FC Portugal 2002 Coach: High-Level Coaching of RoboSoccer Games

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Abstract. FC Portugal coach aims at the creation of a flexible team that may be coached at any level, before and during simulation games, by an human or automatic coach. Our coach agent is able to define and communicate to the team, before the start of each game, the strategy to use. This strategy includes the tactics, formations and player's individual behaviors to use in each situation. During the game, the coach is able to change this strategy depending on opponent modeling and statistical information.

1 Introduction

Games between the best simulation league teams in RoboCup2002 will be very similar to real soccer games. Decisive games will be very tied and the capacity of the team coaches to gather game information and use it together with tactical knowledge to change the team tactic in each game will be a decisive factor to win RoboCup 2002. This paper overviews the information gathering strategy of our on-line coach. Due to space limitations, details about its coaching strategy will be published in other forthcoming papers.

2. Gathering Information to Coach a Robosoccer Team

The coach must be able to gather game statistical information and opponent modeling (and eventually teammate modeling) information and uses it to coach the team changing its tactic during the game [1]. Opponent Modeling Information is concerned with opponent characteristics spotted by the coach. We divide this information into four abstraction levels [1]: social level (team information), individual decision level (players and goalie), low-level skills and physical characteristics. At the team level the coach may gather information regarding the opponent team (or his own team) behavior in each situation (e.g. defending or attacking). Information concerning individual players includes players' quality, players' decision mechanisms and goalie strategy. Low-level information is related with the player's individual skills (moving, kicking, dribbling, etc.) and physical information is concerned with the player's physical characteristics (speed, recovery, decay, inertia, acceleration, size, kickable margin and kicking accuracy). Statistical information is also very important to coach a soccer team but, contrarily to opponent modeling information, it is not directly concerned with the opponent's behaviors [1]. It includes the time and result of the game, game play modes, player's actions with and without the ball and their respective results, ball possession (of each team in each region of the field), player positions in the game, assistances to shoots on goal, ball losses and ball recoveries.
All the information gathered by the coach is recorded in an appropriate logfile for future utilization and is used on-line during the game to decide the team tactic at each moment.

References

1. Luís Paulo Reis and Nuno Lau, *COACH UNILANG – A Standard Language for Coaching a (Robo) Soccer Team,* in Andreas Birk, Silvia Coradeschi and Satoshi Tadokoro, editors, RoboCup-2001: Robot Soccer World Cup V, Springer Verlag, LNAI, Berlin, 2002, (to appear)