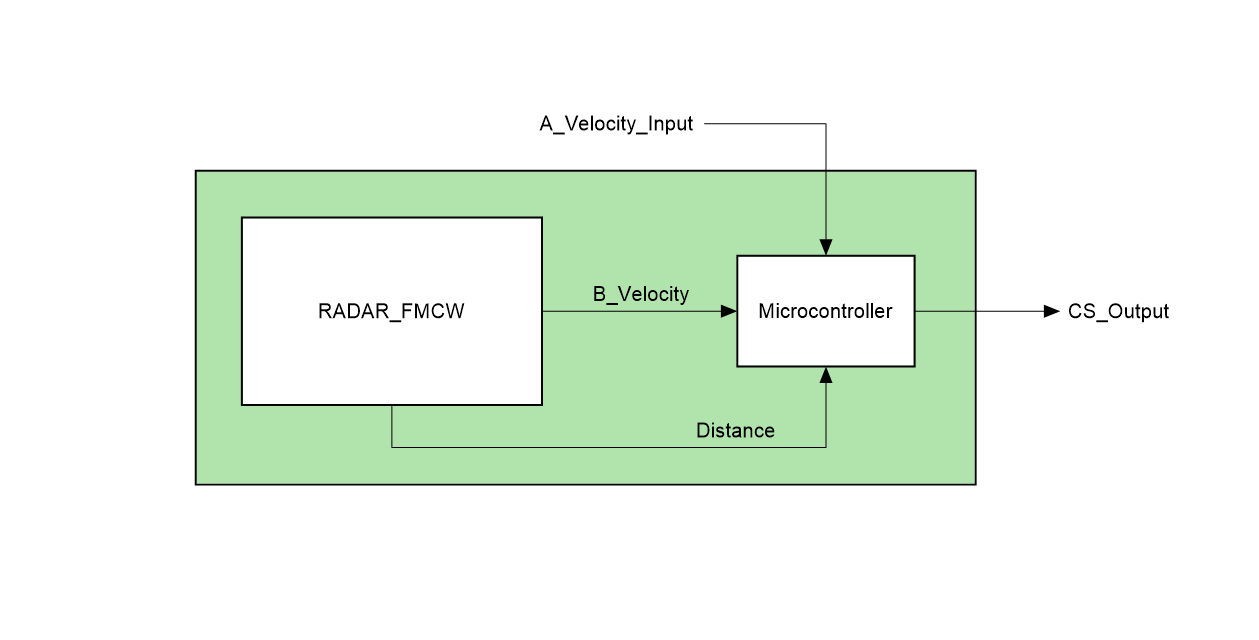
**Automotive safety: FMCW radar for emergency braking**

I am working on a project focused on automotive radar technology. The goal is to develop a PCB capable of detecting both the speed and distance of the vehicle ahead. My idea is to create a programmable radar board that can generate the control signal for emergency braking. The emergency braking distance dynamically adjusts based on the differential speed between our vehicle and the one in front. The general diagram that summarizes:



1. RADAR\_FMCW: Antenna, VCO, low-noise amplifiers, filters, signal processing
2. A\_Velocity\_Input: It is the speed of the vehicle equipped with the radar
3. B\_Velocity: It is the speed of the vehicle ahead, calculated by the radar
4. Distance: It is calculated based on the data detected by the radar
5. CS\_Output: It is the control signal that triggers the emergency braking