

# How Ascom technology enables single-patient ICU rooms and noise reduction

at Central Ostrobothnian Central Hospital in Kokkola, Finland



Intensive Care Units (ICU) globally are moving away from open wards and towards single-patient rooms. As Central Ostrobothnian Central Hospital found, this new style of ICU brings many benefits for the patients, but it also creates challenges for the nursing team.

To address these and to support more effective alarm handling by nurses, the Central Ostrobothnian Central Hospital invested in Ascom's Clinical Alarm and Alert Management solution for its newly renovated ICU. This case study presents the results of the Evidence Collection conducted in Kokkola.

Thankfully, Ascom's technology solutions can offset some of those challenges - bringing comfort to patients and peace of mind to clinical teams.

During this ICU project the Ascom Clinical Alarm and Alert Management solution helped to not only reduce the number of non-critical alarms distracting nurses by 70%. It also enabled alarm noise reductions and a move closer to the 40 decibels recommended by the World Health Organization (WHO).

## Background

The Central Ostrobothnian Central Hospital in the town of Kokkola, Finland, provides treatment for around 42,000 patients each year, some of which require critical care within its ICU. In the autumn of 2024, the hospital invested in transitioning from a 5-bed open ward ICU to a modernized 7-bed single-patient room ICU.

## Project challenges

Single-patient room wards help reduce the risk of cross-contamination and infection. They also provide more privacy and quieter environments for patients and their families. But monitoring a patient's condition behind closed doors can be problematic for ICU teams. Critical medical alarms can become harder to hear and put patients at greater risk.

On an open ward nursing teams are free of physical obstructions. They can see and hear the patient and the medical equipment more easily. Consequently, they're also extremely noisy environments with alarms interrupting patient rest and leading to nursing teams feeling overwhelmed - hindering their judgement and decision making.

*"Nurses cannot be constantly present in single patient rooms, and yet they have to be aware of the patients' condition at all times, even when outside of the patient room."*

**Tadeusz Kaminski**

Chief of the ICU at  
Central Ostrobothnian Central Hospital

## The Ascom solution

To overcome this project challenge Ascom worked closely with the team at Central Ostrobothnian Central Hospital to integrate its Clinical Alarm and Alert Management solution across the ICU. The solution provides medical device integration, alarm filtering, and alarm distribution to mobile devices and live monitor displays outside of the patient's room.



## Improving alarm management

Ascom helped the team categorize actionable and non-actionable medical device alarms. This meant that only the critical alarms would be distributed to nurses via their Ascom Myco 4 smartphones, desktop screens at the nurses' station and in the recreation area to increase patient visibility.

### Results of the smart alarm filtering

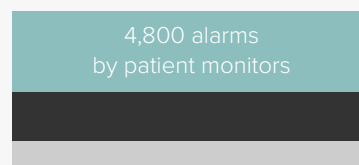


70%

of the total number of alarms were filtered, resulting in over.

20,000

fewer disruptions to caregivers.



During a 30-day period, medical devices in the ICU generated 32,000 alarms. The team decided to focus on patient monitor alarms that generate the highest number of alarms:

- 85% by patient monitors
- 10 % by ventilators
- 5% by infusion pumps

The number of actionable vs. non-actionable alarms varied by medical device, so the decision was taken to focus on the medical device generating the greatest number of alarms. This was the patient monitor.

The patient monitor generated over 27,000 alarms. The Ascom Clinical Alarm Filtering allowed **82% reduction in non-actionable alarms**, resulting in around 4,800 reaching the nurses.

In total, the Ascom Clinical Alarm Filtering **reduced the total number of alarms reaching nurses by 70% over the 30-day period**, with less than 10,000 alarms ultimately received.

*“Patient safety is a top priority for us, and to ensure it, we looked for new technologies. We explored the availability of smart technology solutions and also the experiences of other central hospitals. The solutions provided by Ascom stood out and appeared to match our requirements.”*

**Tadeusz Kaminski**

Chief of the ICU at  
Central Ostrobothnian Central Hospital

## Alarms reaching nurses

As a consequence of moving to single-patient rooms and filtering of non-actionable alarms, the noise in the ward was reduced.

At the patient's bedside, before the system was implemented only 44% of the noise measurements were below 50 decibels compared to post-installation, when 76% of the measurements were below 50 decibels. Now 6% of alarms recorded during the hours of 8am to 8pm are well below 40 decibels.

### Alarms below 50dB at patient's bedside

44%

Before the solution  
was implemented  
(autumn 2024)



76%

Post the solution  
was implemented  
(spring 2025)

### Achieved results

*"We no longer need to visit the patient room in order to check if the infusion pump is empty because we receive the information directly to the Myco smartphones. It is easier to anticipate the tasks and perform them in the right order. The workflows are more systematic and there is less rushing around from one situation to another."*

**Ros-Marie Rasmus**

at Central Ostrobothnian Central Hospital

Find out more about Ascom's Clinical Alarm and Alert Management Solution on our [website](#).

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#### About Ascom

Our vision is a world where the right information moves people forward. Our mission is to put the right information in the right hands at the right time so that people can make the best possible decisions.

We are a global provider of communication and collaboration solutions for the acute care, long-term care and enterprise sectors. Our solutions are based on intelligent integrations with software and hardware that are open source and compatible with third party solutions. Every single second, our systems generate large amounts of data, which we then turn into useful and actionable information. This helps us to bring data to life for people in the toughest operational environments, ensuring smooth, complete, and efficient workflows.

Ascom is headquartered in Baar (Switzerland), has operating businesses in 19 countries and employs around 1,400 people worldwide. Ascom registered shares (ASCN) are listed on the SIX Swiss Exchange in Zurich.