



Technical data for the JST MultiConsoling[®]

Your real-time control center to connect computer, camera, TV signals etc. with monitors at the operator workstation, monitor walls or (decentralized) crisis rooms.

Making new challenges manageable!

A study has shown that almost all operator workstations are overloaded with too many monitors, sometimes even on the second level. **And the operator should still keep an eye on everything!**

With the use of MultiConsoling®, the entire control room concept can be put on a solid technical and ergonomic basis. **Monitors are reduced, everything can be seen,** display and operation remain in **real time**. MultiConsoling® and the operator remains in control!



MultiConsoling[®] "the operator's hand" is the daily tool of the operator

MultiConsoling[®] is the real-time control centre for connecting sources (computer, camera, TV signals etc.) to all monitors at the operator station and JST DisplayWalls.



- ✓ **Quick:** Real-time image display and keyboard/mouse operation
- ✓ **Safe:** Transmission without network
- ✓ **Flexible:** No additional software on your source computers, implementation immediately
- ✓ **Investment protection:** Absolutely independent of the operating system of the source computers
- ✓ **Scalable:** Display on the operator station monitors and for the entire control room team on DisplayWalls
- ✓ **Free Seating:** The operator can change the workplace within a few seconds

MultiConsoling[®] is a development by JST

Once you have got to know the fast and boundlessly flexible way of working, you will not want to miss it anymore. Only through the combination of the **hardware component "MultiCenter"** and the unique **software myGUI[®]** are all functions available for optimal control room operation.



The hardware component:

All computers are connected to the MultiCenter with keyboard, mouse, monitor and if necessary sound card. Camera and TV receivers are also connected to the MultiCenter. The MultiCenter has the MultiConsoling[®]-API to be controlled by the myGUI[®] software described below. Thus, the MultiCenter is optimally adapted to the different working methods in the control room.



The software component:

The heart of a MultiConsoling[®] plant is the graphical user interface myGUI[®]. With my-GUI[®], even the most complex control room technology is operated immediately, quickly, safely and intuitively, even by new employees.

The MultiConsoling® principle

All sources, e.g. computers, cameras, SAT receivers etc., are installed **remotely from the control room in a technical room**. Your advantage: Less heat and noise in the control room. All keyboards, mice, monitors and, if necessary, loudspeakers in the control room are converted to multiconsoles by the Multicenter. At the click of a mouse, the operators switch the remote sources to their multi-console workstations or the large display wall. Overview and operation are considerably improved. Thus all sources can be moved from place to place or even operated by several operators simultaneously. This improves communication within the team with the result that fault and alarm messages are processed faster and more successfully than ever before. Various other sources such as camera, TV and audio signals can also be interconnected. MultiConsoling® works network-free with access to the sources to be displayed and therefore highly available, secure and absolutely without loss of image and audio quality. Mouse and keyboard inputs are transmitted without delay.

An extensive rights management blocks access to sources completely or partially. The operation of third party software on sensitive sources, e.g. alarm and process computers, is in most cases not permitted for reasons of warranty and security; for this reason the myGUI® database must only be installed on a myGUI® controller.



MultiConsoling® Hardware



Grabber

Grabbers pick up the signals from the computers, cameras and TV receivers and forward them to the MultiCenter. Signal amplification up to a maximum of 140 m Cat5/6/7 cable length between the Grabber and MultiCenter. The following signals can be connected to the computer: USB mouse/keyboard, PS/2 mouse/keyboard, DVI-D monitor, DisplayPort or similar, and 3.5 mm audio jack (stereo) for speakers and microphone. Connection of the MultiCenter via RJ45 socket. Delivery incl. external power supply (+12VDC/500mA). Aluminium housing, dimensions WxHxD in mm: 105 x 26 x 104



MultiCenter

This example shows the type "MultiCenter X64", which provides 64 ports to connect grabbers (computers) and multiconsoles. The ports can be used flexibly for grabbers and multiconsole devices. The MultiCenter can be cascaded so that the number of ports can be increased.



Multikonsole

Multiconsoles are used for remote connection to the MultiCenter; max. 140 m Cat5/6/7 cable length. Connections: Audio in/out, USB mouse/keyboard, PS/2 mouse, PS/2 keyboard, DVI-I; RS232 for LED light for HI switch function. Desktop aluminium housing with internal power supply (100-240V/60-50Hz), dimensions W x H x D in mm: 210 x 44 x 210. Option: Redundant power supply via external power supply unit (+12VDC/500mA).

TECHNICAL ROOM

Grabbers (front and rear view here) capture the signals from the computers, cameras and TV receivers and transfer them to the MultiCenter.



MultiCenter X64 provides 64 ports to connect Grabbers (computers) and MultiConsoles

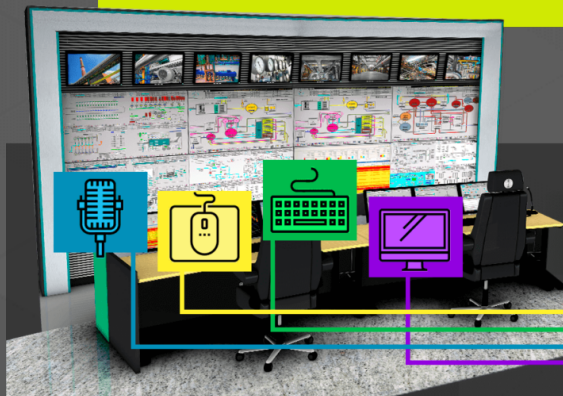


Cat5/6/7 cable up to 140m

Cat5/6/7 cable up to 140m



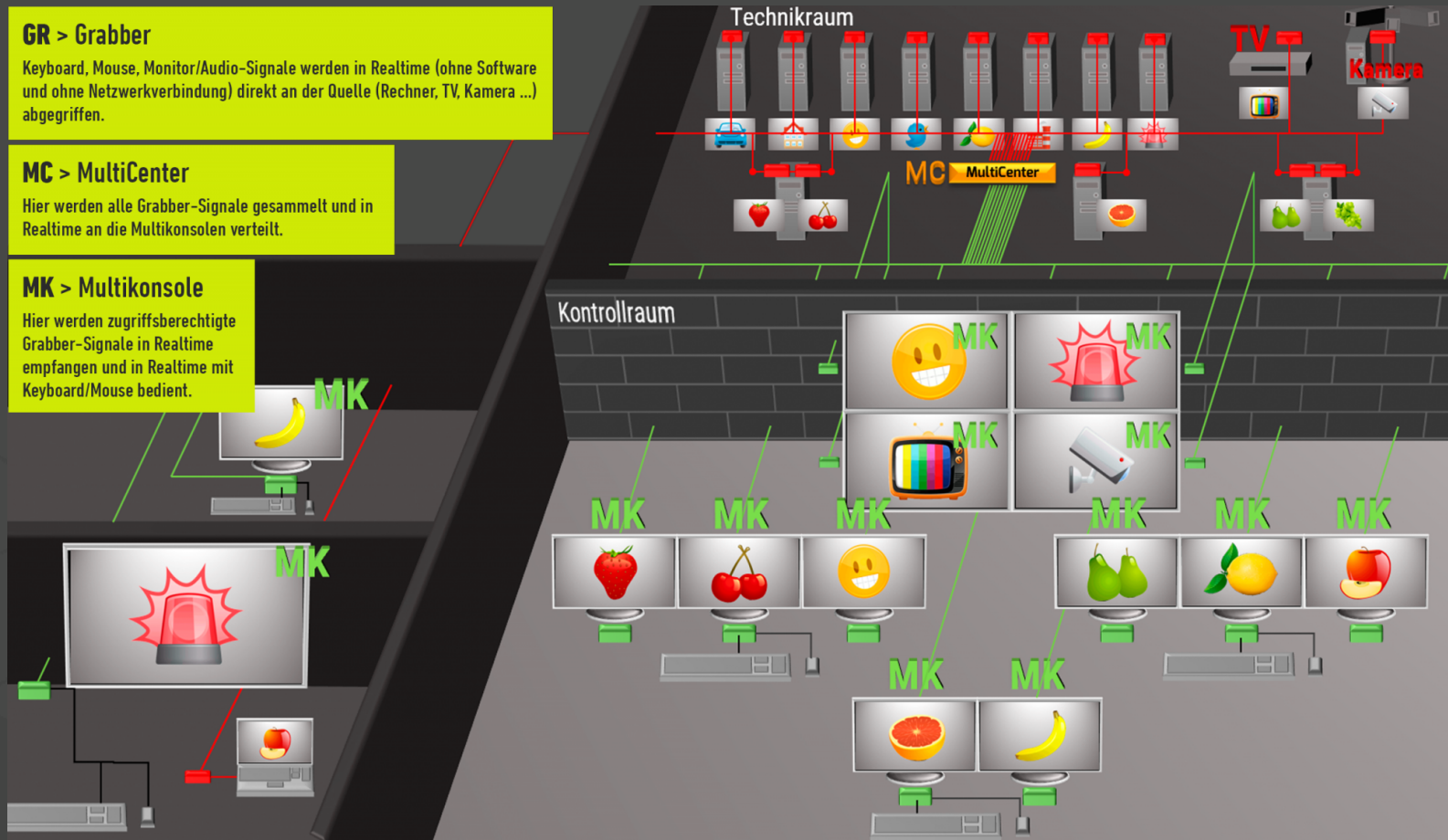
MultiConsoles (receivers) are used for the flexible connection of different sources to display walls and workplace monitors.



CONTROL ROOM

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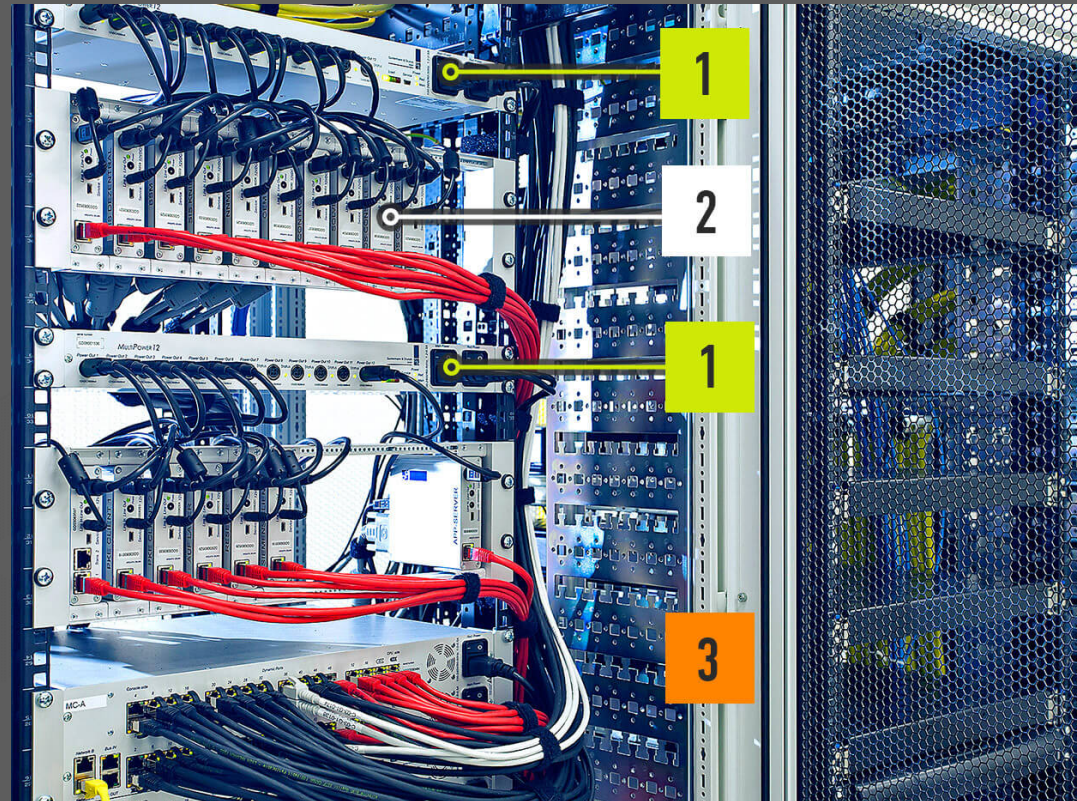
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The hardware in the technical room

- 1) Option **PowerUnit12** for space-saving 230V supply of the Grabber
- 2) **Grabber** for connecting all sources. Option: CaseMounts for 19" cabinets
- 3) **MultiCenter** for connecting all Grabbers and multiconsoles in the control room



The hardware in the technical room

Versions of the MultiCenter

- MultiCenterX16 V2: 16 Ports (19" Housing/HE)
- MultiCenterX32 V2: 32 Ports (19" Housing/1 HE)
- MultiCenterX48 V2: 48 Ports (19" Housing/2 HE)
- MultiCenterX64 V2: 64 Ports (19" Housing/2 HE)
- MultiCenterX80 V2: 80 Ports (19" Housing/2 HE)
- MultiCenterX128 V2: 128 Ports (19" Housing/3 HE)
- MultiCenterX176 V2: 176 Ports (19" Housing/4 HE)
- MultiCenterX80: 80 Ports (19" Housing/4 HE) for max. 5 pieces 16 port cards
- MultiCenterX160: 160 ports (19" Housing/6 U) for max. 10 pieces 16 port cards
- MultiCenterX288: 288 ports (19" Housing/9U) for max. 18 pieces 16 Port cards

The MultiCenter X80, X160 and X288 have additional features

- highest availability through I/O slot design
- CAT and FO transmission (FO up to 10 km) possible in mixed operation

- three fully redundant power supplies possible. 2 power supplies can fail without affecting the operation
- due to passive backplane no failure of the chassis possible

USB 2.0 Interface

Grabbers and multiconsoles with integrated USB interface are also available as an option. This allows to switch transparent USB 2.0 signals in addition to keyboard/mouse/video/audio signals.



Figure: MultiCenterX64 (left) and MultiCenterX288 (right)

The hardware in the technical room

Grabber Installation Sets

Keep the technology in your 19" cabinet tidy. Especially for larger installations it is recommended to install the many grabbers in a well organised way. Your advantage: Perfectly sorted connection cables and a clear and optimised power supply.

1. CaseMount: To install the grabbers, mounting brackets, so-called CaseMounts, are required, s. Fig. on the right.

2. In turn, 19" frames, so-called rack cases, are required to install the CaseMounts. The rack cases are available in different sizes:

- **Case2:** Height 1 HE, for horizontal mounting of 2 grabbers side by side
- **Case3:** Height 1 HE, for horizontal mounting of 3 grabbers side by side
- **Case12:** Height 3 HE, for vertical mounting of 12 grabbers side by side, see fig. on the right

3. PowerUnit12: 230 V power supply unit in redundant design for connecting up to 12 grabbers. This means that all power supplies of the grabbers can be omitted for a clear installation. Only two 230V sockets (including product features

1 x redundancy). Delivery with 19" rackmount kit/1HE. There are 12 pieces of power loop cable in 1 metre length and 19" mounting bracket included loop cable in 1 metre length and 19" mounting bracket included.

*a console consists of mouse/keyboard/monitor/audio



Figure: 1 x Rack-Case, 12 x CaseMount (1 piece per Grabber) (left) and PowerUnit12 for Grabber (right)

The operation

myGUI® is the user interface and an integral part of the **MultiConsoling®**. All consoles* of the workstations and the large display wall are displayed on the myGUI® as "control room picture". Each operator can call up his own individual control room images.

On the far left of the myGUI® are folders (see figure), which can be used to sort the **sources by groups**. On the right side you will find icons that symbolise your sources. You determine the appearance of the icons yourself. Now drag an icon onto a multi-console = MK (large screen display or monitor at work) and the source is actually on the display and can be operated in real time.

*a console consists of mouse/keyboard/monitor/audio



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The operation

To enlarge important events, drag an icon onto the magnifying glass.
Nun erscheint die Quelle als BigPicture, Now the source appears as BigPicture, i.e. across frames, on all four large-screen displays. The prerequisite for the BigPicture function is that JST displays are used that have an MC-API.

The myGUI® has been developed by JST in several years of work and support of many operators. The main focus was always on intuitive operation, because stressful situations often lead to operating errors.

*a console consists of mouse/keyboard/monitor/audio



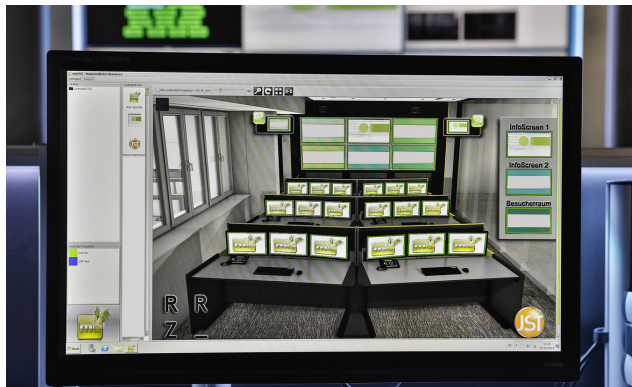
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The operation

The control room images of the myGUI® user interface are an image of your current room situation. Only in this way is intuitive and self-explanatory operation possible. Please see the examples.



Multiconsoling® Software myGUI®



Virtual Control Room

The control room is reconstructed in photo-realistic 3D view with all multiconsoles, the current operator position and the display wall, if in use. This virtual control room forms the basis for intuitive operation. Any number of control room views can be called up via tabs.



Easy-Using

Each source is displayed as an icon. All source icons can also be read in by the client himself in case of later changes. The sources are switched to the multiconsole by drag & drop with the mouse. Multiconsoles can also be copied or moved to multiconsoles.



BigPicture

By mouse click it is possible to display a computer image on large screen walls with 4 displays (2x2 arrangement) or 9 displays (3x3 arrangement) across frames. Only JST displays with a MultiConsoling® API can be used for this function.



Don`t-Disturb

Operators can temporarily lock any multiconsoles for **undisturbed work**. It is then not possible for other operators to switch computers to these multiconsoles.



Blocked-PC

Operators can temporarily reserve one or more computers **for sole access**. Access to these computers is then blocked for other operators.



Pooling-Funktion

In order to **minimise the number of computers**, it is possible for many operators to take turns connecting to a few computers.

Example: Five operators share two Office computers, as a maximum of only two operators need an Office application (e-mail, Internet, ...) at the same time. The pooling function now detects before switching on whether a computer is already in operation. To ensure that only one operator can work on only one computer, only free computers are connected for data protection reasons.



E-Mail-Versand

In order to transmit information as quickly as possible in the event of critical alarms, the operator can use one or more e-mail icons in the console user interface to send pre-defined e-mails with a click. For each e-mail, the recipients, texts and file attachments are prepared according to the alarm situation.



SOS-Funktion

In order to inform all persons quickly and simultaneously in case of critical alarms, pre-defined SOS messages can be sent at the click of a mouse to all workstation monitors and large-screen displays integrated into the console system. For reasons of compatibility and security, the SOS message is displayed **independently of the client's network and software**. To ensure that the SOS message is perceived in any case, the monitor content is overlaid with a colour-highlighted text bar.



Grafik-Controller-Integration

Integration in a large screen system with activation of a JST graphic controller.



Profiles

A **complex rights management system** ensures secure access protection. For a simplified administration the rights management can communicate with an active directory database.



Reporting

A log function logs all actions that are performed in myGUI®.



myActions

Previously defined scenarios are called up with just one mouse click.

Example: You switch computer "A" to large-screen display "1", camera "Z" to large-screen display "2" and computer "B" to monitor "7" at the workstation. If this display occurs frequently, it is saved as myAction. Any number of myActions can be saved. This is also possible time-controlled (option). For large-screen displays, ON/OFF function, source change etc. can be controlled; only JST displays with a MultiConsoling® API can be used for this function.



HI-Switching

For example, the mouse and keyboard can be moved from the workstation to the large screen wall in order to make direct entries there. Thus it is also possible that many employees work simultaneously on one computer to support teamwork and the transfer of know-how.



Optimized Touch

myGUI[®] is optimised for accurate and safe **touchscreen operation.**

MultiConsoling[®] Hardware

of the MultiCenter

Keyboard/DVI-D video/VGA video/mouse/audio/RS232/USB2.0 switch

Flexibility: Ports can be used either for computer or multiconsole

Extension: Ports can be increased by cascading the MultiCenter.

Control: Interface for secure and comfortable myGUI[®] operation.

High transmission range: Cat5/6/7 cable length to computer max. 140 m, to multi-console max. 140 m. When using fibre optic cable up to 10,000 m.

High Performance: All signals in real-time transmission.

High Quality:

- DVI resolution up to 1920 x 1200 @ 60Hz/24 bit colour depth
- Display port resolution up to 2560 x 1600 (2K) @ 60Hz/24 bit colour depth
- Display port resolution up to 4096 x 2160 (4K) @ 30Hz/24 bit colour depth

High Quality: Audio Stereo 24 Bit Digital speaker and microphone.

Compatibility: Computer connection independent from network and operating system.

Stay Alive: If the MultiCenter is switched off or fails, the computers remain unaffected.

Auto Acknowledge: Added components are automatically detected and installed.

Hot Plug & Play: Remote computers can be reconnected without rebooting.

Safety: Redundant network and power connection. Faults are sent as SNMP traps.

Miscellaneous: Voltage 100 – 240V/60-50Hz for MultiCenter and MultiConsole, +12VDC / 500 mA for grabber and redundant power of MultiConsole, operating conditions +5 to +45 °C

There are many good reasons for using MultiConsoling®!

Improvement of the working environment

The computers can be connected at a distance of up to **280 metres** without any loss of performance or quality; in conjunction with our fibre optic transmission systems they can even be connected **at a distance of up to 10,000 metres**. By outsourcing the computers, less heat and noise is generated in the control room; you also gain more space under the operator desks. The computers are installed in the remote **technical room** and are thus protected **against unauthorised access and air-conditioned**. At the same time, they increase security because USB sticks can no longer be used in the control room (viruses, data theft ...).

Free Seating

Since any computer can be brought to any multiconsole, any operator can flexibly switch to any workstation that has a multiconsole.

Know-How-Transfer

Due to the display on the large display wall and the simultaneous mouse and keyboard access of several operators to the multiconsoles of the large display wall or the workstations, know-how is transferred unexpectedly (training on the job) among the employees.

Communication diversity

Even outside the control room there are various places where important information is not within reach or cannot be displayed. With MultiConsoling® this is no longer a problem. If necessary, also equip supervisors, engineers or system administrators with a multiconsole. Crisis management, meeting or training rooms can also be equipped with a multiconsole.

The KIS principle

KIS stands for **Keep It Simple**. Operation and configuration of the MultiConsoling[®] system is extremely simple. The system is based on a hardware solution in which only keyboard/mouse/monitor/audio interfaces are wired (plug & play). **No software has to be installed on the computers connected to the MultiCenter!** They are therefore independent of operating systems and are absolutely compatible even in a heterogeneous computer environment, over several computer generations. The myGUI[®] software is only installed on one host computer.

Highest availability

Only keyboard/mouse/monitor/audio signals, not TCP/IP packets, are transmitted to the remote computers via your CAT 5/6/7 in-house cabling. Therefore **no load on your network, highest operational stability, no performance losses and perfect picture quality**. Only the operating clients, the host computer and the MultiCenter each receive an IP address in order to communicate with each other via network. In the event of a network failure, the MultiConsoling[®] system can be temporarily operated without myGUI[®]. Operation would then take place via hotkeys, which would be looped through directly from the multiconsole to the MultiCenter.

More freedom

With the optional HI-Switch (**Keyboard/Mouse switching**) you only need one mouse and one keyboard to switch to different monitors. This gives you the feeling of tidiness and creates free space on the table.

The variety of possible areas of application

MultiConsoling[®] allows access right into the BIOS (system level) of the computers even in the event of a network failure. For this reason, this system can also be used excellently for the work of your system administrators, for example to remotely maintain entire server landscapes.

System requirements

myGUI[®]-Host

If a myGUI[®] controller is not included in the scope of the order, a computer with the following **minimum equipment** is required: Intel i7 Core 2nd generation, 4 GB main memory, 20 GB, hard disk space, a graphics card that supports a resolution up to 1920×1080 pixels.

Operating system: Windows Server 2008 R2 Standard or 2012 R2 Standard. Windows 7 from Version Professional or Windows 10 from Professional. Both 32 bit and 64 bit versions are supported. The basic installation as well as the MUI (user language) of the operating system must be executed in German or English.

The myGUI host is installed on the aforementioned computer. The myGUI host component is protected by a software licence. It is possible to install a virtual server if it can be connected to the JST control network.

myGUI[®]-Web

myGUI[®]-Web user interface is a web application that supports the following browsers: Microsoft Internet Explorer from version 11, Mozilla Firefox from version 45, Opera from version 24, Safari from version 534.57.2, Mobile Safari from IOS 7 and Google Chrome from version 37. There are several options for installation and the operating concept, which are shown in detail during the course of the project – depending on the respective requirements.

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Mouse-Bedienung



Touch-Bedienung



Zeitgesteuert



CommandPad



Sprach-Steuerung



Alarmer *

*Automatisiert durch Alarmer (z.B. PixelDetection®, Traps, I/O Kontakte, externen Alarm-Tools)

Kontrollraum mit dem JST-Equipment

Displays¹⁾, MultiCenter, Multikonsolen, Grabber, myGUI-Controller, ComandBoxen ab V. 3, Redundanz-/Backup-Modulen, weitere Geräte, kundenseitig vorhanden⁴⁾



JST Services
KEEP THE SYSTEMS RUNNING

Aktionen von JST-Service
welche im Vorfeld
abgestimmt
wurden.

Proxy-Server von JST
Monitoring: PSM empfängt
Daten, interpretiert diese und
löst - wenn nötig - Aktionen
beim JST Service aus



myGUI-Bediensoftware mit serienmäßig integriertem PSM-Modul³⁾ steht mit allen Geräten in Verbindung und empfängt Statusinformationen.



PSM

PRO AKTIVES SYSTEM MONITORING



PSM-Modul sendet Status- und Diagnosedaten der Geräte



Proxy-Server kundenseitig
nötig/vorhanden



PSM / Proactive System Monitoring

Have your complete control room technology monitored by a professional.

With the PSM system we proactively monitor your control room technology. We detect defects, irregularities and wear and tear before a fault occurs and initiate the necessary measures.

1) Possible with most displays due to the design.
2) Must be integrated individually – option with extra charge. 3) Available from myGUI version 3.0, Rev. 1.350 4) If no data transfer to JST is desired, the PSM server can also be installed locally on the customer's "premises". The monitoring is then carried out by the customer.

A well-coordinated team: The hardware and software solutions from JST



MultiConsoling®

The unique workstation and DisplayWall control.



CockpitView

The summary of various computers on only one large screen wall or monitor. MultiConsoling® is the basis for CockpitView.



PixelDetection®

The event-controlled activation of computers that display an alarm.

An alles denken!

Jungmann Systemtechnik



Do you have any questions?

We are happy to advise you:

0800 / 777 8 666

Or send us a [message to \(kontakt@jst.ag\)](mailto:kontakt@jst.ag), we will get back to you immediately!

www.jungmann.de

We reserve the right to make changes to technical data, programming, functions and designs in the interest of technical progress without prior notice