STI robot competition
Introduction meeting

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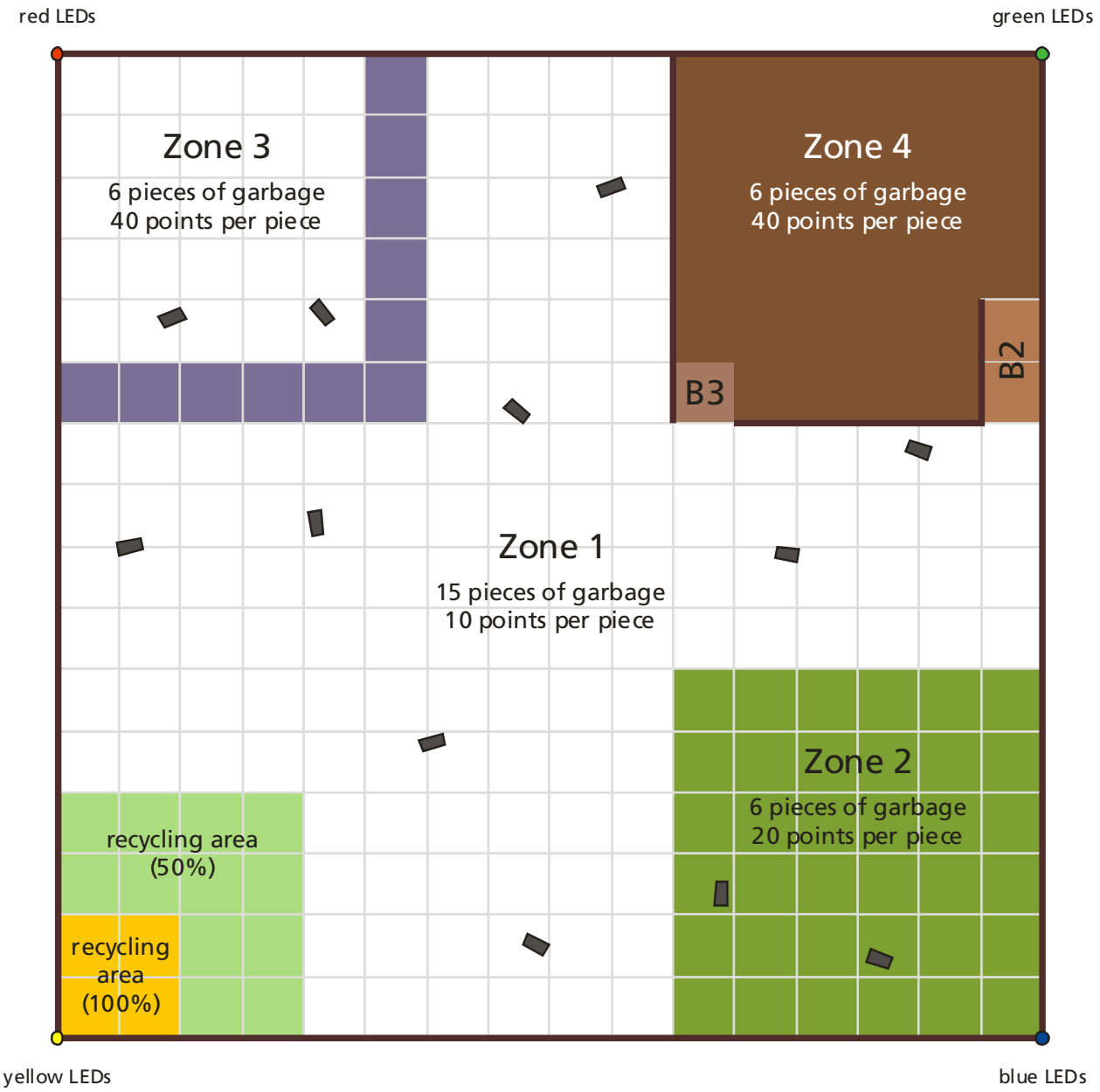
Aim of the competition

- Friendly competition: 5 teams of 3 students
- Earn a maximum of points by collecting garbage and depositing it in the recycling zone
- Arena with different terrain types: score depends on garbage position
- Private competition (rehearsal, not evaluated)
- Public competition (robot **features** will be evaluated)

Arena example



Main rules

- **Robots must be 100% autonomous**:
  - Battery powered
  - No remote control
  - No remote computation
- **Multi-robot solutions are allowed**
  - Communication between robots is allowed (but not to offload computation)
- **Garbage must remain intact**
- **Maximum volume: 1 m³**
- **No flying solutions**

Important dates

- Design review ("milestone 3"): **week 7** (April 11th to April 15th)
- Report deadline (SAC): Friday **June 10th**
- Final arena: **June 4th to June 14th**
- Private competition: **June 9th**
- Public competition: **June 14th**

Deliverables

- Report
- Videos

  A set of video files demonstrating all the capabilities of your robot. No fancy video effects or editing, simple cuts are ok.
- CD/DVD with all source code, drawings, etc.
- The robot participating to the competition

Grading

- **Design review** (milestone 3): 10%
- **Achievements**: 40%
- **Report**: 30%
- **Video**: 20% (scientific quality)

Achievements

Management (20%)

- Time management
- Budget management
- Team management
- Process management

Functionalities (40%)

- Localization & navigation
- Obstacle avoidance
- Being able to move bottles
- Being able to drop bottles in the recycling area
- Robustness

Quality (40%)

- Mechanical design (drawings & design)
- Electronics design
- Software
- Integration (software & mechatronics)

Budget

- Real budget (1000 CHF): buying parts
  - Coach must authorize the buying
  - Buy in local stores and keep receipts
  - Order from suppliers (*through us*)
- Virtual budget (2000 CHF)
  - Components already in stock
  - Access to 3D printers
  - Access to mechanical & PCB workshop

http://robot-competition.epfl.ch/