

CRITICAL LINK CUSTOMER STORY: SAAB SENSIS CORPORATION

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Smart Use of Resources Makes an Industry Leader Even More Competitive

For decades, Saab Sensis Corporation has been a world leader in developing technologies for the aviation industry. Like all companies who achieve at their level, Saab Sensis knows that, in addition to employing the greatest engineering minds, they must allocate their resources as effectively as possible to remain at the industry’s forefront.

This was the goal that drove Saab Sensis’ recent decision to use Critical Link’s MitySOM-5CSx System on Module (SOM) in the development of the newest generation of their ground based ATM sensor, a state-of-the-art product that receives the signals transmitted by aircraft for the purpose of locating them in space.

Saab Sensis Corporation is trusted throughout the world for their advanced radar, sensor, and related expertise that meet the changing needs of the global aviation markets. The company provides cutting edge surveillance and information technology for the aviation industry, supporting air navigation service providers, airports, and airlines.

As one of the most technologically advanced companies in the market, Saab Sensis had the ability to develop their product without using a SOM. However, the team knew they would get to market much more quickly and cost-effectively if they used an integrated solution.

“We’d developed our own boards before,” said Chris Schierer, Saab Sensis Senior Staff Systems Engineer and Lead Engineer for the ground based ATM sensor. “It wasn’t a question of capability. It was a question of where we wanted to focus our resources. When it came down to it, we wanted our engineers to focus on developing our own industry-specific intellectual property – the things that would make us more profitable and competitive.”

According to Schierer, MitySOM-5CSx reduced the Saab Sensis hardware engineering effort by approximately half. “Basically, we were facing an opportunity cost



Challenge: A finite number of engineers were available to work on numerous projects. It was preferred that these engineers focus on developing industry-specific product characteristics that would make their technology more competitive.

Solution: Critical Link System on Modules: MitySOM-5CSx

Impact: Saab Sensis Corporation was able to develop the newest generation of ground based ATM sensors much more quickly than expected, incorporating a wide variety of technical improvements.

The Critical Difference:

- SOMs designed for long term production: 10-15 years availability from initial release
- Accelerated development schedule and time to market
- Consistent lifecycle support
- 100% US-based development & assembly

issue,” he said. “We knew the best choice was to outsource and using an integrated solution made a lot more sense than hiring a bunch of contractors.”

Schierer also said that by allowing Critical Link to take care of the module, Saab Sensis’ engineers could focus on advancing progress on other projects.

“We have a lot of irons in the fire,” said Schierer. “A lot of very advanced products we’re developing. Using Critical Link’s SOM helped us ensure we were making as much progress as possible on all fronts at all times. It was definitely the right move.”

The Exceptional Results

Beyond the savings of time and human resources, the greatest benefit of using a Critical Link SOM for Saab Sensis was the sheer speed at which they were able to develop their product.

“When our custom boards arrived, we were able to plug in the SOM, put our code in, and we were up and running in 24 hours,” recalled Schierer. “That is miraculous. There were people walking around the building with their jaws hanging down, saying, ‘I can’t believe we’re up and running on the first day.’”

Each part in the MitySOM-5CSx family is pin-for-pin compatible, allowing development teams room to grow and flexibility to quickly and cost-effectively meet changing requirements. The current offering features a range of processing densities, speed grades, and temperature options. Critical Link also designs and produces custom modules when a customer’s specific needs cannot be met by an off-the-shelf part.

“Why should a company pay employees to develop something that already exists?” asked Critical Link Sales Representative, Matt Cook. “Saab Sensis was able to develop this product very quickly, especially from an aerospace defense market standpoint. By combining the work of our two very talented teams, we were able to achieve some amazing results.”

Even with the rapid development schedule, the teams produced technology that is of the highest quality, impressing customers worldwide.

Why Saab Sensis Chose Critical Link

When product development planning commenced and Saab Sensis decided a SOM was the appropriate direction, they began searching for modules that had an embedded ARM processor in an Altera FPGA environment. The 5CSx module made perfect sense.

“We’ve used embedded soft-core processors, called Nios, in Altera FPGAs in the past,” said Schierer. “Although the Nios supports standard operating systems like Linux, there just isn’t as much industry support as there is for ARM. By going with the embedded ARM SoC solution, we got the best of both worlds: an Altera FPGA our firmware designers were familiar with and a well-supported processor environment our software engineers were familiar with.”

As the company diligently compared SOMs from a handful of manufacturers around the world, they found no company had a board ready they could send to the team – except for Critical Link, a company located right in their city.

While Schierer admits the proximity was alluring, he said the primary deciding factor was that Critical Link was so far ahead of their competitors in development.

“Critical Link already had a prototype,” he explained. “The other companies sent us descriptions of products they were developing, but the Critical Link rep said, ‘You want me to bring you one?’ We were, of course, interested right away. We already knew of Critical Link, we were comfortable with their capabilities, and the SOM’s price was competitive. There was really no contest.”

The decision to use a SOM in developing a product might seem like a no-brainer, but Cook says new customers always have valid reservations. “There are two major concerns companies have when they outsource,” explained Cook. “First, they have employees to pay to do work and want to ensure they have projects to work on at all times. Second, companies feel that when they outsource they lose some control. Critical Link has proven time and time again that the benefits of working with us will always prevail over these risks.”

Tom Catalino, Critical Link Vice President, pointed out another key reason Critical Link SOMs are a great choice for companies: product longevity. “Our clients can expect our products to be available for 10-15 years or more – significantly longer than many of our competitors,” he said. “We understand that our customers’ products are going to be in production for a long time. We support them throughout their product lifecycle, and won’t force unwanted hardware revisions or software updates on them. At Critical Link, our mission is to help companies focus on their core competencies and serve their customer base as effectively as possible. That job is made much easier when we’re working with a company like Saab Sensis that is doing everything right. Working with them has been a pleasure.”

About Critical Link

Syracuse, NY-based Critical Link (www.criticallink.com) is an embedded systems engineering firm, offering a broad range of highly customizable, small-form factor SOMs and development kits for embedded medical, scientific, and industrial applications. Critical Link’s end-to-end product engineering offerings include design, development, and production services. Critical Link is a member of the Altera Design Services Network and a certified member of the Arrow Consulting Engineering Services (ACES) network.