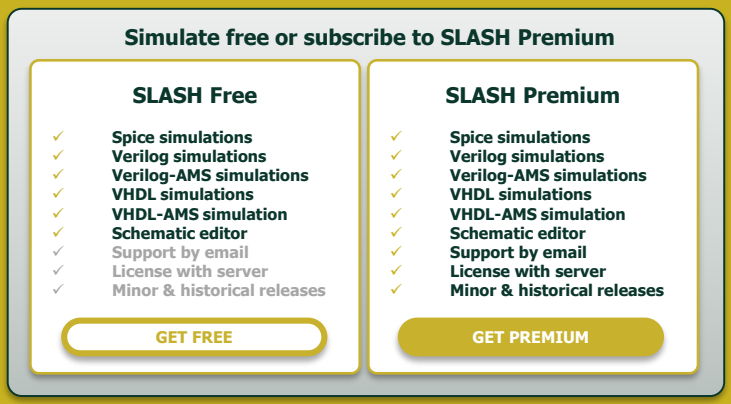
DOLPHIN DESIGN

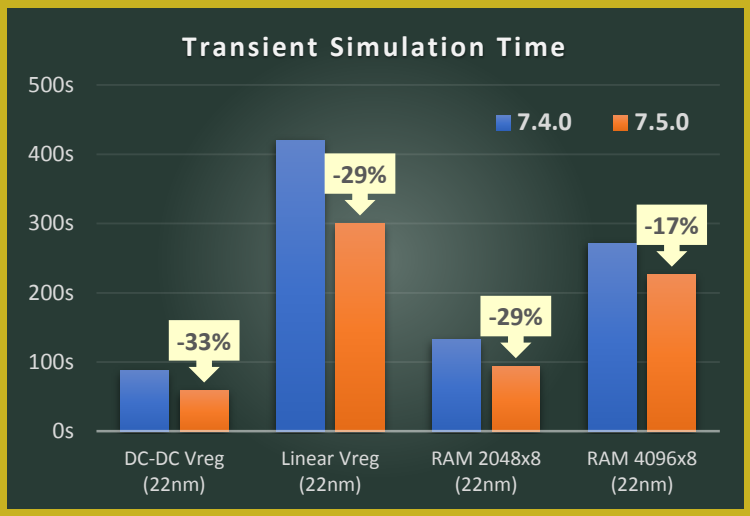
SLED 3.5 & SMASH 7.5

Freemium business model

SLASH (SMASH & SLED) is now available within freemium business model:

- ✓ Free discovery license including all the features and without circuit size limitation for non-commercial used, and limited to four free discovery licenses for commercial used
- ✓ Premium license for the support, the license with server and access to minor and historical releases





SPEED-UP Transient Analysis

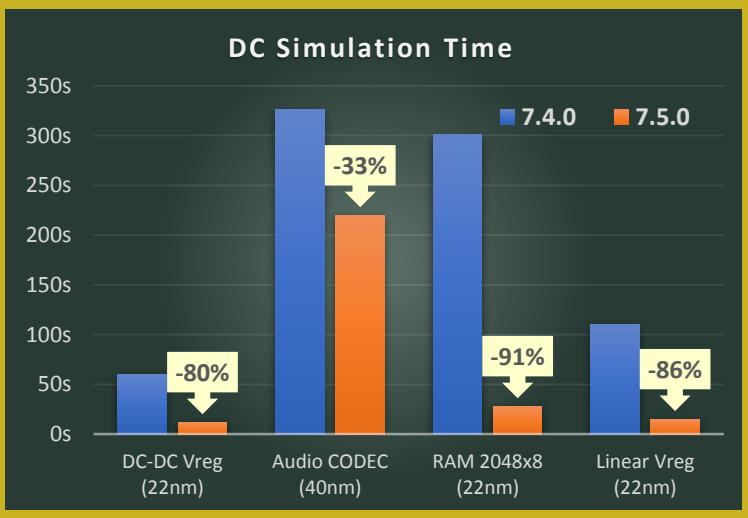
SMASH 7.5.0 mixed-signal simulator speeds up transient analysis of leading-edge analog and mixed designs by up to **1.5X** compared to previous release while maintaining the accuracy of a SPICE golden simulator.

Advanced post-layout parasitic RC reduction technics and optimization of RC equations enable SMASH to solve large-scale verification simulation challenges in advanced technology nodes.

Improve DC convergences

Today, with advanced process nodes and ultra-low power designs, DC convergence has become increasingly difficult even for mixed-signal circuits.

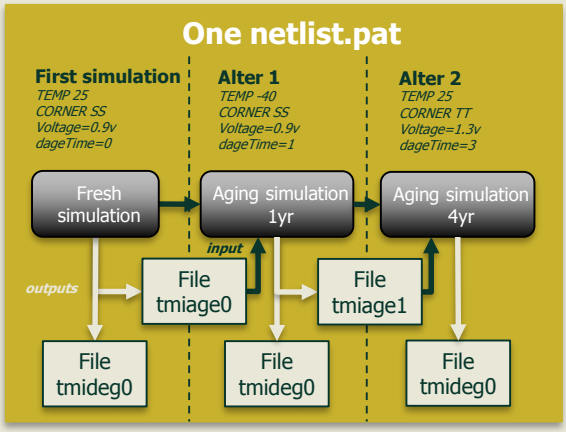
With SMASH 7.5.0, convergence of OP and DC analyses has been strongly improved and speed up by **10X** or more, especially for mixed-signal circuits, thanks to improving stepping method.



SLED 3.5 & SMASH 7.5

Aging analysis with TMI models

As processes are scaled down, devices aging has become more critical and effects such as Hot Carrier injection (HCI) and Bias Temperature Instability (BTI), continuously degrade the circuit performance with time, leading to yield loss or even circuit failures.
Analyzing device reliability has become imperative as the lifetime of circuits has become an additional issue.
SMASH 7.5.0 supports TSMC Model Interface (TMI) aging flow to simulate these effects in design for reliability validations.

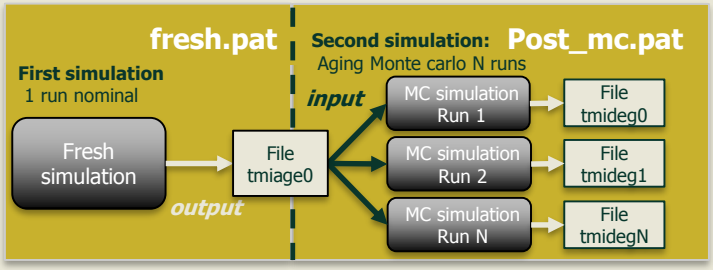


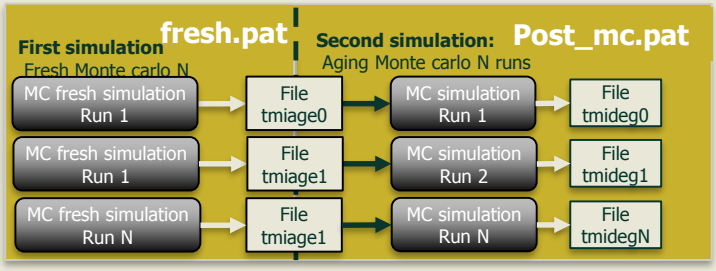
SMASH performs reliability analysis in two steps:

- In the first step, SMASH simulates the stress over the transistors and calculates the degradation based on the results of this fresh simulation.
- In the second step, SMASH applies the degradation on the transistors to simulate the behavior of the circuit after the defined aging time.

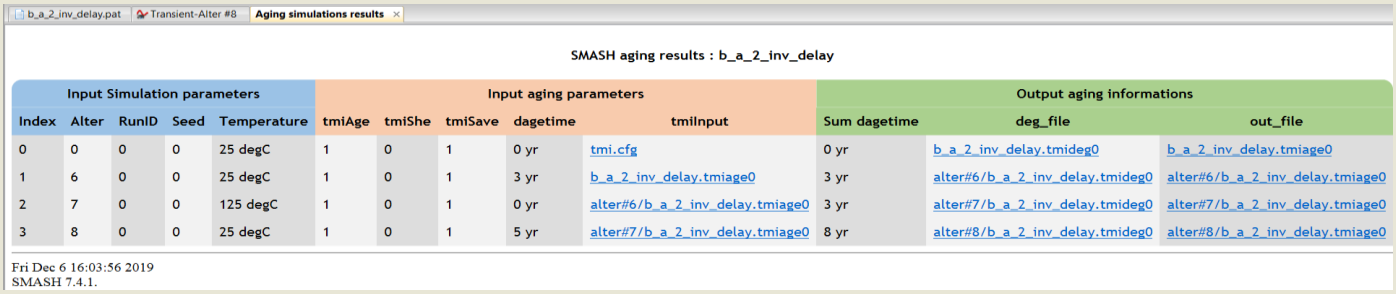
SMASH allows to launch successive aging simulations with different input conditions (temperature, supply source, corners, age time, etc...).

For aging simulations in Monte-Carlo, SMASH allows to use a single fresh simulation to speed-up the analysis, or as many fresh simulations as Monte-Carlo runs for accuracy.





Moreover, SMASH generates aging results in html format to make its exploiting easier.



b_a_2_inv_delay.pat | Transient-Alter #8 | Aging simulations results

SMASH aging results : b_a_2_inv_delay

Input Simulation parameters					Input aging parameters					Output aging informations		
Index	Alter	RunID	Seed	Temperature	tmiAge	tmiShe	tmiSave	dagetime	tmiInput	Sum dagetime	deg_file	out_file
0	0	0	0	25 degC	1	0	1	0 yr	tmi.cfg	0 yr	b_a_2_inv_delay.tmideg0	b_a_2_inv_delay.tmiage0
1	6	0	0	25 degC	1	0	1	3 yr	b_a_2_inv_delay.tmiage0	3 yr	alter#6/b_a_2_inv_delay.tmideg0	alter#6/b_a_2_inv_delay.tmiage0
2	7	0	0	125 degC	1	0	1	0 yr	alter#6/b_a_2_inv_delay.tmiage0	3 yr	alter#7/b_a_2_inv_delay.tmideg0	alter#7/b_a_2_inv_delay.tmiage0
3	8	0	0	25 degC	1	0	1	5 yr	alter#7/b_a_2_inv_delay.tmiage0	8 yr	alter#8/b_a_2_inv_delay.tmideg0	alter#8/b_a_2_inv_delay.tmiage0

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SMASH 7.4.1.

TCL Hooks in the cells

SLED 3.5.0 enables greater configurability thanks to the new possibility for the users of being able to define TCL functions related to a cell called on hooks, i.e. on key actions of the GUI (double click, save, netlisting…)

YOUR FEEDBACK MATTERS

To contribute suggestions and requests for the Dolphin EDA Solutions, please provide feedback on your user experience to **support@dolphin.fr**.