

RoboLog Koblenz 2002 – Coach Description

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Background. The RoboLog Koblenz team has participated in the RoboCup simulator competitions since 1999. Currently, the whole team consists of 10 people (see also our web page www.robolog.org). This year for the first time, we intend to participate also in the coach competition. As for our simulator team, the major goal is to program agents (here: the coach) in a declarative manner but also to be able to describe the procedural aspects of agent behavior. Therefore, for our implementation we use C++ but we will also plan to employ the declarative and logical programming language *Prolog* [3].

The Coach. We have already been programming our online coach in C++ under Linux for several weeks now. So far, our coach is able to parse all soccer server and referee messages. It can also *exchange players* (here: the attackers) of our RoboLog team at the beginning of a game, choosing a good player type for them.

At the moment we concentrate on *opponent modeling*: finding out which role (attacker, midfield player, or defender) each opponent player has and of which player type the exchanged opponent players are in order to oppose them players of our team with appropriate properties. We will have to generalize these methods so that our coach will be able to coach other teams too.

Future Work. For the future we plan to build in some methods that will enable our online coach to find out more about the positioning of opponent players and their favorite pass partners. We want to do this in order to give players who are coached by a future RoboLog coach some advice where to place themselves on the field. For this, we can exploits results from the field of *qualitative spatial reasoning* (see also [1]).

Because of our RoboLog team consisting of an interface written in C++ for low-level skills and a Prolog part for high-level behavior, we also think about doing the same with our online coach. Up to now our coach does not make use of the coach language, but this is planned. So far, we experimented with the agent communication language *KQML* for our agents [2].

References.

1. M. Dettori. Qualitatives räumliches Schließen im RoboCup. Diplomarbeit D 649, Fachbereich Informatik, Universität Koblenz-Landau, 2002.
2. J. Murray, O. Obst, and F. Stolzenburg. RoboLog Koblenz 2000. In P. Stone, T. Balch, and G. Kraetzschmar, editors, *RoboCup 2000: Robot Soccer World Cup IV*, LNAI 2019, pages 469–472. Springer, Berlin, Heidelberg, New York, 2001. Team description.
3. J. Murray, O. Obst, and F. Stolzenburg. Towards a logical approach for soccer agents engineering. In P. Stone, T. Balch, and G. Kraetzschmar, editors, *RoboCup 2000: Robot Soccer World Cup IV*, LNAI 2019, pages 199–208. Springer, Berlin, Heidelberg, New York, 2001.