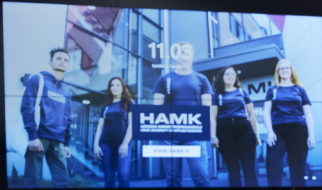


## HIGHER EDUCATION HAMK



# FROM LECTURE HALLS TO COW SHEDS: HOW PTZ CAMERAS ARE UPGRADING ONLINE EDUCATION

**Company Name:** Häme University of Applied Sciences (HAMK)  
**Industry:** Higher Education  
**Founded:** 1862  
**Location:** Finland  
**Services:** Online education and distance learning  
**Website:** [www.hamk.fi](http://www.hamk.fi)  
**Products Purchased:** CR-N300 (15 units), RC-IP100 Controller  
**Canon Installation Partner:** Media Trade

## Objective

- Upgrade live streaming capabilities across multiple departments and campuses
- Record valuable teaching sessions for participants off campus
- Provide lecturers and students with less disturbance and distraction
- Integrate new equipment within existing infrastructure
- Deliver a simple and easy-to-use solution for educational purposes
- Offer a more flexible learning experience

## Challenges

- Preserved buildings with a complicated installation process
- Finding equipment with high-quality autofocus in low light spaces
- Limited funding available as an educational institution

## Approach

By the end of 2021, Häme University of Applied Sciences needed a quick production solution to ensure current students were receiving the remote

resource and support they needed, all within budget. The demand for distance learning and live streams was mainly to ensure maximum productivity and participation, and minimum impact on education and learning.

Through their supplier, they contacted personnel from Media Trade, who presented them with different options of the Canon PTZ cameras. Due to a longstanding partnership with Media Trade, HAMK went with their recommendation. A demo unit was sent out to be tested across campus which convinced them that the CR-N300 PTZ camera and the RC-IP100 controller – used in conjunction with remote control software – met their business and learning needs.

## Scope

HAMK offers classes across seven different campuses in Finland, ranging from engineering subjects like Mechanics and IT to Biosystems and Bioengineering. This meant a high-tech, versatile system was in demand across multiple departments to live stream and record teaching sessions, such as conference rooms, auditoriums, podcast studios as well as panel discussion events.

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## Results

- Smoother operation and quicker set-up time
- Ease-of-use enabled lecturers to operate equipment autonomously
- Efficient workflow from remote livestream access
- Professional and high-quality picture for students at home
- Reduced costs on an already minimal education budget
- Higher level of attentiveness on campus due to discreet equipment

## Distance learning through live streams

As a multidisciplinary, higher education institution with roots as far back as 1840, Häme University of Applied Sciences (HAMK) offers unrivalled degree programmes in its schools such as bioeconomy, technology, and professional teacher education.

It's situated in southern Finland with seven campuses and a student population of around

8000, so the use of various online tools to aid functional studying methods are an imperative part of student life.

When the institution wanted to bridge the gap between lecturers on campus and students on Zoom, one of their biggest challenges was finding a system that would be versatile enough to flex across lecture rooms, labs, and research units.

“We wanted a versatile system to have the chance to use them in every kind of situation that we have,” says Teemu Järvenpää, a lecturer at HAMK for more than 15 years.

A big factor in finding the right equipment was making sure it could work efficiently not only in their new state-of-the-art facilities, but also in their historic buildings dating back to the 1800s. Two very different environments with completely different lighting and camera placements.

The lecturers also wanted an easy solution that would offer them high-quality visuals and connection for their students learning from home.

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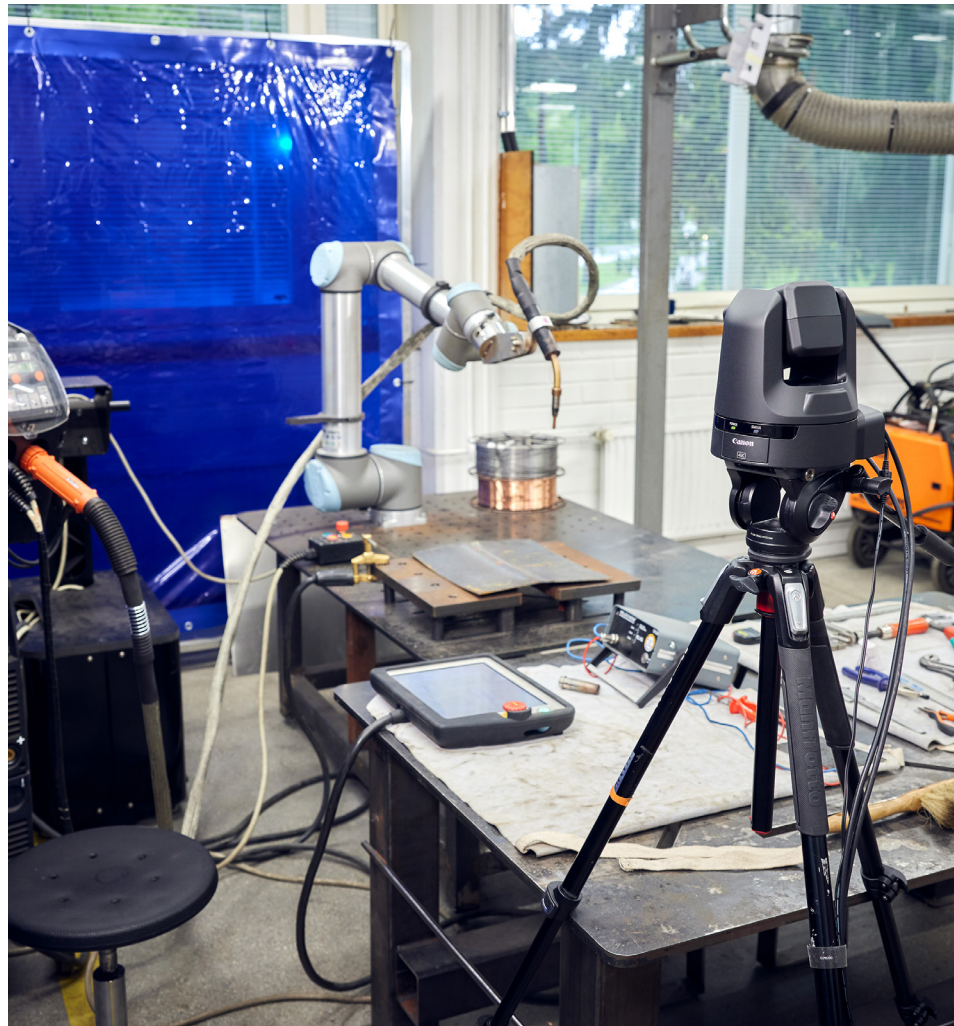
## Robots revolutionise milking cows

Believe it or not, high-quality image solutions are not just for lecture rooms. Some of HAMK's facilities are also known for having state-of-the-art robotics, engineering labs and even cow barns.

These robotic systems allow cows to be voluntarily milked, revolutionising the dairy industry around the world.

“For a one-time student project we planned to have a presentation video filmed over a 24-hour time period, the use case being that we wouldn't allow a cameraman to be in the same room as the cows being milked, so we placed cameras in the space instead.”

With two cameras covering a large space, both Canon devices could be filtered from one end of the barn to the other, following specific cows and free-standing robots. Small, quiet, and discreet, the PTZ cameras were the perfect piece of equipment to capture such a high-tech milking system. It turns out cows need their privacy too.



“Particularly the hybrid Auto Focus on the CR-N300 has proven to be very effective and a feature the team uses all the time”

### Our generation of installation

A significant amount of HAMK's research units are notable social innovators, and with innovation comes the need for high-tech installation.

However, with the older buildings having preserved status, permission was needed from The Ministry of Education and Culture to mount and install the cameras. Connecting to the cameras wirelessly was also not an option, due to the buildings' thick stone walls.

“This is why we wanted a camera that can be accessed through different kinds of methods. We use NDI and HDMI connections, and in some cases SDI,” and luckily both NDI and HDMI integrate very well with their system to ensure complete flexibility in their workflows. Teemu adds: “NDI is great and will change the landscape widely.”

Lighting also proved to be an issue in these buildings when people move from bright light to dark corners, which is why a camera that regains fast focus is key for these less favourable spaces. Particularly the hybrid autofocus on the CR-N300 has proven to be very effective and a feature the team uses all the time, according to Teemu.

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## Plug and play

Installation in the newer facilities on the other hand, is generally an easy and efficient process. Positions are pre-programmed so that employees optimise their productivity throughout live streams, and each lecturer can control their own system autonomously with ease.

“The main design point in all the spaces where the camera is more permanent is that it’s very easy to use, it must be like this because there are users from every discipline.”

Teemu adds: “People from different backgrounds – engineers, a variety of languages – just want a system that’s plug and play, something universally usable.”

Although the camera systems are already simple and intuitive, a demo video and written instructions were created by Teemu and his team to make it an easy transition for anyone.

## The 4K future of education

One thing that stands out with the PTZ cameras, is the ability to maintain flexible production – without a dedicated team having to be on campus during live streams – not to mention the large dynamic range in lecture rooms where they don’t have professional lighting available.

“Most of the time the lecturers are in old rooms without specific video lighting, and it will demand the camera to be optically efficient. The biggest improvement we’ve seen is the picture quality, which is impressive, and the smoothness of operation. We were also surprised to learn it was 4K and full HD. I’m glad we chose higher resolution, allowing us to crop the images in editing and get a better quality.”



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With the CR-N300, it also means lecturers and student participants aren't disturbed or distracted, which is a priority for HAMK.

"Sometimes we want to have a tightly framed image of the lecturer and it can be disturbing to have a camera in your face when giving a presentation to 500 students. The 20x zoom allows us to place the cameras further away without the need to have a tripod that takes up space."

"The 20x zoom allows us to place the cameras further away without the need to have a tripod that takes up space"

HAMK are also planning to deliver a hybrid lecture space to combine two lecture halls in different campuses. With the capabilities of Canon cameras, they can in fact extend the physical space and allow students to reap the benefits of this.



"The biggest improvement we've seen is the picture quality, which is impressive, and the smoothness of operation"

For Teemu, the main advantage of PTZ cameras is having "a way to participate in lectures without having to come to campus, so anytime they have free time they can listen in and see the things we're doing." With roughly 40% of the average annual intake being mature students in the Information and Communication Technology department, it means many can fit their degree around their busy everyday lives.

Flexible, digital, on-demand education is the future.

## The Canon Solution

### CR-N300 PTZ Camera

- 1/2.3 Type CMOS Sensor
- 4K UHD Image Quality
- 20x Optical Zoom with Image Stabilization
- Hybrid Auto Focus
- Multiple in-built protocols such as RTMP and NDI | HX\*
- HDMI, SDI, IP and USB-C Connectivity

### RC-IP100

- 7-inch touchscreen
- Multi-function joystick
- Professional zoom rocker
- Customisable controls
- Flexible connectivity



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