

# THE SENA ROBOTIC WHEELCHAIR PROJECT

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**Abstract:** *In our society, the number of physically impaired people who need some type of mechanical aid for mobility is quickly increasing over time. Advances in technology have permitted the development of robotic wheelchairs which are able to relieve users from tedious operations, like manually controlling the wheelchair along corridors or crowded areas. This chapter presents the robotic wheelchair SENA which is the result of a long-term research project at the University of Málaga (Spain). SENA is based on a commercial powered wheelchair that has been endowed with a variety of sensors and devices managed by a conventional user's laptop. Other features of the SENA prototype are the ability for autonomous navigation within office-like scenarios and high-level human-vehicle interaction and cooperation, which is based on a specific software architecture for assistant robotics. At the end of the chapter several real experiences with the prototype are commented.*

**Key words:** *Mobile Robotics, Assistant Robotics, Human-Robot Integration*



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