

## NAME

CCIFSG – CUTEr tool to evaluate a single constraint function value and possibly gradient in sparse format.

## SYNOPSIS

CALL CCIFSG( N, ICON, X, CI, NNZSGC, LSGCI, SGCI, IVSGCI, GRAD )

## DESCRIPTION

The CCIFSG subroutine evaluates the value of a particular constraint function of the problem decoded into OUTSDIF.d at the point X, and possibly its gradient in the constrained minimization case. The gradient is stored in sparse format.

## ARGUMENTS

The arguments of CCIFSG are as follows

**N** [in] - integer

the number of variables for the problem,

**ICON** [in] - integer

the index of the constraint function to be evaluated,

**X** [in] - real/double precision

an array which gives the current estimate of the solution of the problem,

**CI** [out] - real/double precision

the value of constraint function ICON at X,

**NNZSGC** [out] - integer

the number of nonzeros in SGCI,

**LSGCI** [in] - integer

the declared length of SGCI,

**SGCI** [out] - real/double precision

an array which gives the nonzeros of the gradient of constraint function ICON evaluated at X. The i-th entry of SGCI gives the value of the derivative with respect to variable IVSGCI(i) of function ICON.

**IVSGCI** [out] - integer

an array whose i-th component is the index of the variable with respect to which SGCI(i) is the derivative,

**GRAD** [in] - logical

a logical variable which should be set .TRUE. if the gradient of the constraint functions are required and .FALSE. otherwise.

## AUTHORS

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## SEE ALSO

*CUTEr (and SifDec): A Constrained and Unconstrained Testing Environment, revisited,*

N.I.M. Gould, D. Orban and Ph.L. Toint,

ACM TOMS, **29**:4, pp.373-394, 2003.

*CUTE: Constrained and Unconstrained Testing Environment,* I. Bongartz, A.R. Conn, N.I.M. Gould and Ph.L. Toint, TOMS, **21**:1, pp.123-160, 1995.