



## Electronic System Level (ESL) Market Trends 2015

### ESL on the Ascent

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#### EXECUTIVE SUMMARY

2014 marked the first year of really solid growth for electronic system level (**ESL**) tools, after years of promise as the next big thing in EDA. It seems the tide is finally turning and ESL technologies may now be experiencing their long-awaited user adoption in earnest. For the first time, ESL growth was higher than that of either the downstream CAE market or the EDA market as a whole.

The register transfer level (**RTL**) tools market also had a very good 2014. Much of the strong growth in RTL can be attributed to the addition of semiconductor design intellectual property (IP) as a sub-application within our RTL market segmentation. Continual, steady growth has been evident even for the traditional RTL and gate-level tools over the past five years, confirming that this part of the market is a mainstay for EDA user investment.

**IC CAD** was another well-performing market in 2014. New silicon technologies, coupled with migrations to ever-smaller semiconductor manufacturing process nodes, necessitate high-performing CAD/CAM tools. In fact, rapid advancement on the manufacturing technology front may force EDA vendors to step up their game and accelerate innovation for IC CAD/CAM design tools.

While **PCB** design tools are not as high-growth a market segment as the others, they do tie directly into the future of system design automation (SDA). PCB is the linkage point between electronics design and mechanical design of end products. Especially factoring in the design challenges of new semiconductor device packages, cable and wire harness design, and new materials introductions, the role of PCB design tools will be significant in the emergence of an SDA methodology. This should afford EDA vendors new opportunities beyond the standard PCB layout and analysis areas.

#### Moving Toward a System Level Design Future

Now that we are entering the world of System Level Design, we need to look at the market, and therefore the numbers, from other perspectives. System design methodologies and business requirements are often developed within vertical industry markets. There is no single, overarching

systems market for all types of end products; fighter jets and cell phone have vastly different design challenges, after all. Therefore, it makes sense to present Market Trends data in an alternate way also, to correspond to this vertical industry approach.

These types of second-cut data reports are usually created on an on-demand basis. With frequent demand, though, a second-cut report may become a standard report. The Analog Market Trends report is a prime example of this. As the system level design methodology begins to take shape, we may extend our reporting into multiple industry reports, depending on demand.

## INTRODUCTION

The Electronic System Level encompasses tools used to concurrently design hardware and software. These tools are involved in the architecting and partitioning of high-level designs very early in the design flow. At this stage of design, the behavioral and algorithmic description of the design is formulated and refined. The ESL market may not be brand new, but it hasn't exactly been a booming segment of EDA—until now. The ESL market grew 10.1 percent in 2014, surpassing the growth of both the CAE market and the EDA market overall. We expect a pattern of robust growth for ESL in the coming years.

## OVERVIEW

This report comprises the ESL section of the EDA Market Trends. ESL, RTL (register transfer level) and gate-level tools, along with miscellaneous tools (e.g., interoperability tools and design libraries), make up the CAE market for EDA tools. In this report we will discuss market share, trends, and forecasts for the ESL sub-applications that are most significant in the overall EDA landscape. Readers should note that we classify design tools at their highest level of use.

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