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## Effects of Digital Twin Simulation Modelling on a Flexible and Jigless Production Concept in Automotive Body Shops

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### Abstract

Product variants and engineering change requests challenge the automotive body shop and make flexible production systems necessary to sustain competitively. Component-integrated jig features (CJF) can enable flexible production by reducing specific jig technology and integrating their functions in components to be joined. This research paper presents digital twin simulation modelling of a flexible and jigless production concept by coupling a physical production cell in a virtual production environment. The effect of CJF on the welding process, production equipment, integration planning and engineering changes can be forecasted for better decision-making and production planning.

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