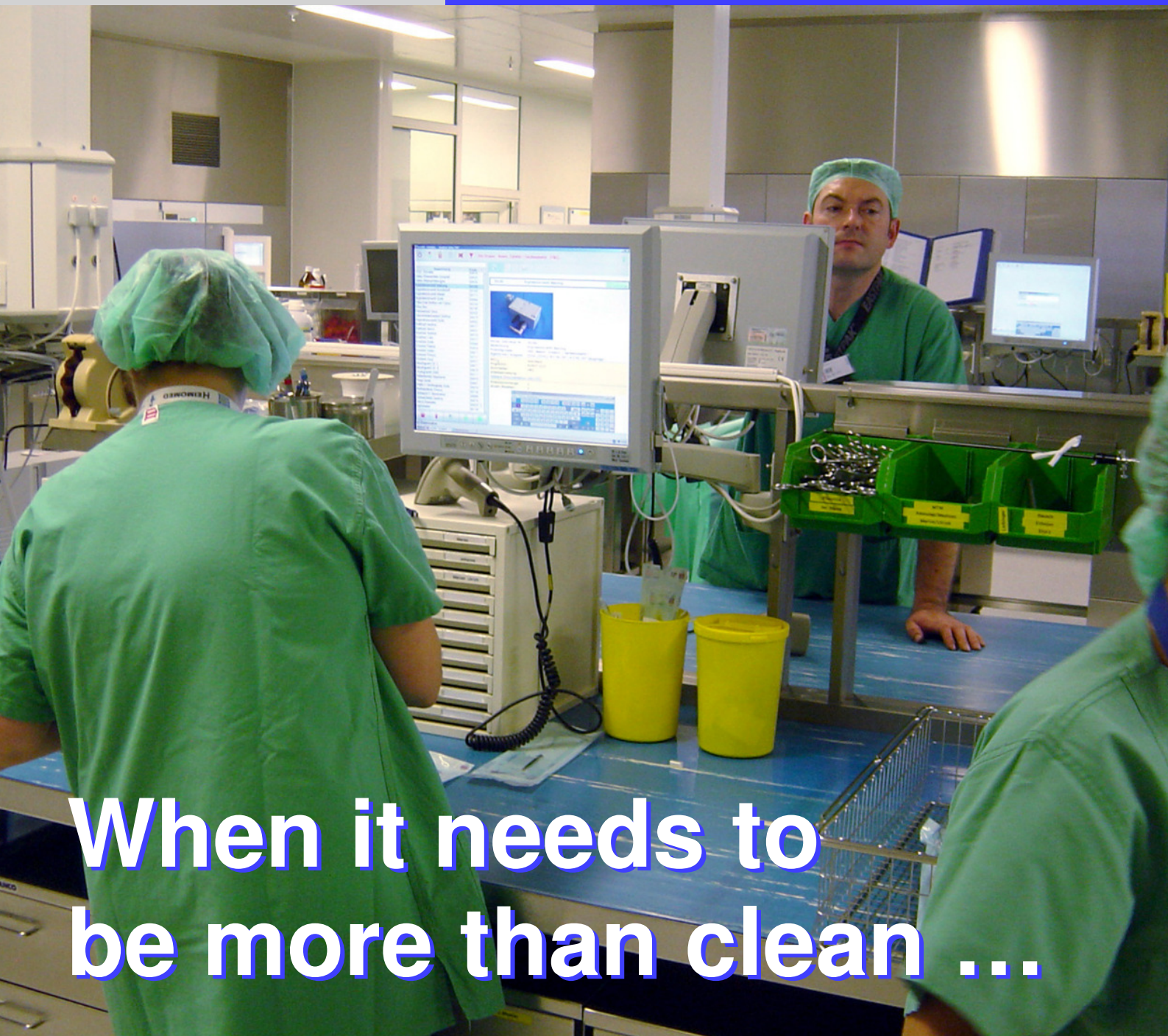


MEDICAL PC

Focus ON

CLEAN ROOM

STERILE TECHNIQUE



**When it needs to
be more than clean ...**

PENTA

The Central Sterile Supply Department (CSSD) at the University of Munich Hospital uses Hercules Medical PCs from Penta to verifiably ensure under all circumstances that only correctly prepared medical products are handed out for use.



The Central Sterile Supply Department (CSSD) at the University of Munich Hospital uses the fanless Penta Hercules Medical PC even in the clean room.



All procedures in the CSSD are carried out with utmost attention to hygiene, efficiency and ergonomics.

When it needs to be more than clean ...

Hygiene is one of the most important issues for hospitals and needs to be verifiably ensured under all circumstances despite increasing pressure on efficiency and budget. The Central Sterile Supply Department (CSSD) at the University of Munich Hospital uses IT supported process control and documentation with hygienic medical PCs supplied by Penta.

More than 3700 staff look after more than 40,000 inpatients and 170,000 outpatients every year in the 1100 beds of the 31 clinics and departments of the University of Munich Hospital. The hospital's Central Sterile Supply Department (CSSD) regularly prepares over 3000 non-critical, semi-critical and critical medical products. Comprehensive control and documentation procedures verifiably ensure that only correctly prepared medical products are handed out for use. The EN 554 standard specifies all of the necessary documentation and checking procedures including the automatic and permanent recording of process parameters (e.g. chamber temperature and pressure), allocation of batch numbers, and product and batch approval after successful preparation. In addition, numerous tests are carried out and reference checks are performed on the sterilization equipment. Moreover, the validation and process data have to be archived for at least 10 years.

Legally compliant documentation – from delivery to dispatch

Along with highly qualified personnel and state-of-the-art sterilization equipment, hospitals also need to take advantage of the latest procedures and IT technology in order to meet the highest quality standards whilst also meeting the increasing pressure to

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Medical PC for clean rooms and supply of sterile equipment at the University of Munich Hospital



The new IT systems greatly increase efficiency, especially concerning the content of batches and sterilisation baskets.

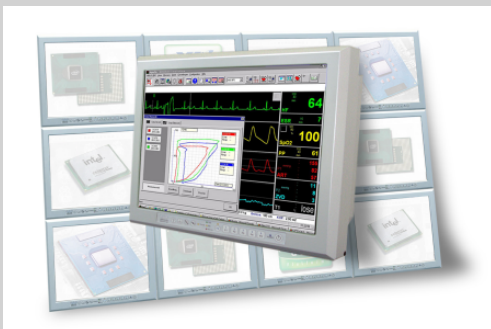
reduce costs. The different standards specify around 1700 different procedural requirements and the hygiene plan prescribes various to-dos. It is simply not possible for staff to learn all of these procedures, let alone ensure that they are all followed correctly. This is why the CSSD has installed the latest software, called EuroSDS, on fourteen Windows XP medical PCs with touch screens and handheld scanners. At the same time, the administration of equipment and batches has been converted to use contact-free and fast barcode labels that provide a unique identifier for each item. Before, staff had to use separately generated Excel tables for following the content of batches and sterilisation baskets. The new software and barcode system greatly increase efficiency.

Legally compliant documentation – from delivery to dispatch



Ventilation slits attract dust, even in clean rooms (the dust layer on the left of the picture is the result of six months operation in an operating theatre). Systems without fans and ventilation slits, such as the Hercules Medical from Penta, are a lot better.

As well as having the necessary processing power, the IT hardware also needs to meet the highest hygiene standards. In the ideal case it should also be sterile which means that the chance of finding a living germ on the device is smaller than 1:1,000,000. The CSSD therefore needs IT systems suitable for use in clean rooms. Ideally, the systems should be without fans and ventilation slits. This is important, not only in the CSSD but also for systems that are used in close proximity to patients such as in operating theatres, accident and emergency, intensive care and other stations that could contain pathogens. The dust blown out of PCs together with difficult to disinfect input terminals significantly increases the risk of contamination. Completely sealed systems are therefore the ideal solution. Due to its hygienic design, the Hercules Medical can be kept hygienically clean simply by wiping it with a damp cloth.



Penta currently offers its fanless and completely sealed Hercules Medical family of medical PCs in several different performance categories.

Another important factor is the insensitivity of the system to adverse environmental conditions such as high humidity or high temperature. Conventional fan cooled systems would not be able to cope with the steam and heat generated by washers that clean



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Medical PC for clean rooms and supply of sterile equipment at the University of Munich Hospital



Ideally suited for use in clean rooms: the easy-to-disinfect and completely sealed Hercules Medical from Penta.



Operation is extremely hygienic and takes place exclusively via the touch screen and USB handheld scanner.

medical equipment at temperatures of up to 95 ° C. For these areas you need systems that generate as little heat as possible so that they don't transgress their operating limits in hot environments. In addition, the systems should also have IP65 protection.

One PC for all areas – from the CSSD clean areas to patients' beds

When choosing the right PCs, the University of Munich Hospital relied upon the experience of its medical teams and the recommendations of its IT department. Based on previous good experience, the hospital chose the hygienic Hercules Medical from Penta. The systems are completely sealed without fans or ventilation slits that could collect dust. They offer IP65 protection not simply for the entire casing but also for the power plug, USB ports and network interface thanks to an optional cable covering. Due to the smooth casing with few joints, the systems can be wet-cleaned and offer no places for dirt and germs to gather. Operation is also extremely hygienic and takes place exclusively via the touch screen and USB handheld scanner for contact-free scanning of the barcode labels on the medical equipment and batches. The flat screen with integrated PC is considerably quicker, easier and safer to clean than conventional systems with a keyboard and mouse. This not only reduces cleaning time but also minimizes the risk of contamination from the IT equipment.

The systems are ergonomically designed for mounting on VESA LCD pivot arms. This enables staff to ideally position the Hercules Medical for entering data via the menu-based touch screen or transferring data from the new USB handheld scanner. Without fans the system operates silently, which is much appreciated by the staff. For one thing they can work with greater concentration and it is more pleasant to work without the noise generated by fans. On the other hand, fanless systems are more reliable which reduces



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Medical PC for clean rooms and supply of sterile equipment at the University of Munich Hospital

Penta asked Prof. Rotter, head of the Clinical Institute for Hygiene and Medical Microbiology at the Medical University of Vienna to test the suitability of a medical PC system for use in close proximity to



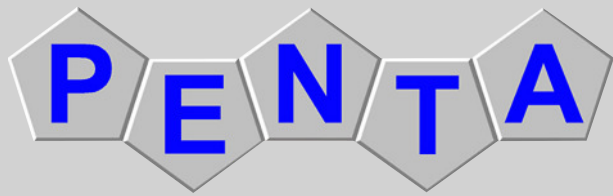
patients. In his report he came to the following conclusion: *"The PC and screen are configured as an all-in-one device that is completely sealed without ventilation slits and fans. It is therefore free of dust and completely silent. The screen is supplied either as laminated glass or as a touch screen. Both are suitable for use with cleaning material and disinfectants. The keyboard and mouse are also designed without joins and can also be wet-cleaned and disinfected. With these attributes that fully meet the demands on hygiene for surfaces in infection sensitive areas, this device is exceptionally good and extremely well*

maintenance costs - compared to systems with active cooling the MTBF (Mean Time Between Failure) due to failure of a mechanical component is five times higher. The lack of ventilation slits increases the MTBF and lifetime even further since the system is not vulnerable to dirt.

Individual configuration to exactly meet the application requirements

The new Hercules Medical PCs in the CSSD have 17 inch touch screens. With 1.4 GHz Intel® Pentium® M processors and 1 GByte of RAM, the PCs are tailor-made to meet the processing requirements of the software. Long-term availability ensures that new Penta systems can be easily added or existing systems replaced with exactly the same configuration for years to come. This makes them predestined for use in close proximity to patients in operating theatres and intensive care stations as well as sterile and clean areas such as the CSSD where IT equipment with a long lifetime is needed. These are convincing arguments for the Hercules Medical from Penta that are shared by experienced professionals who daily prepare different medical products - "This type of IT system is a real blessing. Networked access to information makes our jobs much easier and the easy-to-clean Penta systems ensure the highest standards of hygiene." This underlines Penta's considerable know-how and competence when it comes to medical PCs. More Penta medical PCs will be used for the upcoming extension of the CSSD at the University of Munich Hospital.





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About Penta

Penta GmbH, with its headquarters in Puchheim, Germany, and numerous worldwide sales representative offices and agencies, is the leading producer of fanless PC systems for medical technology and other industries requiring fanless, hygienic, completely closed, and robust IPC technologies. The company was founded in 1995 and has among its medical customers Schiller, Image Device, Imaging Services, Stoss Medica and Invitec as well as numerous hospitals and medical centres.

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