



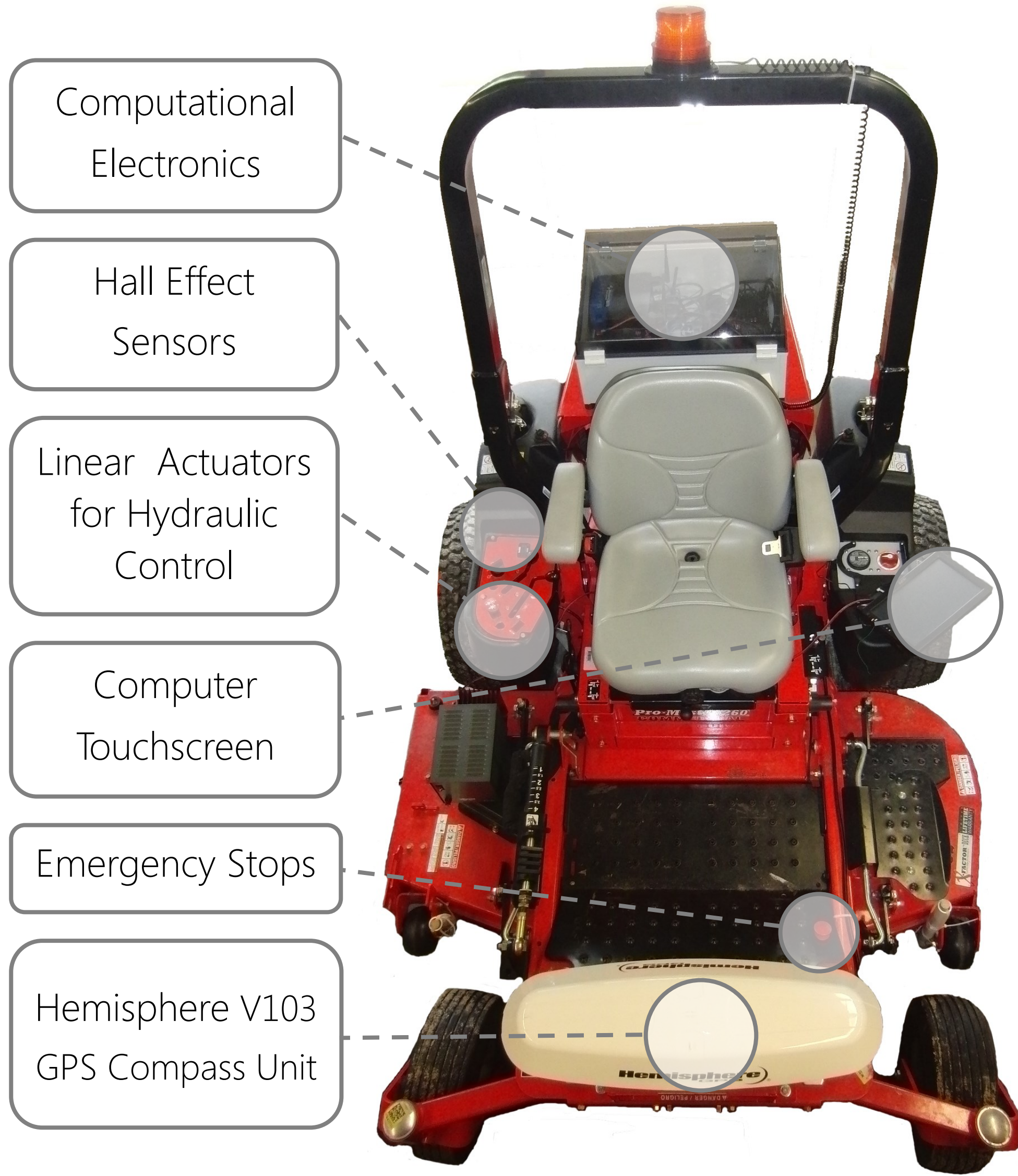
ELECTROMECHANICAL & NAVIGATION SYSTEMS FOR A LAWN MOWER

The Project

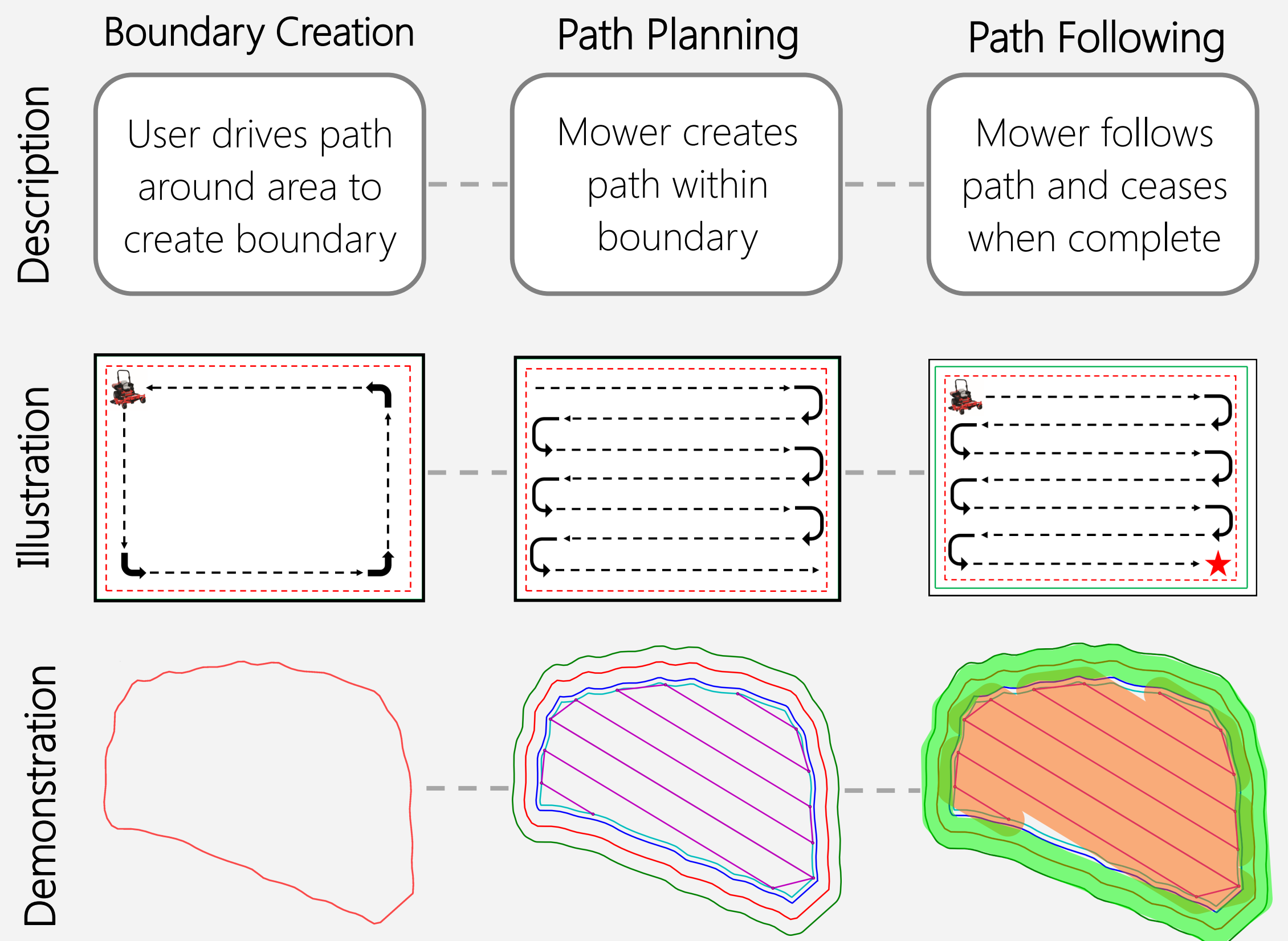
Integrate electromechanical and navigation systems into an Ariens lawn mower to create a research and development platform.

What It Does

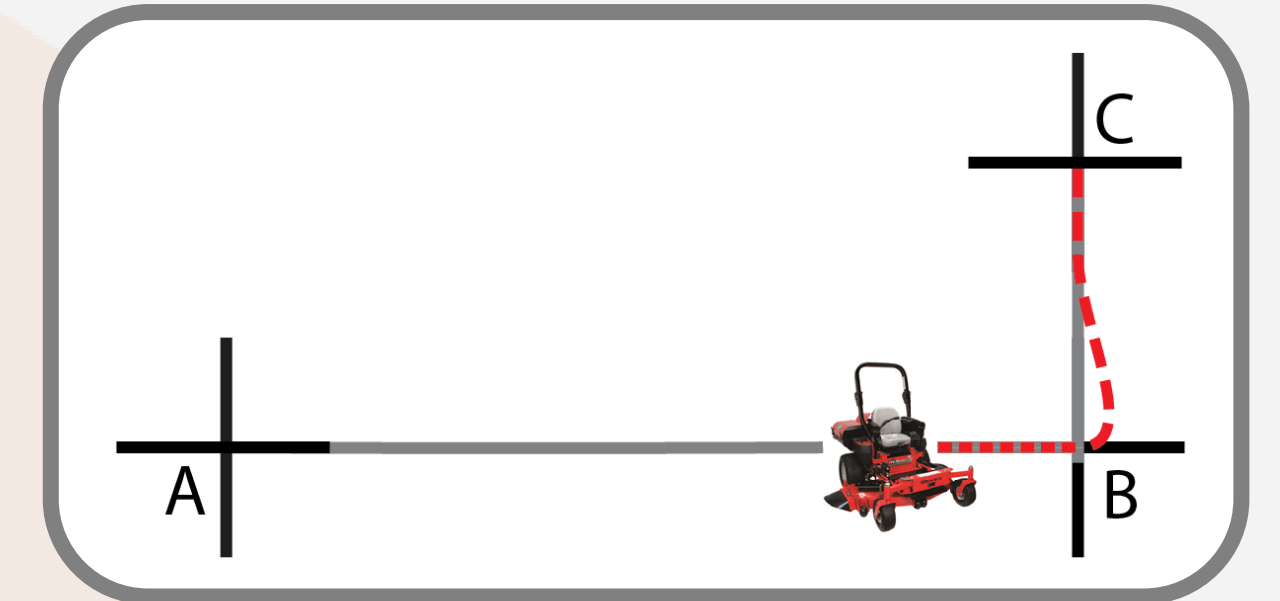
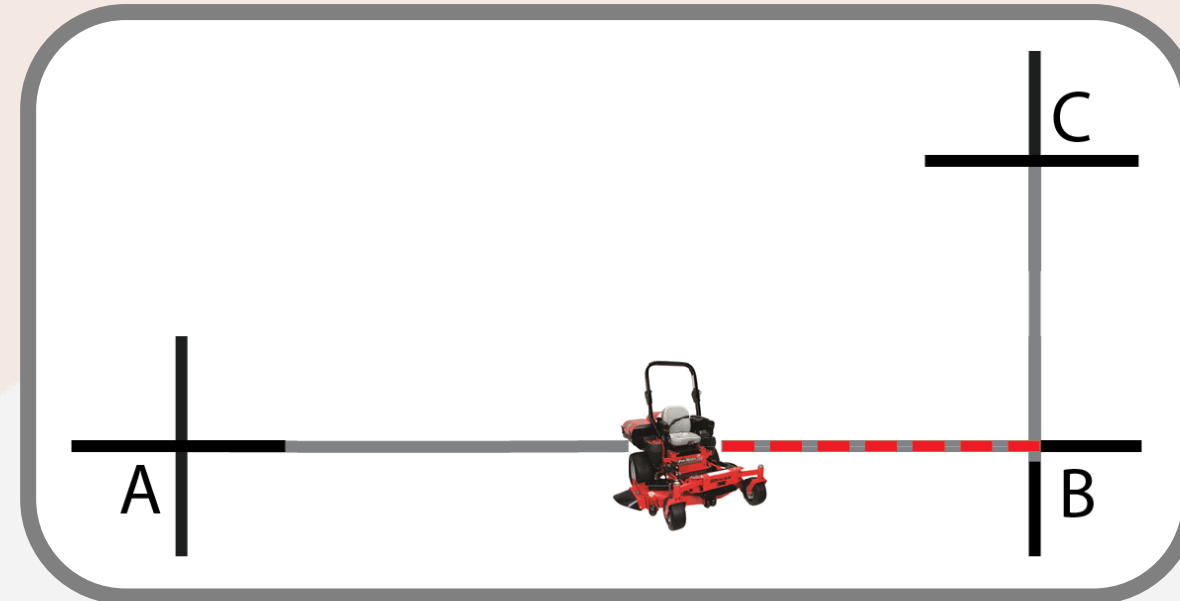
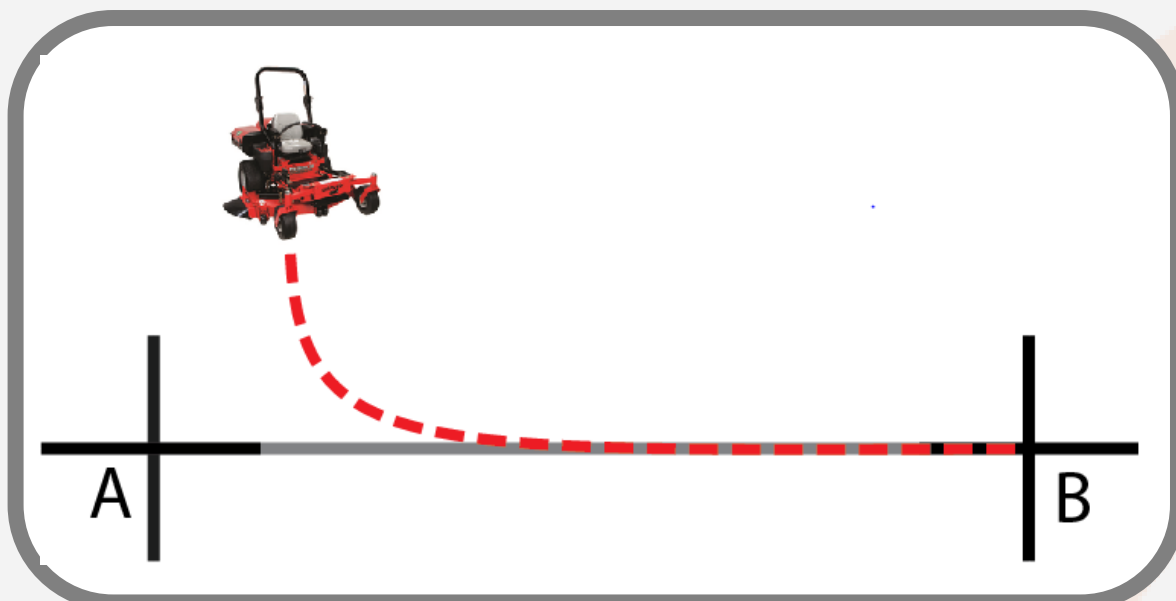
Given a human defined boundary on flat ground, the mower plans an aesthetic cut path covering the defined region, follows the path, and stays within the boundary.



Capabilities

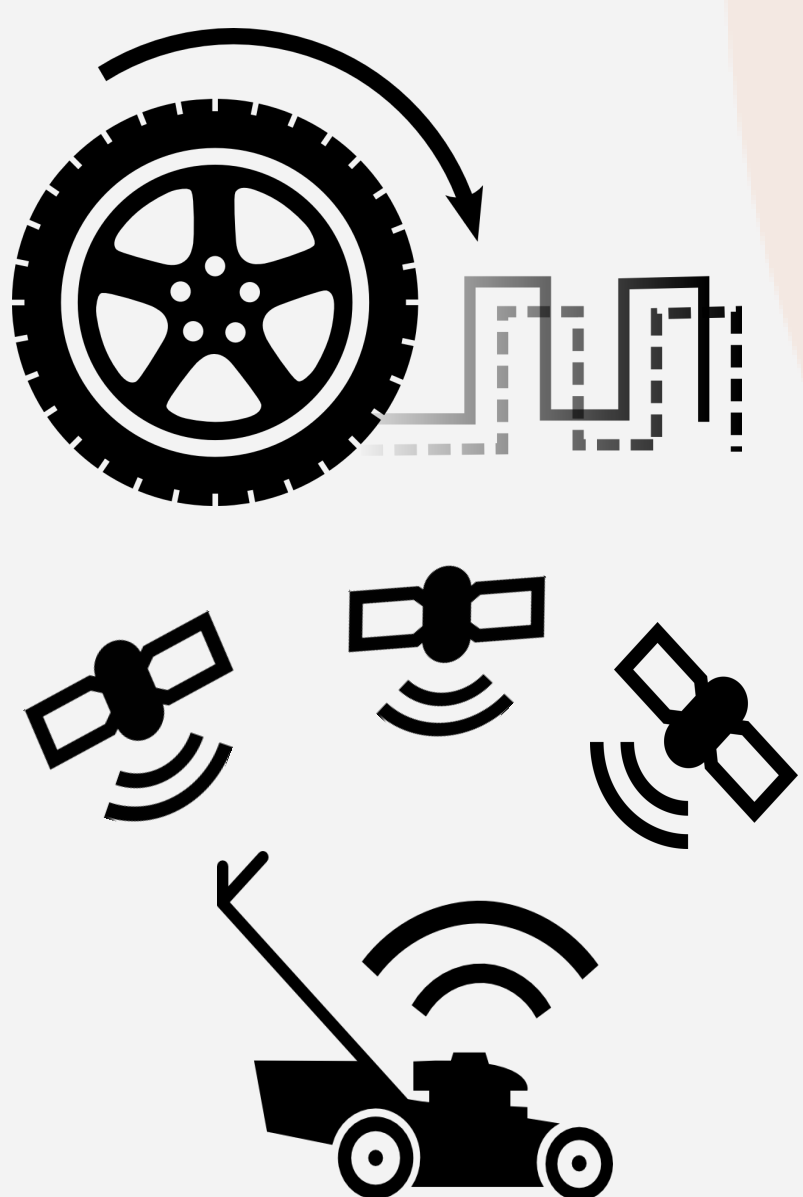


THINK



Path Following incorporates an arbiter that ensures the mower both **stays on the desired path** and **drives straight** towards its next waypoint.

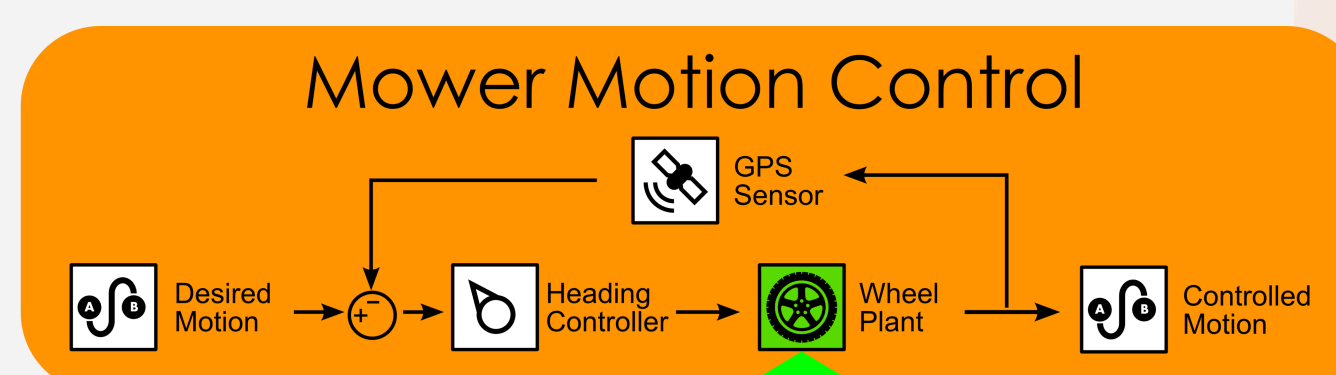
SENSE



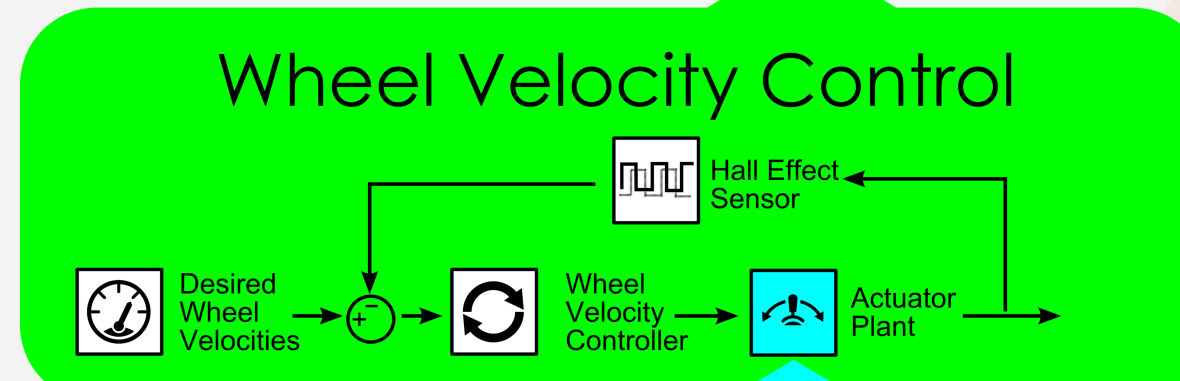
Hall effect sensors determine the speed & direction of each wheel by measuring the motion of a disc attached to the mower's left & right

Global position & mower orientation is determined using a Hemisphere V103 GPS

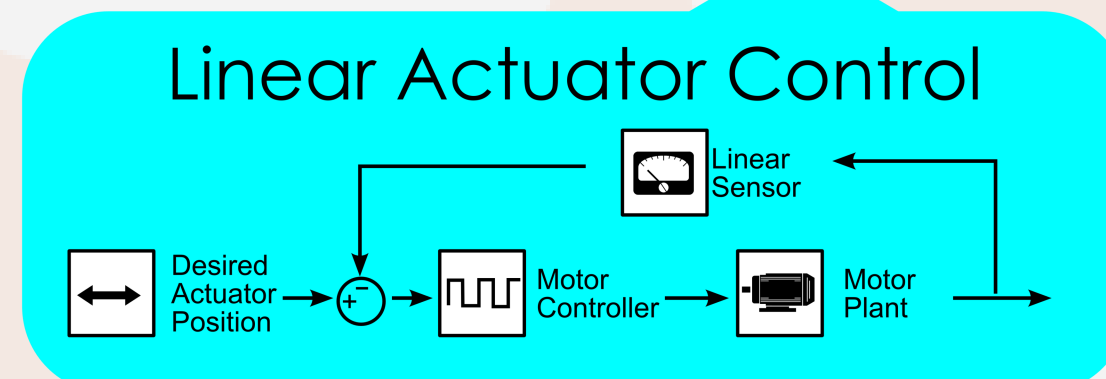
ACT



Mower Motion Control determines how the wheels should move to produce the desired mower motion.



Wheel Velocity Control determines the desired linear actuators position to produce the desired wheel velocities.



Linear Actuator Control drives linear actuators to their desired positions as quickly as possible with low motion jitter.



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