# Chapter 3

# User exit subroutines

This section describes the user exit subroutine.

## ems_itru

This subroutine is called after every *Iiterufreq* iterations, or after resetting the current model.

### Specification

`call ems_itru`(*dspace*, *dspace*, *reason*, *userrtcd*)

### On entry

*dspace*
: is the user-provided work area.
Specified as: a one-dimensional real array of doublewords.

*dspace*
: is the integer version of the work area.
Specified as: a one-dimensional integer array of fullwords.

*reason*
: is the situation where `ems_itru` is called.
If *reason* = 1, the subroutine is called after a primal iteration of `ems_sslv`.
If *reason* = 3, the subroutine is called after a resetting the current model during `ems_sslv`.
Specified as: a fullword integer.

*usrrtcd*
: is the user return code from the user exit subroutine.
Specified as: a fullword integer.

### On return

*dspace*
: is the user-provided work area.
Returned as: a one-dimensional real array of doublewords.

*dspace*
: is the integer version of the work area.
Returned as: a one-dimensional integer array of fullwords.

*usrrtcd*
: is the user return code from the user exit subroutine, where:

If *usrrtcd* = 3, EMSOL acts as if the maximum number of iterations has been reached.
If *usrrtcd* = 99, then the current model is reset.

Returned as: a fullword integer.

**Notes**