



PAJ SYSTEMTECHNIK

Platform IV Mechatronic Design

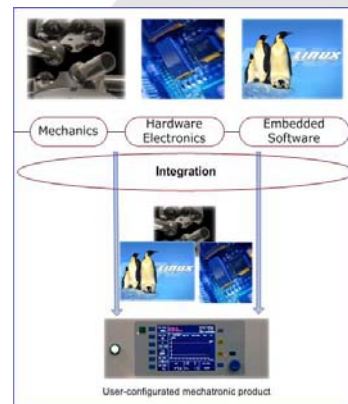
Single Source and OEM Supplier
of Mechatronics

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October, 2006

Introduction

- ✓ Company Profile
 - ❖ A high technological company
 - ❖ Original Equipment Manufacturer
 - ❖ Single source supplier of mechatronics with user-configuration
- ✓ PAJ Competencies
 - ❖ Research & Development
 - ❖ Scientific Research
 - ❖ Manufacturing
 - ❖ Sales & Service

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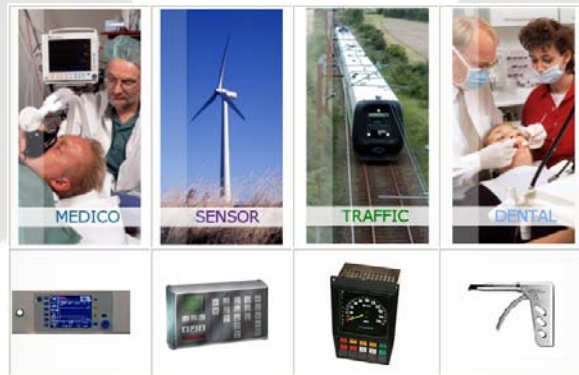


Introduction



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✓ Main Products

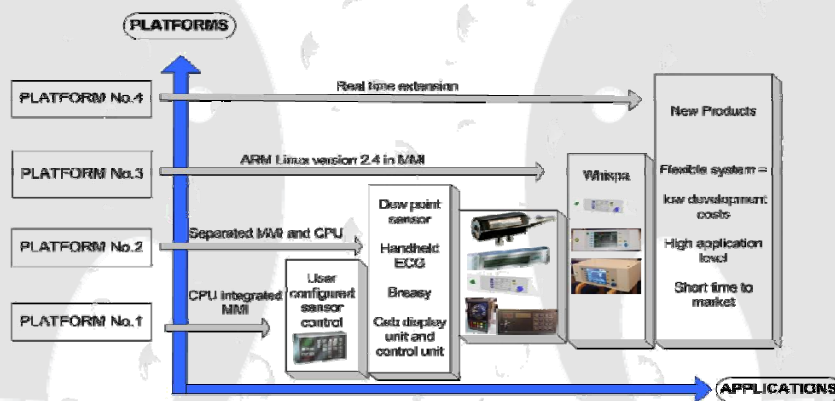


Introduction



--- PAJ Platform IV

✓ The Roadmap of PAJ Platforms

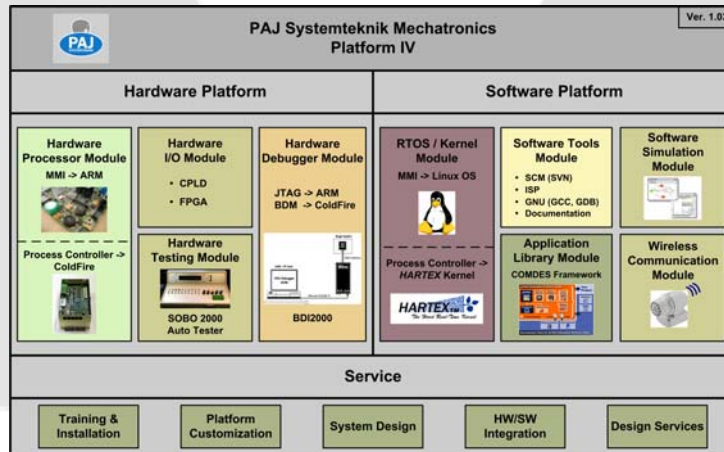


Introduction



--- PAJ Platform IV

- ✓ An Overview of PAJ Platform IV



MoDES Project



--- PAJ Platform IV

- ✓ Main Purpose

To Develop PAJ R&D Platform IV

- ❖ Component Based Design Method
- ❖ Application Component Repository
- ❖ Software Analysis Methods
- ❖ Software Engineering Toolset

- ✓ Benefits

- ❖ Enhanced Flexibility
- ❖ Reduced Development Costs
- ❖ More Application Options
- ❖ Decreased Time To Market

Case Study



--- Whispa System

- ✓ Whispa Anaesthesia Ventilator System
 - ❖ An Anaesthesia Workstation
 - ❖ Breathing Equipment with Fresh Gas
 - ❖ Friendly User Interface
 - ❖ TFT & FSTN Screen
 - ❖ Support for Adults and Infants
 - ❖ Automatic Self-Test
 - ❖



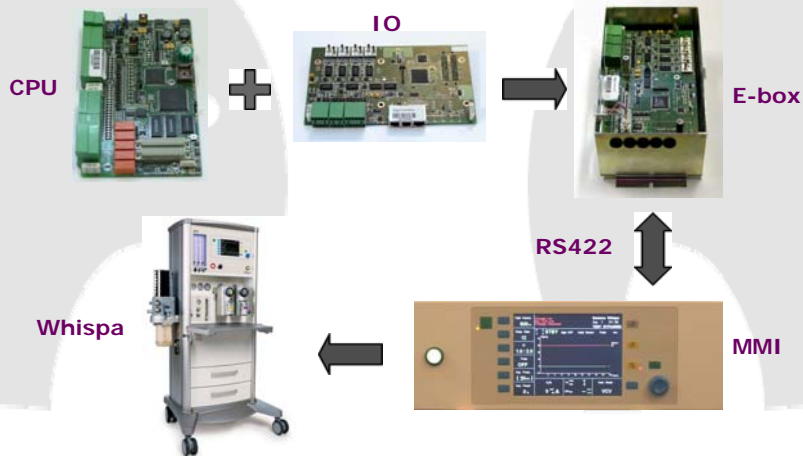
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Case Study



--- Whispa System

- ✓ Whispa Anaesthesia Ventilator System



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Case Study



--- Whispa System

✓ Main Whispa Components

Man-Machine Interface (MMI)

- ❖ Motorola Dragon Ball Processor with ARM9 Core
- ❖ Embedded Linux 2.4 Kernel
- ❖ Touch Panel Supported
- ❖ TFT & FSTN Screen Supported
- ❖ User Configuration
- ❖



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Case Study



--- Whispa System

✓ Main Whispa Components

Electronic Control Box (E-box)

- ❖ CPU Board with 32-Bit ColdFire Microprocessor
- ❖ A Multitasking Kernel
- ❖ I/O Board with CPLD
- ❖ Testing / Application Selected
- ❖ All Application Functionalities Supported
- ❖



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Case Study



--- Whispa System

- ✓ Whispa Application Modes
 - ❖ Volume Control Ventilation (VCV) Mode
 - ❖ Pressure Control Ventilation (PCV) Mode
 - ❖ System Integrated Minute Ventilation (SIMV) Mode
 - ❖ Self-Test Mode
 - ❖ LC Test Mode



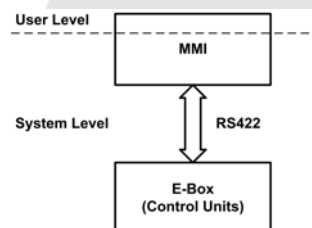
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Case Study



--- Whispa System

- ✓ Whispa Control Units
 - ❖ Patient Pressure / Flow Control
 - ❖ System Pressure / Flow Control
 - ❖ Respiration Rhythm Control
 - ❖ Pressure / Volume Alarm System
 - ❖ Fresh Gas Control (O₂, Air and N₂O)
 - ❖ Main Power and Battery Sensor
 - ❖ Inspiration Valve Control (PWM)
 - ❖ Expiration Valve Control
 - ❖ Peep Valve Control (PWM)
 - ❖ Pilot Valve Control
 - ❖ Communication to MMI (RS422)
 - ❖



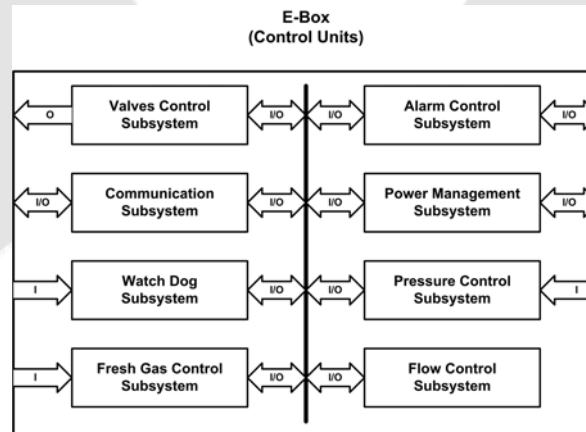
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Case Study



--- Whispa System

✓ Whispa Subsystem Diagram



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Conclusion



--- PAJ Platform IV

✓ Expectation From PAJ

Develop and integrate high technologies (know-how) in the following areas:

- ❖ Real-Time Systems
- ❖ Reusable Components and Component-Based Design
- ❖ Software Verification and Validation
- ❖ Advanced Hardware and Software Design

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Thank you for your attention ☺