SLED 3.0 & SMASH 7.0

64-BIT NATIVE APPLICATION

Starting from now, all our EDA solutions will only be available in 64-bit versions for x86_64 platforms with Microsoft Windows Vista/7/8/10 or with RedHat Enterprise Linux 6 (RHEL6) and compatible Linux distributions.
Native 64-bit applications allow to overcome the limitations of 32-bit versions, such as loading large designs and simplifying installations on a 64-bit Linux OS.

AC/NOISE DURING TRANSIENT OR DC

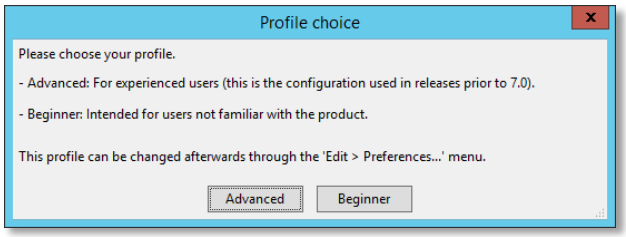
SMASH 7.0 provides an efficient way of detecting events or dynamic conditions to automatically launch small signal or noise analysis during a transient or a DC analysis.
The small signal or noise analysis can be dynamically triggered on time, current(s) or voltage(s) events thanks to 2 new directives:

- .RUNAC directive to launch small signal analysis during a transient or a DC analysis.
- .RUNNOISE directive to launch noise analysis during a transient or a DC analysis.

Coupled with post-processing directives like .MEASURE or .FFT, scheduling small signal or noise analysis by detecting events during a transient or a DC analysis is an efficient way to improve the productivity of the design characterization.

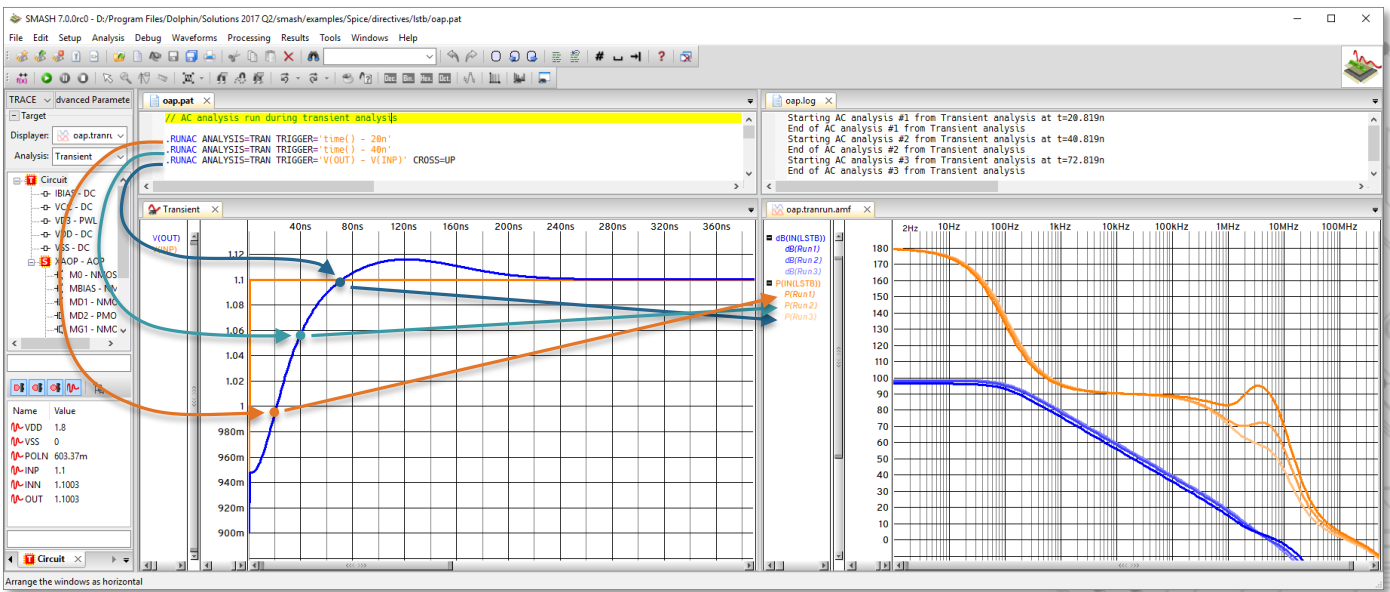
BEGINNER PROFILE

SMASH 7.0 introduces a profile concept that is particularly useful for users who are not familiar with the product.
At first use, SMASH prompts the user to select a profile – Beginner or Advanced (it can be changed later with the preferences menu). Beginner profile implicitly saves all signals during simulation so that waveforms can be easily plotted later.



SLED EXTENSIONS

For having a centralized access of all the views of a project, SLED 3.0 allows to invoke an external executable to open a complementary file of a SLED's project. To do this, it is now possible to associate a user command line with any document extension.
For instance, you can associate GDSII files with a layout viewer. Once the preference is set, a double-click on a GDSII file item in the project manager will launch the layout viewer.



QUANTILES IN MONTE CARLO

For helping analysis of Monte-Carlo results, SMASH 7.0 adds the computation of quantiles. Quantiles are particularly useful as they are less susceptible than means or other moment-related statistics to long-tailed distributions and outliers.
Depending on the number of runs, results of quantiles include:

- quartiles 25%, 50%, 75%.
- percentiles 1%, 5%, 95%, 99%, etc…
- percentiles equivalent sigma -i*sigma and +i*sigma (for I = 1 to 6).

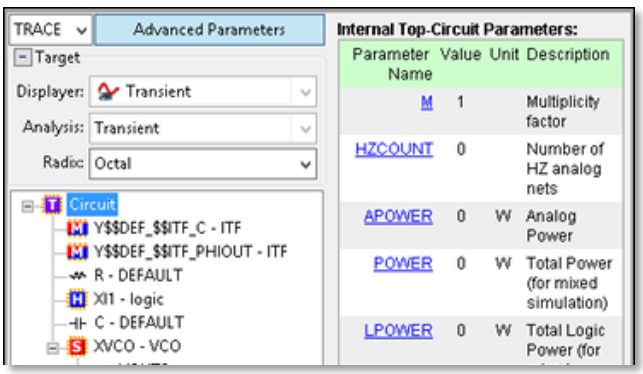
Confidence intervals are provided for theses quartiles and percentiles.

```
Quantiles                                                  :                  CI [          2.5% ;          97.5% ]
        PERCENTILE_1                                       :   -1.119678e+00     [ -1.917737e+00;  -8.889613e-01]
        -SIGMA2 (PERCENTILE_2.27501319481792)              :   -8.889613e-01     [ -1.917737e+00;  -5.650425e-01]
        PERCENTILE_5                                       :   -5.279711e-01     [ -1.093021e+00;   2.211921e-01]
        -SIGMA1 (PERCENTILE_15.8655253931457)              :    1.066438e+00     [  5.630866e-01;   1.403150e+00]
        PERCENTILE_25                                      :    1.680886e+00     [  1.148333e+00;   1.893162e+00]
        PERCENTILE_75                                      :    4.264001e+00     [  3.844831e+00;   4.566909e+00]
        +SIGMA1 (PERCENTILE_84.1344746068543)              :    4.798589e+00     [  4.459590e+00;   5.242173e+00]
        PERCENTILE_95                                      :    5.864183e+00     [  5.408692e+00;   6.676971e+00]
        +SIGMA2 (PERCENTILE_97.7249868051821)              :    6.665956e+00     [  5.943906e+00;   7.341821e+00]
        PERCENTILE_99                                      :    6.801962e+00     [  6.649488e+00;   7.341821e+00]
```

ADD TRACES AND PRINTS

To be more user-friendly, the user's interface for adding traces and prints has been re-designed in SMASH 7.0.
On top of the circuit hierarchy panel, a frame dedicated to trace/print configuration has been added.
This frame includes:

- a TRACE/PRINT toggle button to switch between both modes,
- a Displayer field that specifies the waveform viewer to which traces will be added,
- an Analysis field that specifies for which analysis traces will be generated,
- an Advanced Parameters button to access parameters or commands related to the selected circuit instance or to the selected signal/net/port.



Once the displayer and the analysis type have been selected, double-clicking on a signal/net/port will add it to the corresponding waveform viewer.
Traces can also be added using Drag & Drop.

When "PRINT" is selected, .[L]Print directives for the selected signals are added to the circuit's control file instead of adding them as traces to a waveform viewer.

PERFORMANCE IMPROVEMENT

SMASH 7.0 brings several optimizations such as:

- loading time of circuits using sub-micron processes,
- loading time of netlist containing many .MEASURE directives,
- Monte Carlo operating point searching,
- compilation speed of Verilog modules with large quantity of continuous assignments.

YOUR FEEDBACK MATTERS

SMASH is known as one of the best high speed mixed-signal simulators. To contribute suggestions and requests, please provide feedback on your user experience to **support@dolphin-integration.com.**