What to See at DAC 2018

Just a quick glance at the conference program and it's immediately apparent that DAC 2018 is awash in machine learning, artificial intelligence, deep learning, data analytics, hardware and software security, and high reliability design requirements. The hot topics of the modern electronics design world extend far beyond just churning out a working circuit.

But that doesn't mean that the concerns of growing design and verification complexity, low power and IoT design challenges, and system-level architecture and implementation methodologies aren't as evergreen as always. Perpetually increasing design size and scope, advancements in manufacturing process and materials, risks from cyber security threats, and the continued march of the Internet of Things (IoT) era are driving this year's crop of *What to See at DAC* highlights. A handful of key themes encompass the most notable DAC 2018 product messages from the vendors currently exhibiting at the conference. Table 1 highlights the not-to-miss products and companies to visit at this year's DAC exhibit hall.

Table 1: What to See at DAC 2018 Company List

Company	Category	Booth
ARM	Semiconductor IP	1628
Baum	Power Analysis	2454
Cadence	Analysis Tools, Cloud, Emulation, Simulation	1308
Circuit Devs	Data Management	2133
Concertal Systems	ESL Design	2357
FootPrintKu	Data Management	1249
IC Manage	Data Management, Analytics	2618
Imperas	ESL Design	2638
Mentor Graphics	Emulation, Analog/Mixed-Signal, Cloud, DFT	2621
Methodics	Data Management	1653
Metrics	Cloud, Simulation	1244
Movellus	Analog, Semiconductor IP	2120
Silvaco	Simulation	2429
Solido (Mentor Graphics)	Analog/Mixed-Signal	1344
Synopsys	Analysis Tools, Emulation, Simulation	1609

Analog Tools (Round 2?)

More than a decade ago, a group of analog design tool startups burst onto the EDA landscape and seemed poised to reshape the process of creating analog and mixed-signal electronics. That didn't quite pan out as intended, however, as those companies—and their product concepts—mostly fizzled out. The EDA industry has been searching for new solutions to the analog problem ever since. For several years now, the buzz around analog/mixed-signal/RF design has been ramping up, undoubtedly tied to the prevalence of automotive and wireless IoT designs. This year, DAC is showcasing a variety of new products and companies targeting analog tools and IP with creative solutions big and small. There are products for layout and simulation of analog and RF designs, mixed-signal circuitry modeling, and numerous approaches to analog IP. We hope this is the harbinger of a new era of analog tools that streamline analog/mixed-signal/RF design and close the gap with digital design tool flows.

EDA Rising in the Cloud

Every type of software these days seems to be migrating to the cloud and now EDA is no exception. A key difference is that—so far, at least—the EDA industry is not pushing all its tools into the cloud and marketing itself as a software-as-a-service (SaaS) play. The SaaS strategy has been attempted in EDA unsuccessfully in the past under other monikers, most recently during the dotcom era, with a host of reasons it was ill-suited for a majority of EDA applications. The time might finally be right, though, for certain EDA tools to make meaningful use of the cloud. Web services have become sufficiently easy-to-use, cost effective and widely accessible that utilizing them on either an ad hoc or ongoing basis is a reasonable possibility in key applications. Employing web services to expand compute capacity for extra simulation or emulation cycles is becoming a practical option and DAC 2018 showcases several novel company and product announcements in this area.

Design Tools' Scope Creep

No longer can DAC (and EDA) exclusively encompass tools to define and describe a circuit design. The range of design-related tool needs keeps widening, encompassing a host of EDA tools for data management, design team productivity, software and systems development, security hardening, and software quality. Tools for the development, discovery, integration, manipulation, tracking and management of semiconductor IP are becoming more commonplace and essential. All of these seemingly ancillary tools are gradually becoming more integrated into the electronics design ecosystem. The DAC 2018 show floor is overflowing with vendors offering all manner of general-purpose and specialized IP, as well as tools for design process efficiency, compute resource optimization and maximization, design data analytics, and application specific functionality.

Laurie Balch
Research Director
laurie@pedestalresearch.com
(408) 799-9319