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# Extending the Automation Pyramid for Industrial Demand Response

by

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April 2019

to be presented at: 52nd CIRP Manufacturing Systems Conference (CIRP MSC),
Ljubljana, Slovenia, 2019

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WI-956

www.fim-rc.de

Available online at www.sciencedirect.com

ScienceDirect

Procedia CIRP 00 (2019) 000–000

www.elsevier.com/locate/procedia

CIRP Manufacturing Systems Conference 2019

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**Abstract**

Industrial demand response uses a multitude of energy flexibility measures. Their planning and control requires various production IT systems. A widely accepted approach to classify these inhouse IT systems are the levels of the automation pyramid in companies. This paper broadens the scope of this concept to overcome the limitation to companies' (virtual) borders by including required IT systems that refine and monetarize a company's energy flexibility, e.g. energy markets, aggregators, etc. Therefore, a holistic approach for the classification of functionalities for industrial demand response across companies and energy markets is developed and applied exemplarily.


Peer-review under responsibility of the scientific committee of the 52nd CIRP Conference on Manufacturing Systems.

*Keywords:* Energy; Automation; System Architecture; Automation Pyramid; Demand Response


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