



Empowering a European sports broadcaster to deliver new-age viewing experiences with a multi-camera system

e-con Systems built a portable camera system for a leading Europe-based sports broadcaster to provide memorable experiences to viewers. We helped them broadcast live amateur soccer matches with real-time AI-powered vision technology that ensured seamless and immersive viewing without the need for expensive camera equipment or highly skilled operators.



About the client

The client, based in Europe, offers a digital broadcasting portal that shows official live streams of amateur soccer matches. They also provide the option for users to watch the matches on-demand or record them for later viewing.

Key challenges and customer's expectations

The client wanted to harness a vision-powered solution to give their viewers an unforgettable amateur sports experience. They required a cost-efficient portable solution to record football matches before broadcasting it live, on-demand, or as a highlight reel - without the need for a camera operator!

Since the client already had developed the core algorithm, our major challenge was to develop a custom-fit portable multi-camera system that could be mounted in an open environment. Furthermore, it had to be equipped with an IP-rated enclosure to offer protection from rain and dust, given the unpredictable outdoor conditions during soccer matches.

Some of the client's specific requirements were:

- Ability to broadcast live - wirelessly in HD quality (High resolution - 1080p) via LTE
- 180-degree panorama view in real-time
- Easy to integrate with intelligent AI analytics for image processing

Selection of the camera module

e-con Systems selected e-CAM30A_HEXCUTX2 for the NVIDIA Jetson TX2 developer kit since it comprises six 3.4 MP 2-Lane MIPI CSI-2 camera boards - ideal for a dynamic multi-camera setup. Each camera is based on the AR0330 color CMOS image sensor from ON Semiconductor, and they come integrated with a high-performance Image Signal Processor (ISP).

With the NVIDIA TX2 processor to run the client's algorithms for image recognition, our solution could track camera movements that viewers are generally accustomed to while watching soccer.

Key highlights of e-CAM30A_CUTX2:

- Trigger signal for frame synchronization
- YUV422 - Synchronous/Asynchronous

How e-con Systems delivered a hassle-free solution?

e-con Systems customized the camera and the TX2 carrier board to unlock the right system features and stay compliant to IP67 ratings. We made sure that this multi-camera system could support interfaces like Ethernet, UART, and a micro coaxial cable that connected six GMSL cameras, USB 2.0 Client, Micro SD, and LTE.

Initially, we leveraged a Libargus-based sample application to demonstrate the camera function and helped get the CE certification. Then, e-con Systems designed, developed, and manufactured the end-to-end camera system for the client.

Business benefits

- One-stop-shop multi-camera camera solution – single vendor for design, development, integration, and volume production
- Fully automated and portable – significant cost and manual effort savings
- Powerful image processing and smart data insights to assess performance of players and help coaches maximize their potential

Talk to us

Find out more about how e-con Systems can empower you with cutting-edge vision technology to build memorable broadcasting solutions that attract your viewers.

Connect with our product manager, who worked on this vision-based solution, and get started!

Ranjith Kumar

Email: ranjithkumar@e-consystems.com

Phone: +1-408-766-7503

About e-con Systems™

e-con Systems has been a pioneer in the embedded vision space; designing, developing and manufacturing custom and off-the-shelf camera solutions since 2003. With a team of 300+ extremely skilled core engineers, our products are currently embedded in over 350 customer products. So far, we have shipped over 2 million cameras to the United States, Europe, Japan, South Korea and many more countries.

Our cameras are suitable for applications such as autonomous mobile robots, smart agricultural devices, medical diagnostic systems, smart checkouts/carts, sports broadcasting systems, industrial handhelds, drones, biometric systems, etc.

Our wide portfolio of products includes MIPI camera modules, GMSL cameras, USB 3.1 Gen 1 cameras, TOF cameras, stereo cameras etc. e-con offers a wide variety of cameras with low light performance, HDR, global shutter, etc. These cameras range from a resolution of 2MP up to 18MP.

We are also powered by a strong partner ecosystem to offer end-to-end vision solutions, including sensor partners, ISP partners, carrier board partners, etc.

What sets e-con Systems apart is our deep expertise in building customized product designs while ensuring rapid prototyping and custom modifications in camera hardware and software, including form factor modifications, ISP tuning, carrier board development, lens calibration, and much more.

By empowering machines to see, e-con Systems looks to create a world where humans have enriching life experiences so that they can make the world better.



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