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Delivering the Silent ICU

Innovative digital technologies and enhanced interoperability help provide a more patient-centric and efficient healthcare environment





Towards a better healing and working environment

Excessive noise and disturbances in the ICU can negatively impact patient recovery and well-being. They can increase the stress for families and alarm fatigue for clinical staff with the risk of critical alarms being missed.

With alarm management at its core, the Silent ICU approach can help reduce noise pollution and alarm fatigue to provide better patient care and working environment.

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Dräger

B|BRAUN
SHARING EXPERTISE

The Silent ICU is the result of a partnership between Dräger, B. Braun and Ascom to seamlessly, automatically and securely transfer data between devices and alarm management systems, based on the ISO/IEEE 11073 SDC and the IEC 60601-1-8 standards.

The solution enables alarms to be transferred to the Ascom distributed alarm system in a reliable way. Alarms are vizualized on a dashboard that can be located at the nurse station. In addition, actionable alarms are simultaneously routed to the right caregiver at the right time. Meanwhile at the bedside, the medical device alarms remain silent which contributes to a quieter ICU environment.

The Silent ICU – a better environment for all



Better for patients

- Enables single-patient rooms with closed doors, which promotes a better healing environment for the patient
- Quiet environment promotes better sleep for the patient, so lowering the risk of patient delirium[1]
- Calmer ICUs are a less stressful experience for family members



Better for staff

- Enables single-patient rooms with closed doors, which can support infection control strategies
- Alarm management helps reduce the number of non-actionable alarm messages received by caregivers, thereby aiming at reducing alarm fatigue
- Improves workflow efficiency for the healthcare personnel
- Helps organize patient care



Better for hospital management

- Calmer environment for patients and staff
- Contributes to increased patient safety and satisfaction
- Optimized clinical workflows
- Enhanced clinical workflows improve nursing staff retention

Excessive noise and alarm fatigue are a problem

Clinical alarms play an important role in ICUs to alert staff about changes in a patient's condition and give early warning of problems such as arrhythmia, high or low blood pressure and low oxygen saturation, as well as technical issues like an occlusion of an infusion line. The earlier these problems are detected, the earlier the intervention, which leads to better patient outcomes. However, despite the overall need for alarms, there is the significant risk of negative effects without proper alarm management.

Excessive noise levels
Peak noise levels can exceed 85 dB when WHO guidelines suggest a maximum of 35 dB for patient care areas[2].

Alarm fatigue
According to the American Association of Critical Care Nurses, alarm fatigue "is a sensory overload that occurs when clinicians are exposed to an excessive number of alarms, which can result in desensitization to alarm sounds – as well as an increased rate of missed alarms". With clinical and technical alarms covering the wide range of equipment in the ICU — ventilators, infusion pumps, patient monitors, etc. — these can add up to 350 alarms per ICU bed per day[3].

The risk of alarm fatigue increases further when up to 85 – 95 % of these alarms are false positive and might not require urgent clinical intervention[4]. The ECRI Institute warns that alarm fatigue leads to an increased risk of patient harm and dissatisfaction among both patients and staff[5].

Excessive noise levels and alarm fatigue can lead to a range of problems for patients and staff.



Sleep disturbance and delirium
Restful sleep is vital for patient healing and recovery. As a result, sleep disturbances can lead to delirium, increased pain and prolonged hospital stays[1].



Stress and anxiety
High noise levels can cause stress and anxiety, which can lead to increased blood pressure, heart rate and respiratory rate, and an overall negative impact on patient outcomes.



Increased risk of patient harm
High noise levels and alarm fatigue can lead to desensitization to alarms, communication failures, errors and delays in care.



Decreased patient and staff satisfaction
Noise can negatively impact the overall patient experience in the ICU, while making for a tougher working environment for staff.

The Silent ICU solution

Key products



B|BRAUN
SHARING EXPERTISE

Spaceplus infusion pumps



Dräger

Evita V(N)600/V(N)800 ventilators, IACS Patient Monitoring System



SDC
SERVICE-ORIENTED DEVICE CONNECTIVITY

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Clinical Monitoring and Alarm Management solution, Myco smartphones

The Silent ICU solution is based on full delegation of alarms from the source medical device to the distributed alarm system:

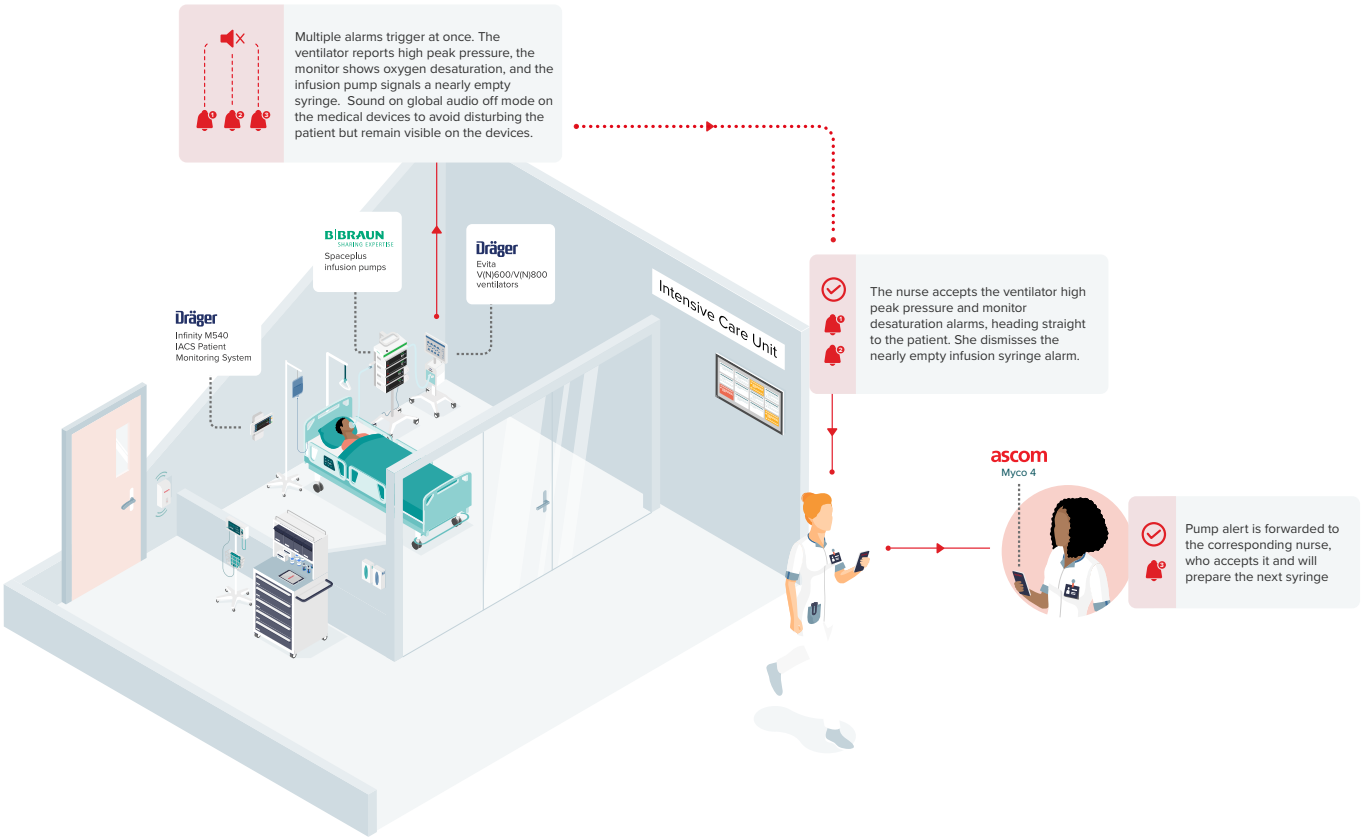
- Compatible bedside medical devices like infusion pumps, patient monitors and ventilators can be set to silent mode, creating a quieter and more effective healing environment for patients
- Clinicians can view patient status in real time for more informed decision-making and timely interventions
- Alarm notifications from the devices appear on dashboards and are simultaneously distributed as actionable alerts to designated clinicians' smartphones. In case of unavailability of designated caregiver, the alarm will be redirected to colleagues according to the agreed redirection chain
- Alert management workflows can be optimized. Non-actionable alarms that do not require intervention can be filtered to let staff focus on the important alarms, improving their response times and decision-making abilities. This way, alarm fatigue in caregivers can be reduced to improve the quality of care

Key features

- DAS/CDAS integrating several types of devices such as a monitor, a ventilator and an infusion pump to enable closed-door scenarios
- Global audio-off capabilities enabling silenced medical devices at the bedside
- First Silent ICU solution involving SDC Medical Devices
- Reliable alarm distribution (DAS/CDAS under IEC 60601-1-8)
- Smooth transition: the solution supports a phased adoption model where mixed environments (composed of both 'silent' and legacy medical devices) run on a single platform enabling a uniformed workflow
- Scalability: possibility to expand the solution beyond the ICU

The Silent ICU solution

Healing care and smarter workflows through safe alarm distribution



Take the next step

The Silent ICU solution can improve patient recovery and well-being at the same time as it can ease the pressure on staff. By minimizing noise pollution, contributing to less alarm fatigue and promoting seamless interoperability between medical systems, a quieter, calmer ICU heralds a new era of healthcare excellence. To discuss how you can implement the Silent ICU in your workplace, **visit ascom.com or contact your local Ascom representative.**

Scan for more infomation

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Disclaimer
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Ascom is working globally with medical device industry to contribute to a more healing environment and shaping and leveraging internationally standards for intero-perability. Therefore, Ascom is a member of OR. NETe.V.

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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.

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