Xenomai User´s Meeting
at RTLWS Dresden 2009

Xenomai at manroland AG

Roderik Wildenburg
Dresden, 2009/09/28
Contents

- Company presentation
- Mechatronics
- Automation of printing presses
- Xenomai at manroland
- Conclusion
Print media
The world’s second-largest manufacturer of printing systems
The world’s market leader in web offset
Almost 8,700 employees
Annual sales of almost 1.7 billion €
Export share of almost 80 percent
manroland mechatronics

- robot kinematics
- automated plate transport and attachment
- color density control
- cut control
- prepress and postpress integration
manroland system integration

Consistent automation from prepress through printing right up to finishing
Automation structure

- Control station
- Ethernet
- Customer network
- PressManager PPM
- Closed loop systems
- Internet
- DSL
- PNF: PECOM-network-filter
- LSS: Control station -Server
- TSC: TeleSupportCenter
- Sercos drives network
- PECom machine network
- PECom management network
- PC
- RIP
- planpag

© manroland AG, 2009/08
Wildenburg/Debes/Dr. Zeller (RAEK3)
Xenomai at manroland AG
2009.09.28
Potential Xenomai applications

**Unit Controller**
- Control and closed loop functions
- Soft PLC
- RTnet (inter controller communication)
- Fieldbus (Interbus)

**Diagram**
- PressManager (PPM)
- Closed loop systems
- LSS
- PNF: PECOM-Netz-Filter
- Internet-Netzfilter
- DSL
- TSC: TeleSupportCenter
- Betriebswirtschaft
- PC (PPM-Arbeitsplatz PressMonitor)
- PC (PPM-Arbeitsplatz PressMonitor)
- RIP
- printnet OM
- planpag
- Antriebsnetz
- Maschinennetz
- PECOM Managementnetz
- Kundennetz
- Wildenburg/Debes/Dr. Zeller (RAEK3)

© manroland AG, 2009/08

Wildenburg/Debes/Dr. Zeller (RAEK3)

Xenomai at manroland AG

2009.09.28

9
manroland hardware overview

- PowerPC based controller
- MPC5200B, 400 MHZ, 128MB
- Ethernet and fieldbus interface
- CF-card
- No fan
- Linux 2.4.25/ Xenomai OS
- Soft PLC, Xenomai tasks, Linux processes
Xenomai extensions

Xenomai/Linux scheduling diagnosis with LTT

Realtime communication with RTnet UDP/IP-Stack

- RT-App
- RTnet-API
- UDP/IP-Stack
- manroland PPC unit controller (5200 FEC Ethernet)

- Linux
- TCP, UDP / IP-Stack
- VNIC
Why manroland selected Xenomai

- Open source
- Free of charge
- No runtime license fees
- Smooth cooperation with Linux
- Real-time not influenced by Linux
- Wide scope of functionality
  (especially in combination with Linux)
- Small invasion of the Linux kernel
- Strong PowerPC support
- Usability of the complete GNU toolchain
- Well documented API
- Development roadmap
- Migration path to RT_PREEMPT
- Multiple skins
Prerequisites for a Xenomai success story

- Understanding the open source spirit
- Understanding that open source and free does not mean: „no costs“
- Knowledge of configuring, compiling and patching a kernel
- Knowledge of the GNU toolchain. In case the kernel does not compile you should be able to debug the build process
- Cross compile toolchain like ELDK, in case your board isn´t x86 based
- Strong partner, in case you run into trouble you can´t solve yourself
Many thanks to the creators, the community and our partners for making Xenomai so useful and valuable.
We, from manroland wish Xenomai the success and acceptance this great piece of software deserves.
Thank you for your attention

WE ARE PRINT.
roderik.wildenburg@manroland.com
www.manroland.com