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Industrial engineering and knowledge society – the underlying philosophy, trends and open questions

Abstract: Our civilization is a technology and science based civilization. Both, technology and science are developing very quickly with the tendency to increase dynamic of changes. The organization of the society is continuous modifying and adjusting to the state which gives maximum benefits from the possibilities of present used technology and science. Now we live in the knowledge based society and compete in knowledge economy.

Knowledge economy is one in which commercial and non-commercial organizations (including regions and countries) rely dominantly on the generation and exploitation of knowledge and knowledge assets (compared to using natural resources, physical capital and low skill labor) in the creation of wealth. However, it is not simply about pushing back the frontiers of knowledge. In knowledge economy the success of companies depends more on how effectively they use and explore what they "know", than on what they "know".

In this lecture, I will describe the underlying philosophy, trends and open questions that shape the future of (industrial) engineering in knowledge society in order to open discussion with audience and shade more light on research challenges.

Lecturer: Branko Katalinic, born 1952 in Starigrad, Croatia, is professor of robotics, flexible and intelligent automation, at Vienna University of Technology, and visiting professor at eighth universities in Europe and Asia, including University of Novi Sad (from 2008). He made the studies in robotics and automation at the FSB - University of Zagreb and Royal Institute of Technology in Stockholm. He got Honor Austrian Citizenship for the extraordinary Results in Science and State Interests of Republic of Austria.

Professor Katalinic designed and realized more flexible manufacturing systems, flexible assembly systems and industrial robots. He is founder and president of DAAAM International network (www.daaam.info) for academic and scientific cooperation, and founder and editor of three international journals.

Professor Katalinic is honored with more than twenty international recognitions including five doctor honoris causa (including one from University of Novi Sad in 2009) and more professor honoris causa. As coordinator or partner he is involved in many international and European projects. Since 2008 he is executive adviser and project director of FESTO, worldwide leading concern in automation, and responsible for the cooperation with universities, academy of sciences and all other institutions where knowledge is generated, systemized and transferred to group or new generation. Since 2013 he is Vice President of International Academy of Engineering (IAE) and President of Central European Branch of IAE.

He organized, as main organizer, more than 50 large international conferences. He was Member of International Program Committees at more than 150 conferences. He gave invited lectures more than 170 in 24 countries, as editor he published more than 80 proceedings, annals and books.

Present research interests: intelligent manufacturing systems, self-organizing production systems, robotics, mechatronics, and megatrends in science and technology.