Industrial experience of using a component-based approach to industrial robot control system development.

Peter Eriksson
ABB, Sweden
peter.j.eriksson@se.abb.com

Introduction

I will share some experience that we have gained during ten years of development of our today’s robot controller software, supporting simulation systems and communication software. ABB produces and delivers industrial robot systems to a variety of application fields such as those for car manufacturing, foundry, painting and food packaging. Recently ABB has as the first robot manufacturer delivered more than 100,000 units to the market. The controller generation that this presentation will cover represents about half of the delivered systems. The controller software represents a huge and complex system with several million lines of code and several hundred man-years of development. Many different software engineering fields such as real-time, motion control, databases, application programming language, communication and human-machine interaction are combined in these products and increase the demands on the development process as well as the system architecture.

Experience and some highlights during ten years of using a component-based approach to system development

The subjects that will be covered can be divided in the following areas

- Organization
- Methods
- System architecture
- Test strategy
- Legal and commercial issues

Some examples and solutions that we have applied on the different subjects will be presented.

Present and future challenges, goals and obstacles for CBSE from my perspective

Many challenges and unsolved issues exist and even if we have been very successful during our development we are heavily dependent on the experience of individuals and on the maintaining of quality and system architecture. During the presentation I will highlight some of those issues that need to be addressed to establish a higher degree of stability and predictability in the type of component-based software architectures that we use.