Editorial

ABB and software

Prith Banerjee

Dear Reader,

I would like to use the opportunity of this, my first editorial in my tenure as Chief Technology Officer of the ABB Group, to greet all readers and welcome you to this issue of the journal, dedicated to software in ABB.

I joined ABB in April 2012 after spending five years as Senior Vice President of Research at Hewlett Packard, 23 years in academia at the University of Illinois and at Northwestern University, and having founded two software startups. In the past several months, I have interacted with hundreds of technologists at ABB, and learned about the broad portfolio of products and solutions in power and automation. I have experienced ABB as a true engineering company with innovation at its core. Our researchers are working on both evolutionary innovation of our products and services, and disruptive innovation into brand new areas.

Software is among the youngest of the engineering disciplines, and one that has in its short history undergone remarkable developments. Software developers today can build upon a vast armory of tools and libraries as well as theories and frameworks, freeing them of many mundane and repetitive tasks and permitting them to apply their minds and creativity more fully to their core challenges. But it is not just the theory or the tools that have advanced. Breakthroughs in computing and communications are opening new opportunities for software. Who would have thought only some years ago that a power transformer would have a software component?

Rather than being a newcomer to the software scene, ABB's software activities go back many decades. The company now employs some 3,000 software engineers. Because much of the software was, until recently, embedded in other products, ABB was not recognized as being an obvious software company. This changed with the acquisition of enterprise software companies

such as Ventyx and Mincom, rendering ABB much more visible on the software scene.

ABB's present offerings and activities are best thought of in three main categories. One of these is that of software embedded within devices. This can range from protection logic in breakers to advanced interactive functionality in analytical and measurement devices or robot controllers. The second type is that of system software, used to control and coordinate processes on a plant-wide scale (or beyond). Tens of thousands of individual devices can be connected to such systems and different levels of control activity can be integrated (for example the same operator workstation that monitors a plant-wide chemical process can also control power-management aspects). The third category of software consists of enterprise-level software, which, as stated above, has been significantly boosted by recent acquisitions.

ABB also pursues general software-related activities, acting horizontally across these three columns. One of these is its SDIP program to assure a uniform and high quality in all software development work. Another aspect that is of increasing importance as more and more devices are connected to public networks is that of cyber security.

The scope of software activities within ABB is wide indeed. This edition of *ABB Review* covers a representative selection of projects. I trust that this journal will kindle your interest in and further your understanding of the fascinating world of software within ABB.

Enjoy your reading.

Prith Banerjee
Chief Technology Officer and
Executive Vice President
ABB Group