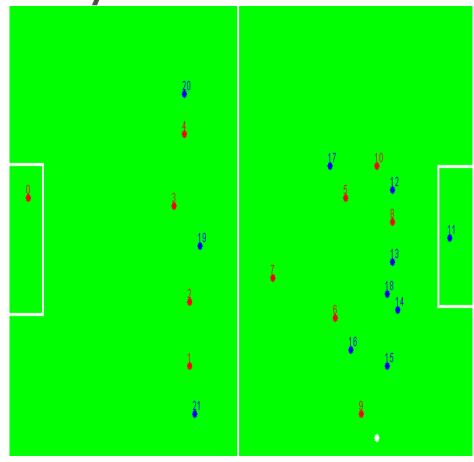# **C**atalysts

# 8th Catalysts' Coding Contest

*Linz / Austria and Cluj / Romania*

*April 27th, 2012*

# Soccer Video Analysis

- The Goal: Automatically analyse relevant situations in a soccer video

- Why? Soccer trainers want to show critical situations to their players immediately after the match. They want to use video analysis already at school level.

- Today video analysis is only available for clubs with hard financial background. They get better and better.

# Level 1: Distance

Calculate the distance of the players to the ball

**Input:**

 frame := ballPosition {player}

 ballPosition := coordinate

 player := teamNumber playerNumber coordinate

 coordinate := xPosition yPosition

 xPosition, yPosition := number from 0 .. 120

 teamNumber := number either 1 or 2

 playerNumber := number from 1 .. 11

**Output:** {teamnumber playernumber}

 sorted by distance to the ball

 nearest player first

 distances are unique, thus there's a single correct result

# Level 1: Distance

**Example for 4 players only:**

**Input:** 0 0 1 1 0 5 1 2 0 1 2 1 0 2 2 2 0 0

**Output:** 2 2 1 2 2 1 1 1