



THE STRONGEST LINK.



# OPERATING AND MONITORING IN THE PROCESS INDUSTRY

For hazardous and industrial areas



## HMIs FOR ALL AREAS

Our aim is to provide the optimum HMI with the right technology for every type of application. The new ORCA device platform has been designed for indoor and protected outdoor areas, and the SHARK device platform for challenging outdoor areas. Together with our tablet PCs, Thin Clients, 55" shopfloor screens and software solutions our portfolio comprises a full range of HMIs for all hazardous areas in the process industry.

Thanks to this wide variety you can find the right solution for any type of HMI requirement in hazardous areas.

In the rare case that your requirements are not met by our standard portfolio, we can develop customised solutions and new product versions according to your needs.



### INDOOR AND PROTECTED OUTDOOR SOLUTIONS

- Modular, cyber-secure ORCA HMIs with sustainable design for Zone 1, 2, 21, 22
- Smooth integration in PLT MES and PLC
- GMP and cleanroom compliant
- Complete solutions with tablets, smartphones, WiFi and service packages

**PAGE 4**



### OUTDOOR SOLUTIONS

- Shock-resistant, seawater-proof SHARK HMIs for Zone 1, 2, 21, 22
- Fail-safe 24/7 operation in all types of harsh environments
- Also in extreme temperatures ranging from -40°C to +65°C

**PAGE 8**



### HMI<sub>s</sub> FOR MACHINES

- Internationally certified ORCA panel-mount devices for machine operation in Zone 1, 2, 21, 22
- Easy integration with direct PLC connection
- Temperature range from -20 °C to +55 °C

**PAGE 10**



### MOBILE SOLUTIONS FOR ANY PLANT

- Complete mobile worker concepts with tablets, smartphones and WiFi network structure
- Versatile solutions for Zone 1, 2, 21, 22
- Partner concepts for 5G and LTE
- Flexible kit of components

**PAGE 12**



### NEW PRODUCTS

- New pressurized 55" HMI for shop floor monitoring (Zones 1, 2 and 22)
- New generation of box PCs / Thin Clients for integrated HMI concepts
- Windows 11 IoT Enterprise LTSC with Security Updates until 2034

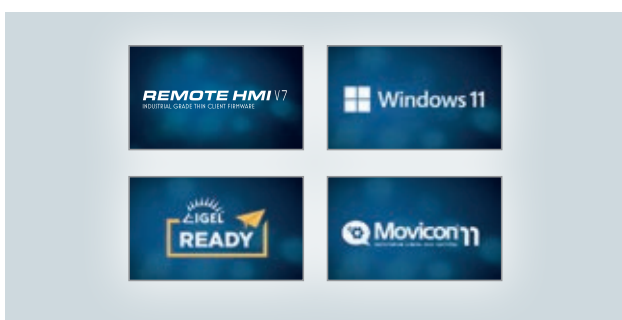
**PAGE 14**



### CUSTOMISED SOLUTIONS AND ACCESSORIES

- Customised solutions tailored to your requirements.
- Wide range of supplements and accessories
- Individual HMI designs possible where technically feasible

**PAGE 15**



### SOFTWARE SOLUTIONS

- Software solutions for any requirement and any application
- Thin Clients: REMOTE HMI V7, IGEL OS, PXE Boot, Thin Manager
- Machine operation: MOVICON 11

**PAGE 18**

# ORCA – MODULAR HMIs INDOOR AND PROTECTED OUTDOOR

The explosion-protected ORCA HMIs are universally applicable and compatible with all major process automation, MES and PLC systems. Future-proof, modular and with sustainable design – available in sizes 22", 15" and 12"

The latest generation ORCA HMIs have a modular design. The Electronics Box (E-Box) and the

display box (D-Box) are two separate modules which are connected via a cableless click-fit system – „Easy Connect“.

This modular concept turns the ORCA into something more than an HMI: a technological system with replacements, upgrades and easy maintenance possible for at least the next 15 years.



## MODULAR DESIGN

- ELEKTRONIKS AND DISPLAY BOX
- EASY CONNECT CLICK-FIT SYSTEM
- EASY UPGRADE OF DISPLAY AND ELECTRONICS BOX
- FAST MODULE REPLACEMENT

## ORCA HIGHLIGHTS

Modular design consisting of electronics box and display box

Low maintenance and upgradeable

Sophisticated product design down to the last detail, sustainable design

Robust 22", 15" and 12" multi-touch displays with anti-glare glass

Wide variety of accessories

Platform future-proof for at least 15 years

Cyber-secure connection with REMOTE HMI firmware

GMP and cleanroom compliant

Integrated RFID/NFC reader

Worldwide certifications



### TECHBOX

**Application:** INDOOR AND PROTECTED OUTDOOR in production facilities

**Explosion protection:** Zone 1, 2, 21, 22 / Division Class II, Div 1 and 2, Class III, Class I Zone 1 / Div 2

**Areas of application:** Global (IECEX), EU (CE / ATEX), USA (NEC / FCC), Canada (CE-Code / ICES), India (BIS / PESO), Japan (JPNEEx), Korea (KCC / KCS), China (CCC / CNEx), Australia (RCM), Marine / onboard ships (DNV / ABS)

**Temperature range:** -20 °C ... +50 °C

## DUAL MONITOR ORCA – THE HIGH-END CONTROL STATION

Visualising MES and ERP simultaneously on both screens and operating them with only one keyboard – our new DUAL MONITOR ORCA features a great variety of monitoring solutions.

Use the integrated card readers for fast authentica-

tion and the Bluetooth or wired barcode scanners for exact weighing according to the recipe. Our dual monitor solutions can be used in multi-client operation or in keyboard / mouse sharing mode. The crucial point is: the user has everything under control on site.

Maximum amount of information directly on site

Process control screen remains visible under the REMOTE HMI menu bar

Capacitive multi-touch display that can be operated with gloved fingers

Also possible as direct monitor (see illustration)

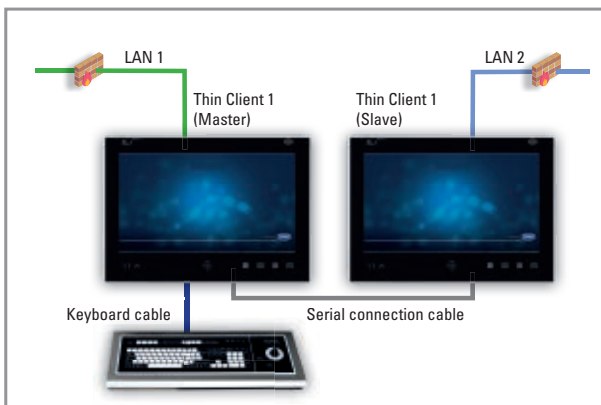
Multi-monitoring

Integrated RFID/NFC reader

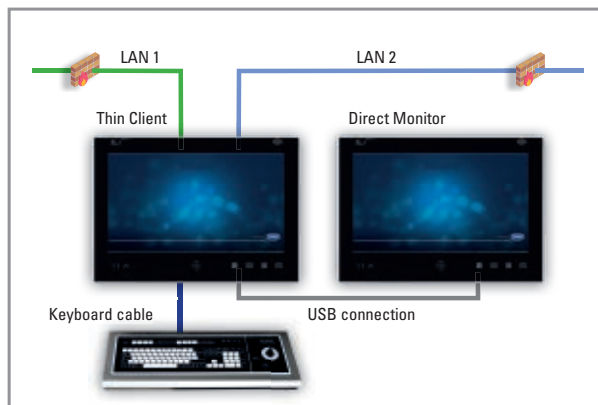
Dual monitor enclosure, one keyboard for both systems



## Keyboard and mouse sharing



## Multi-monitor method



Two Thin Clients with serial connection or full multi-monitoring – we can do both.



### TECHBOX

- ORCA dual monitor solutions, horizontal or vertical
- Operated with one keyboard
- Multi-client operation or operation with keyboard and mouse sharing
- Cyber-secure with integrated REMOTE HMI firmware

# SHARK OUTDOOR SOLUTIONS FOR EXTREME ENVIRONMENTS

Our shock-resistant, IP66-certified SHARKs are extremely rugged and have been developed for outdoor areas and harsh environments. They guarantee fails-safe, reliable operation 24/7 – even in extreme temperatures ranging from -40 °C to +65 °C.

Equipped with the innovative, sunlight-readable multi-touch display and WiFi and Bluetooth functionality, the SHARKs are the leading HMIs for hazardous, extreme areas.

Foldable sun shade

Camera for user authentication (optional)

Multi-touch screen (PCAP) under non-reflective glass

21.5" Full HD, 1920 x 1080  
15" Full HD, 1024 x 768

Salt and seawater-resistant enclosure

Shock (25 g) and vibration-proof (5 g)

Capacitive function keys

RFID card reader



## TECHBOX

**Application:** DRILLING RIGS AND UNPROTECTED OUTDOOR areas

**Explosion protection:** Zone 1, 2, 21, 22

Divisions: Class I, Zone 1 / Class I, Zone 2 / Class II, Div 2 / Class III

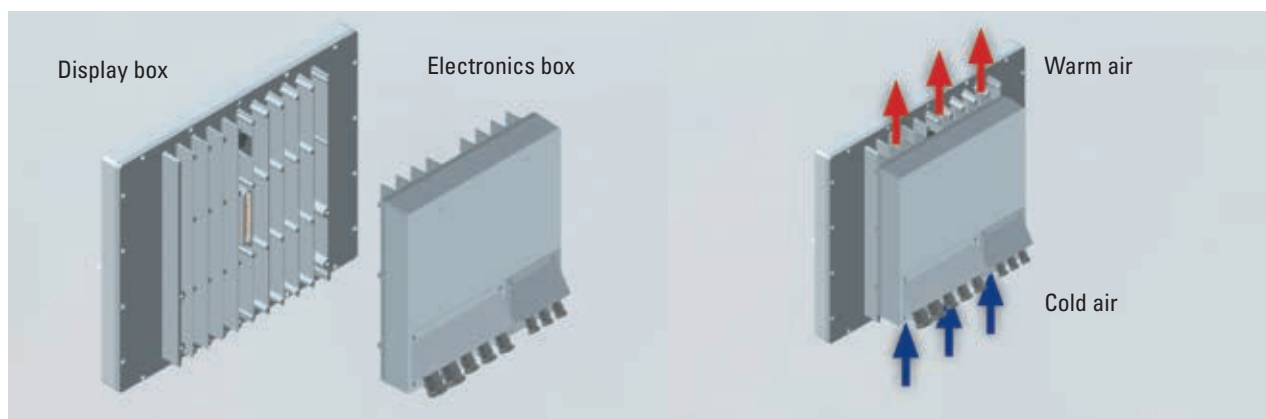
**Areas of application:** Global (IECEX), EU (CE / ATEX), USA (NEC / FCC), Canada (CE-Code / ICES), India (BIS / PESO), Korea (KCC / KCS), China (CCC / CNEx), Australia (VAE (ECAS)), Marine/ ship certification (DNV / ABS)

**Temperature range** -40 °C ... +65 °C

## SHARK-HMIs – MODULAR AND WITH COOLING EFFECT

In order to make them resistant to extreme ambient conditions, the display unit and the electronics unit are housed in two separate boxes. The airflow between the two boxes helps cooling them, and this

stack effect ensures the fail-safe permanent operation of the SHARK HMIs. A heating system can be installed as a further option.



## DETAIL SOLUTIONS FOR THE OIL AND GAS INDUSTRY

The 15" SHARK HMIs are ideal for small or mobile applications on drilling rigs. They are shock-resistant, highly weatherproof and, with the exception of the RFID module, have the same features as the 21.5

SHARK HMIs. All SHARK devices have in common that they can operate in extreme temperatures ranging from  $-40\text{ }^{\circ}\text{C}$  to  $+65\text{ }^{\circ}\text{C}$  and integrate state-of-the-art technology.



Mobile Rigfloor PC



Wall-mounted SHARK PC



WiFi, Bluetooth antenna



Drilling rig stand



Integration of camera images possible



Control LEDs



RFID



## SOLUTIONS FOR MACHINE OPERATION

We have developed the modular ORCA Panel PC and Thin Client panel-mount devices with 12", 15" and 22" screens for the operation of machines and systems in hazardous areas Zone 1, 2, 21 and 22 as well as Class I Division 2. Typically, they are connected with PLC systems.

Highlights include widescreen displays with touchscreens behind glass. They are GMP and clean-room compliant and meet the requirements

of EU-GAMP as well as FDA 21 CFR part 11. As a further option, they can be equipped with RFID or barcode readers.

In addition, they are available as complete turnkey solutions with MOVICON 11. Alternatively they can be configured as Panel PC with Windows LTSC (for the installation of any software), or as kiosk system with our REMOTE HMI firmware.



### ORCA ELECTRONICS AND DISPLAY BOXES

The ORCA HMI portfolio comprises two different E boxes with Intel® Atom™ or Core™ i5 processors, making every system as powerful and efficient as your application requires.

These can be combined with three different D boxes. You can choose from high-resolutions multi-touch 12", 15" or 22" displays. The ORCA devices have been designed for total flexibility.

On request, we also provide extended Service Level Agreements with module replacement and with terms of up to five years in order to minimise fail risk and down time.

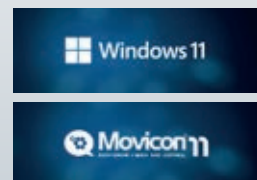
## ORCA HMIS – PANEL-MOUNT DEVICES

Cleanroom-compliant for installation worldwide in various temperature ranges, the ORCA panel-mount devices also have a modular design. The stack effect between display box and electronics box ensures

a cooling airflow and thus constant operation 24/7. Data transmission via Ethernet (copper up to 100 m) or FO up to 10,000 m (FO SX up to 500 m / LX up to 10,000 m).



ORCA screen sizes 22", 15" and 12"



### TECHBOX

- GMP AND CLEANROOM-COMPLIANT, EU-GAMP, FDA 21 part 11, optional RFID and/or barcode reader
- Also available as fully pre-configured turnkey solution with MOVICON 11
- Alternatively as Panel PC with Windows LTSC and any software or as kiosk system with our Remote HMI firmware.
- **Explosion protection:** Zones: 1, 2, 21, 22; Division Class I, Zone 1 / Division 2; Class II, Division 1 and 2; Class III
- **Area of application:**
- Global (IECEX), EU (CE / ATEX), USA (NEC / FCC), Canada (CE-Code / ICES), India (BIS / PESO), China (CCC / CNEEx), Japan (JPNEEx), Korea (KCC / KCS), Australia (RCM), Marine / ship certificates (DNV, ABS)
- **Temperature range:** -20 °C ... +55 °C



## MOBILE SOLUTIONS

We have developed our Mobile Worker concepts for real-time access to operating data, inspection logs and maintenance systems. All our mobile devices are resistant to flammable gases, high humidity, vibrations and extreme temperatures.

The shortage of skilled labour can be partly compensated for by individually tailored Mobile Worker concepts. They help you to increase safety for people and machines, improve the quality of your processes and fulfil your documentation obligations, while reducing costs at the same time.



## MOBILE SOLUTIONS FOR PRODUCTION AND MAINTENANCE

Our focus is not on the tablets themselves, but on finding a solution. We develop individual mobile worker plans for every type of facility.

Our products range from simple mobile phones and tablets to smartphones featuring the latest in 5G technology. Our portfolio also comprises WiFi products, software and individual services.



### 10" TABLET-SET FOR ZONE 1, 21

- 8 GB RAM, 128 GB internal, SSD <128 GB.
- Powerful, exchangeable battery
- Programmable keys for SOS / lone worker protection, etc.



### 6" SMARTPHONE SET FOR ZONE 1, 2

- 5G / WiFi 6 smartphone.
- Powerful 8 GB memory
- 48 MP camera
- Exchangeable battery



### 11.6" TABLET FOR ZONE 2, 22

- With Windows LTSC operating system
- Luminous display with 1200 cd/m<sup>2</sup>
- Thunderbolt 4, WiFi 6, Bluetooth 5.3.



### CUSTOMISED WIFI SOLUTIONS

- Planning, expanding and optimising your WiFi network in Zone 1, 2, 21, 22
- Your partner for LTE and 5G
- Flexible components kit for any requirement



## NEW PRODUCTS



55"

### SHOPFLOOR MONITORS

- For production planning and GMP-compliant workflows
- 55" displays, MES integration possible
- As direct monitor or Thin Client
- For hazardous areas Zone 1, 2 and 22



### BOX PC

- Box PCs or Box Thin Clients for integrated concepts from Zone 1 / 2 to the control room
- Modern, powerful box PCs with the latest processors for safe industrial areas
- Fast data processing and smooth image display



### WINDOWS® 11 IOT ENTERPRISE LTSC

- 10 years of security updates after release, no feature updates
- Greater security due to TPM 2.0 and forced secure boot
- Enhanced performance with optimised update processes and
- More efficient management of company resources
- Modern user interface
- Efficient, automated operation with AI integration



## TAILOR-MADE SOLUTIONS

Our considerable expertise enables us to provide an optimal HMI for any type of application.

Below is a selection of our customised solutions.



Mobile Solution



Dual monitors vertical



Top connect solution



VESA mounting



Wall-mounted solution



Special paint finish



Rotatable housing

# HMI ACCESSORIES

An ideal HMI meets all requirements of its specific environment.

Our portfolio includes a wide range of accessories to fulfil this aim.



Barcode scanner



RFID card reader



Keyboard with trackball



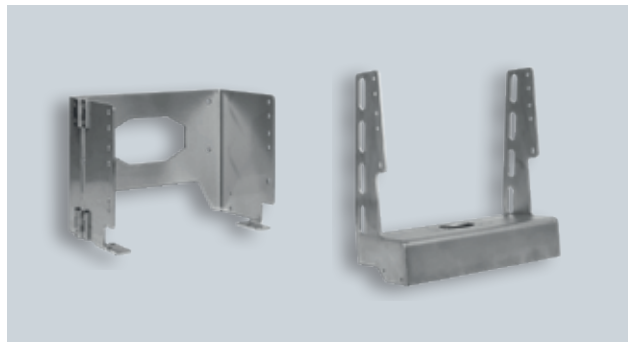
Keyboard with joystick



miniCON Ex plug connector



Secure stand with casters



SHARK wall mounts



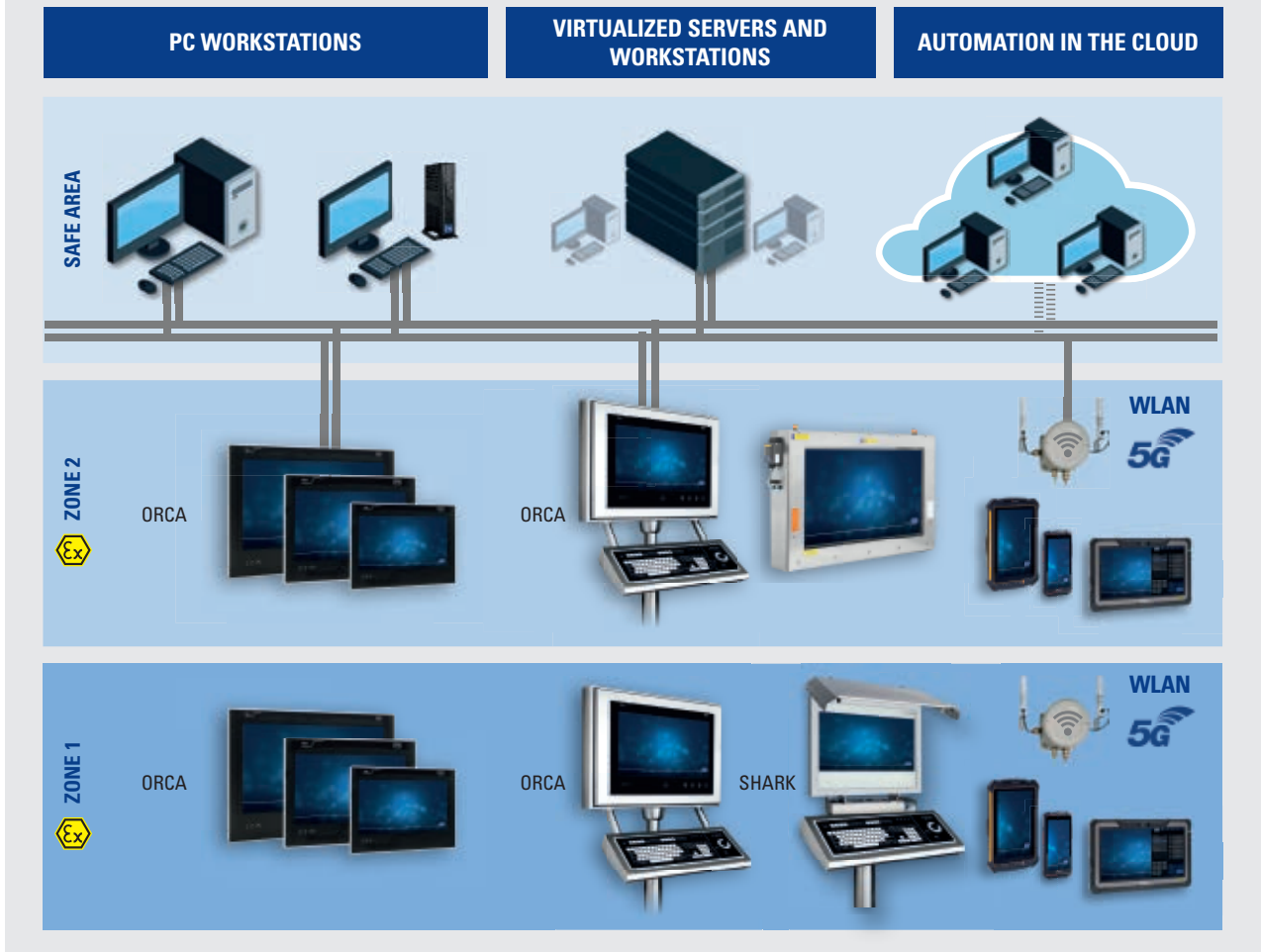
ORCA stand for floor and ceiling mount



ORCA wall mount (top and bottom)

# OVERVIEW OF HMIs AND MOBILE DEVICES

## INTEGRATION OF R. STAHL HMIs INTO MODERN NETWORKS



## HARDWARE / SOFTWARE SUPPORT



### R. STAHL HMI EXPERT ADVICE

sales.dehm@r-stahl.com  
Tel. +49 221 76806 1200



### R. STAHL HMI SUPPORT CENTRE

support.dehm@r-stahl.com  
Tel. +49 221 76806 5000



### HMI PRODUCT FINDER

<https://r-stahl.com/en/global/hmi-finder-ex-no-ex-explosion-protection-r-stahl/>



### ORCA WEB OVERVIEW

<https://r-stahl.com/en/global/systems/automation-system-solutions/hmi-orca-operating-interfaces/>

# REMOTE HMI FIRMWARE – OUR PROPRIETARY SOFTWARE

We have designed the Remote HMI firmware as a closed system, based on the Microsoft Windows® 10/11 IoT Enterprise LTSC operating system. This means that the firmware is highly secure, easy to use and extremely reliable.

Many soft-PLC systems already contain visualisation components which can be displayed with HTML5 browsers.

For these applications we recommend the Pro version of our REMOTE HMI firmware, as it can easily parameterise the browser contained in the image, running it securely in kiosk mode.

In addition to our Remote HMI we also offer the Remote Device Manager for a particularly easy integration and deployment of further network participants.



SECURE  
SIMPLE  
RELIABLE

## REMOTE HMI Overview

- Closed system
- Based on Windows® IoT Enterprise LTSC
- Individual security concepts
- Intuitive operation
- Simplified display

## REMOTE HMI in detail

- Integrated HTML5 browser
- Display and operation of IP camera images
- Keyboard & mouse sharing
- Permanent SSD status monitoring
- Direct support function via QR code
- Portrait mode, fluid design and much more

## REMOTE DEVICE Manager – Addition to REMOTE HMI

- For the administration and maintenance of Thin Clients from the control room.
- The same parameterisation as on the local Client.
- Simple Deploy function for transfer of settings to other Thin Clients.

**REMOTE HMI** V7  
INDUSTRIAL GRADE THIN CLIENT FIRMWARE

## INDUSTRIAL GRADE TURNKEY SOLUTIONS FOR INDUSTRIAL FACILITIES

Modern Thin Clients have become the number one choice for the operation of distributed control systems. For these, we have developed our Remote HMI firmware specifically for the process industry as an intuitive, highly secure and extremely reliable software.

Alternatively, our HMIs can be operated with IGEL OS – our products are IGEL READY – or configured with PXE Boot for the ThinManager®. Our HMI software experts will support you with commissioning and answer any questions you might have regarding software.



PXE Boot/Thinmanager®



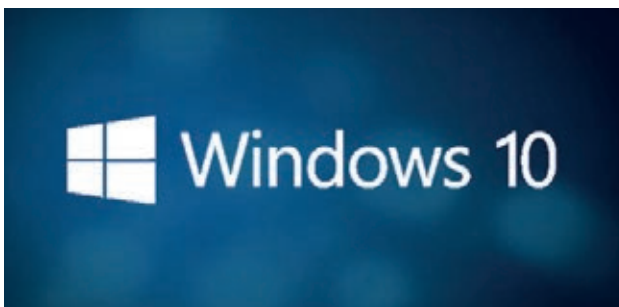
IGEL OS®

### IGEL® OS – SPECIALLY DEVELOPED FOR CLOUD WORKSPACES

Our ORCA and SHARK device platforms are IGEL®-READY, meaning they were verified for full integrity with the IGEL OS by both IGEL® and R. STAHL. The IGEL® OS has been specially developed for Cloud services and for access to virtual environments. It supports a great number of the latest remote display protocols and technology integrations. IGEL® OS is based on a particularly secure Linux distribution, which thanks to its minimal

vulnerability provides maximum protection against malware. Two-factor authentication and trusted execution are part of the standard range.

Also, as a Linux-based operating system, IGEL® OS is practically manipulation-proof and extremely secure against viruses and other malware.



Windows® 10 IoT Enterprise LTSC 2021 will be supported with security updates until 2031.



Windows® 11 IoT Enterprise LTSC 2024 will be supported with security updates until 2034.

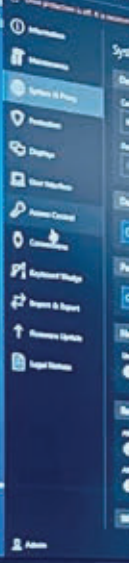
### WINDOWS® 10- / WINDOWS 11 IOT ENTERPRISE LTSC

On request, R. STAHL will support customers with the configuration of their Panel PCs with the most secure Windows system to date. Windows® 10/11 Enterprise LTSC is ideal for applications in larger companies. Via DirectAccess, the operating system enables users easy and secure connection to internal company networks.

When it comes to security, Windows® 10/11 IoT Enterprise LTSC also raises the bar: The integrated Windows® Defender features many additional functions, providing even more effective protection from threats. Also, users can be granted access to specific applications even more precisely. This increases overall company security and productivity.



REMOTE H  
Industrial-grade Thin Client F



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