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## A comprehensive and effective cloud based architecture for robotic systems Flutter of aircraft wing using parallel processing

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In this era, cloud technology has been seen as the next-generation approach of IT projects due to its great benefits to human lives. Robotic technology has brought important social and economic effects to humans over the past years. However, robots have some constraints in terms of computational capacity, memory storage and interactive machine learning. Cloud computing offers unrestricted computation power, memory storage and particularly collaboration opportunity. Cloud might support robotics technology to overcome these challenges. Opportunity to use cloud lets cost effective robots to be produced. Cloud has been extended to the manufacturing model, thus establishing the cloud manufacturing notion that provides manufacturing as a service. Robotics might benefit from extended capabilities from the manufacturing cloud, including strengthened computing capability, extended hardware limitation and shared knowledge. Additionally, cloud not only empowers robots but also it permits them to link each other regardless of time, place and machine type. This research presents a new comprehensive and effective cloud based architecture for robotic system (CARS) which could be a roadmap to robotic companies to build the next generation robot. With this proposed system, the limitations between local activities and cloud services are studied and well-defined. The current robot cells might be enhanced by using the cloud technology in terms of response time, adaptation, flexibility, interactive machine learning, energy consumption and communication.

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