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Biography

Bernd Blobel, studied Mathematics, Technical Cybernetics and Electronics, Bio-Cybernetics, Physics, Medicine and Informatics at the University of Magdeburg and other universities in the former GDR. He received his PhD in Physics with a neurophysiological study. Furthermore, he performed the Habilitation (qualification as university professor) in Medicine and Informatics. He was Head of the Institute for Biometrics and Medical Informatics at the University of Magdeburg, and thereafter Head of the Health Telematics Project Group at the Fraunhofer IIS in Erlangen. Thereafter, he acted until his retirement as Head of the German National eHealth Competence Center at the University of Regensburg as well as Head of the globally unique International Interdisciplinary PhD and PostDoc College. He was and is still leadingly involved in many countries' health digitalization as well as electronic health record strategy. He published more than 600 papers, published/edited many books and supervised a big number of PhD students from all around the world. He was German Representative to many SDOs such as HL7, ISO, CEN, OMG, IEEE, ASTM, SNOMED, etc., also chairing the national mirror groups.

Managing Integration and Interoperability in Intelligent and Ethical Personalized, Preventive, Predictive, Participative Precision Medicine Ecosystems

Abstract:

For realizing pervasive and ubiquitous health and social care services, health and social care system have to undergo an organizational, methodological and technological transformation towards personalized, participative, preventive, predictive precision medicine. For designing and managing the resulting highly complex, distributed and dynamic ecosystem, we must consistently and formally represent the system and its components from the perspective of all actors from different domains including the subject of care, using different methodologies, knowledge, language and experiences. The granularity level of the considered components may range from elementary particles up to the society and universe. This must be done, using a system-theoretical, architecture-centered, ontology-based and policy-driven approach. Over the last 30 years, the author developed the necessary model and framework, which is meanwhile standardized as ISO 23903 Interoperability and Integration Reference Architecture. The approach has been defined as mandatory for any specification or project at ISO, CEN, IEEE, etc. addressing more than one domain. The presented approach enables design, implementation and management of intelligent and ethical health and social care systems as well as knowledge-based communication and cooperation of all actors involved. Thereby, it manages also security, privacy and trust in detail. The Keynote introduces necessary standards and methodologies for designing and managing 5P medicine ecosystems as well as practical examples.