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Smart Manufacturing as a framework for Smart Mining

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Abstract

Based on the analogy between manufacturing and mining (i.e. ore ‘production’), smart mining has four dimensions: (i) advanced digital-oriented technologies (such as Cloud computing and the Internet of things) with automated Cyber-Physical Systems (CPSs), adaptable production processes (dependent on working conditions) and production volume control (with optimal resource consumption); (ii) smart maintenance of CPSs; (iii) new ways for workers to perform their activities, using advanced digital-oriented technologies; and (iv) smart supply-chain (procurement of materials and spare parts / products delivery). This paper presents a case study on the smart mining approach implemented at a coal mining system in Serbia.

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