

Smalltalk Summer School 2004

Smalltalk on a CE device

Experience Report

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Content

Smalltalk on a CE device

- Project „Collect working hours at the building sites“
- Topics
 - Manager wishes
 - Available knowledge
 - Project description
 - Cebit fair: Hardware and Software
 - IDE candidates
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 - Hardware evaluation
 - Development and problems
- Summary
 - Video clips (Examples: Standard, Pollock, Application, Squeak)
 - Caution: Beta State

Us

Smalltalk on a CE device

- **Experiences**
 - Smalltalk experiences for some years using mainly VAST
 - C# and .NET
 - RDBMS and OODBMS
- **Development**
 - Document Management Software „Schrievkrom“ (VAST) (www.schrievkrom.de)
 - Election Prejection presentation software for the first german TV channel „ARD“ with company „infratest-dimap“ (C#) (www.dimap.de)
- **Administration + Development**
 - [Butzkies Stahlbau GmbH, Krempe](http://www.butzkes.de) (www.butzkes.de)

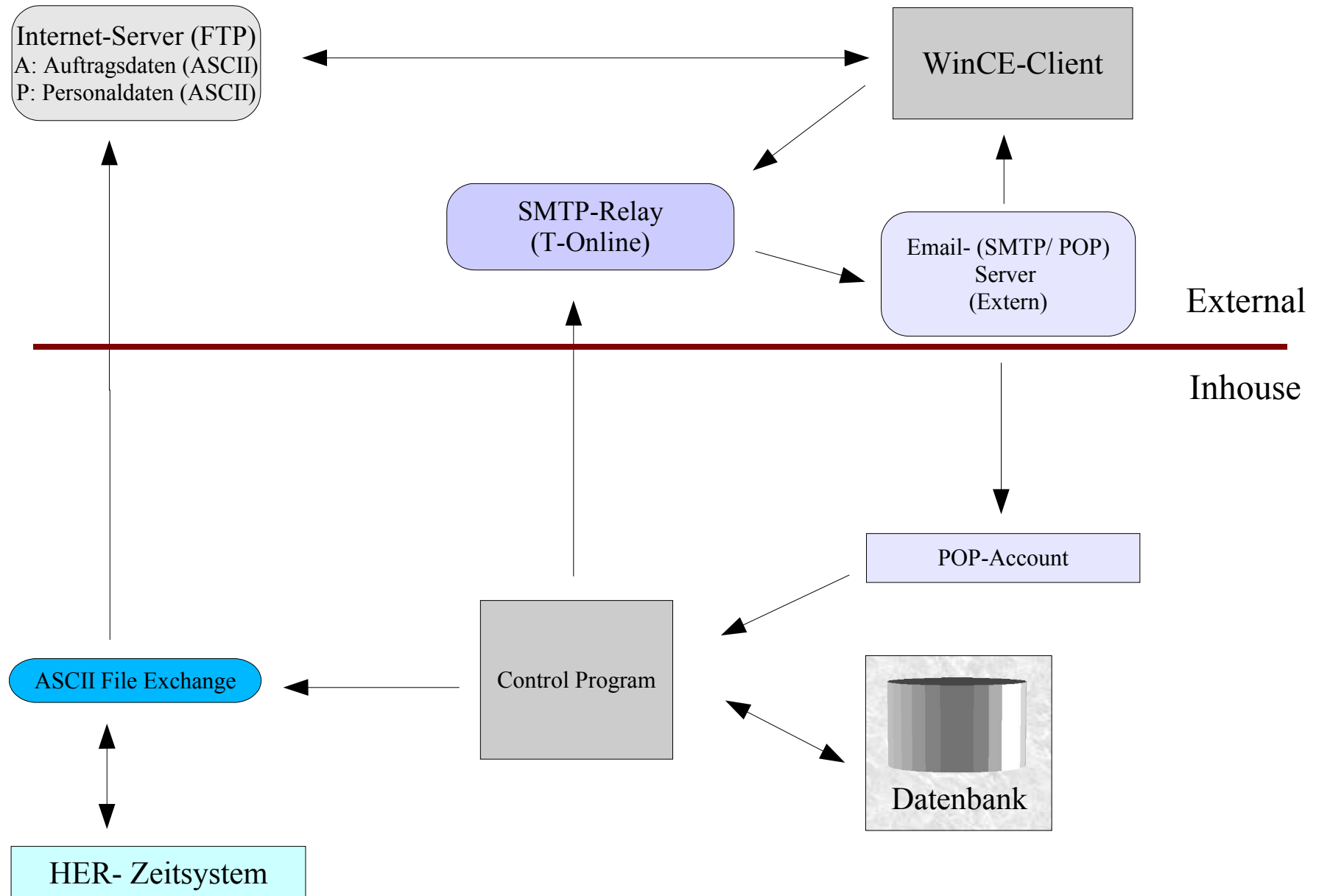
Wishes and Knowledge

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- **Manager wishes**
 - One day: wish to collect number of working hours at building sites and send them very soon to our company and reduce the time to manage these numbers here: „Look here at my PDA and my handy“
 - Perhaps some spreadsheets with Pocket Excel and macros ?
 - Pocket Excel has no macros
 - Perhaps use already available devices
 - Embedded Visual Basic ? Should be portable ... ?! After all it's Windows !
 - No real wish for Smalltalk (no mainstream, too few developers)
- **Environment**
 - Managers in company had newest PDA and handies (bought by company)
 - No real wish to do software development inhouse ... it's not productive ..
- **Developing**
 - No PDA or Windows CE developing experience, but went to CeBit to look for devices ..

Project Description

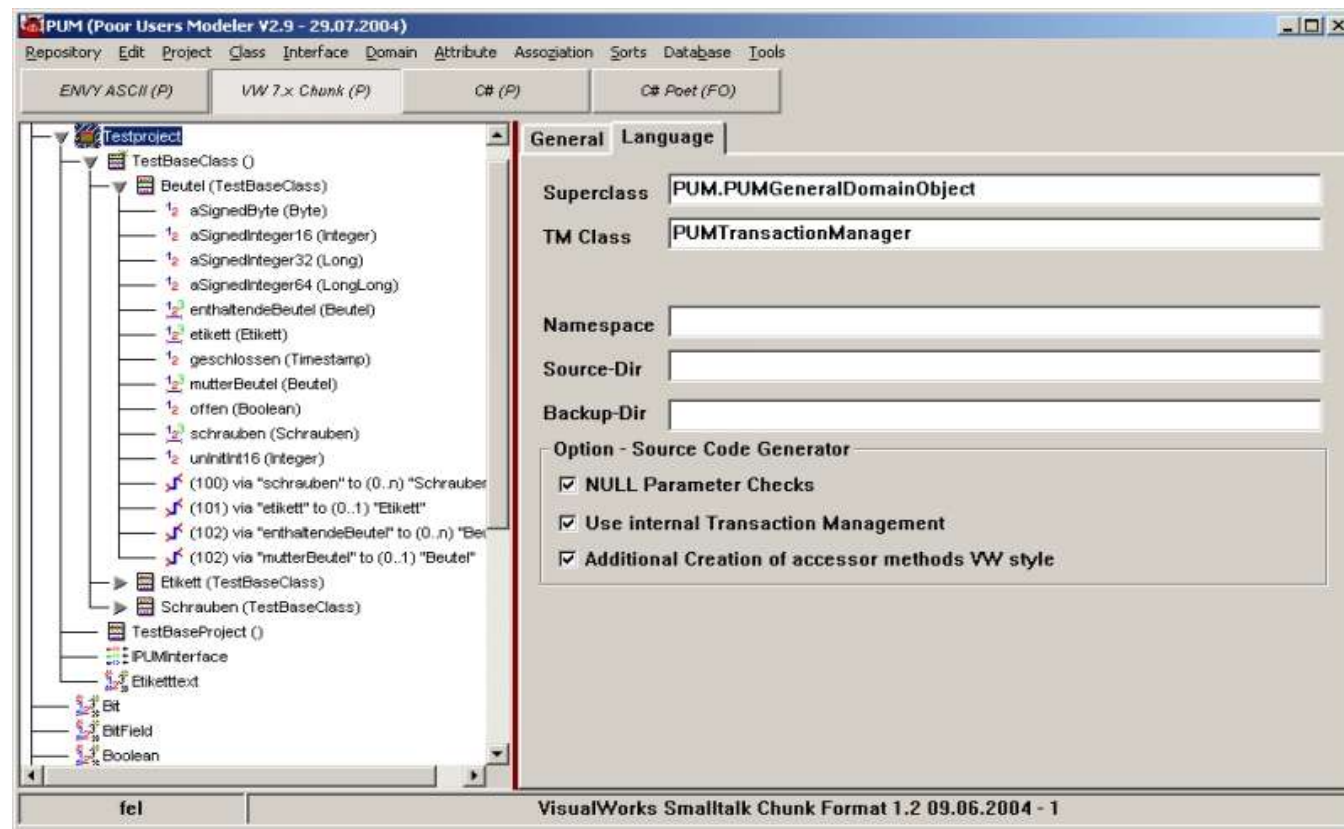
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Project Description

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- Using PUM (Poor Users Modeller) as a code generator
 - Writing the PUM VisualWorks runtime during this project
 - Writing the PUM VisualAge/VisualWorks ENVY runtime during this project
 - Learning how to generate source code for VW



Hardware

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- **CeBit fair Hannover 2004: dBook1** (www.demolux.de)
 - Windows CE .NET 4.2
 - StrongArm 1110 206 Mhz, 128 MB RAM, Keyboard, full VGA
 - Integrated GPRS module
 - Partial protection against water, dust
 - Price € 900 - € 1400



Hardware

Smalltalk on a CE device

- **CeBit fair Hannover 2004: skeye.integral**
 - Windows CE .NET 4.2
 - StrongArm 206 Mhz, 64 MB RAM
 - 1/4 VGA
 - Full protection against water, dust
 - Price around € 1900 (plus ...)



IDE's

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- We wanted a Smalltalk project – but we know the bad reputation of Smalltalk in the minds of our managers
 - VisualStudio 2003 Professional
 - .NET != CE .NET
 - Large, Larger, Largest ...
 - Emulators ...
 - Java
 - Not so good reputation from third party developers
 - No SWT support
 - Squeak
 - No solution out of the box – but possible candidate
 - VisualWorks
 - CeBit fair 2004 visit
 - Deployment of an image, development on a PC

VisualWorks and it's license

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- **Project calculation**
 - Fixed prices with VAR license
- **Cincom refuses VAR licenses for project -> inhouse development**
 - Much higher price now each year to pay – not acceptable by management
- **We changed the complete development process**
 - I founded a small company (one person company)
 - I got the VAR license ...
- **Summary**
 - Cincom license too complicated for smaller software projects

Hardware Evaluation

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- **Skeye integral**
 - Socket stuff did not work – due to false secondary exception handling
 - New CE parcels fixed this problems
- **dbook1**
 - Did not start at all
 - New special virtual machine needed – due to special machine instruction handling on this machine
- **Very good support during project from company „Georg Heeg“**
- **Management wanted dBook1**
- **Additional Hardware for testing**
 - Aldi Medion (XScale 400, 64 MB)
 - IPAQ 2210 (XScale 400, 64 MB)



Summary

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- **Concept in general works ...**
 - Develop on the PC, deploy image on the PDA
- **BUT: Problems due to heterogenous Windows CE market**
 - Unsure if application runs under the most selling consumer PDA's
 - Expect improvements in the next one or two years
 - Need for support for cheap consumer devices, not only high end devices
 - Product still needs more time or man power to become less complicated
 - Native DLL usage also heterogenous (DLL's missing)
- **Memory and speed is again a problem for Smalltalk**
 - Image size

Summary

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- **VisualWorks GUI too slow**
 - Using the normal VW GUI development process leads to very slow, not acceptable applications.
 - Pollock is NOT a solution to this problem – even worse
 - PDA with special graphic accelerators reduces this problem
 - Consider the in general simple non standard GUI applications on a PDA !
 - We need a „light“ widget set !!!!!
- **Smalltalk IS fast enough for a PDA**
 - See Squeak demo (Small Memory footprint)
 - Faure (<http://russell-allen.com/squeak/faure/>)
 - DynaPad (<http://dynapad.swiki.net/1>) (10/2003)
- **Wish for more specific PDA support**
 - More documentation and much more integration of the CE system
 - One still needs additional developer information: PocketPC embedded VisualBasic books or VisualStudio Professional 2003

Clips

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- **Speed feeling**
 - Drop-down list under VW 7.2.1 (Standard) under IPAQ 2210
 - Drop-down list under VW 7.2.1 (Pollock) under IPAQ 2210
 - Application under ipaq 2210
 - Application under dbook1
 - Squeak GUI
- **PDA environment**
 - DynaPad