Different types of automation systems for farm vehicles are invented and introduced in agricultural fields.Experimental tests illustrated that in the stationary test, distance measurement errors were between +−0.31% and +−0.37% in the distance range of 5.2–6.8 m. In the dynamic test at the four constant travel speeds, maximum lead error (when the master was ahead), and maximum lag error (the slave was ahead), were 32 and 23 cm, respectively.As an example of drive assistance, to allow the operator to focus more on other systems and processes taking place on and around the machine, Foster et al. developed an automatic velocity controller for a self–propelled hydrostatic drive–train windrower to improve operator performance, reduce operator fatigue and increase the productivity of the machine.As implements get wider, this task becomes more difficult, so different marking systems have been developed, such as using a disc coulter to mark the correct driving distance while cultivating and using foam markers while spraying and crop edge detection.In terms of the involvement of a human operator in maneuvering the vehicle, Mizushima et al. classified automated guidance systems into operator–assistant and autonomous systems.More precisely, Blackmore et al. categorized automated farm machinery on three groups; (1) drive assistance (2) automatic steering and (3) autonomous machines.Various driver assistance help to reduce the complexity and difficulty of field operations as well as to help improve efficiency.An operator–assistant system uses an auto–track function to guide the vehicle, following crop rows automatically, and relies on a human operator to drive the vehicle to make endrow turns [10].A Proportional–Integral–Differential (PID), closed loop control system, is applied to satisfy the desired conditions.In a research by Zhang et al. a leading tractor as a master and another unmanned agricultural machine, which follows the other leading one as a slave are evaluated.Both vehicles used GPS signals and inertial sensors to evaluate their positions.Two tractors cooperated in three modes: standard mode, obstacle avoidance mode and headland turning mode.In another similar research Lee et al. evaluated, two self–propelled citrus canopy shake and catch for citrus harvesting, worked in pair (mater and slave), one on each side of the row of citrus trees.Two mentioned vehicles synchronized accurately using laser scanner.High trackin

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