



Swarm Robot

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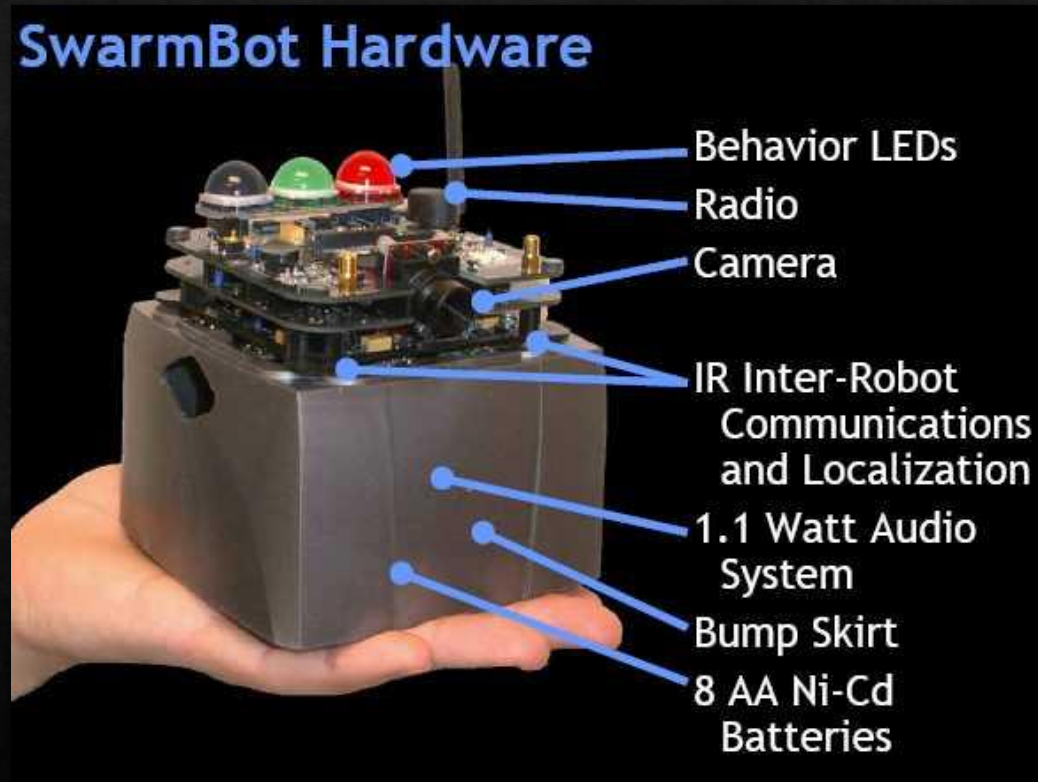
Brief History

- ◆ Swarm robotics has its origins in swarm intelligence and, in fact, could be defined as "embodied swarm intelligence". Initially, the main focus of swarm robotics research was to study and validate biological research (Beni, 2005). Early collaboration between roboticists and biologists helped bootstrap swarm robotics research, which has since become a research field in its own right. In recent years, the focus of swarm robotics has been shifting: from a bio-inspired field of robotics, swarm robotics is increasingly becoming an engineering field whose focus is on the development of tools and methods to solve real problems (Brambilla et al., 2013).

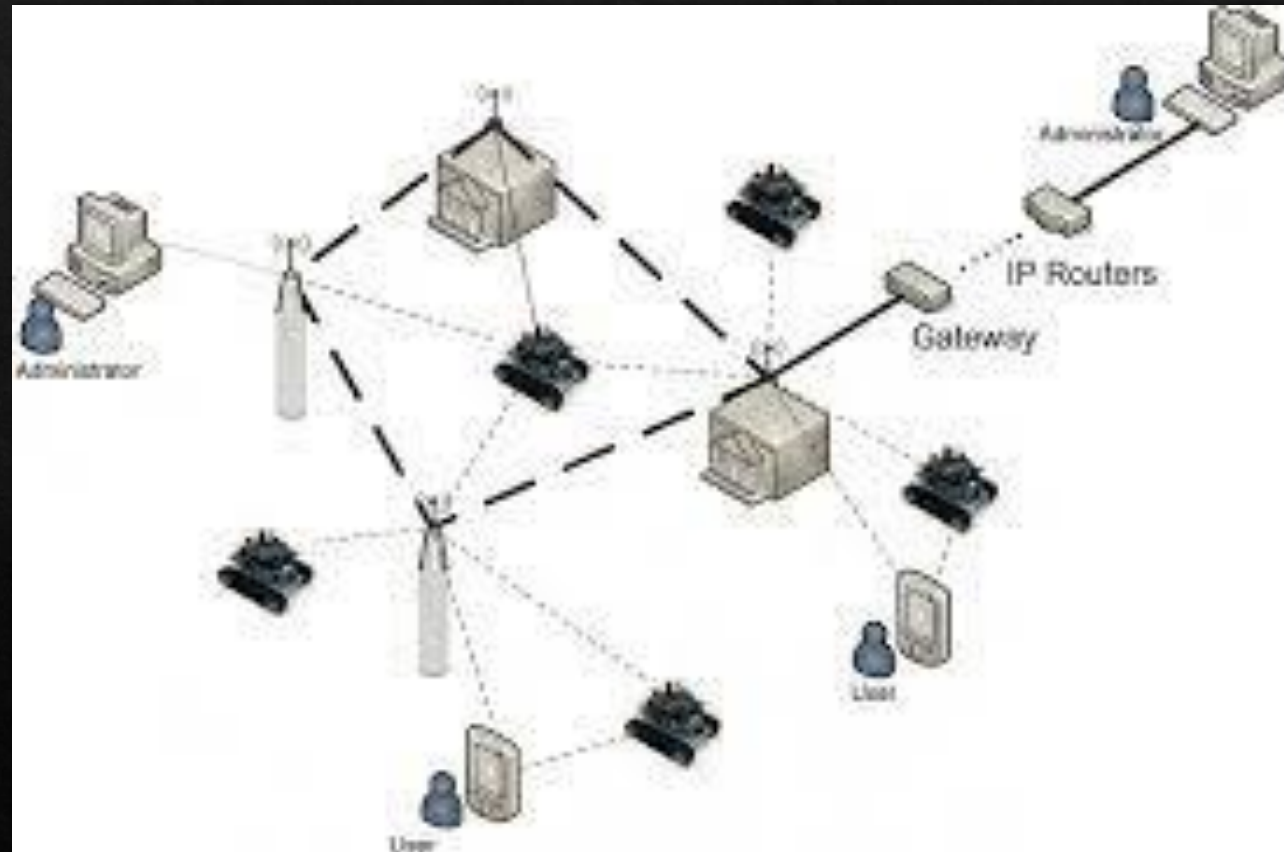
Swarm Robot Characteristic

- ◆ A robot swarm is a self-organizing multi-robot system characterized by high redundancy. Robots' sensing and communication capabilities are local and robots do not have access to global information. The collective behavior of the robot swarm emerges from the interactions of each individual robot with its peers and with the environment. Typically, a robot swarm is composed of homogeneous robots, although some examples of heterogeneous robot swarms do exist (Dorigo et al., 2013).

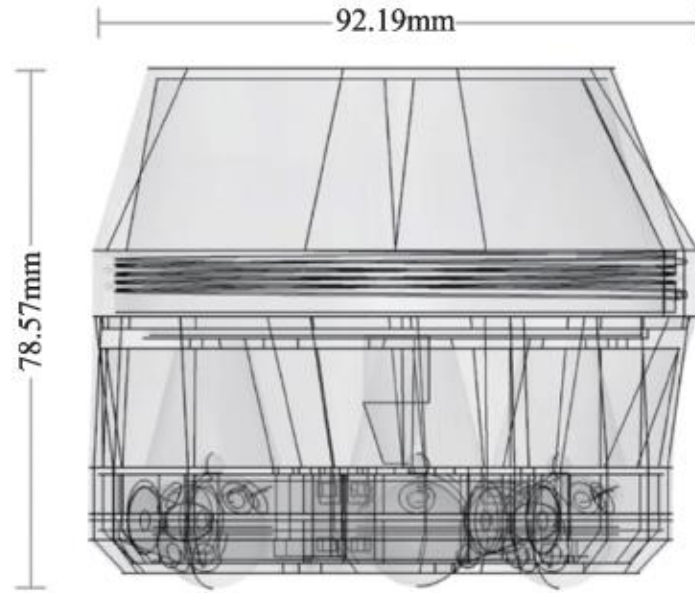
Swarm Robot Main Components



System Architecture



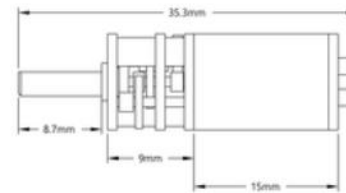
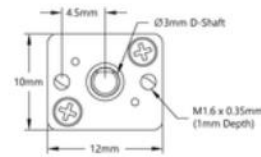
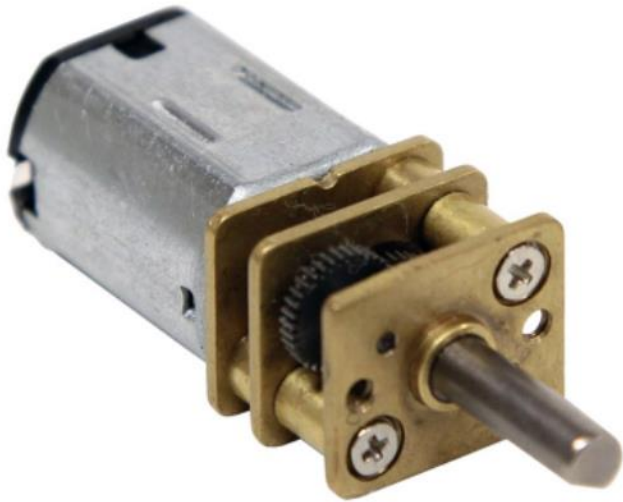
System Architecture



Components Selection

Premium N20 Gear Motor (250:1 Ratio, 110 RPM)

SKU: 638110



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Components Selection



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