



Designing

Premium Innovative Solutions for 30 Years

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Analog Way was initially founded in France in 1989. Since then, I am proud to say we've established a worldwide reputation for quality, reliability and performance. For 30 years, we have pioneered the design and engineering of numerous award-winning image processing solutions.

At Analog Way, we have delivered some incredible experiences to our customers. From panoramic LED canvas in sports books to large live corporate events and concerts, from product launches to installations in prestigious locations. As an example of our capabilities, we've delivered equipment to drive the highest-resolution LED screen in Times Square. For this project, we partnered with SNA Displays to provide a full 8K resolution processing solution for a massive wrap-around display canvas, one of the largest continuous exterior displays in the world representing more than 17,000 square feet of LED display technology. For the record this is equivalent to almost 4 basketball courts.

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As a result of efforts like these, Analog Way is seen as one of the undisputed leaders in video presentation experiences. This is an important element of who we are, and the capabilities we want to be able to deliver to our customers.

It feels great to be able to talk about these capabilities and how we strive to offer premium innovative solutions to our customers. It doesn't come accidentally and is the result of a clearly choreographed, and very intentional, effort.

So, how do you follow up an example like Times Square? How do you maintain, or extend your high-end positioning? This is the real question. It's one thing to want to be among the leaders on your market. How do you actually do that though?

We knew we needed to maintain our extreme performance edge. However, to really make a difference, we had to start with some basics. We had to turn our desire to be a leader into something tangible that meant something to our customers. We know our customers need



to power increasingly rich, interactive experiences. We know they demand industrial grade reliability. They also need a high degree of customization built into some very flexible, modular, systems.

In order to deliver what we considered the next generation of video processing, we estimated we're going to need a system capable of dealing with 24 x 4K inputs, as well as evolving requirements around 8K. This meant we needed deliver 3 x times the video processing performance over and above what we'd achieved in Times Square.

These are significant improvements in core performance. In practical reality these improvements needed to be delivered with the same, or tougher, physical constraints. In fact, we needed to deliver this performance in one of the most compact systems in the world. This increase in power meant a huge power footprint in a relatively small confined space, often in some tough conditions.

Consider an outside display in Las Vegas. During the day it is not uncommon to see temperatures hitting 40 C, dropping during the evening, and incorporating all the dust and dirt you might expect with a desert environment. In these environments, the effective dissipation of heat, and the management of severe temperature variation is key to maintaining effective performance our customers can rely on. We therefore needed to absolutely, 110%, ensure our systems are able to deliver 24/7 in these environments.

Already a tough engineering challenge, we then needed to ensure we can commit to our performance considerations for all of

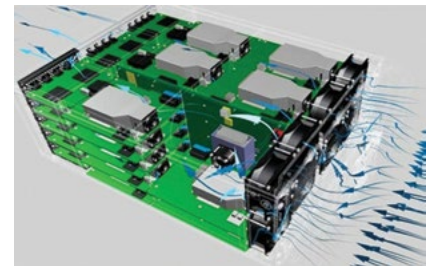


Figure 1: **Cradle CFD Solution**

the design variations our customers are going to be able to select. The modular design of the LivePremier™ series allows customers to easily swap in I/O cards to accommodate a variety of connectivity arrangements to match their source and display requirements. In fact, per chassis, the LivePremier™ series features up to 24 inputs and 20 outputs configurable as single screens, edge-blended widescreens or scaled auxiliary outputs, 2 dedicated multiviewer outputs and up to 24x 4K or 48x HD freely assignable layers.

Clearly, there's a lot to consider... and we hadn't even considered our own deadlines and design processes. For example, how would we iterate on our designs in a timely manner so we could reach our performance goals. We feel we have an extremely talented engineering team, that is arguably the best in our industry. However, it quickly became clear that traditional processes, relying on experience, educated guess work and physical testing was going to struggle as we tried to ensure we reach our goals.

Our only real way forward to drive this sort of innovation was Cradle CFD Solution simulation. We'd be able to iterate on our



designs, and simulate our performance in a fraction of the time we'd done in the past, and gain more insight along the way.

For this we chose MSC Cradle scStream. Until MSC Cradle, frankly, we'd not considered Computational Fluid Dynamics (CFD) too much. However, our needs here meant we needed something pragmatic that could actively help our team reach our goals. We were not looking for a fluid dynamics science project. We simply wanted to drive our design forward.

We needed something that was able to deal with our fairly large, configurable, assemblies and help us gain the insight we needed, quickly, accurately, and effectively. We needed to get a clear view on the thermal conditions in our compact footprint. In particular we needed to understand the parameters required to maximize air cooling system performance, and clearly ascertain maximum temperatures, and their fluctuation.

The initial model, with some support from MSC, only took 2-3 days to setup, and we had some of the detailed results we needed within a week. From a physical perspective we're now confident we can effectively and reliably dissipate some 2KW across 133 In² (approx. 800cm²). To provide some context the amount of energy we're generating is similar to a household electric fire. It's therefore important we get this right.

So far, we've been pleased with our decision. So much so, we also used MSC Cradle CFD to produce an 8K video to highlight our core differentiative features - front panel configuration, swappable cards, redundant power supplies, and of course our industry leading cooling. We even featured it's results on our website!

However, it's not enough to make us happy. It's our customers we need to impress. Our LivePremier™ solution line won two best of show awards at the 2019 Infocomm show in Orlando, and this is only the beginning!

Find out More About MSC Software CFD Solutions:
www.mscsoftware.com/cfd