

Advanced Node Circuit Design using MunEDA WiCkeD™ 40nm, 28nm, 20nm, 16nm, 14nm and below

WiCkeD for Advanced Node Cell Design - User Benefits

- WiCkeD compatible with most recent FinFET , FDSOI and Bulk CMOS technologies
- Support of 40nm, 28nm, 20nm, 16nm, 14nm and below
- Support of main worldwide foundry processes
- Applicable for inhouse process technologies
- Tape-out and silicon proven in numerous cases

New Challenges in Advanced Node Design

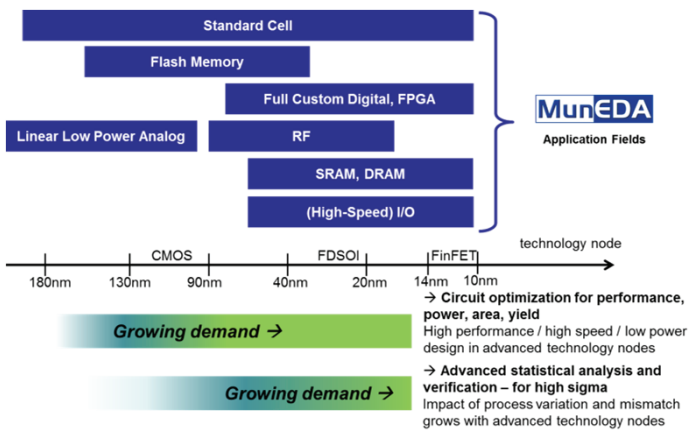
Advanced process nodes such as 28nm, 14nm and below especially for FinFET and FDSOI pose new challenges for library development and full-custom IC design. Designers have to cope with

- larger process variation
- lower voltages
- and more parasitic effects.

Typical Applications in Advanced Node Design

Typical applications for MunEDA WiCkeD in advanced node design are:

- memory interfaces
- clock buffers, latches, and other standard cells
- custom RF design (LNA, transceivers, ...)
- custom digital blocks (FPGA, high performance computing)
- And many more ...



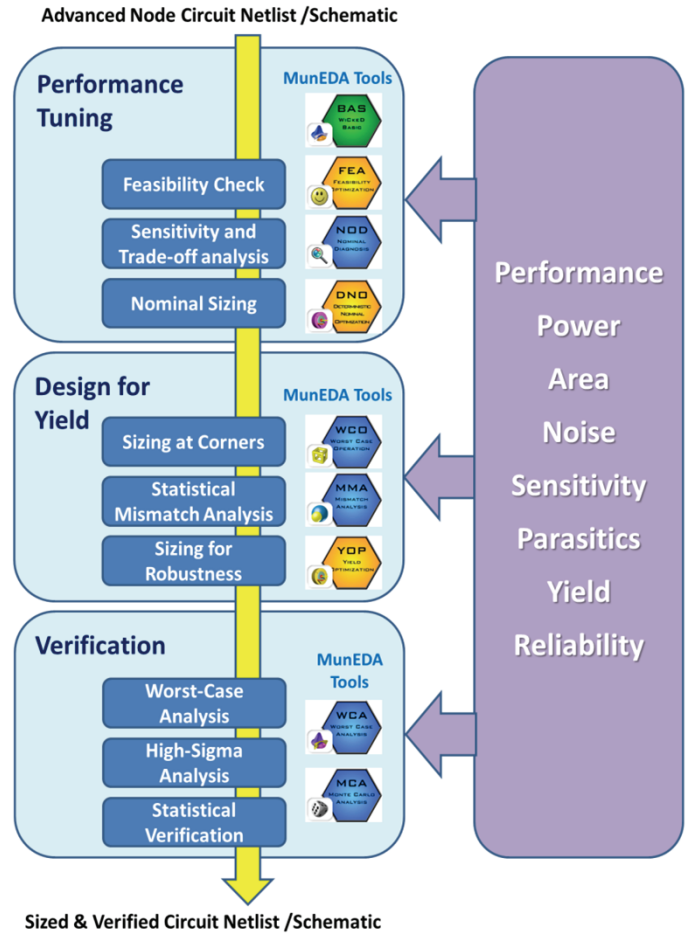
MunEDA WiCkeD – Advanced Node Design Support

MunEDA WiCkeD tools are compatible with the most recent FinFET and FDSOI technologies and tape-out and silicon-proven.

- discrete device geometries considered when calculating sensitivities and optimizing circuits
- supports reliability/aging simulation models while tuning I/O devices' trade-offs between reliability and performance
- advanced sensitivity calculation to determine mismatch sensitive devices in large circuits (find yield detractors) such as ADC, PLL
- batch-mode operation enables automatic optimization of library cells such as latches or clock buffers
- analysis and optimization of extracted post-layout netlists
- supporting many different foundry PDKs

Advanced Node Design with MunEDA WiCkeD Tools

MunEDA WiCkeD provides a unique set of analysis and sizing tools that help the analog designer understand, check and improve the trade-off between a circuit's performance, robustness, and power consumption. WiCkeD has the capacity to handle even large custom IC blocks such as RF transceivers or data converters.



Advanced Node Design References from MunEDA WiCkeD (MUGM):

- Samsung - AutoScript based WiCkeD design optimization flow setup for 14nm FinFET high-speed memory interface design (MUGM 2013)
- STMicroelectronics - WiCkeD/Virtuoso Design Intents Flow for STM 14nm CMOS14FDSOI (MUGM 2013)
- GLOBALFOUNDRIES - Challenges in Deep-Submicron Technologies - Design Migration & Reuse (MUGM 2013)
- SK Hynix - Design Optimization for Sensing Circuit of Resistive Memory in 28nm (MUGM 2011)
- STMicroelectronics - Design Centering of IO in 28nm FDSOI technology (MUGM 2012)
- Altera - FPGA Routing Driver Optimization with WiCkeD tools in 20nm (MUGM 2012)
- STMicroelectronics - Design optimization in deep-submicron technologies for reliability based circuit optimization for IOs in 28nm (MUGM 2013)

MunEDA WiCkeD – General & Tool Support

- WiCkeD is integrated and supports the major design frameworks and analog/RF SPICE & FastSPICE simulator as well as stand-alone or customized environments
- MunEDA WiCkeD supports many different foundry technologies and PDKs in many different technology nodes:
- For more information & support: www.muneda.com

