WNDRVR Studio

DEPLOY: VIRTUALIZATION

LEVERAGE AND ENHANCE LEGACY INVESTMENTS WITH NEW IP

THE CHALLENGE

A leading industrial robotics company must evolve an existing six-axis robot design to meet customer demand for more agile manufacturing capabilities. The current robot, deployed on the factory floor, moves items from one conveyer belt to the next as a preprogrammed task.

The customer now requires the robot to perform an additional quality check using a built-in camera and object-recognition capabilities. The robot must also be able to learn and adapt based on continuously improved quality criteria.

These goals require introducing machine learning algorithms and 360º ultra-high-definition video processing to the platform while maintaining all existing capabilities and functionalities.

THE SOLUTION

Leveraging the virtualization capability in Wind River® Studio, this team can run its existing real-time applications and control functions to the newly developed functionality. The new solution can fully leverage the advantages of Wind River Linux as a separate guest operating system, running on a different CPU core with the 360º camera driver interfaces and the TensorFlow-based application for capturing and processing object-recognition data.

Studio's cloud-based tools will also enable collaboration between the core team, which focuses on the robot's basic controls, and the AI/ML team, which works on new features to be delivered at an agile pace as quality criteria are being improved. A digital twin model can be deployed to augment the agile manufacturing feedback loop and to digitally enhance the continuous improvement process.

THE RESULTS

The Studio approach allows the team to innovate while leveraging the existing investment in proven IP, as well as to significantly accelerate time-to-market for the new ML capabilities. The addition of digital twin and feedback loop assets supports and improves the development process.
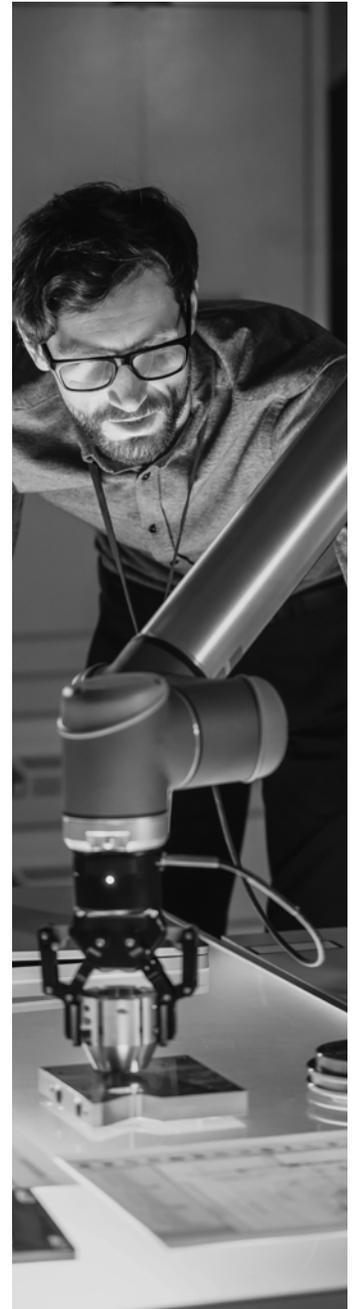
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