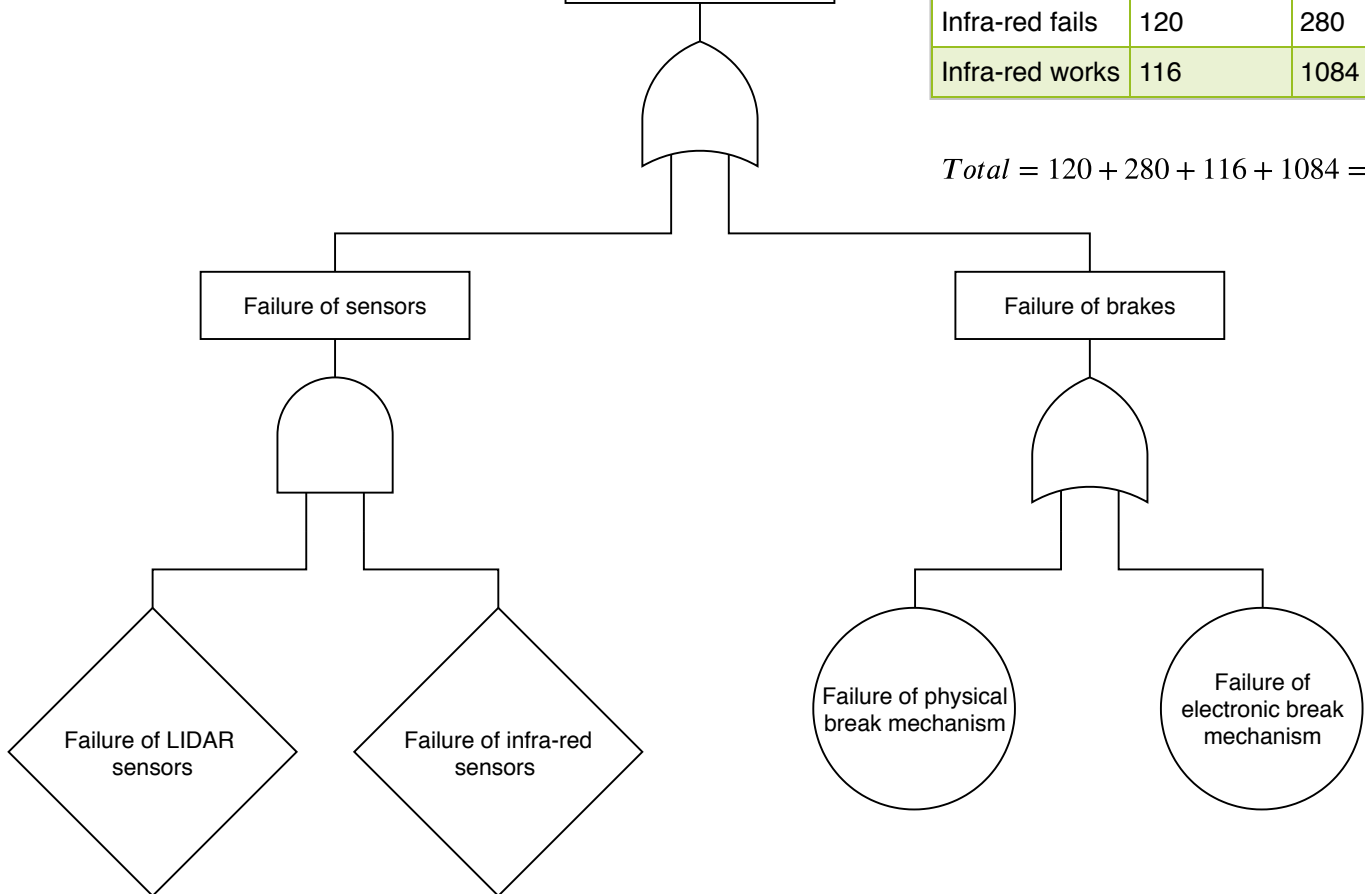


Failure of automatic  
braking system

	LIDAR fails	LIDAR works
Infra-red fails	120	280
Infra-red works	116	1084

$$Total = 120 + 280 + 116 + 1084 = 1600$$



$$P(\text{Physical fails}) = \frac{313}{1600} = 0.1956$$

$$P(\text{Electronic fails}) = \frac{33}{1600} = 0.0206$$

$$P(\text{Failure of brakes}) = 0.1956 + 0.0206 = 0.21625$$

$$P(\text{LIDAR fails}) = \frac{120 + 116}{1600} = 0.1475$$

$$P(\text{Infrared fails}) = \frac{120 + 280}{1600} = 0.25$$

$$P(\text{LIDAR fails} | \text{Infrared fails}) = \frac{120}{120 + 280} = 0.3$$

$$P(\text{LIDAR fails} \wedge \text{Infrared fails}) = P(\text{LIDAR fails} | \text{Infrared fails}) \times P(\text{Infrared fails}) = 0.3 \times 0.25 = 0.075$$

$$P(\text{Failure of automatic braking system}) = 0.21625 + 0.075 = 0.29125$$