

Distributed Manufacturing (DM)- Smart Units and Collaborative Processes

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Abstract : Developments in ICT totally reshape manufacturing as machines, objects and equipment on the shop floors will be smart and online. Interactions with virtualizations and models of a manufacturing unit will appear exactly as interactions with the unit itself. These virtualizations may be driven by providers with novel ICT services on demand that might jeopardize even well established business models. Context aware equipment, autonomous orders, scalable machine capacity or networkable manufacturing unit will be the terminology to get familiar with in manufacturing and manufacturing management. Such newly appearing smart abilities with impact on network behavior, collaboration procedures and human resource development will make distributed manufacturing a preferred model to produce. Computing miniaturization and smart devices revolutionize manufacturing set ups, as virtualizations and atomization of resources unwrap novel manufacturing principles. Processes and resources obey novel specific laws and have strategic impact on manufacturing and major operational implications. Mechanisms from distributed manufacturing engaging interacting smart manufacturing units and decentralized planning and decision procedures already demonstrate important effects from this shift of focus towards collaboration and interoperability.

Keywords : autonomous unit, networkability, smart manufacturing unit, virtualization

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