

# Yrjö Holopainen

M. Sc. in Engineering (Information Technology)  
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## Summary

A self-employed software architect and consultant with over 15 years of experience in developing state-of-the-art products and technologies in Internet, mobile, wireless, and entertainment industries. Extensive work experience in all phases of embedded software and PC system development. Emphasis on software architectures and design, programming, product management and project management. Experienced to work in and lead international multi-site development teams.

## Professional Experience

### **YH Systems, Yrjö Holopainen – Owner (July 2006 - Present).**

**Self-employed software architect and consultant** with customers from smart phone, digital TV, and embedded systems industries. YH Systems' licensable middleware software products include **UPnP systems, embedded copy protection systems and flash file systems.**

### **Nokia GmbH, Bochum, Germany – System Architect (Sep 1997 - Dec 2005).**

Acted as the **system architect in the development of software development toolkits for S60 and Linux based Nokia smart phone platforms**. Managed software and system engineering activities including requirements management, system analysis and architecture, system integration and validation planning. Adapted and optimized requirements management and system engineering processes to a new kind of business and technology environment.

**Planned and implemented software component integration** and quality assurance of **cellular Internet, SIM smart card and cellular protocol** components into a **S40 Nokia smart phone** for the whole product development time.

**Managed several 5 to 30 person subcontracted software projects** including setting up subcontractor requirements, coordination of development and quality, and subcontractor integration to Nokia development work flows. Projects included S60 application and middleware, Linux test automation tools, and Windows application development.

**Led a 7 person agile software team**, acted as the software architect, implemented, and assured quality in the development of '**Nokia Bluetooth Development Kit**'. The kit enabled 3<sup>rd</sup> party Bluetooth application development for the Nokia Bluetooth platform on **Windows** systems. The project met the industry "best-in-class" benchmarks in schedule, cost, and quality of projects of similar size.

Designed and implemented several architecturally significant software components for a **Linux based Nokia Open Standard Terminal set-top box platform**

Led 3-5 person agile software teams, acted as the software architect, implemented, and assured quality in the development of several **over-the-air software download systems for 2<sup>nd</sup> generation Nokia set-top boxes**. The systems were essential for in-time product market launches. The projects successfully met the challenging timelines and rigorous quality standards that were set to the systems.

**Nokia Oyj, Tampere, Finland–Software Design Engineer (Dec 1994 – Aug 1997).**

Researched, designed, and implemented systems for 1<sup>st</sup> generation Nokia set-top boxes including an embedded memory storage system, over-the-air software download mechanisms and virtual machine software components.

Master thesis: “Real-time Operating Systems in Interactive Multimedia Terminal Environments”

**Midnight Sun NET Oy, Oulu, Finland – Owner (1994).**

Designed and implemented the system/software architecture of a Linux based Internet Service Provider system. The company was one of the first European Internet Service Providers.

**Education****M.Sc. in Engineering (Information Technology)**

Tampere University of Technology, Finland, December 1995

Major: Software systems

Minors: Industrial management and engineering, Telecommunications, Signal processing

Attended numerous further education courses and seminars including software project management, personal working techniques, idea marketing, design and programming (C++, CORBA), quality assurance methods (testing techniques, Gilb inspection), operating systems (Symbian, Nokia S40, OS-9, pSOS), and cellular networks (GSM, GPRS, EDGE).

**Technical Skills**

<b>Embedded and real-time platforms:</b>	Linux, Symbian, Java, Nokia S40, pSOS, RTXC, OS-9, OpenTV
<b>PC/Workstation platforms:</b>	Linux, Microsoft Windows, Java, Sun Solaris
<b>Programming languages:</b>	C/C++, Python, Java, Perl, C#, PHP, HTML
<b>Communications protocols:</b>	IP networks (UPnP, TCP/IP, HTTP, WAP), short and middle range networks (Bluetooth, USB, WLAN, Ethernet), digital broadcast (DVB), cellular networks (GSM, GPRS, EDGE), and instant messaging (SIMPLE, Jabber)
<b>PC and Workstation development environments:</b>	Microsoft Visual Studio 6 and .NET, CodeWarrior, Eclipse, NetBeans, Python IDLE, several C/C++ GNU development tools for Linux and Sun Solaris, several embedded systems development environments
<b>Component software:</b>	.NET/Java/Python Web Services, .NET Remoting, CORBA, and Enterprise JavaBeans
<b>Embedded systems processor architectures:</b>	ARM, OMAP, ST, Intel, Motorola
<b>Database systems:</b>	MySQL
<b>Requirements and Change Management:</b>	Borland CaliberRM, Rational RequisitePro, Lotus Notes
<b>Analysis and design:</b>	UML object-oriented analysis and design, Prosa structured analysis and design, relational database design
<b>QA and Configuration Management:</b>	Synergy, PVCS, CVS, Rational Visual Tester, Rational Purify, in-house embedded systems test automation tools

**Languages**

Mother tongue Finnish, fluent English and German, basic knowledge in Swedish and Spanish.

**Patents**

Method and apparatus for protecting software against unauthorized use (US 09/944,405)