Call for Participation

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Organic Real-time Programming:
Towards Self-Evolving and Self-Adaptive Real-time Software

Franz J. Rammig

Heinz Nixdorf Institute at the Universit of Paderborn

For upcoming Cyber Physical Systems with a high need of adaptation tochanging environments an appropriate programming approach is needed. Inthis presentation we will argue that such systems have to be highlyadaptive and self-evolving.The general vision and approach will be pointed out. Furthermorespecific approaches solving important aspects of such a programmingparadigm will be presented. The aspects discussed will include theidentification of adaptation needs using online Model Checking,real-time-aware adaptation mechanisms, and self-adapting safety guardsby means of Artificial Immune Systems. In addition an appropriatearchitectural framework based on real-time-capable virtualization willbe discussed.

Prof. Dr. Franz J. Rammig got his PhD degree in Informatics from the University of Dortmund, Germany in 1977. Since 1983 he is professor for informatics at Univ. Paderborn (UoP), Germany, since 1993 on a donated chair within Heinz Nixdorf Institute. For about 20 years Prof. Rammig was head of C-Lab (cooperation between UoP and Atos, about 70 full-time researchers) and now is chairing its advisory board. He is member of the board of directors of Heinz NixdorfInstitute, of s-lab (cooperation between UoP and 9 IT companies), and ofUoP's International Graduate School on Dynamic Intelligent Systems. Prof. Rammig was appointed into North Rhine Westphalian Academy of Sciences and Arts (2002), German Academy of Technical Sciences – acatech (2003), Central Selection Committee of Alexander v. Humboldt Foundation (2004). Since 2013 he is selection committee member of the CAPES/Humboldt postdoc exchange program. From 1998 to 1999 he was Vice-President of GI (the German Informatics Society). He represents Germany in IFIP and IFIP's TC10 (Computer Systems Technology) where he initiated forming a Working Group (WG10.2) on Embedded Systems. He is one of IFIP's 8 Councilors and has been honored by IFIP's Silver Core, by IFIP's Outstanding Service Award and the EDA Medal issued by edacentrum, Germany. Prof. Rammig was/is member of the editorial boardof the Journal of Network and Computer Applications (Elsevier), the Journal of Embedded Systems (Interscience) and of the book series "Teubner Texte zur Informatik". He authored more than 170 publications and about 50 publications originate per year from his very active group.