Apple Harvest and Infield Sorting Technology

In collaboration with a commercial company in Michigan, USDA-ARS researchers designed and assembled a new self-propelled apple harvest and infield sorting machine prototype. This new machine prototype has the following major innovations:

· A specially designed harvest platform, which replaces buckets and ladders for pickers, is fully integrated with an automated fruit sorting system.
· A computer vision-based sorting system was designed and constructed for automatically sorting and grading apples based on color and size with the defect sorting function being incorporated now.
· A new bin filler technology for automatic handling of harvested fruit was developed, which can potentially be adapted for other harvest platforms.
· A fully automated bin handling system was developed for picking up empty bins from the orchard ground, moving them in position on the platform, and discharging them to the ground when full.