

# Catalysts

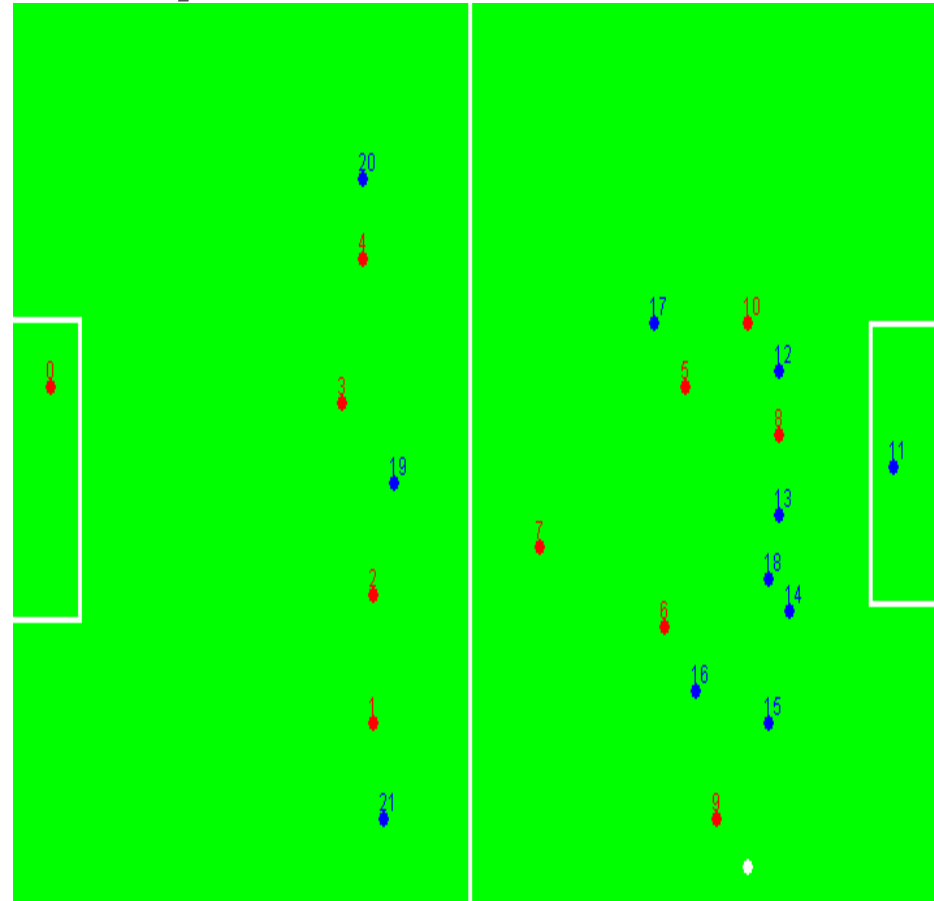
The background of the slide features a series of fluid, overlapping waves in shades of red, orange, and yellow, creating a sense of motion and energy. The waves flow from the left side towards the right, with some areas appearing more saturated and others more translucent.

## 8th Catalysts' Coding Contest

*Linz / Austria and Cluj / Romania  
April 27th, 2012*

# C 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.



# C 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

# C 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