

IVU Traffic Technologies AG - Leading Supplier of IT Systems for Transport and Logistics Processes

" PHYTEC's off-shelf hardware components allowed us to fast track our design. In-depth knowledge of required software support, in particular Windows CE, complemented the COTS hardware offerings and enabled PHYTEC to provide a turn-key solution to our needs."

Prof. Dr. Ernst Denert, Chairman - IVU Traffic Technologies AG

PHYTEC



Summary

Background

IVU Traffic Technologies AG is an industry leader in IT transportation systems and sought PHYTEC's expertise to develop their state-of-the-art computerized public transport system.

Deployment

Within one year, PHYTEC provided a complete XScale PXA270 and Windows Embedded CE turn-key solution for IVU Traffic Technologies AG.

Key Learning

- Jump Start Development
- Windows Embedded CE BSP available in binary or source
- Real-time Capable
- Cost-effective development tools

Partner Experience

PHYTEC provides complete embedded hardware and software solutions to accelerate time-to-market.

Background

IVU Traffic Technologies AG is a leading supplier of IT systems for planning, operating and optimizing transport and logistics processes. Almost 30 years of experience in developing hardware and software systems for 300 public transport companies has made IVU the market leader for public transport solutions as well as other IT segments: monitoring truck fleets, setting up retail networks in geo-marketing (GIS), and electronic voting processing.

IVU Traffic Technology AG first approached PHYTEC in 2004 for design services and turn-key solution for a computerized public transport system. PHYTEC's expertise in all essential areas required for successful completion of this project, within an aggressive timeline, made PHYTEC a natural choice for IVU. Within one year, PHYTEC provided a full turn-key solution: the i.box.

Deployment

PHYTEC designs and manufacturers single board computer modules which are based on various microcontrollers including ARM, XScale, and PowerPC. PHYTEC SBCs incorporate essential circuitry common to all embedded applications such as SRAM, Flash memory, communications controllers and transceivers. PHYTEC also provides engineering design services and turn-key solutions for embedded applications.

IVU chose PHYTEC to design and manufacture their i.box public transport control and collection system. PHYTEC handled all aspects of project management involving various third parties, including software providers and external housing. Integrated into a single package, the i.box is an interactive vehicle-based collection, ticket printing, and traffic control communication system. The phyCORE-PXA270 off-shelf subassembly serves as the core logic in the i.box.

Electronic ticketing is becoming more commonplace on trains and buses, However, selling tickets in public transport systems is no easy task. The on-board equipment must be sturdy, fast and easy to use, and it must be able to settle accounts at any time, even enroute. Customers must be able to pay while on the bus without causing delays and the system must be able to deal with the multiple fares and apportion revenue reliably.

IVU selected Microsoft Windows CE because it best enabled easy deployment of their public transportation and logistics platforms. In particular, WinCE offers scalable solutions for their small, PDA-based mobile i.box. Key features used in the i.box include a convenient customer-machine interface as well as networking capabilities to connect units in the field to a central PC for data transmission.

Key Learning

- Ensures a fast time-to-market for new products, delivering competitive advantage PHYTEC phyCORE-PXA270 and its Windows CE BSP is an excellent platform from which to jump start development, thus ensuring a fast time to market for new products. PHYTEC subassemblies support the embedded engineer in every stage of development: from evaluation, through development and prototyping, to OEM deployment. Implementation of an insert-ready, OEM-able SBC subassembly allows engineers to focus on project applications without expending resources to "re-invent" microcontroller circuitry
- Provides access to Source Code The phyCORE-PXA270 BSP can be purchased in source code or binary version, providing the most flexibility to customers.
- Delivers real-time capability phyCORE modules are well suited for industrial, medical, and aeronautics applications and Windows Embedded CE real-time capabilities perfectly complement such deployments.
- Development Flexibility The most important requirement for IVU regarding the operating system was power management. The flexible structure of the WindowsCE system architecture was used in a way that implemented efficient power failure handling mechanisms.

- In order to provide full support for the complex I/O requirements of the i.box application, custom driver development was required for the on-board CAN interface, 11 simultaneous active serial interfaces with high data throughput, as well as specific AC97 audio requirements which splits the stereo channel into two individual audio channels.
- Most-cost-effective set of development tools PHYTEC bundles Windows Embedded CE Platform builder 180-day Evaluation CDs CD in all our phyCORE-PXA270 Windows CE Rapid Development Kits.

Partner Experience

1. PHYTEC's expertise with Windows Embedded capable hardware solutions and its relationship with Windows Embedded CE partners, offer powerful solutions for customer specific embedded designs.
2. PHYTEC's Commercial off-shelf hardware products allowed IVU to deploy the i.box with minimal time-to-market in record time.
3. PHYTEC's in-depth knowledge of IVU's software and hardware requirements resulted in the success of the i.box deployment.

"Windows CE offers a stable and flexible operating platform that allows realization of complex software applications on a customized target system. The WinCE architecture provides an ideal combination of stability at the hardware-related driver level as well as integration of state-of-the-art multimedia features that suits our application requirements very well."

*Prof. Dr. Ernst Denert, Chairman - IVU
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CONTACT US

PHYTEC subassemblies support the embedded engineer in every stage of development: from evaluation, through prototyping, to OEM deployment. For more information, visit: www.phytec.com

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