Graphical User Interface in JDE robot applications

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Abstract

JDE is an ethology inspired architecture for designing applications both in autonomous and teleoperated robots. In this paper we will outline the JDE architecture, present some tools included in the JDE suite and show several examples of different applications built using it. Experiments carried out using this suite will be described and the obtained results discussed.

We will make emphasis on the Graphical User Interfaces of the examples, like those in Fig. 1. JDE suite provides a flexible way to build such interfaces and controls the execution time devoted to them in the applications. The GUIs provide visual objects to graphically command the actuators and to display the sensor data, like laser, sonar, encoders readings or images from robot cameras. Using them, JDE lets us operate and monitor different mobile robots where monitorization or tele-operation is required. The GUIs also allow the visualization of internal states and structures of the control program, and so they are a useful tool for debugging.

JDE suite includes two socket servers (`oculo` and `otos`) which provide sensors readings and motor commands. These servers can be used both locally or remotely, which makes them really convenient for tele-operation and tele-supervision. They define a standard message protocol which eases the development of new applications and their portability across different robot platforms.
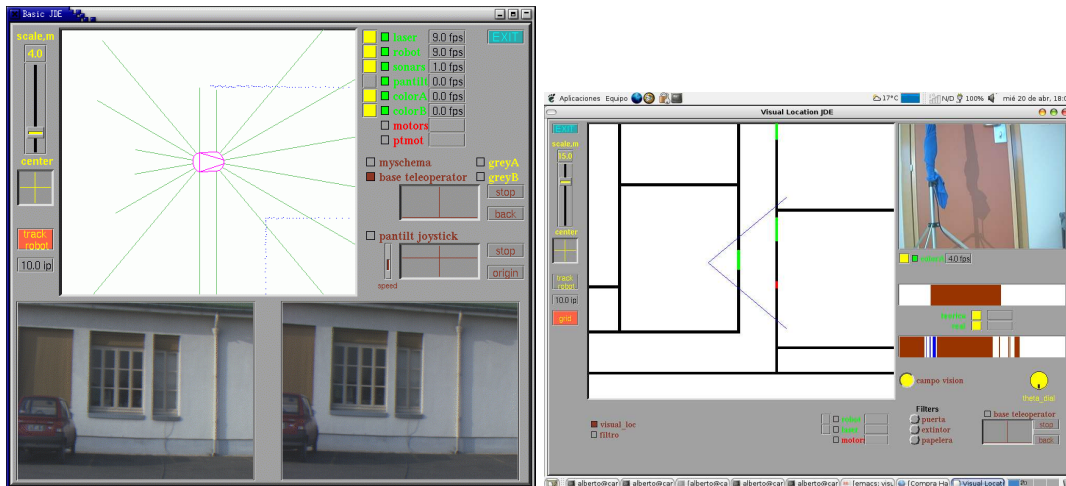

Figure 1: Two different graphical interfaces built using JDE tools