Aras Component Engineering Improves Development of Complex Systems in Partnership with IHS

CIMdata Commentary

Key takeaways:

- *Managing electronic components that meet design requirements in an increasingly complex systems development environment is error-prone and time consuming and the lack of accurate information can drive up costs and impact product launch schedules*

- *Ensuring electronics components are compliant (e.g., to RoHS, REACH, environmental, and conflict minerals) and not obsolete in the rapidly moving electronic products market requires considerable effort throughout a product's lifecycle*

- *Trusted commercial data sources integrated with PLM solutions can dramatically increase product development productivity while avoiding delays and additional sourcing costs*

- *The Aras Component Engineering application, with its tight integration to the IHS CAPS Universe components database, streamlines and simplifies component selection, approval, sourcing, and compliance processes while increasing efficiency and productivity, and reducing regulatory and supply chain risks*

CIMdata research shows that managing electronic component selection and sourcing is an increasing challenge, especially for companies developing products based on complex systems combining mechanical and electronic parts—driven by the rising use of embedded software. Failure to manage component selection adequately can result in run-away supply chain costs and increased exposure to global regulatory issues. And for long-life products adding component obsolescence into the equation makes component management efforts increasingly difficult. This commentary provides a backdrop of the challenges faced by component engineers, explains the benefits and limitations of standalone component sourcing databases, and describes how an integrated approach can aid in eliminating these limitations to improve the effectiveness of component selection and sourcing processes.

Component engineers are typically responsible for:

- Ensuring that purchased electronic components meet applicable specifications and comply with design requirements

- Identifying suitable alternate parts

- Confirming that parts meet material and environmental regulatory requirements

- Ensuring that as parts are obsoleted by manufacturers they are replaced by suitable alternate parts in a timely and cost-effective manner without disruption to production or service

Once the component engineer has selected a suitable component, it is the responsibility of the procurement specialist to approve it for purchase. This typically involves another set of considerations:

- Determining if this or a suitable alternate part is already in use (and possibly in stock)
- Ascertaining if the component or an alternate can be sourced from a preferred manufacturer

These are crucial functions for product development companies everywhere. Problems arise, however, when the component engineer and procurement specialist must work with a number of disconnected sets of data:

- Design tool libraries holding previously entered component specifications
- Existing PDM databases that may provide clues to components used in past designs
- Procurement and ERP systems that can indicate components that have been previously purchased or are held in stock
- Approved manufacturers lists
- Multiple manufacturers' or suppliers' websites

Adding to these problems, when there is an alternate set of components the engineer has to track multiple manufacturers for the components. And, over time, component manufacturers will provide updated specifications that may or may not impact end product performance or the viability of that component for its intended use. The component engineer must factor in and evaluate each of these manufacturer-driven changes to re-qualify the modified component. Multiply these types of changes across numerous components, alternate components, and several manufacturers and the effort increases exponentially, putting the component engineer into a constantly reactive mode in an attempt to keep up.

Faced with these challenges, however, it is not uncommon for the engineers to just throw in the towel and specify a brand new component, thus a new part number, rather than to examine the many options available to assure reuse of existing parts. This impacts the overall burden of maintaining additional inventory, increasing the costing and negotiation efforts for procurement, and further downstream work to track the ongoing status of yet another component.

Aras challenges companies who are consuming components to rethink their assumptions about the connectivity expectations between PLM and the component databases. Aras in partnership with IHS has transformed the management of components by integrating the Aras Innovator PLM solution and IHS CAPS database, which provides up to date information on over 430 million components and close to 4,000 different manufacturers, via Aras' Connected Cloud strategy. This solution is designed to keep in-house part management tightly synchronized with a trusted master data source of components (see Figure 1).

Through the integration of Aras Component Engineering (an Aras Innovator application) and IHS CAPS database, the capabilities of PLM are expanded to enable extended searches for components where the search engine not only identifies candidate parts, but it also identifies which parts already are consumed on existing designs in house and/or come from preferred manufacturers, truly facilitating part reuse.
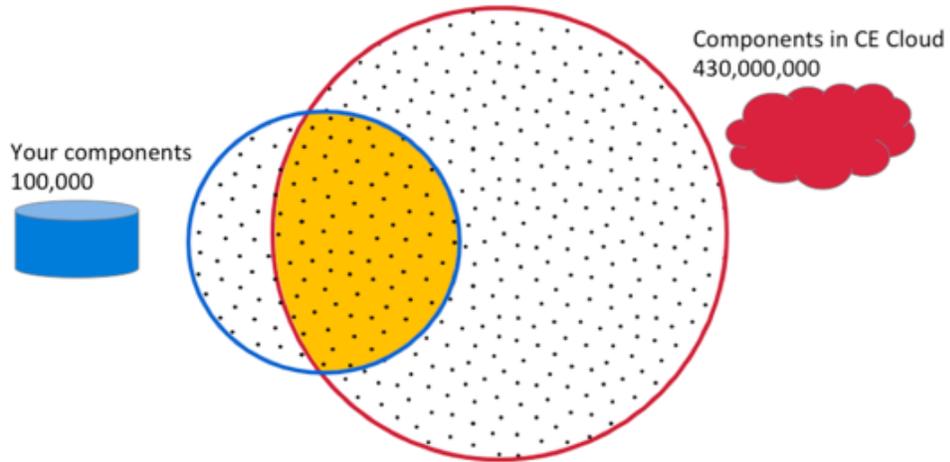
Figure 1—Aras – IHS Connectivity Expands Electronic Part Accessibility
(Courtesy of Aras Corp.)

Components already in use are directly mapped to the IHS database, with proper identification of existing components and specifications that are maintained with complete connectivity. Selecting a new component automatically connects to the new part approval workflow and, when parts are undergoing change or obsolescence, the change management process is activated within the PLM platform.

The system also maintains visibility of the end of life or obsolescence of parts currently in use and traces compliance certifications, such as those for RoHS, directly to the source as shown in Figure 2.
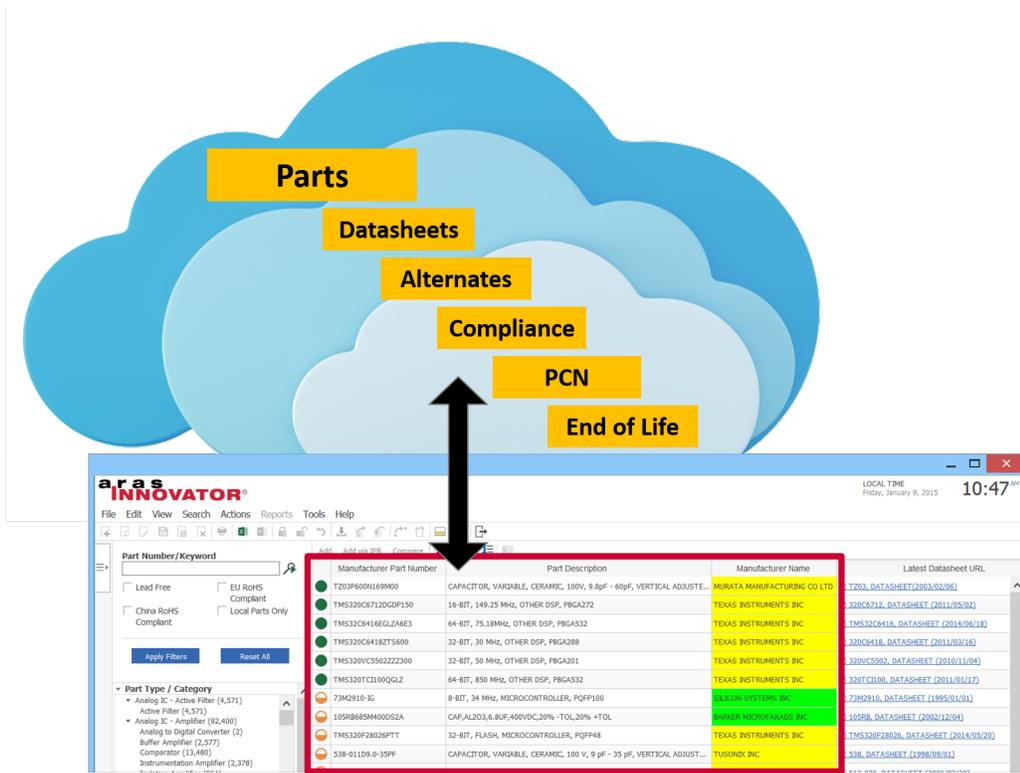

Figure 2—Aras – IHS Keeping Information Synchronized
(Courtesy of Aras Corp.)

The Aras Component Engineering and IHS CAPS database partnership and the resulting connectivity are part of the Aras message to "rethink PLM" and the assumptions about how external data sources can be directly incorporated into the product lifecycle. By providing real time connectivity, the combined solution provides companies with the following benefits:

- Saves time and money by driving component reuse and eliminating duplicate parts
- Reduces the risk of single-sourced purchasing
- Helps manage obsolescence risk for better long-term planning
- Reduces regulatory and supply chain risk and reporting efforts
- Increases engineering efficiency and productivity

CIMdata is excited to see this forward thinking approach to component management and looks forward to further developments from Aras.

About CIMdata

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