

# Pengembangan prototipe implementasi virtual assembly melalui integrasi augmented reality motion glove dan 3d computer aided design system = Prototype development of virtual assembly by integration of augmented reality motion glove and three dimensional computer aided design system

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Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20402476&lokasi=lokal>

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## Abstrak

Kemajuan teknologi juga berkembang pada dunia perakitan. Sekarang analisa proses perakitan ini sudah bisa dilakukan pada dunia virtual dengan bantuan program Computer-Aided Design dan beberapa sensor (Inertial Measurement Unit, dan sensor flex, dan lain-lain), sehingga tanpa memerlukan bentuk fisik dari material maupun proses pembuatan. Kegiatan perakitan ini akan lebih mudah dan lebih terlihat nyata jika adanya interaksi dengan lingkungan, maka dari itu penggunaan augmented reality digunakan. Karya tulis ini membahas cara mengimplementasikan augmented reality pada sistem InvenGlove (motion glove dari penelitian sebelumnya), yaitu: penggunaan kamera, merubah background 3D Computer-Aided Design Autodesk Inventor, dan pemilihan program augmented reality yang akan digunakan; serta membahas peningkatan kinerja InvenGlove. Dalam implementasi memanfaatkan Application Programming Interface pada program Autodesk Inventor dan Windows. Pada akhirnya dihasilkan virtual assembly dengan augmented reality berdasarkan pada program Autodesk Showcase.

*Advanced technology is also developing in the assembling world. Now, assembly process analysis can be done in virtual with some programs suggests Computer-Aided Design and some sensors (Inertial Measurement Unit, flex sensor, etc) without the actual physic materials and the process of making the product itself. Assembling will be easier and looked more real if there are interactions with the environment. Hence augmented reality is used. This paper explains how to implement augmented reality in the InvenGlove system (motion glove from the researches before), such as: using camera device, changing 3D Computer-Aided Design Autodesk Inventor background, and the selection of augmented reality program; and also improvement in performance of InvenGlove. In the implementation utilize Application Programming Interface in Autodesk Inventor program and Windows. The product is virtual assembly with augmented reality based on Autodesk Showcase program.*