# BEETLE /moPOS

## Product Description

**WINCOR NIXDORF**

EXPERIENCE MEETS VISION.

## Content

## Introduction

Internet-enabled devices such as smartphones and tablets have revolutionized our everyday lives. The access to information at any time changed also the way we shop and buy goods. As part of the omni-channel / seamless retailing approach retailers are have the needs to improve their customer engagement and the shopping experience. Whereby various use cases are in the focus of retailers, as there are:

1.) A mobile information terminal for customer facing services (product information, store guide…) or store administration tasks (reports, ordering, inventory…).

2.) A mobile sales terminal for queue busting and checkout purposes incl. mobile "cashless" payments.

3.) An advanced mobile POS system that can also be used as a stationary POS system supporting the classical POS peripheral devices such as cash drawer, receipt printer, customer display, checkout scale, EFT terminal etc.
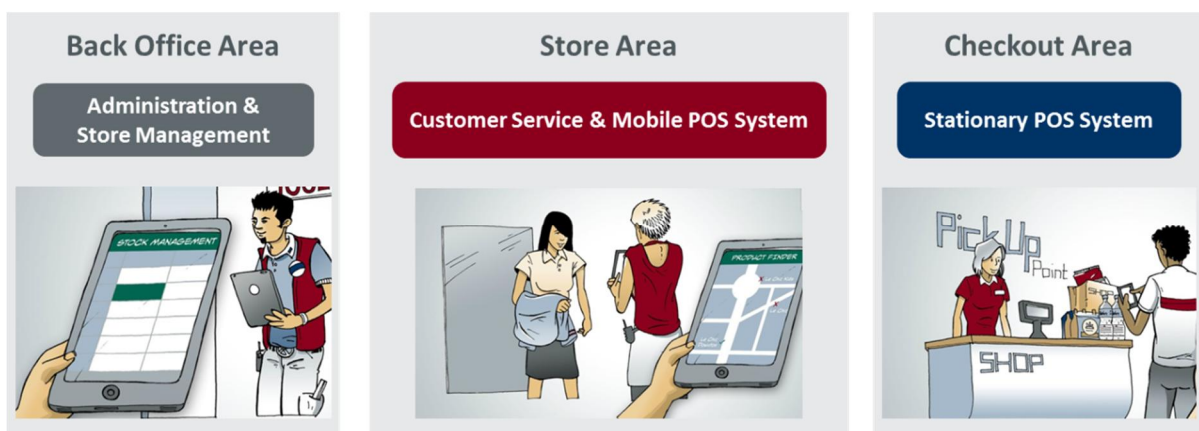


BEETLE /moPOS is an acronym for BEETLE **mo**bile **POS**. It stands for a Point-of-Service solution approach that offers retailers an easy and pragmatic way to migrate their current MS Windows based stationary POS application to a mobile POS application by using modern tablet technologies.

## BEETLE /moPOS - What it is!

Best of both Worlds: The BEETLE /moPOS approach offers the required power and functionality of a stationary POS system and has the mobility to serve customers anywhere and at any time.

It is an innovative, modular, scalable hardware and middleware solution consisting of various building blocks that are designed to support the use cases of modern retail stores.



**Building Blocks**

1.) **A dedicated retail tablet** that's based on Intel's Bay Trail-T processor technology pre-installed with a MS Windows 8.1 operating system. The advantage is that retailers can run their legacy MS Windows desktop applications on a mobile device without the need to develop everything new and furthermore they can enhance their software suite with modern apps.

   Alternatively the tablet will be offered with an Android 4.4 operating system too. Thereby the tablet supports traditional fat and cloud/server-based POS solution architectures. Two tablet sizes – 8.3" and 10.1" – are available.

2.) **A POS Device Hub (PDH)** that supports the connection of the traditional POS peripheral devices using RS232, USB, cash drawer and DVI interfaces. The PDH with its connected devices is understood as a service point that can be shared between various users / tablets as a temporary service during a checkout process. The rules how a user / tablet associates with a PDH can be defined by the user. This can be a 1:1 or 1:n or m:n relationship. An integrated management API (called Admin Server) ensures that the associations are secured and that the status of a PDH is available for all users.

   The tablet always communicates with the PDH and its connected peripheral devices via wireless technology through a router, either mobile or hosted (docked) in the Docking Unit whereas the PDH is connected via Ethernet LAN to the store network.

3.) **A Docking Unit (DU)** is used to host the tablet during the checkout process in a secured manner. Furthermore it has sensors that check the tablet presence and ID which can be matched against a white list of authorized devices. The DU communicates with the PDH via a PoweredUSB interface that also charges the tablet

when docked. An LED bar indicates by predefined colors the status of the PDH. The locking mechanism protects the tablet also against theft when hosted (docked). The release is motor-driven and controlled by the application depending on the defined relationship (1:1/1:n/m:n) between tablet and PDH. In emergency cases the tablet can also be released via a mechanical key.

4.) **Mobile payment:** The number of cashless payment methods continues to rise, both app and card based solutions. As of today the retailer decides what methods he wants to offer and selects his preferred cashless payment solution provider to manage the electronic transactions. For card based transactions typically the cashless payment solution provider delivers the necessary PIN Pad device and PIN Pad software needed. Those devices have to be certified by the local payment authorities and therefore have to be sourced locally.

For cases where the signature is still used to accept cashless transactions via debit or credit card the tablet can be equipped with an encrypted MSR device. The MSR reads the magnet stripe of the card and the signature is entered electronically via pen / fingernail on the touch screen. PIN based transactions require an EMV certified PIN Pad that can be given to the customer during the electronic transaction process. The 8.3" tablet offers a so called SmartBack option with a cradle that can hold such a PIN Pad device. Two purposes are considered: 1.) storing the PIN Pad device at the tablet and 2.) charging the battery of the PIN Pad to extend the operation time. Various PIN Pad devices are supported.

# Software Platform & Architecture

## Operating System

The tablet is based on Intel's latest Bay Trail-T Atom processor technology that runs a Microsoft Windows 8.1 or an Android 4.4 (available from summer 2015) operating system. Thereby the retailer has the choice to run his legacy MS Windows based POS and Merchant Management applications (fat client approach) or/and any new App-based solution suite (thin client approach).
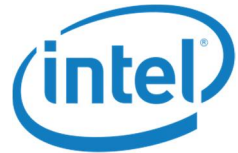
The firmware of the PDH is based on a dedicated Linux version (WNLPOS) and an open API that enables WN & 3rd party software vendors to interface with the devices @ the PDH based on the standardized UPOS & HTML5 architecture as well as via plug-in architecture to other 3rd party devices.

## Benefits of Windows 8.1

- Homogeneous IT platform: MS Windows has the largest market share (OS & Appl.) and is a fully featured PC operating system that also has been enhanced for the usage on mobile devices
- Migration option: Ability to run legacy desktop Windows applications
- Know-How in IT: Number of IT experts and experienced users
- Data security: Implementation of security- and administration functions
- Performance: Scalability from Fat to Thin Client, Multi-Window-Support and offline-applicability
- Lifecycle & Support: Microsoft guarantees 10 years support and 15 years availability for Windows Embedded 8.1 Industry Pro Retail

## The Middleware Software

The middleware software is based on Wincor Nixdorf's established WNLPOS (Embedded Linux based on CentOS Enterprise) operating system and JavaPOS device drivers (comply with the well-established UnifiedPOS specification 1.13) and is delivered as part of the PDH.

In the first step (January 2015) the programming interface supports just the JavaPOS interface. The API will also be extended by HTML5 & Plug-in features to support those POS applications which are not familiar with the UnifiedPOS programming and to support also 3rd Party products. Furthermore it will be extended by an administration API (so-called Admin Server) to manage the relationship between tablets and PDHs considering various assignments as 1:1, 1:n and n:m connections.

A separate API Programming Guide is available.

## Software Architecture

Compared to a traditional stationary POS system the tablet replaces the classical operator display and input device (touch screen / keyboard) as well as the system unit. It runs the operating system, POS & other applications / apps.

The PDH is the POS peripheral controller running the JavaPOS drivers and web-services based on an Embedded Linux operating system. A PDH with the peripheral devices are seen as a service point that is associated with a tablet / user on demand during a checkout process. To share the PDH between several tablets / users in an ordered and secured manner we have implemented an administration layer called Admin Server. This Admin Server runs as a software stack on the PDH itself or in larger installations on a separate server. The setup & configuration of the PDH & Admin Server is done via a modern web-based user interface.

Whereas the tablet communicates with the PDH via a WiFi router or a WLAN infrastructure, the PDH is connected with a wired Ethernet cable.
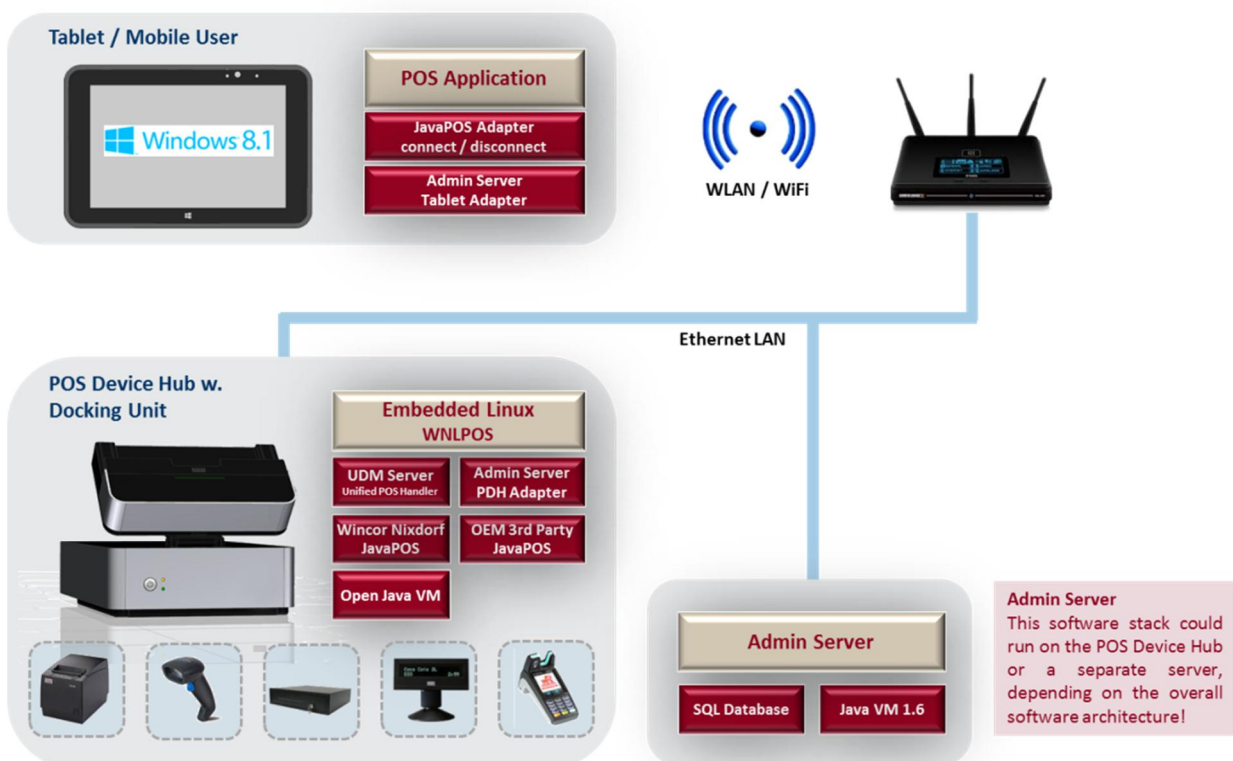
## Supported Peripheral Devices

The special release in Jan. 2015 supports the following peripherals via UPOS interface:

**Printers**

- Wincor Nixdorf TH230/230+ ; RS232, USB (with optionally connected cash drawer)
- Wincor Nixdorf TH420 ; RS232 (with optionally connected cash drawer)
- EPSON TMT88 / USB (with possibly optionally cash drawer)
- Bixolon 350plusII /USB

**Display**

- BA63 RS232/USB
- BA66 RS232/USB

**Scanner (two scanners are possible)**

- RS232 scanners as far as they support the NIXDORF MODE A
- USB scanners for table top Scanners as far as they support the IBM HID protocol
- USB scanners for hand held Scanners as far as they support the IBM HID protocol

**Cash Drawers**

- Connected to printers as mentioned above
- Connected to the RJ12 port of the PDH

**Others**

- Further peripheral classes such as fiscal printer, scale, EFT devices etc. will be implemented step by step.
- The support of a graphical customer display incl. features such as video streaming will be available with the series release.

## Features & Benefits / Value Proposition

### ① The Tablet offers…

- … two tablet sizes: 8.3" and 10.1" with a resolution of 1.920 x 1.200 pixels
- …a smart design but also improved ruggedness and a powerful exchangeable battery for up to 10 hours of operating time
- …a powerful quad core Intel Atom processor Z3745 (1.8 GHz) from the latest Bay Trail-T portfolio
- …the choice of Windows 8.1 and Android 4.4 operating systems
- …the typical features of a modern tablet such as multi-touch screen, Gorilla Glass, integrated cameras, Bluetooth 4.0, 3G/LTE support, compass, NFC reader, proximity sensor, Micro SDXC card support, USB interface etc.
- …security features such as BitLocker, MS Secure Boot, TPM 2.0, Kensington locks etc.
- …an innovative authentication feature that connects the tablet "logically" with a PDH
- …a unique locking feature offers theft protection when docked @ the PDH
- …a special SmartBack which allows the adaptation of an MSR or EFT Pin Pad device (8.3" tablet)
- …an extended life cycle of 4 years sales and further 3 year of service support (4+3)
- …a choice of various accessories such as holding straps, spare batteries, docking stations, etc.

### ② The POS Device Hub offers …

- …the typical POS specific interfaces (cash drawer, 1x RS232, 1x powered COM, 4x USB 3x PoweredUSB and 1x DVI-I) to connect all relevant POS peripheral devices such as cash drawers, POS printers, barcode scanners, checkout scales etc.
- …a high-performance power supply that powers all connected devices
- …an open API based on the standardized UPOS or HTML5 software architecture
- …a smart design and space-saving footprint
- …an easy to use management tool / interface for the individual connection of tablets and PDHs
- …a management agent (BEETLEINFO) for efficient remote administration & monitoring
- …a web-based administration GUI for remote setup configuration
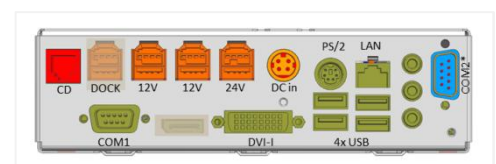
③ **The WN Docking Unit offers …**

- …the flexibility of individual installation allowing the attachment to the PDH, a pole- or a wall via VESA compatibility
- …a unique locking mechanism for theft protection when the tablet is docked
- …an electronic authentication feature that connects the tablet "logically" with the PDH
- …a presence sensor that recognizes the tablet when docked
- …an integrated tablet charging interface
- …an adjustable viewing angle to ensure best legibility of the tablet screen

④ **The AAVA Docking Station offers …**

- …the opportunity to dock the tablet
- …a function for quick charging (2 hours)
- …a port replicator for the tablet with
  - 3x USB 3.0
  - 1x HDMI and
  - 1x Ethernet LAN
- …a Kensington Lock for theft protection
- …an external 60W power supply

⑤ **The Single Charger offers …**

- …the capability to dock, lock and charge a tablet independent from the PDH (available from summer 2015)

⑥ **The Back Office charging station offers …**

- …the capability to charge up to four tablets in parallel (available from end 2015)

## Over 40 Years of Development Expertise

Wincor Nixdorf (formerly Nixdorf Computer and Siemens Nixdorf) has been developing and manufacturing POS products and solutions for the retail and service sectors since 1973. During this period we have been the innovator for a variety of product developments. BEETLE POS systems have been in use since 1993 and have withstood the test throughout the world. Mobility in Retail is becoming more and more important and our BEETLE /moPOS approach offers the required power and functionality of a stationary POS system and the mobility to serve customers anywhere and anytime.

Reliability, longevity and economic viability are the guiding principles behind our developments and incorporate the following:

- Development of high-quality products for long-term use over five to ten years
- Compliance with accepted technology standards
- Consideration of new technologies to support environment protection and sustainability
- Early recognition and assessment of market and technology trends and adaptation for use at the point of sale/service
- Active memberships of organizations and active partnerships with technology leaders to ensure ongoing further development and standardization of retail specifications
- Controlled further developments, provision of the latest technologies, creation of migration concepts for the installed base
- Trendsetting and innovation
- Definition of future technologies and products for the retail sector in conjunction with our customers and partners
- Acting as an one-step product, service and solution provider