# Integr8tor - Innovative sourcing with highest security

German in origin, and based in Hong Kong and Shenzhen, China, CML is the world's biggest PCB provider, supplying Europe's electronics manufacturing industry with quality boards made by selected Asian manufacturers. CML adds value to the supply chain with its innovative sourcing process, and lowers its customers' risks by handling the entire client-manufacturer interaction. CML offers a selection of services, resulting also in data integrity and product quality along with competitively priced products. Just two years ago, the company installed Integr8tor, cutting significant time and work from the quoting process, but also benefiting from some unusual advantages of Integr8tor, which seem tailor-made for the challenges of China's marketplace.
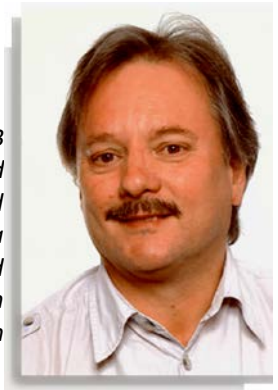
CML Technical Director Hubert van Rennings, explains: Founded in 2001, CML rapidly became the world's largest PCB provider with German roots and sourcing expertise in Asia. Our 250-strong PCB team of Technical, Quality, Sales, and Marketing experts are at our customers' fingertips in Hong Kong, China, Indonesia, Korea, Japan and the Americas. With our own CML UL logo on the PCBs, it is absolutely clear to the customer that we take responsibility and ownership of the whole supplier process. We operate with up to ten highly qualified independent manufacturing partners, situated in China and South Korea. Our manufacturing partner selection critera, which includes fab capabilities, service and cost-effective manufacturing, paired with our regular audits, gives peace of mind to our customers globally. Our job is to create an efficient, hassle-free interface by handling all communications, clarifying all technical details, and ensuring that our customers' requirements are clear to our manufacturing partners. This is essential when you consider the challenges that can arise when trying to translate not only between languages, but also between very different cultures.

Before coming to us, our European customers dealt with European manufacturers, whose standards are high. These manufacturers look carefully at the design data and clarify internally any issues that may arise, or even come up proactively with design change proposals for better economics or more robust boards. Only then will they quote. CML with its innovative business model does exactly that, along with better overall economics.

When dealing directly with Chinese manufacturers, customers are exposed to a rather different approach, which includes the expectation that the customer adapt his needs to the production capabilities, e.g. materials, parameters or metrics such as tolerances, in order to fit with the manufacturer's way of doing things. If this does not happen, it's not unusual for the manufacturer to respond "we can't (or won't) do that". Going beyond this calls for persistence and patience - it's only on the 2nd or 3rd step that a manufacturer might (might!) be willing to change company rules for a single partner or project. And even if the talks get past this first stage, this is only after utilizing a surprising amount of resources in communication and clarification during which there will have been misunderstandings, incomprehensible emails, and possibly a lot of frustration for both parties. Understandably, the customer will often give up before getting to this point.

This is where we come in. Our customers can speak with us in their native language and culture (not only German), they receive European service levels and they are guaranteed the products, quality and service they expect, at competitive prices. When we show potential new customers what we are willing and able to do for them as a service provider, they are usually very happy to come to us for the higher value service we offer. We handle a vast range of boards, capabilities and technologies – there is no limit really. To give the best service possible, we fit our customers' requirements to the manufacturer. This includes quality and reliability requirements, design rules, materials needed, approvals such as UL, environmental, or the TS 16949 certifications that are important for the automotive industry, and of course price.

We check and manage our customers' design data thoroughly before passing it on to our manufacturing partners, ensuring that all the data is production-ready. Before this of course, we use the data to generate quotes for our customers. Until 2013, this was a manual process: Gerber data was checked using our CAM350 software, and other formats were checked by looking at the customers' drawings, and all the results were entered into an Excel spreadsheet. This gave us an overview of what the customer wanted, and enabled us to generate a quote. This was a time-consuming and labour-intensive process, so in 2013, we decided to install Integr8tor in our Shenzhen operations, to carry out initial checks on our customers' Gerber data, design rules and stackups. From the outset, this saved us a great deal of time in quoting, which was invaluable. It also resolved what was perhaps an even bigger problem for us: communication.

To explain this, consider that Mandarin and Cantonese are fluid, ancient languages that were not designed to describe electricity or modern technology, so anything can be described in countless ways – something that suits the Chinese peoples' love of individual expression. This is great when you are writing prose, but it makes it very difficult indeed for two engineers who are trying to understand each other.

Integr8tor is invaluable because it provides very clear syntax and rules for how things must be described, including design rule checks, text descriptions and even annotations – so everybody understands the instructions, because the approach is uniform and clear.

As Integr8tor uses a uniform XML format, output data can easily be put into a database, and this leads to another major advantage for us: it allows us to see what products we have made and under what conditions. This means that when a request comes in for, say, a 10-layer board, we can set the filter in the Integr8tor database to search for a similar project and compare the design rules with those of the incoming project. If they are similar, we can see which factories will be able to make it and under what conditions, and we can predict the technical issues that might arise for the manufacturer.

Another advantage, and it's a major one for anybody who, like us, supplies the EMS sector, is that we can see if we are being asked to provide quotes on identical products. This is important because end customers or OEMs may put out a quote request to a number of EMS companies for a packaged end product, and some or all of those EMS companies may come to us for quotes for the PCBs. Each one will use different formats for the complete data package, making it virtually impossible to spot identical projects manually. Now, thanks to Integr8tor, we no longer need to repeat the preproduction work.

Integr8tor is also invaluable for our CAM work – indeed, shortly after we installed Integr8tor, we replaced our CAM 350 licenses with higher-end Ucam seats because we knew that Integr8tor and Ucam would work together seamlessly. Now, if Integr8tor indicates anomalies or issues in a customer's data, we can easily pass it to Ucam for editing, then run it back through Integr8tor.

The decision to take on Ucam was easy – I have personally been working with it for 15-20 years, long before I joined CML, and have first-hand experience of how it compares with Genesis as well as CAM 350. One of Ucam's features that is particularly valuable for us is its Flexpanel tool which combines different-shaped single PCBs onto a shipping panel, while UcamX, to which we are now upgrading, offers great new nesting software that nests L-shaped boards onto panels, and it also supports Gerber X2 data. At the same time, we are also looking to increase our Integr8tor seats in Shenzhen.

Our relationship with Ucamco in China, and particularly with Rik Vandekerckhove, Ucamco's ASP Director, is excellent, and Ucamco's technical service is open and responsive. We communicate easily via Teamviewer, and even if we present them with an issue they have never seen before, within a week we generally have a solution from them, or we may even work together to find the solution. All in all, we are very happy indeed with the company and its excellent products.

About Ucamco
Ucamco (formerly Barco ETS) is a market leader in PCB CAM software, photoplotting and direct imaging systems, with a global network of sales and support centers. Headquartered in Ghent, Belgium, Ucamco has over 25 years of ongoing experience in developing and supporting leading-edge photoplotters and front-end tooling solutions for the global PCB industry. Key to this success is the company's uncompromising pursuit of engineering excellence in all its products.

For more information on Integr8tor or Ucam, please contact Ucamco:

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About CML
CML is globally your largest Printed Circuit Board provider founded in Germany. CML has a global reach with a local feel. With office in Asia, US and Europe, customers are sure to be cared for by their local contact. Our experts in the fields of technology, quality control, sales, and logistics secure a successful life cycle of your PCB project. We strive to make ever purchase with us streamlined and effortless - just like purchasing 'PCBs from just around the corner'.

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