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"
**************************************************************************
      PASCAL interface for local process communication
            using unlimited message lengths (i.e. < 16 Kw)
**************************************************************************
" FILE: BKS_USERS.01 *KST.D*MESSAGE_IF.D*V01.D*P.MESSAGE_IF.I

%IMPORT: SEND_LONG_MSG, GET_LONG_MSG, SEND_LONG_ANSWER, LONG_MSG

PROCEDURE SEND_LONG_MSG(VAR RECEIVER : PROCESS_NAME;
                        VAR MSG      : UNIV ELEMENT;
                            MSGLGT   : INTEGER;
                        VAR ANS      : UNIV ELEMENT;
                            ANSLGT   : INTEGER;
                        VAR EVENT    : INTEGER;
                        VAR CC       : COMPLETION_CODE); EXTERN;

"
   The MSGLGT words in MSG will be transferred to the RECEIVER.
   The RECEIVER is also notified of the address and maximum length
   of the data area (ANS) in the sending process where the answer
   of the message received may be written.
   Do not use the records MSG and ANS before a WAIT_ANSWER/EVENT
   has been executed and the answer of the message identified by
   EVENT has been received.
"
PROCEDURE GET_LONG_MSG(     MB       : MESSAGE_BUFFER;
                        VAR MSG      : UNIV ELEMENT;
                            MAXLGT   : INTEGER;        MSGLGT
                        VAR SCNT_RET : INTEGER;
                        VAR CC       : COMPLETION_CODE); EXTERN;

"
   The message buffer MB received from the sending process is
   containing the address of the message to be transferred. This
   procedure will copy the message from the data area of the sending
   process into the area specified by MSG. Only MAXLGT words will be
   transferred in case the message sent is longer than MAXLGT.
"

PROCEDURE SEND_LONG_ANSWER(     MB       : MESSAGE_BUFFER;
                            VAR ANS      : UNIV ELEMENT;
                                ANSLGT   : INTEGER;
                                EVENT    : INTEGER
                                CC_ANS   : COMPLETION_CODE;
                            VAR CC       : COMPELTION_CODE); EXTERN;



"
   The contents of the record ANS (length ANSLGT words) is copied
   into the answer area in the data area of the sending process
   and a SEND_ANSWER is executed. MB is the messagebuffer received
   from the sending process and must be kept unchanged until
   SEND_LONG_ANSWER has been executed. The EVENT is the normal XAMDS
   event identifier identifying the message received.
   CC_ANS is returned in the answerbuffer an may be obtained directly
   by caller from the messagebuffer.
"
PROCEDURE LONG_MSG( VAR RECEIVER : PROCESS_NAME;
                    VAR MSG      : UNIV ELEMENT;
                        MSG_GT   : INTEGER;
                    VAR ANS      : UNIV ELEMENT;
                        ANSLGT   : INTEGER;
                    VAR CC       : COMPLETION_CODE); EXTERN;


"
   The MSGLGT words in MSG will be transferred to the RECEIVER.
   The RECEIVER is also notified of the address and maximum length
   of the data area (ANS) in the sending process where the answer
   of the message received may be written.
   The process is suspended until the answer is received.
"
"RESTRICTIONS:
   Every message buffer sent by the normal SEND_MESSAGE/SEND_ANSWER
   may not contain a negative integer (i.e. bit 15 set) in the first
   word of the buffer.

   When a process is receiving a message buffer with bit 15 set in
   word no. 1, it knows that the message to be received is a long
   message.
"
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00.00078
00.00078 "------------------------------------------------------------------------
00.00079 "
00.00080 " REGISTER CROSS REFERENCE INDEX AT CALL:
00.00081 " ---------------------------------------
00.00082 "
00.00083 " FUNCTION            R0          R1   R2    R3      R4          R5          R7
00.00084 " ---------------------------------------------------------------------------
00.00085 " SEND_LONG_MESSAGE   REF(PROC)        BCNTI BCNTO   REF(AREA)   REF(DATA)   L
00.00086 " SEND_LONG_ANSWER                MESS EVT   BCNTO     CC        REF(DATA)   L
00.00087 " GET_LONG_MESSAGE                MESS BCNTM         REF(AREA)               L
00.00088 " LONG_MESSAGE       REF(PROC)        BCNTI BCNTO   REF(AREA)   REF(DATA)   L
00.00089 "
00.00090 " REGISTER CROSS REFERENCE INDEX AT EXIT:
00.00091 " ---------------------------------------
00.00092 "
00.00093 " FUNCTION            R0          R1   R2    R3      R4          R5          R7
00.00094 " ---------------------------------------------------------------------------
00.00095 " SEND_LONG_MESSAGE  KEPT              EVT   KEPT    KEPT        KEPT        CC
00.00096 " SEND_LONG_ANSWER                KEPT DEST  KEPT    KEPT        KEPT        CC
00.00097 " GET_LONG_MESSAGE                KEPT UPDA  KEPT                KEPT        CC
00.00098 " LONG MESSAGE       KEPT              KEPT  KEPT    KEPT        KEPT        CC
00.00099 "
00.00100 "
00.00101 "   LEGEND:
00.00102 "   -------
00.00103 "   REF(PROC)        PROCESS NAME
00.00104 "   MESS             REF(MESSAGE_BUFFER)
00.00105 "   EVT              EVENT
00.00106 "   REF(DATA)        REF(DATA TO BE TRANSFERRED)
00.00107 "   REF(AREA)        REF(DATAAREA TO BE OVERWRITTEN)
00.00108 "   BCNTI            BYTECOUNT CORRESPOND TO REF(AREA)
00.00109 "   BCNTO            BYTECOUNT CORRESPOND TO REF(DATA)
00.00110 "   BCNTM            MAX BYTECOUNT READ INTO AREA
00.00111 "   UPDA             BYTECOUNT RECEIVED
00.00112 "   L                LINK
00.00113 "   CC               COMPLETION CODE
00.00114 "------------------------------------------------------------------------
00.00115 "PAGE
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00.00039
00.00040 "------------------------------------------------------------------------
00.00041 " PROCEDURE MCOMMUNICATION NARRATIVE
00.00042 "
00.00043 " MESSAGE_IF MONITOR PROCEDURES ARE A SET OF FUNCTIONS AVAIBLE FOR
00.00044 " COMMUNICATION BETWEEN PROCESSES.
00.00045 "
00.00046 " TO USE MESSAGE_IF FUNCTIONS THE USER MUST SUPPLY ALL PROCESS DEPENDENT
00.00047 " PARAMETERS TO BE USED BY CALLED PROCESS.
00.00048 "
00.00049 " THE COMM PROCEDURES ONLY PERFORM OPERATIONS ON THE MESSAGE BUFFER IN A
00.00050 " UNIFORM MANNER.
00.00051 "
00.00052 " MESSAGE_IF FUNCTIONS ARE INVOKED THROUGH:
00.00053 "
00.00054 "          MON(COMM,COMM_FUNCTION, REGISTER_PARAMETERS ,R7):ERROR_DONE
00.00055 "
00.00056 " THE FOLLOWING MESSAGE_IF FUNCTIONS ARE AVAILABLE:
00.00057 "
00.00058 " -   SEND_LONG_MESSAGE     SEND A MESSAGE TO A PROCESS
00.00059 " -   SEND_LONG_ANSWER      SEND ANSWER TO CALLING PROCESS
00.00060 "                           AND RETURN DATA INTO CALLING PROCESS DATA AREA.
00.00061 " -   GET_LONG_MESSAGE      TRANSFER PARAMETERS FROM CALLING PROCESS
00.00062 "                           TO RECEIVERS LOCAL DATA AREA
00.00063 " -   LONG_MESSAGE          COMBINATION OF SEND_LONG_MESSAGE
00.00064 "                           AND WAITANSWER.
00.00065
00.00066 " POTENTIAL RESULT CODES:
00.00067 "
00.00068 "      -   COMM DONE,              OPERATION COMPLETE
00.00069 "      -   COMM ILL FUNCTION,      SUBFUNCTION ERROR
00.00070 "      -   COMM ILL ADDR ,         SPECIFIED ADDR EXCEED BOUND
00.00071 "      -   COMM ILL MESS ,         ILLEGAL MESSAGEBUFFER CONTENTS
00.00072 "      -   COMM ILL BYTESIZE ,     BYTECOUNT TO XFER GREATER THAN SPECIFIED
00.00073 "                                  BY CALLER
00.00074 "      -   COMM UNKNOWN PROCESS    CALLING PROCESS NOT EXISTING
00.00075 "      -   COMM TIMEOUT            MEMMORY NOT AVAIBLE
00.00076 "
00.00077 "PAGE
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