



## Tait Communications and Cadence

### The Company

Headquartered in Christchurch, New Zealand, Tait Communications designs, develops, manufactures, tests, deploys, supports, and manages innovative digital wireless communications environments for organizations worldwide that protect communities, power cities, move citizens, harness resources, and save lives.

As the company's PCB design manager, Dave Elder leads a team of five other PCB designers who develop radio communications equipment for a global customer base. Typically, the team works on roughly one new PCB design per month, and each design could lead to about 100 different product variations. The team also develops custom designs for its customers.

### Key Challenges

Until recently, Tait's PCB designers had been managing schematic and footprint library models manually using spreadsheets and custom-written scripts and utilities—a time- and labor-intensive process. "We often duplicated our efforts because we couldn't—even with our distinctive part names—find a particular part out of the thousands that we manage," noted Murray Hall, a senior design engineer at Tait who also now, on a part-time basis, manages library development and administration.

As a long-time Cadence® user, Tait turned to Cadence for a solution to automate its library management process. "Our manual methodology was both time-consuming and error-prone, which was giving us inconsistent and inaccurate results" noted Hall.

In addition to better library management, the ideal solution also had to be able to manage design reuse modules. Explained Elder, "Our PCB designs are unique, and we tend to have various rigid requirements on design reuse. A lot of our products are governed by regulations, so we need to be certain that what we say we are putting on a PC board is accurate. We wanted version control and the ability to guarantee the accuracy of the components on our boards."

### Business Challenges

- Shorten library creation process
- Make it easier and faster to locate parts
- Maximize library management resource utilization

### Cadence Solution

- Allegro® Design Workbench
- Allegro PCB Library Workbench
- Allegro PCB Editor

### Lessons Learned

- Implement automated library management via a phased approach
- Synchronize Allegro PCB Library Workbench with an ERP system for timely, accurate parts data

### Results

- 25% faster library creation process
- 25% more schematic capture productivity
- 10% more PCB design layout productivity
- 40% less time spent managing parts libraries
- 15% reduction in duplicated part library effort
- 20% improvement in library model accuracy
- More agile regulatory compliance process
- Access to more up-to-date, accurate parts data
- Faster, more efficient process to install software updates across the user base

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**Dave Elder**

**PCB Design Manager,  
Tait Communications**

### The Solution and Results

The Cadence team directed Tait to Allegro PCB Library Workbench. With Allegro PCB Library Workbench, users can create, validate, manage, and distribute library parts and their associated data for use with Allegro PCB Editor. As parts are created or modified, the tool automatically creates revisions and distributes the updated design libraries to specified design sites. When parts are on a “last-time-buy” status, the designers are alerted in Allegro Design Workbench during the part selection process.

“Allegro PCB Library Workbench solved many of our design reuse module challenges and provided the library management and flow capabilities we needed,” said Elder. “As an ISO 9001:2008 and ISO 14001:2004 compliant company, we’re also pleased that the tool provides the parts data traceability we need to maintain our compliance.”

Developing new libraries is now a much easier process — a welcome benefit now that Tait no longer has a full-time dedicated PCB librarian. Said Hall, “The library management part of my job is a lot easier because the database in Allegro PCB Library Workbench tells me where parts are. The tool has a very powerful search capability — I can use any keyword to target a model, and we’re no longer duplicating component entry efforts.”

Previously, the team wrote their own scripts to create a datasheet model capability that was not linked to the parts. Now, the team can link models directly into multiple parts within a library, which, in turn, makes it easier to link and store datasheet information. The team can also more easily distribute libraries across the organization. “Resource planning has improved because we can now have the most appropriate PCB designer—someone who is more available or has a closer involvement in a particular project—take care of design entry,” explained Elder.

Software installation and updating used to be a time-consuming process at Tait. Since Allegro Design Workbench is a client/server tool, its system administration function can push out software updates to the entire user base.

### Lessons Learned

Tait migrated its manual library management process to Allegro PCB Library Workbench over the course of three weeks. In an ideal world, Elder advised, it would be best to make time to clean the data in the Allegro PCB Designer environment, train the team on the new tool, and then perform the migration—each step independently as part of a phased approach.

Another useful tip from Elder is to synchronize Allegro PCB Library Workbench with the company’s enterprise resource planning (ERP) environment to perform an overnight data exchange. “We always know how much stock we have, and we have very timely, accurate data available during schematic design,” he noted.

Finally, as a best practice, Elder pointed out the advantages of collaborating closely with Cadence. “We had our Cadence application engineer (AE) on site for two weeks and, in reality, it would have been better to have those days spread out over a couple of months. Nonetheless, our Cadence AEs helped us out substantially, setting up and running the migration, finding weaknesses, suggesting improvements, and providing training,” he noted. “Having a quick start with Cadence support enabled us to jump ahead probably by about a year.”

### Summary

Looking ahead, the Tait team plans to evaluate and possibly implement Cadence Team Design Authoring for improving design collaboration. “I would regard our relationship with Cadence as a partnership,” said Elder. “We were also providing valuable feedback based on our requirements. Working closely with Cadence has been an invaluable experience.”



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