

Smart Operating Room Solutions

Company Overview

Phase in Medical Direccion, 04.12.2013

S·CAPE 
digital health care technologies

Agenda

Key Facts

Benefits of Digital OR Solutions

Overview of S-CAPE Solutions

Q&A

S-CAPE delivers high quality digital OR integration solutions for more than 12 years

- Leading global provider focused exclusively on tailored digital OR solutions
- Custom solutions in 4,500 OR's in more than 1,000 hospitals
- Designed, constructed, and deployed from Germany
- Global network of partners to ensure excellent customer care
- Collaboration with leading medical technology companies

SIEMENS



OLYMPUS
Your Vision, Our Future



BRAINLAB



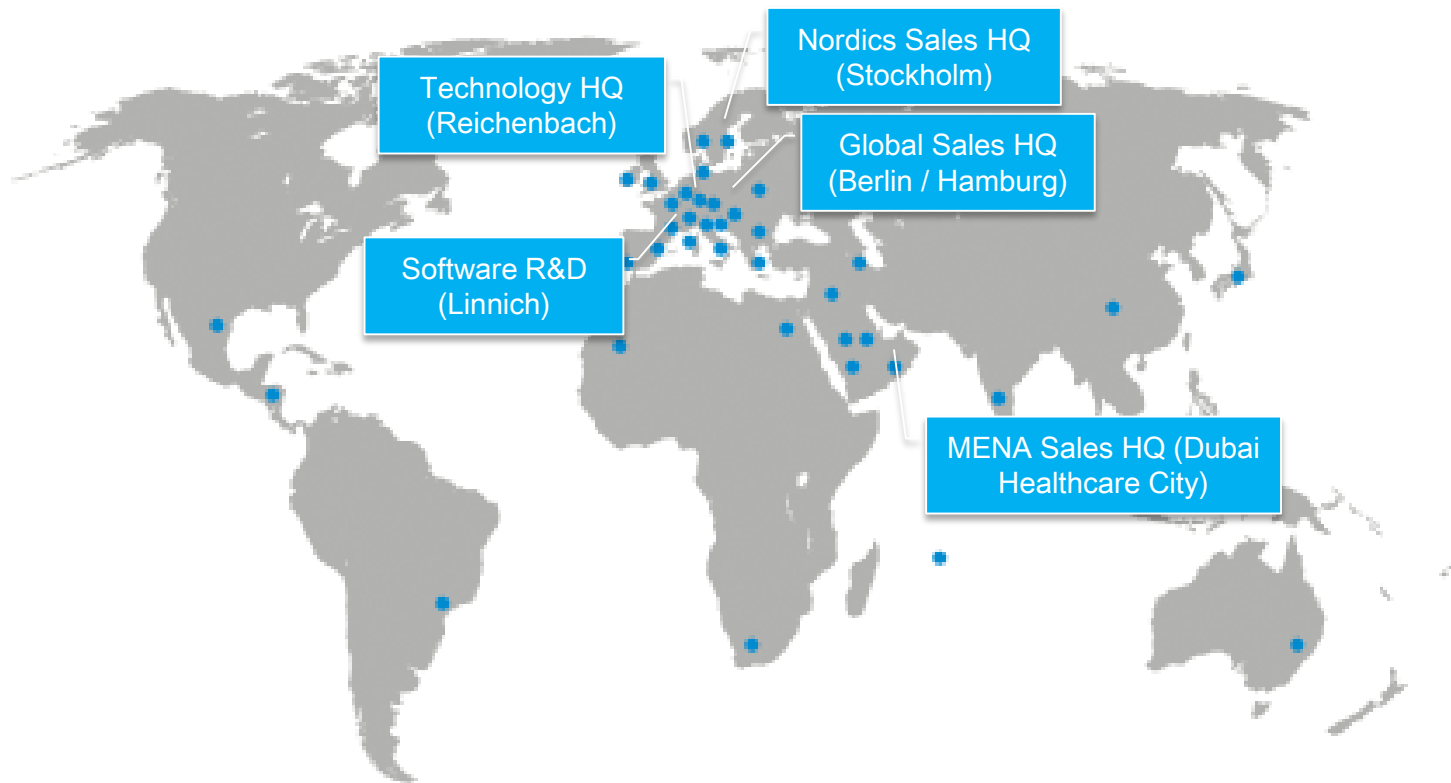
stryker[®]

MAQUET
GETINGE GROUP

AGFA



Two R&D locations, three sales offices, and a strong global network of distribution and service partners



S-CAPE has true global reach from a strong European base. Our teams have successfully completed OR integration projects in over 40 countries

8 out of Top 10 hospitals in Germany are part of the active installed base of S-CAPE

1	Charité Universitätsmedizin Berlin	S·CAPE	14	Universitätsmedizin Göttingen	S·CAPE
2	Klinikum der Ludwig-Maximilians-Universität	S·CAPE	15	Universitätsklinikum Aachen	S·CAPE
3	Universitätsklinikum Carl Gustav Carus	S·CAPE	16	Universitätsklinikum Tübingen	S·CAPE
4	Universitätsklinikum Freiburg	S·CAPE	17	Universitätsklinikum Gießen und Marburg	S·CAPE
5	Universitätsklinikum Heidelberg	S·CAPE	18	Uniklinik Köln	S·CAPE
6	Klinikum rechts der Isar der TU München		19	Universitätsklinikum des Saarlandes	
7	Klinikum der Joh. Wölg. Goethe-Universität	S·CAPE	20	Klinikum Augsburg	
8	Universitätsmedizin d. J. Gutenberg-Univ. Mainz	S·CAPE	21	Universitätsklinikum Münster	S·CAPE
9	Universitätsklinikum Hamburg-Eppendorf		22	Universitätsklinikum Düsseldorf	S·CAPE
10	Universitätsklinikum Bonn	S·CAPE	23	Universitätsklinikum Jena	S·CAPE
11	Universitätsklinikum Erlangen	S·CAPE	24	Universitätsklinikum Ulm	S·CAPE
12	Universitätsklinikum Würzburg	S·CAPE	25	Universitätsklinikum Leipzig	S·CAPE
13	UK Schleswig-Holstein, Campus Lübeck	S·CAPE			

- German hospital care possesses strong reputation in the world
- 21 of Top 25 Hospitals in Germany, are long-standing S-CAPE clients
- Co-development of solutions with leading healthcare practitioners

S-CAPE's references comprise several of Europe's most reputable hospitals

Charité - Universitätsmedizin Berlin

- 102 medical consoles installed
- Founded 300 years ago
- 3200 beds (Largest Clinic in Europe)
- Home to several Nobel Prize winners
- #1 Germany (Overall); #1 in Orthopedics



Asklepios Klinik Barmbek, Hamburg

- 14 medical consoles installed
- More than 2000 beds
- #5 world's best hospital for medical tourists



Karolinska Hospital, Sweden

- 8 medical consoles installed
- 1600 beds
- #5 medical hospital in Europe
- #20 medical hospital in the World



Klinik Hirslanden, Zurich

- 8 medical consoles installed
- 259 beds
- one of the most exclusive private hospitals in Switzerland



Deutsches Herzzentrum Berlin

- 6 medical consoles installed
- 162 beds
- Largest organ transplantation center in Germany



Acibadem Hospital, Turkey

- 20 medical consoles installed
- 1900 beds
- Largest private hospital chain in Turkey



Agenda

Key Facts

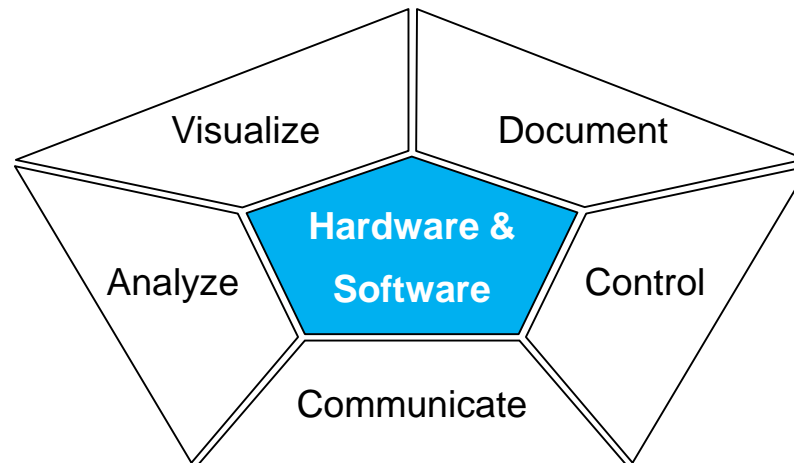
Benefits of Digital OR Solutions

Overview of S-CAPE Solutions

Q&A

What is a smart OR integration solution?

A central platform in the OR that is used to:



... information from video, imaging and other data sources in and out of OR

... by means of partial or full integration with:

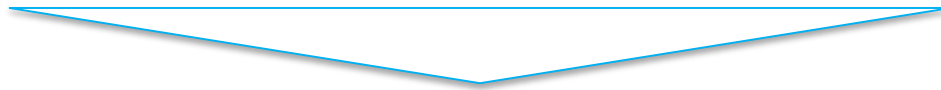
- Patient Record Information Systems (Patient Record and Imaging)
- Medical Devices
- Recording and Streaming Devices
- Room Equipment

What are the benefits of integrated operating rooms?

- **OR integration solutions improve:**
 - Surgical team productivity
 - Patient safety
- **These benefits are enabled by optimizing the use of:**
 - Space in the often cluttered OR
 - Information previously not available or not productively used during the perioperative cycle
 - Expertise of highly valuable staff members
 - Time to prepare , execute, document procedures

Win back working space in the OR

- **Challenge: Bulky equipment in working area reduces team productivity**
 - Medical equipment overload from old and new devices in the OR
 - Clutter slows staff down and introduces patient risks



- **Solution: Digital OR integration gives control back to the surgical team**
 - Single customizable control interface close to the working area
 - External displays that comfortably fit workflow
 - Visualize in any combination via connections that don't get in the way

Make the right information available at the right time

- **Challenge: No real-time access to important data can affect outcomes**
 - Physical transfer of data from other departments is inefficient
 - Important data are not in front of clinicians' eyes when needed



- **Solution: Make important clinical data readily available at point of care**
 - Give clinicians easy access to key data sources in and out of the OR
 - Adapt visualization of clinical data to surgical workflow
 - Retain previously unavailable data for future use

Enable communication to improve efficiency

- **Challenge: Shortage of experienced surgical and nursing staff**
 - Difficult to use expertise of senior clinicians in daily crucial situations
 - Need to better utilize non-sterile staff to improve efficiency



- **Solution: Enable mobility to bridge capacity and expertise gaps**
 - Make handovers in procedures more seamless
 - Enable participation of remote staff
 - Create training and learning opportunities
 - Enable staff cross-utilization among several active ORs

Free up more time for patient care

- **Challenge: Low OR capacity utilization in the face of increasing number of procedures**
 - Long idle time between procedures reduces capacity utilization
 - Documentation processes are error-prone and time-consuming



- **Solution: Enable intuitive documentation solutions to reduce complexity**
 - Digitize processes to reduce human error
 - Document in-operatively without complexity
 - Reduce wasted time on finding right clinical data when case editing
 - Annotate and submit to relevant sources without hassle

Agenda

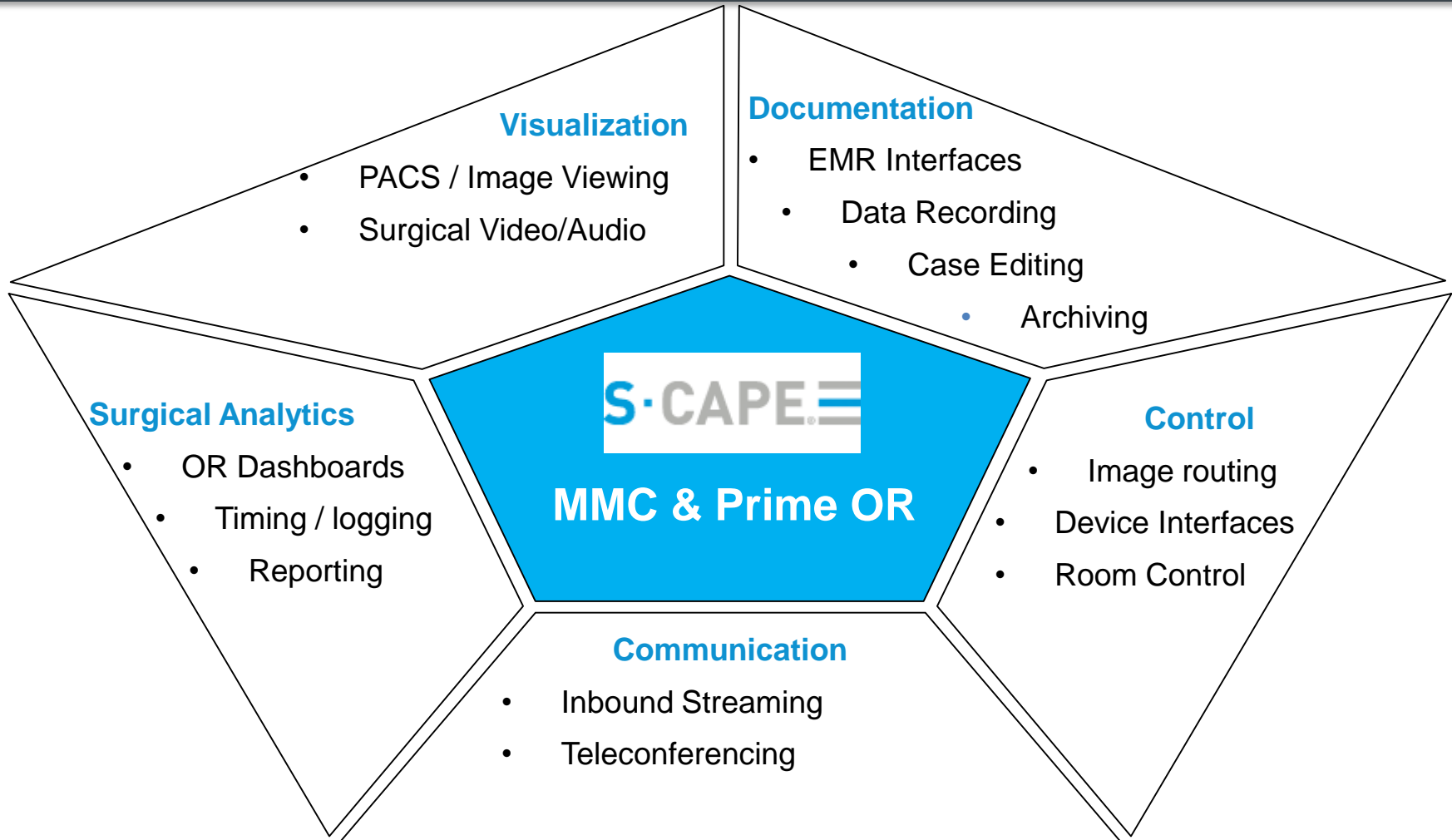
Key Facts

Benefits of Digital OR Solutions

Overview of S-CAPE Solutions

Q&A

S-CAPE provides OR integration through modular hardware and software solutions: Medical Multiconsole (MMC) and Prime OR



S-CAPE MEDICAL MULTICONSOLE: Customizable Command & Control Platform for Your Digital OR

- **Medical Multiconsole (MMC)**
 - **Key functions**
 - Access to PACS, HIS, RIS or any other information system
 - Immediate access to external data sources
 - Management of surgical video, data and room fixtures
 - Consumable tracking
 - **Benefits**
 - Highest quality made in Germany
 - Customizable and configurable in look and functionality
 - Integrated into the wall of the operating room
 - Easy to sterilize, robust housing
 - Any display size or technology available (.FHD, UHD, 4K, LED, 3D)



- 1** microphone
- 2** IP 65 USB 3.0 super speed
- 3** HD camera
- 4** IP 65 stereo speaker
- 5** IP 67 keyboard and mouse
- 6** full HD DICOM preset displays
- 7** barcode scanner

- 8** manual switch buttons
- 9** external video connections
- 10** additional patch bays (upgrade function)
- 11** display for clock, temperature, timer
- 12** touch screen (video routing software)
- 13** iPod / iPad docking station

- +** Remote triggering of video recording via endoscope and wireless foot switch
- +** Redundant solutions for high availability and system uptime
- +** RS 232-control of 3rd party systems

Sample S-CAPE MMC Configurations



PACS / Video / KIS / Room & Media Control / Nurse Repository



KIS / PACS / Video / Orthopedic / Four Boom Monitors



Multi Touch / Brainlab Navigation Software



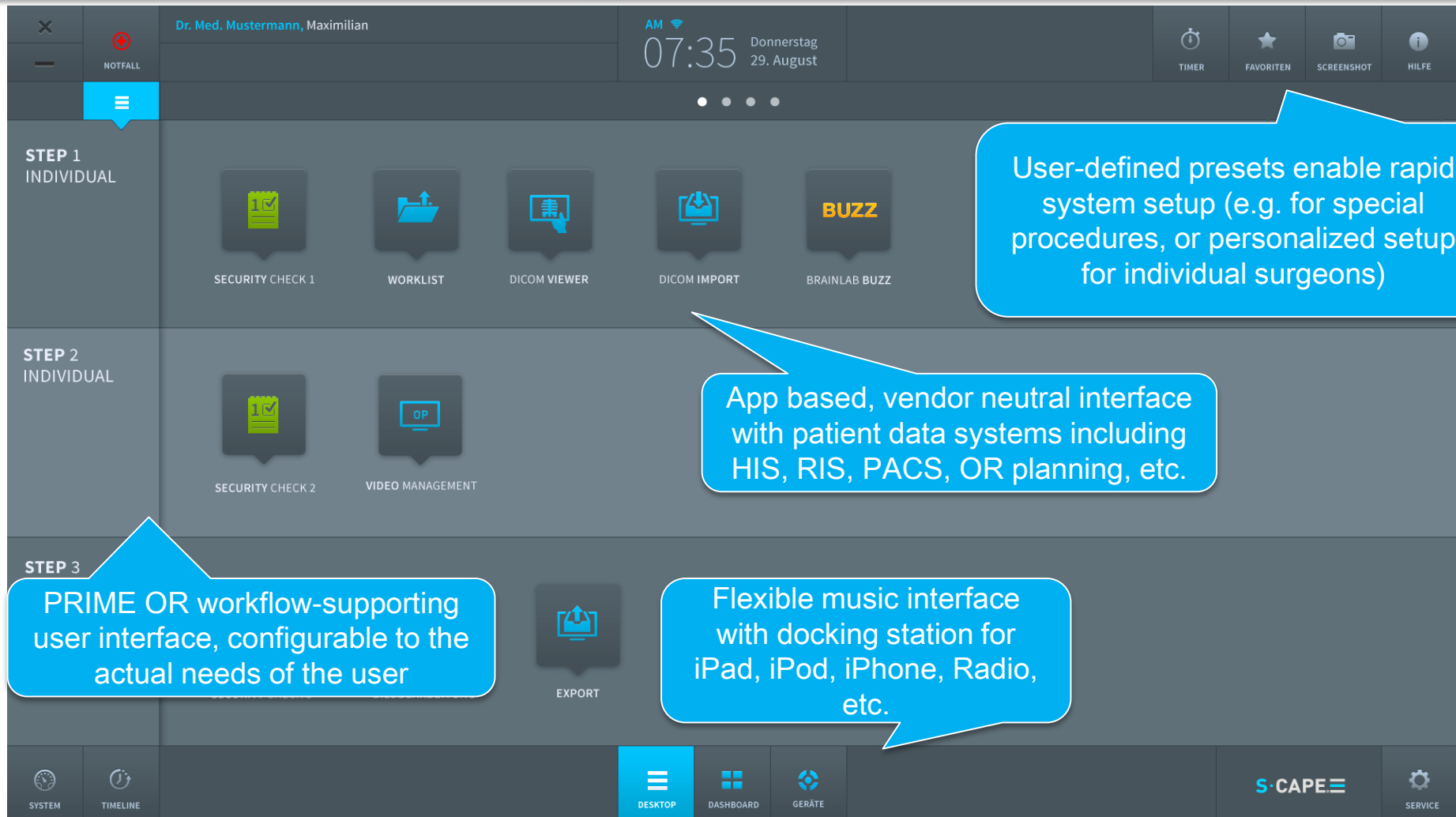
PACS / KIS/ Full Glas OR Console

PRIME:

Customizable Software Platform to Improve Your Workflow

- **PRIME**
 - **Key functions**
 - Bi-directional integration with health record and PACS databases
 - Recording, capturing and annotation of procedures
 - Live streaming
 - Telesurgery communication
 - Perioperative dashboards and analytics
 - **Benefits**
 - Single platform to manage key aspects of intraoperative workflow
 - Modular functionality tailored to today's needs
 - Customizable user interface
 - Designed for ease of use within the OR

PRIME OR Main Interface



Patient Safety Checklist (WHO Standard)

Dr. Med. Mustermann, Maximilian

NOTFALL

Maxmeier, Felix | M | 17.04.1977

STUDIE WECHSELN

TIMER

FAVORITEN

SCREENSHOT

HILFE

LOG IN

BEFORE INDUCTION OF ANAESTHESIA

WITH AT LEAST NURSE AND ANAESTHETIST

> Has the patient confirmed his/her identity, site, procedure, and consent?	<input type="radio"/> Yes
> Is the site marked?	<input type="radio"/> Yes <input checked="" type="radio"/> Not applicable
> Difficult airway or aspiration risk?	<input type="radio"/> No <input type="radio"/> Yes, and equipment/assistance available

Pre-, in-, and post procedural customizable safety checklists

SYSTEM

TIMELINE

DESKTOP

DASHBOARD

GERÄTE

S·CAPE

SERVICE

Patient name inserts on all screens. The selected patient can easily be verified by OR team on all screens

Pre-, in-, and post procedural customizable safety checklists

Documentation Solutions

- **“Oasis”: Surgical Documentation System**
 - Capturing, and editing real-time data during procedures to intuitively document and enrich patient records, as well as enable information for education and research
- **Key Benefits**
 - Connectivity to any drive (DVD, USB) or database (PACS, HIS)
 - Quick data capturing built into workflow
 - Advanced image editing and annotation capabilities
 - Long-term OR-centered vendor neutral archiving outside HIS/PACS
 - Intelligent tagging of recorded segments for quick future access

HIS and PACS Integration – Retrieving Patient List

Simple worklist retrieval through integration with Hospital Information System

Simple case editing functionalities

Dr. Med. Mustermann, Maximilian

NOTFALL

IMPORT WORKLIST NEUE STUDIE LOKALE STUDIEN

WORKLIST

PATIENT ID	STUDIE		DATUM	PATIENT	GEBURTSDATUM	SEX	KOMMENTAR
123453625	Gastro Duondal endoscopy ...	✓	22.08.2012	Mustermann, Max	17.11.1986	M	Lorem Ipsum dolores set dilemane sindugeregt das dufisuy ...
123453625	Lung Surgery	!	22.08.2011	Mustermeyer, Eva	17.11.1986	W	Lorem Ipsum dolores set dilemane sindugeregt das dufisuy ...
123453625	Gastro Duondal endoscopy ...	✓	22.08.2012	Max Mustermann	17.11.1986	M	Lorem Ipsum dolores set dilemane sindugeregt das dufisuy ...
123453625	Lung Surgery	!	22.08.2011	Eva Mustermeyer	17.11.1986	M	Lorem Ipsum dolores set dilemane sindugeregt das dufisuy ...
123453625	Gastro Duondal endoscopy ...	!	22.08.2012	Max Mustermann	17.11.1986	M	Lorem Ipsum dolores set dilemane sindugeregt das dufisuy ...
123453625	Lung Surgery	!	22.08.2011	Eva Mustermeyer	17.11.1986	W	Lorem Ipsum dolores set dilemane sindugeregt das dufisuy ...
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SYSTEM TIMELINE

DESKTOP DASHBOARD GERÄTE

S·CAPE

SERVICE

Communication Solutions

- **“Magellan”: Surgical Communication System**
 - Transmitting real-time surgical video, audio, or clinical parameter data to one or more sources outside the OR for the purpose of telesurgery, OR bloc communications, training, presentations
- **Key Benefits**
 - Ability to get 2nd opinion during a live procedure
 - Communication of non-sterile staff across operating rooms
 - Observation ability by connecting all ORs in bloc in a unified view
 - High-grade image quality and low latency

HD Streaming and Video Conferencing

The screenshot displays the S-CAPE video conferencing interface. The main window shows a high-definition surgical procedure. On the left, a sidebar titled 'VIDEO MANAGEMENT' contains a 'GESPRÄCHSPARTNER' section with a video feed of Dr. Med. Mustermann, Maximilian. Above this feed are icons for ROUTING, RECORD, KONFERENZ, and CHAT. A blue callout bubble points to the 'KONFERENZ' icon, stating: 'Live video and audio streaming in SD or HD, e.g. to a lecture hall or doctor's office'. Below the video feed, another blue callout bubble states: 'Audio inputs e.g. from room microphone or wireless microphone'. The top of the interface includes a status bar with 'NOTFALL' and a timer. The bottom of the interface features a navigation bar with icons for SYSTEM, TIMELINE, DASHBOARD, and GERÄTE, along with the S-CAPE logo and a SERVICE button.

Live video and audio streaming in SD or HD, e.g. to a lecture hall or doctor's office

Audio inputs e.g. from room microphone or wireless microphone

Intelligent Surgical Efficiency Solutions

- **“Sentinel”: Surgical Analytics Solution**
 - Aggregation of key clinical content and its intelligent visualization in the form workflow- and specialty-tailored operative dashboards to enhance productivity and patient safety
 - Time stamping of key events and actions during procedures, and intelligent post-operative reporting of key efficiency metrics
 - Digital implementation of WHO-certified patient safety checklists
- **Key Benefits**
 - Fully customizable to workflow and type of surgical procedure
 - Stricter compliance with patient safety protocols
 - Reduced adverse patient outcomes
 - Ability to aggregate and analyze cumulative data over multiple procedures to improve surgical bloc efficiency

Interactive Timeline

Dr. Med. Mustermann, Maximilian

07:35 Donnerstag 29. August

TIMER FAVORITEN SCREENSHOT HILFE

STEP 1 INDIVIDUAL

SECURITY CHECK 1 WORKLIST DICOM VIEWER DICOM IMPORT BRAINLAB BUZZ

STEP 2 INDIVIDUAL

STEP 3 INDIVIDUAL

Live interactive timeline to facilitate, track and monitor surgical workflow

Export of documentation to USB stick, USB HDD, DVD/Blu-ray™ burner, network, or PACS

STEP 1 INDIVIDUAL 17:23 17:23 17:23 17:23 17:23 Aktion 1 ... Aktion 1 ... Aktion 1 ...

18:16 17:23 17:23 17:23 17:23 17:23 Aktion 1 ... Aktion 1 ... Aktion 1 ...

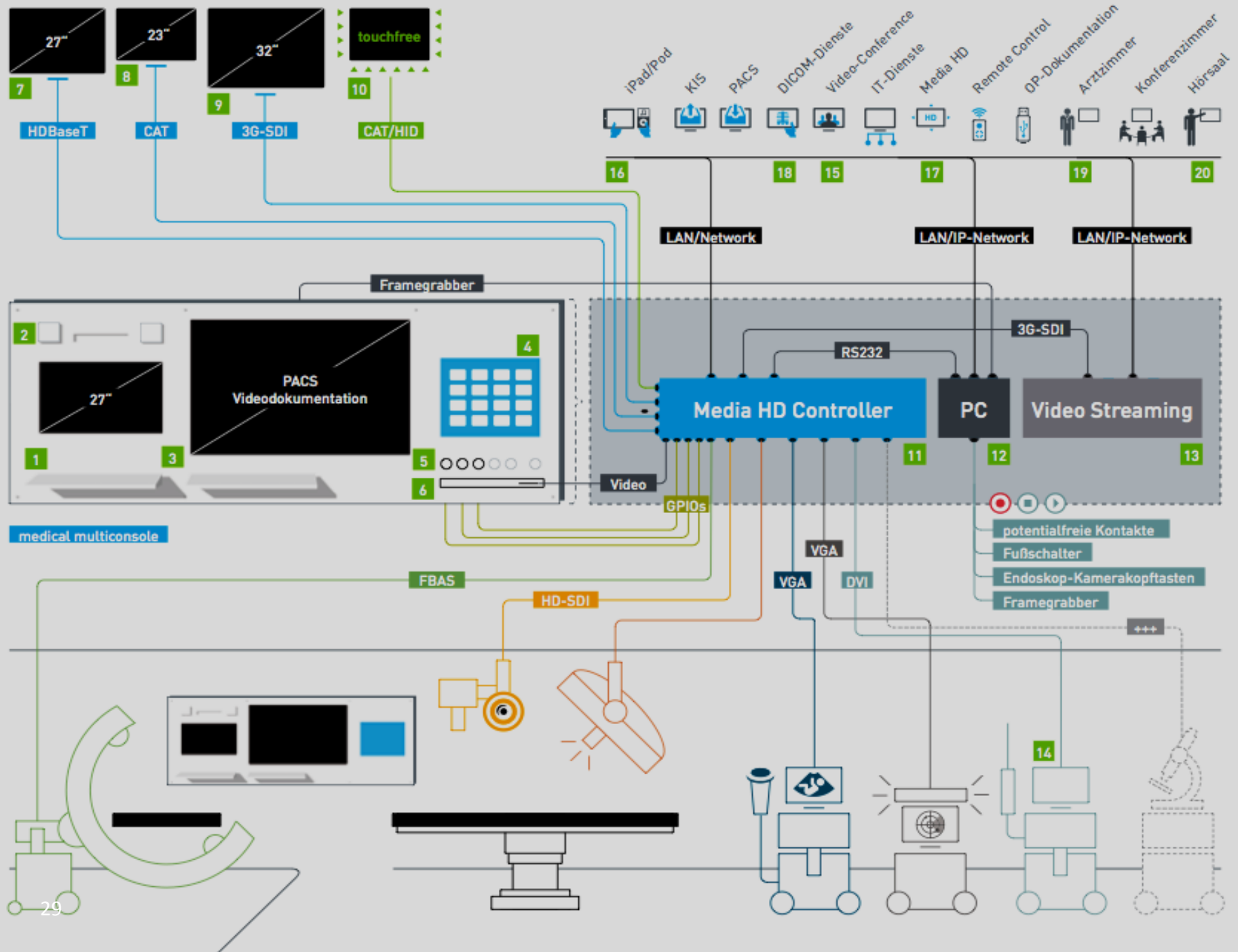
STEP 1 INDIVIDUAL 17:23 17:23 17:23 17:23 17:23 Aktion 1 ... Aktion 1 ... Aktion 1 ...

SYSTEM TIMELINE SERVICE

S-CAPE digital health care technologies

OR Video and Medical Device Management

- **OR/Hub: Surgical Video and Medical Device Management**
 - Scalable integration and distribution of visual and data signals to enhance easy access and management of key real-time imaging and clinical parameters.
- **Key Benefits:**
 - Maps to individual workflow
 - Fully vendor independent
 - No extra infrastructure or space needed if via MMC
 - Broadcast-quality, DICOM image processing
 - 100% real-time
 - Minimal cabling length and exposure



Video Management

Intuitive video
management interface

Recording
in
resolution
of up to
Full HD
incl. audio
signal

Individual assignment of video source
to monitor in up to ultra HD quality

Full-HD picture-in-picture (PiP)
functionality for displaying and
recording multiple video signals.

The screenshot displays the S-CAPE Video Management interface. At the top, a header bar shows patient information: 'Dr. Med. Mustermann, Maximilian' and 'Maxmeier, Felix | M | 17.04.1977', along with a 'STUDIE WECHSELN' button. The time is 07:35 on Thursday, August 29. On the left, a 'VIDEO MANAGEMENT' sidebar contains icons for 'ROUTING', 'RECORD', 'KONFERENZ', and 'CHAT'. Below these are five monitor slots: 'AMPEL 1 HD DISPLAY /"', 'AMPEL 2 HD DISPLAY /"' (showing a surgical video), 'OP LEUCHTENKAMERA 1 HD DISPLAY /"', 'STREAMER 2 HD DISPLAY /"', 'PIP MONITOR HD DISPLAY /"' (with a PiP icon), and 'TOUCH FREE DISPLAY HD DISPLAY /"'. The main area shows a large surgical video feed. The bottom bar includes 'SYSTEM', 'TIMELINE', 'DESKTOP', 'DASHBOARD', 'GERÄTE', 'S-CAPE', and 'SERVICE' icons.

How is S-CAPE different from conventional solutions?

Conventional Solutions

Bulky design invading work area

One-size fits all suites

No focus on OR integration

No IT expertise

Not easy to use

Not future-proof due to design and lack of vendor neutrality

Longer OR downtime during installation times

S-CAPE Solutions

Compact design enhancing work area

Fully customizable from ground-up

Exclusively focused on OR solutions

State-of-the-art modern IT architecture

Designed for surgeons and nurses

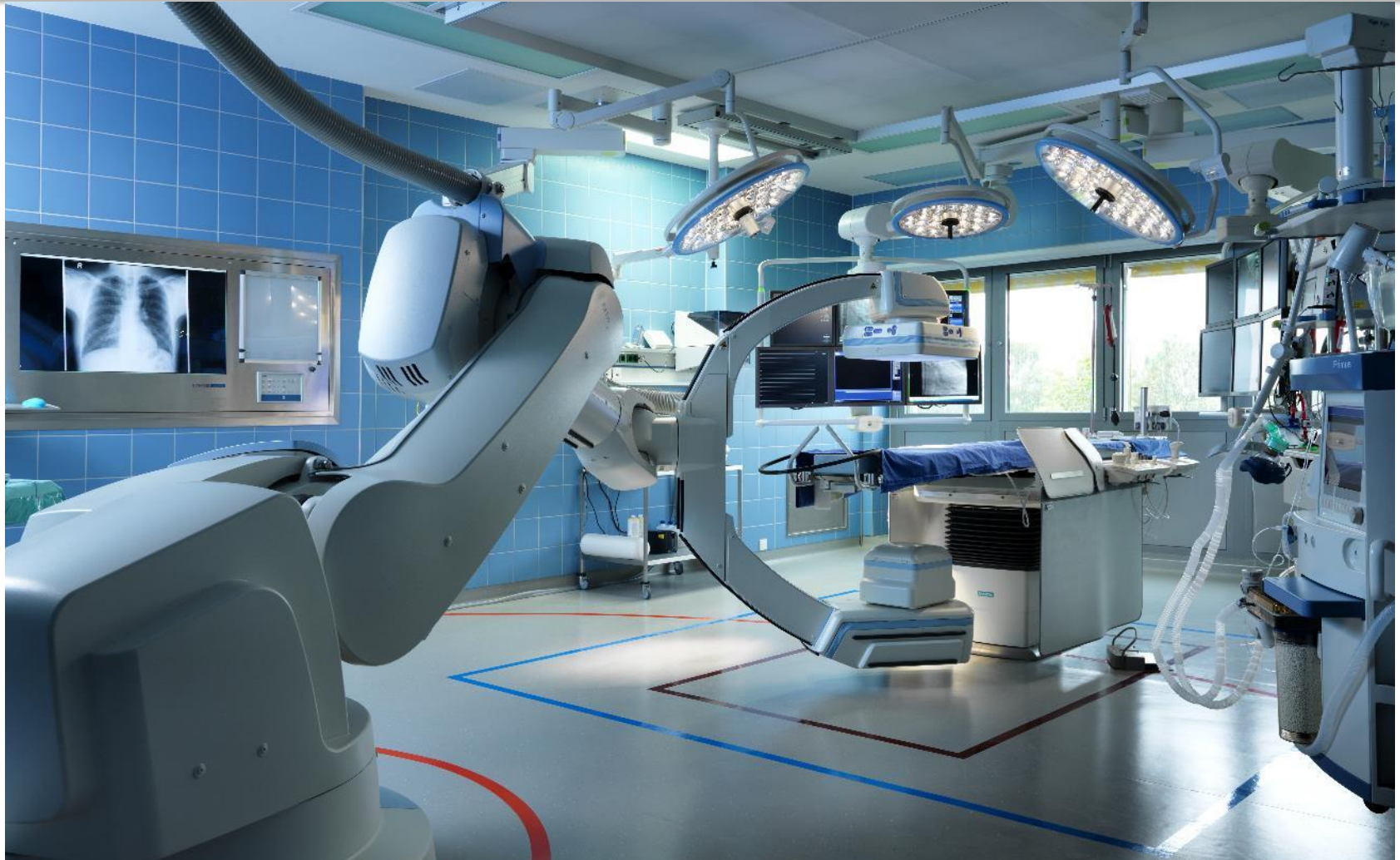
Fully vendor independent without any lock-in to medical device vendors

Minimum OR downtime with rapid deployment model

Exemplary integrated OR by S-CAPE (Switzerland)



Exemplary integrated OR by S-CAPE (Germany)



Exemplary integrated OR by S-CAPE (Austria)



Exemplary integrated OR by S-CAPE (Luxembourg)



Exemplary integrated OR by S-CAPE (Germany)



THANK YOU!

Any Questions?