Abstract. Computer 3Dmodeling ofanyrobotic system has become widespread

in the last few years and is used for educational and research purposes. Currently,

there are lots of 3D modeling tools available for various fields of robotics research

with some advantages and limitations. In this paper, as an example a computer

model of the RRRRT manipulator and its movement. To create a 3D model of

the manipulator, at first, you need to obtain 3D models of the manipulator com

ponents: kinematic pairs, links, grips, etc. in the Maple environment. Next, it is

necessary to combine all the parts of the manipulator into one system using the

developed program in the Maple environment, while specifying the main con

nections between them to create a full-fledged visualized moving model of the

manipulator. Also, in this paper, the direct positional kinematics problem of this

manipulator is studied in detail. To find the kinematic characteristics of the manip

ulator, the Denavit-Hartenberg and Newton-Euler methods were rationally used.

The received results are presented in the form of 3D graphs. Such graphs allow

you to visually observe how the modules and directions of the given parameters

of the manipulator change in the graph, depending on the manipulator position in

space.

Keywords: computer modeling · kinematics · positional problem · 3D model ·

manipulators · Maple