downloaded separately for customers with a valid USFOS license.

[Available modules](#)



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USFOS MODULES:

[Usfos](#): "Version 8-3, 2006_12_31".

[Fahits](#): "Version 6.0, 2006_12_31".

[Fatal](#): "Version 1.7-01, 2006_12_13".

[StruMan](#): "Version 4-2, 2006_11_18".

[Xact](#): "Complete Package, Version 2006_12_31"

[Xact DLL](#): "DLL only, Version 2006_12_31"

Figure 2-1 Download complete USFOS installation setup or the modules one by one

2.3 Enhanced Graphical User Interface

The graphical user interface (xact) has been enhanced since last year’s release. The GUI version released together with USFOS 8-4 is “2.4”. Check under help/about to ensure that the latest version is installed.

2.3.1 Elastic Utilization (“code check”).

When the structure responds linear elastic (for example when dead weight is applied), the Elastic Utilization could be used. (NOTE, Not valid for non-linear response). The Elastic Utilization dialogue is extended and has 3 different alternatives:

- API LRFD
- API WSD
- Simple Elastic Stress / Yield Stress ratio

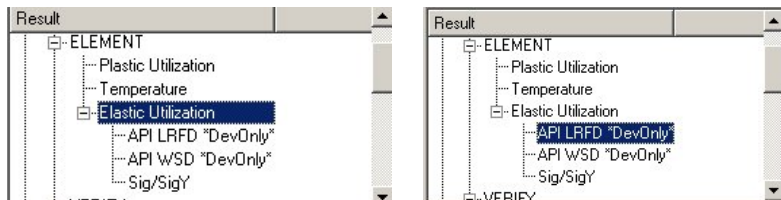


Figure 2-2 Elastic Utilization. Extended Checks.

The utilization is visualized with colour as shown in Figure 2-3, and one colour is used per element (same colour within the entire element).

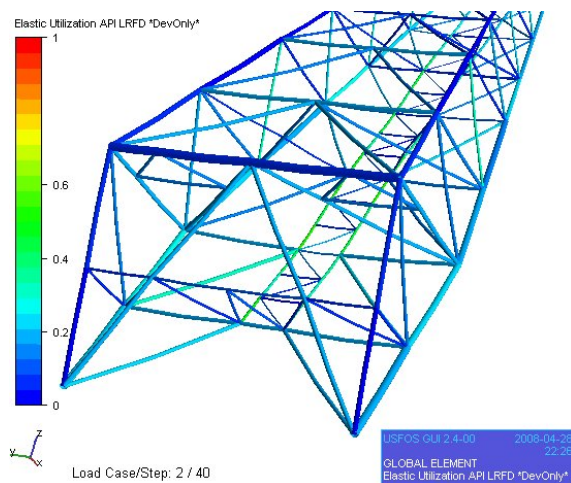


Figure 2-3 Elastic Utilization according to API LRFD.

2.3.2 “Rubber band” selection of Images.

If parts of the 3D images should be “grabbed”, the new rubber band selection could be used. After the actual area is selected, the File/Export to image is used to select image format and name, (default name and type is set).

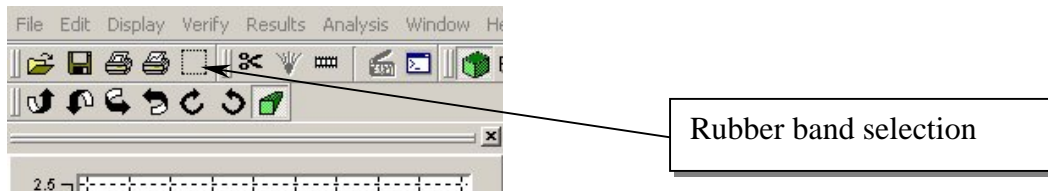


Figure 2-4 Location of Rubber Band selection.

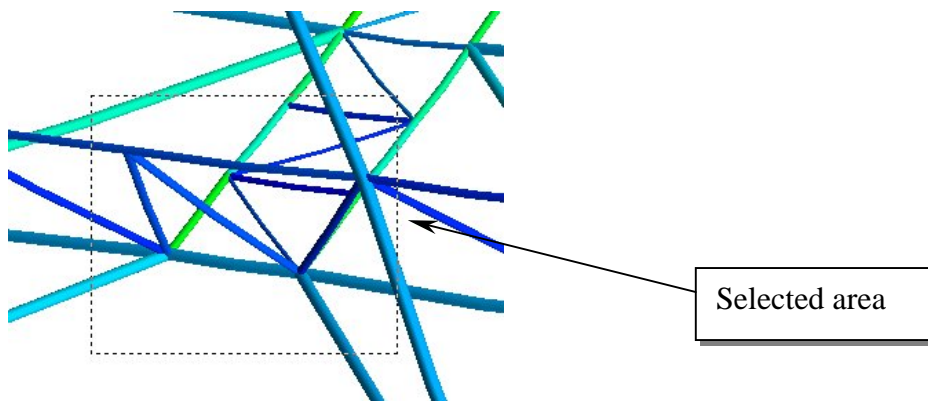


Figure 2-5 Selecting area

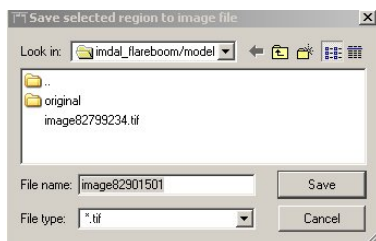


Figure 2-6 Save image to file using the “File/Export to Image” dialogue.

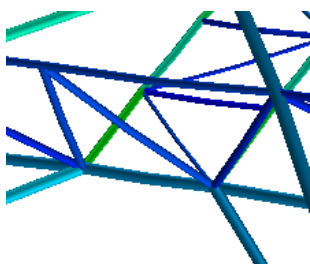


Figure 2-7 Selected area stored on a separate image file.

2.3.3 Verification of Hydrodynamics.

The graphical verification of hydrodynamics parameters is extended as shown below. In addition to increased number of parameters, the elements excluded from hydrodynamic calculations (“non-hydro elements”) are given a grey (N/A) colour.

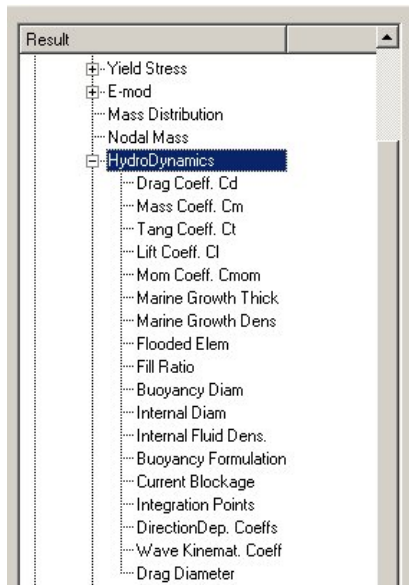


Figure 2-8 Extended Verify Hydrodynamics.

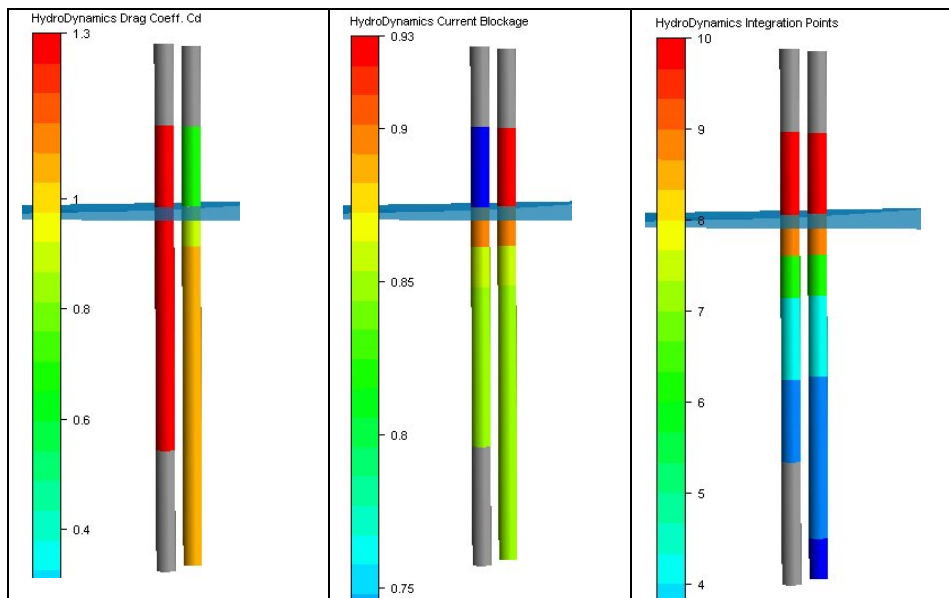


Figure 2-9 Visualization of Cd, Current Blockage and Integration density.

See <http://www.usfos.no/examples/usfos/hydrodynamics/hydropar01/index.html> for an example.

2.4 Hydrodynamics

The hydrodynamic module has been extended in release 8-4. The extensions covers the following:

- ❑ Extended input, both more parameters to specify and simplification of the input, (for example using groups or depth profiles).
- ❑ Extended result presentation (see above)
- ❑ Extended simulation capabilities (some extension require special hydro license)

Examples of the new features are available on the web:

- ❑ HYDROPAR option
<http://www.usfos.no/examples/usfos/hydrodynamics/hydropar01/index.html>
- ❑ Direction Dependent Cd
<http://www.usfos.no/examples/usfos/hydrodynamics/DirDep1/index.html>
- ❑ MaxWave. AddLoads
http://www.usfos.no/examples/usfos/hydrodynamics/maxwav_addcase1/index.html
- ❑ MaxWave Specify Case
http://www.usfos.no/examples/usfos/hydrodynamics/maxwav_speclcase/index.html
- ❑ MaxWave AddWind
http://www.usfos.no/examples/usfos/hydrodynamics/maxwav_addwind1/index.html

An overview of all available hydrodynamic examples is found on the following link:
<http://www.usfos.no/examples/usfos/hydrodynamics/index.html>

2.5 Dynamic Results

The dynamic result option has been extended on following points:

- ❑ Dynres_E : Results for Shell elements
- ❑ Dynres_G : Reaction forces

2.6 Joint Model. First Crack

A new capacity curve is added to the “msl” joint option. The curve is derived from existing curves, but the ductility limit is become more active in connection with the design of the capacity curve.

The new “first crack” (keyword *fcrack*) in USFOS will match the recommended curves in the codes (NORSOK, API).

Below, and X-joint example demonstrates the difference between the “mean” and the new “frack” option.

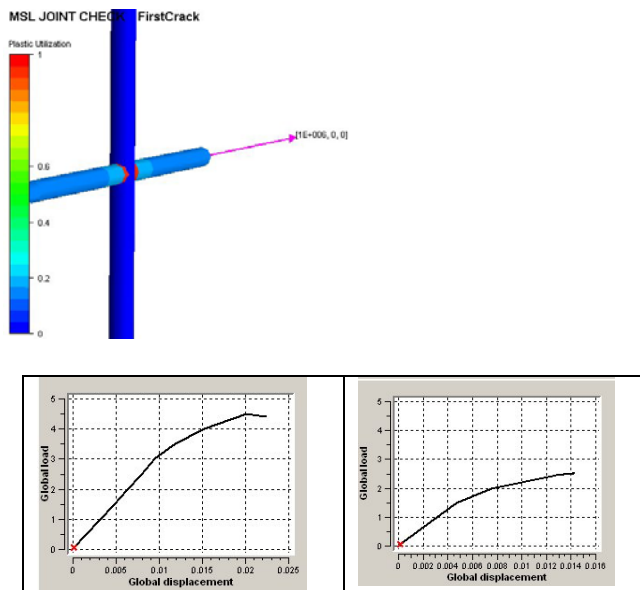


Figure 2-10 Significant difference between MSL mean (left) and fcrack (right.)

The example is found on the web following address:

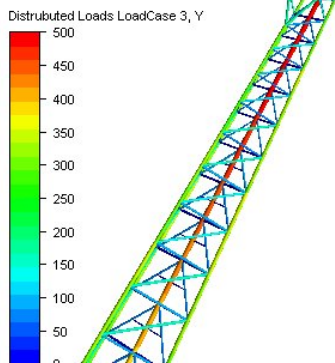
http://www.usfos.no/examples/usfos/misc/Jnt_MSL_fcrack/index.html

2.7 Aerodynamic loads

The existing module for aerodynamic calculation is modified and extended with following keywords:

- ❑ Updated / Extended input
- ❑ Extended result presentation
- ❑ New features (wind fields and static loads calculation)

MaxWind Demo Case01. Static Max Wind



For more information, see the user's manual and the example:

<http://www.usfos.no/examples/usfos/misc/Wind01/index.html>

3 Linux Versions



All USFOS modules are available on LINUX 64 bit. The different USFOS modules and utility codes are found on the following web address:

<http://www.usfos.no/download/Linux/index.html>

A simple installation description is found on the download page.

http://www.usfos.no/download/Linux/files/Usfos_on_Linux.pdf

4 New/modified input commands

Since last main release (8-3), following input identifiers are added/extended:

MAXWIND	:	New command	:	<i>Max Wind calculation</i>
W_COEFFS	:	New command	:	<i>Coefficient definition (wave/wind)</i>
ELMCOEFF	:	New command	:	<i>Assigning coefficients to elements</i>
HYDROPAR	:	Extended command	:	<i>Detailed specification of hydro parameters</i>
FLOODED	:	Extended command	:	<i>Different list options (groups etc)</i>
WAVE_INT	:	Extended command	:	<i>Profile definition</i>
WAVE_KRF	:	Extended command	:	<i>Profile definition</i>
CURRBLOC	:	Extended command	:	<i>Profile definition</i>
MAXWAVE	:	Extended command	:	<i>Specify wave case, Add load case.</i>
TIMEHIST	:	Extended command	:	<i>Constant increment and Sine</i>
CHJOINT	:	Extended command	:	<i>First Crack, MSL.</i>
DYNRES_E	:	Extended command	:	<i>Forces for shell elements.</i>
DYNRES_G	:	Extended command	:	<i>Base Shear ++.</i>
WINDFIELD	:	Extended command	:	<i>Rearranged input, new fields</i>