

**Robert Reinhardt**  
**List of software projects I was involved with**

The list presents various project that I worked on and learned from. It shows:

1. extremely broad range of application areas;
2. broad range of my roles: from the developer to the designer, consultant supervisor and project manager;
3. some recent projects are still quite technical – I like to be in touch with present technologies.

This list is not exhaustive, it was compiled from bibliography, old tapes, CDs and personal memory in 2005.

<i>Timeframe</i>	2006
<i>Project</i>	A GPS / GSM-GPRS based vehicle tracking system for tracking and support of a fleet of agricultural machines (tractors and attached tools, dusting planes)
<i>Partners</i>	Pivot, Slorom, Xenya,
<i>My role</i>	Design of the the system architecture, implementation of data capture and web data presentation system, specification of the mobile unit firmware, specification and organization of the geo-data
<i>Environment, tools &amp; technologies</i>	python, ruby, mySql, perl, Wavecom GenLoc31e module, Google Earth
<i>Results</i>	The system is in test run and it will be deployed on an initial number of vehicles (5-10) before the spring season

<i>Timeframe</i>	2006
<i>Project</i>	Web interface & reporting for a Warehouse management system Logistics information system in Atlantic Zagreb
<i>My role</i>	I was the project manager of this implementation project of the Aldata Solution's G.O.L.D. Stock system; a late project specification change decision called for a "quick and dirty" implementation of an interface between level 3 commercial system and the warehouse management system. I implemented part of the interface functionality and complete web front-end to the interfaces and some other functions of the warehouse management system.
<i>Partners</i>	Aldata Solution Ljubljana, Atlantic Trade Zagreb
<i>Environment, tools &amp; technologies</i>	perl, Oracle PL/SQL, proC, java
<i>Results</i>	System in production

<i>Timeframe</i>	2005
<i>Project</i>	A demonstrator for Self-voice-mail service
<i>My role</i>	I designed and implemented a demonstrator system for authentication, voice conversion, e-mail delivery, web front-end and maintenance of the system (all but voice capture itself).
<i>Partners</i>	Xenya, Pivot, Mobitel
<i>Environment, tools &amp; technologies</i>	php, perl, C
<i>Results</i>	Successful demo, the system was later implemented under the integrated portal in Mobitel.

<i>Timeframe</i>	2004
<i>Project</i>	WINDECT, Wireless Local Area Network with Integration of Professional-Quality DECT Telephony, a FP6 Specific Targeted Research Project
<i>Partners</i>	Ascom Switzerland, Winfinity Berlin, IHP Frankfurt/Oder, University of Manchester, ETH Zurich, J. Stefan Institute Ljubljana
<i>My role</i>	Work package 4, development of a Human Computer Interface
<i>Environment, tools &amp; technologies</i>	python / gtk, execution environment: Windows, Linux, iPAQ, sockets
<i>Results</i>	successful integration

<i>Timeframe</i>	2003 – 2006
<i>Project</i>	Sailing Club MIPC web site Design and maintained of a web site of the sailing club MIPC. It includes some regatta entry forms, regatta scoring and other active interfaces. One of the modules also includes SMS notifications of the regatta scores.
<i>Partners</i>	JK MIPC
<i>My role</i>	I personally designed and maintained the web site together with all applications on this site up until mid 2006. I also did most of the pre-press editing of the printable material (images & texts).
<i>Environment, tools &amp; technologies</i>	perl, php, mySql, java, xml, ...
<i>Results</i>	used to support at least one major regatta each year and to provide handicap scoring for the club's yachts for all regattas in the competition season; needs a renewal

<i>Timeframe</i>	1989-1991
<i>Project</i>	A financial accounting system DF
<i>Partners</i>	Aster, Emona Obala Koper
<i>My role</i>	Architectural design of the system, development team management, implementation of some functional modules, namely data structure organization, quad arithmetics, ...
<i>Environment, tools &amp; technologies</i>	OpenVMS, pascal, assembly
<i>Results</i>	The system was successfully used in 13 production installations in various companies; last implementation was shutdown in 2006

<i>Timeframe</i>	1998
<i>Project</i>	DFP, A web based datawarehouse and document management system for DF; A data warehouse and reporting system for financial, accounting data was implemented for several customers with a copy of data from the legacy financial-accounting system DF to Oracle. For my personal use as the manager of Aster, I developed a web based interface to this data warehouse together with document imaging/archival system.
<i>Partners</i>	Aster, Aldata
<i>My role</i>	Architectural design, specification, development, implementation
<i>Environment, tools &amp; technologies</i>	Oracle, PL/SQL, perl
<i>Results</i>	Extensively used internally in Aster and later in Emona Obala and Aldata Slovenia.

<i>Timeframe</i>	1991-1993
<i>Project</i>	VP, a comprehensive Wholesale support system for maintenance of stock, valuation of stock, invoicing, etc. with support for flexible business model, including consignment stock on input and output, customs support, etc.
<i>Partners</i>	Aster, Emona Obala Koper
<i>My role</i>	architectural design of the system, implementation and maintenance was done by coworkers in Aster and my role in that was minimal; later on, a data warehousing system was implemented to hold the reporting data for VP (my role minimal), but my DFP is based on that data warehouse.
<i>Environment, tools &amp; technologies</i>	OpenVMS, pascal, assembly
<i>Results</i>	Successful implementation in two installations, last installation was shut down (changed to G.O.L.D.) in 1999.

<i>Timeframe</i>	1984-1985
<i>Project</i>	Warehousing support system for Slovenijaes, a large (at that time) furniture manufacturer and trader. The project started with the design and specification phase in 1977, at the same time the warehouse construction planning was initiated. The implementation of the system came into a crisis in mid 1984, when the system was architecturally redesigned and a new development group (15 engineers) was formed. The system included all (also real time) support for the warehousing technology and operations.
<i>Partners</i>	Jozef Stefan Institute, Slovenijales
<i>My role</i>	Project manager – led the group of 15 best people that were available at the JSI (and outside) at that time. The project run under scrutiny of the users and outside consultants as there was a pending lawsuit. By some estimates this was the largest and most intensive software development project at that time in Slovenia.
<i>Environment, tools &amp; technologies</i>	VMS, pascal, assembly
<i>Results</i>	Successful start in production in mid 1985, the system run with virtually no changes or support until 2000 for 15 years.

<i>Timeframe</i>	1983-1989
<i>Project</i>	A set of VAX/VMS system management tools. For the purpose of workload sharing, JSI, Iskra and Banka Slovenije teamed to form a pool of system engineers that were able to work at all sites. In the course of standardization of system management, we gradually developed a set of tools (mostly scripts).
<i>Partners</i>	Mark Martinec, Henrik Krnec, Bob Marčan, and others at Jozef Stefan Institute, Iskra and Bank of Slovenia
<i>My role</i>	I was acting VAX/VMS system engineer at the JSI and was doing my part of scripting, evaluation, standardization and testing.
<i>Environment, tools &amp; technologies</i>	VMS DCL, pascal, assembly
<i>Results</i>	This set of tools was later the basis for an Aster product VAXMAN that was deployed by Aster on more that 100 sites.

<i>Timeframe</i>	1983
<i>Project</i>	Rasterizer for the GKS graphic library
<i>Partners</i>	Mark Martinec and others at Jozef Stefan Institute
<i>My role</i>	I reimplemented and hand optimized a kernel image rasterizer that was used as the core of a GKS graphics library for all devices that needed raster output (like matix printers).
<i>Environment, tools &amp; technologies</i>	assembly, some 5000 lines of VAX code
<i>Results</i>	By hand optimizing the code I achieved approximately 50 fold boost in performance.

<i>Timeframe</i>	1981
<i>Project</i>	Demonstration of phototypesetting system. JSI has completed a comparative study of the phototypesetting systems for the association of printing industry in Slovenia. There was an obvious business opportunity to be part in the process of the renewal of the software solutions that were in use at that time, however we had to overcome the credibility problem. So we decided to make a demonstration of our capabilities and hacked (in the noblest sense of this word) a system that we were able to show as almost complete system. We developed a comprehensive text management solution, some of the page composition functionality and all the hardware/software glue so that we were able to integrate the demo system into a number of then existing typesetting solutions. All this in a single month.
<i>Partners</i>	A group at JSI Computer Science department
<i>My role</i>	Project management, integration works
<i>Environment, tools &amp; technologies</i>	VAX, PDP, a lot of other hardware boxes (real and faked) pascal, assembly
<i>Results</i>	Successful demonstration, no business success

<i>Timeframe</i>	1975-1978
<i>Project</i>	LISP Programming System
<i>Partners</i>	
<i>My role</i>	I maintained and developed a LISP interpreter/compiler for a LISP system that was developed at the University of Texas, Austin.
<i>Environment</i>	Assembly language CDC Cyber 72
<i>Results</i>	The system was used by several researchers for their development environment.

<i>Timeframe</i>	1976-1978
<i>Project</i>	A system to support organization of Symposium Informatica
<i>Partners</i>	J. Stefan Institute
<i>My role</i>	Together with several other students we maintained a system that supported "Congress organization": referral procedures, production of proceedings, participants lists, hotel reservations, registration of participants, scheduling, etc.
<i>Environment</i>	Fortran on PDP 11
<i>Results</i>	Each year we organized the symposium; the system was a good support, although for our own use only (today a single Excel would do a better job)

<i>Timeframe</i>	1973-1974
<i>Project</i>	Methodological Software, a large fundamental research project in software engineering and compiler construction; a simple Compiler-compiler
<i>Partners</i>	J. Stefan Institute, Anton P. Železnikar, many others
<i>My role</i>	A system to work with context free grammars, test for LL(1), iterative language modification to make an LL(1) grammar, produce a recursive descent language parser, ...
<i>Environment, tools &amp; technologies</i>	Fortran, assembler, CDC Cyber 72
<i>Results</i>	REINHARDT, Robert, ŽELEZNIKAR, Anton P. Preprost sistem za pisanje prevajalnikov. V: <i>Proceedings of the 9th Yugoslav international symposium on information processing Informatica 74 : Bled, oktobra 1974.</i> [COBISS-ID 6976807]

<i>Timeframe</i>	1973
<i>Project</i>	Hashing algorithms
<i>Partners</i>	J. Stefan Institute, Vladimir Batagelj
<i>My role</i>	Implementation of the testbed and execution of tests
<i>Environment, tools &amp; technologies</i>	Fortran, CDC Cyber 72
<i>Results</i>	BATAGELJ, Vladimir, REINHARDT, Robert. Metode iskanja po tabelah. V: <i>Proceedings of the 8th Yugoslav international symposium on information processing Informatica 73 : Bled, 1.-5. oktobra 1973</i> . Ljubljana: ZSOOP, 1973, str. a20/1-8. [COBISS-ID 8345177] Based on this and on his further original research Vladimir Batagelj has published a paper Communications of the ACM.