Assessment of the Performance Evaluation for Knowledge-based Kitting Applications via Analysis of Metrics Scoring Methods

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***Abstract*— The IEEE Robotics and Automation Society's (RAS) Ontologies for Robotics and Automation Working Group is dedicated to developing a methodology for knowledge representation and reasoning in robotics and automation. As part of this working group, the Industrial Robots sub-group is tasked with studying industrial applications of the knowledge representation. One of the first areas of interest for this subgroup is the area of kit building or kitting. This is a process that brings parts that will be used in assembly operations together in a kit and then moves the kit to the assembly area where the parts are used in the final assembly. It is anticipated that utilization of the knowledge representation will allow for the development of higher performing kitting systems. While our previous effort aimed at designing the basis for performance methods and metrics to determine higher performing kitting systems, the work presented in this paper assesses the performance evaluation of our kitting system through the analysis of metrics scoring methods.**

I. INTRODUCTION

zeid: 0.5-1 page: Industrial kitting, test methods and metrics for assembly from the literature review.

II. DESIGN METHODOLOGY

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III. KNOWLEDGE MODEL

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IV. TEST METHODS AND METRICS

Tom - 1 page: Take from NISTIR and augment with new stuff.

V. KITTING VIEWER

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VI. RESULTS

Tom - 1 page: Maybe discuss the results for scoring metrics. This section should be the highlight of this paper.

VII. CONCLUSIONS AND FUTURE WORK

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REFERENCES

[1] J. P. Wilkinson, Nonlinear resonant circuit devices (Patent style), U.S. Patent 3 624 12, July 16, 1990.