Group Report Template

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Abstract—
Index Terms—Keyword1, Keyword2, Keyword3, Keyword4, Keyword5

I. Introduction and Motivation

The structure of the paper is as follows. Section ?? outlines the research question and the research approach. Section ?? describes similar work in the field and how our contribution fits the field. Section ?? presents a production reconfiguration use case. The use case serves as input to specify a reconfigurability QA requirement in Section ??. Section ?? introduces the proposed reconfigurable middleware software architecture design. Section ?? evaluates the proposed middleware on realistic equipment in the I4.0 lab and analyzes the results against the stated QA requirement.

II. Problem and Approach

Problem.

Research questions:

1)
2)

Approach. The following steps are taken to answer this paper's research questions:

1)

III. Related work

This Section addresses existing contributions by examining xxx in the I4.0 domain. In total, x papers are investigated.

In [?], experiences are elaborated on a three-layer architecture of a reconfigurable smart factory for drug packing in healthcare I4.0.

The paper [?] proposes an ontology agent-based architecture for inferring new configurations to adapt to changes in manufacturing requirements and/or environment.

In [?], [?] an architecture for a reconfigurable production system is specified. Two objectives for reconfiguration and how they can be reached are described.

Several papers [?], [?], [?] describe reconfigurable manufacturing systems that are cost-effective and responsive to market changes.

All contributions provide valuable knowledge about reconfiguration but lack a study of the software architecture perspective that specifies a quantifiable reconfigurability architectural requirement, a software architecture that adopts the architectural requirements, and evaluates the architectural requirement.

IV. Use Case

This Section introduces the use cases.

V. Quality Attribute Scenario

This Section introduces the specified x QASes. The QASes are developed based on the use case.

VI. Design and Analysis Modelling

Design and analysis modelling.

VII. Formal verification and validation

Formal verification and validation of system(s).

VIII. Evaluation

This Section describes the evaluation of the proposed design. Section ?? introduces the design of the experiment to evaluate the system. Section ?? identifies the measurements in the system for the experiment. Section ?? describes the pilot test used to compute the number of replication in the actual evaluation. Section ?? presents the analysis of the results from the experiment.

A. Experiment design

B. Measurements

C. Pilot test

D. Analysis

IX. Conclusion

Conclusion of the report, discussion and relevant future work.

A. Discussion

B. Future work

References

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