


# Introduction

ASURO is a mobile mini-robot, completely programmable in C and especially developed for education at the German Aerospace Centre DLR, department for Robotics and Mechatronics. Assembly is easy for experienced electronic technicians and feasible for a novice. Except for the printed circuit boards (PCB) only standard parts for assembly will be used.

For programming we use freeware only. Therefore ASURO is exceptionally suitable as an introduction into processor-controlled hobby electronics, for projects in schools and universities, for studies and adult education centres. Special tools, which are freeware for private users, have been used for all electronic development phases and software design, proving how robots can be designed without using expensive tools or machines.

ASURO is equipped with a RISC-processor and two independently controlled motors, an optical line-tracer, six collision-detector switches, two odometer-sensors, three optical displays and an infrared-communication set for programming and remote control by a PC (see fig. 0.1).



The Caution-symbol  signalizes paragraphs with warnings, to be studied intensively, to prevent damage to components or personal health.

We must inform all users, ASURO is no toy and is not to be handed out to children under the age of three years, as they may swallow the dozens of small components. Please provide some batteries and start the assembly!

And yes: ASURO is another way of saying: "Another Small and Unique Robot from Oberpfaffenhofen!"

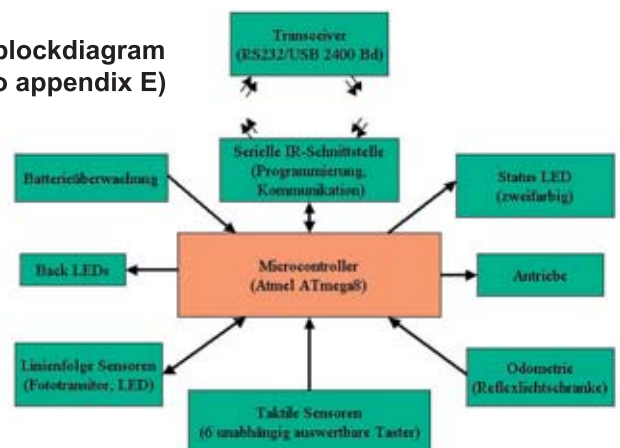
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Fig. 0.1 ASURO blockdiagram  
(see also appendix E)



## WARNING

- \* When you open the parts the return right will be disposed
- \* Read before you start assembly the instruction manual
- \* Be careful with tools
- \* Keep this product out of reach of children and do not build this kit when children are in the neighbourhood, the tools and parts are dangerous for children
- \* Check the polarity of the batteries
- \* Keep the batteries dry, when the ASURO gets wet remove the batteries and let the ASURO dry for some time
- \* Remove the batteries when you are not using the ASURO for a longer period