A COBOL module that sleeps for a random period of time

It may be useful to have a COBOL module sleep or pause for a random number of seconds, such as to simulate system load or user input delay, when testing multi-threaded or multi-user applications. COBOL can first check the system clock to determine a starting time, then pick a random number, then check the system clock repeatedly to determine when the number of seconds has elapsed.

The following COBOL program demonstrates both
1) How random numbers can be used in COBOL, and
2) How elapsed time can be calculated

The first two data items needed, a minimum and maximum value, define the range within which random numbers will be generated. A person could change these values to (for example) 10 and 20, and the program would produce evenly-distributed pseudo-random numbers in that range. The end points (10 and 20) would be included in the range.

This program has been tested and has run successfully on Net Express under Windows XP, as well as with Server Express on the UNIX platforms: AIX, HP/UX, Sun Solaris, Tru64, and SUSE and Red Hat Linux.

Note that the IDENTIFICATION DIVISION, WORKING-STORAGE SECTION, and other headers are optional when they can be inferred from context, so this is a complete program (not a fragment), and it will compile as written:

-----------------------------------------------------------------
000001  01 min-sleep-seconds  pic 99 value 1.
000002  01 max-sleep-seconds  pic 99 value 5.
000003  01 sleep-time         pic 99.
000004  01 begin-time         pic 9(08) value zeroes.
000005  01 filler redefines begin-time.
000006         05 begin-hours       pic 99.
000007         05 begin-minutes     pic 99.
000008         05 begin-seconds     pic 99.
000009         05 begin-hundredths  pic 99.
000010  01 end-time          pic 9(08) value zeroes.
000011  01 filler redefines end-time.
000012         05 end-hours       pic 99.
000013         05 end-minutes     pic 99.
000014         05 end-seconds     pic 99.
000015         05 end-hundredths  pic 99.
000016  01 elapsed-time      pic 9(8).
000017 000018  procedure division.
000019  perform sleep-it 20 times
000020  stop run.
000021 000022  sleep-it.
000023      accept begin-time from time
000024      move 0 to elapsed-time
000025      compute sleep-time = function random * (max-sleep-seconds - min-sleep-seconds + 1) +
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000027     min-sleep-seconds
000028     display "sleeping " sleep-time " seconds"
000029     perform until elapsed-time > sleep-time
000030     accept end-time from time
000031     compute elapsed-time rounded =
000032         ( end-hours - begin-hours ) * 3600
000033         + ( end-minutes - begin-minutes ) * 60
000034         + ( end-seconds - begin-seconds )
000035         + ( end-hundredths - begin-hundredths ) / 100
000036     end-perform.