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Postfos Macro Definitions				
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Postfos Macro Definitions

1   Introduction

If a number of plots and text tables should be extracted from an USFOS simulation, use of pre-defined scripts (macros) is efficient.

For many users familiar with UNIX, writing scripts is a simple and efficient way to extract and further process result data (using *grep, sed, awk* etc).
(see http://www.usfos.no/news/release_notes/Release_Notes_for_Usfos_7-7.pdfT)

However, POSTFOS has a built in "MACRO" feature, which could be useful if same data should be extracted for a series of similar analyses etc. This memo describes the feature by a simple example, (the "*zayas*" example found in the examples folder after installation).

2   Example

The 2D frame shown in Figure 1 is used as example. Following data should be extracted using macro:

- ❑ Element force for elem 7, End-1, degree of freedom 1
- ❑ Element interaction value (same element)
- ❑ Nodal displacement of node 3, degree of freedom 1 (X-dir)

The macro set-up is shown in Table 1.

Figure 1 Simple 2D frame

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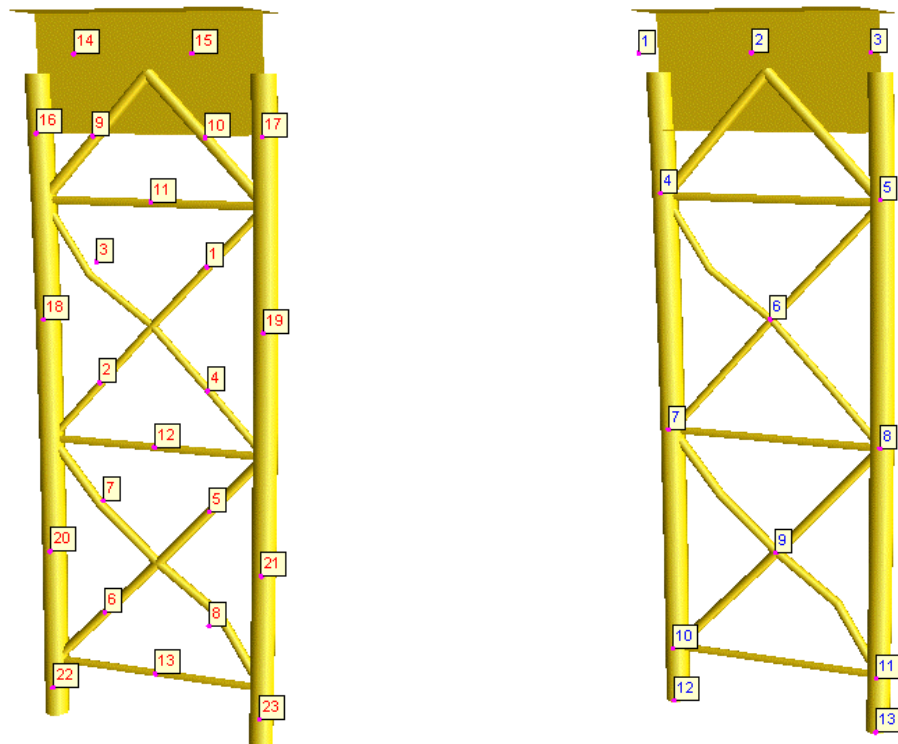
```
**                    POSTFOS MACRO EXAMPLE FILE
*   ----------------------------------------------------------------
*   | General Description                                           |
*   |                                                               |
*   | Comments are available by using       *    in 1. column       |
*   | Start definition of macro by using   >M   in first two columns |
*   | End   definition of macro by using   >E   in first two columns |
*   |                                                               |
*   |                                                               |
*   | The macros defined are executed from POSTFOS by specifying:   |
*   |                                                               |
*   |                                                               |
*   |    EXECUTE-MACRO     zayas.mcro     test1                      |
*   |    EXECUTE-MACRO     zayas.mcro     test2                      |
*   |                                                               |
*   | See POSTFOS User's Manual, Chapter 12, Sect 3.5.              |
*   ----------------------------------------------------------------
**
* ------------------------------------------------------------------
*                    - Define macro with name test1
* ------------------------------------------------------------------
>M,test1
*
*                                          - X-Y plotting :
*define-x-axis  global-load
define-y-axis  element-force
*   element nr:    node_no    Dof
        7              1        1
**                                         - Stop defining
!
*                                          - Print curve at .ps -file
print-plotfile 0  0
*
*                                          - Next plot:
*define-x-axis  global-load
define-y-axis  element-interaction-value
*   element nr:    node_no    Dof
        7              1        1
!
print-plotfile 0  0
*                                          - END macro test1
>E
*** ------------------------------------------------------------------
*                    - Define macro with name test2
* ------------------------------------------------------------------
>M,test2
*
define-x-axis  global-load
define-y-axis  nodal-displacement
*       node no   Dof
          3        1
!*
print-plotfile  0 0
*
*                                          - END macro test2
>E
*                                          - END macrofile
>ENDFILE
```

Table 1 Macro Examples for Postfos. Contents of file: "*zayas.mcro*"

In the file (*zayas.mcro*) two different macros are defined (*test1* and *test2*), and these names could be accessed separately.

The syntax is within the macros is as usual for POSTFOS (run for example POSTFOS interactively first to check that the commands work as intended before the commands are written in the macro file).

When the macros are defined in either one file (several macro definitions in same file) or several files, the commands are activated from POSTFOS using following command:

EXECUTE-MACRO   'file_name'   'macro_name'

For example:

EXECUTE-MACRO   zayas.mcro test2

will execute all commands defined under macro *test2*.

(POSTFOS accepts abbreviations in the commands as long as they're not ambiguous, and the same operation could be executed by typing: *EX-M   zayas.mcro test2*)