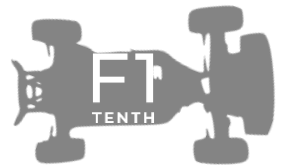# THE 1ST F1TENTH KOREA CHAMPIONSHIP

Orientation

Index

1. Introduction to 'F1TENTH KOREA CHAMPIONSHIP'

2. In-Person Event Logistics

3. Rules and Regulations

Introduction to

'F1TENTH KOREA CHAMPIONSHIP'

Organizers

Dong Young Jang

CheolHyeon Kwon

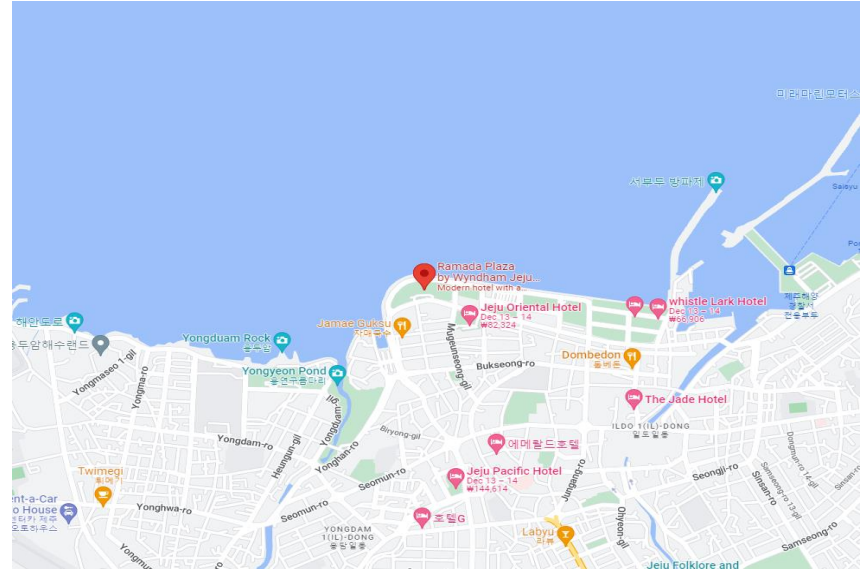JaeHyo Kim

Kyong Hoon Kim

Dong Sung Pae

Jin Hyun Kim

SunHo Jang

Location

Ramada Plaza by Wyndham Jeju, Jeju island, Republic of Korea

All information can be found here: https://korea-race.f1tenth.org/

Time Line

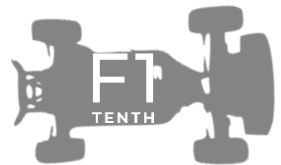| DATE	IN-PERSON COMPETITION
Oct 24th	Registration opens
~~Nov 11th - 23:59 KST~~ **Nov 30th - 23:59 KST (Extended)**	Registration closes **(Extended to until the end of November.)**
Nov 17th - 6pm KST	Online, Introduction of all teams, Race overview, Track overview for in-person competition Meeting link(ZOOM)
Dec 12th	Introduction to F1/10th Challenges , Lectures on Autonomous Driving Technology
Dec 13th	Race Day(Time Trial, Head to Head) , Award Ceremony

F1 TENTH

Communicating with the Organizers

- All important information can be found on the event page:

  https://korea-race.f1tenth.org/

- Join our slack workspace here:

  https://join.slack.com/t/f1tenthxkorea/shared_invite/zt-1jc2ptlnr-kUwwwcAFKmZNvTTRimTPoQ

In-Person
Event Logistics

Schedule

DAY 1 (12/12):

TIME	PROGRAMS	SPEAKERS
10:00~12:00	Introduction to F1/10th Challenges	Dong Sung Pae(Sangmyung University) Cheolhyeon Kwon(UNIST) Jin Hyun Kim(Gyeongsang National University)
13:00~16:00	1) Learning to drive autonomously at the limits of handling - Experiences from Roborace and the Indy Autonomous Challenge (~ 1 hour) 2) Raceline Creation for autonomous vehicles: Minimum Curvature & Minimum Time (~ 45 minutes) 3) Path Planning for High-dynamic overtaking manoeuvres: The Graph-based Planner (~ 1 hour)	Johannes Betz (University of Pennsylvania) Kukjin Jang (University of Pennsylvania) Matthew O'Kelly (Google)
16:00~17:00	Demo	

DAY 2 (12/13):

TIME	PROGRAMS
10:00~12:00	Conduct driving test by team
13:00~15:00	Time Trial Race
15:30~16:30	Head to Head Race
16:30~18:00	Award Ceremony

All information can be found here: https://korea-race.f1tenth.org/

Phases Overview

1. **Inspection**

2. **Qualification**
   a. Part 1
      - Vehicle can drive through the track
      - Remote emergency brake works
   b. Part 2
      - Time Trials
      - Fastest lap
      - Number of laps in 5 minutes

3. **Head-to-head**
   a. Pre-Check
      - Time trials
      - Bumper
      - Obstacle avoidance
   b. Race
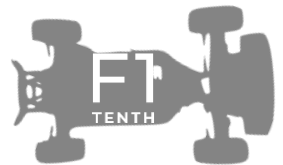   - Standing Start
      - Finish 10 laps before the opponent

Phase 1: Car inspection

- The car should be built according to F1TENTH instructions.

- We will:
    - Check the hardware of the car to meet the requirements:
      http://korea-race.f1tenth.org/rules.html
    - Check that the vehicle is safe

Phase 2: Qualification – Part 1

1. Same track as the race

2. Each vehicle must demonstrate that it can drive autonomously through a track without crashing.

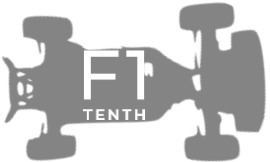3. The team must demonstrate that it is possible to trigger car emergency stop remotely.
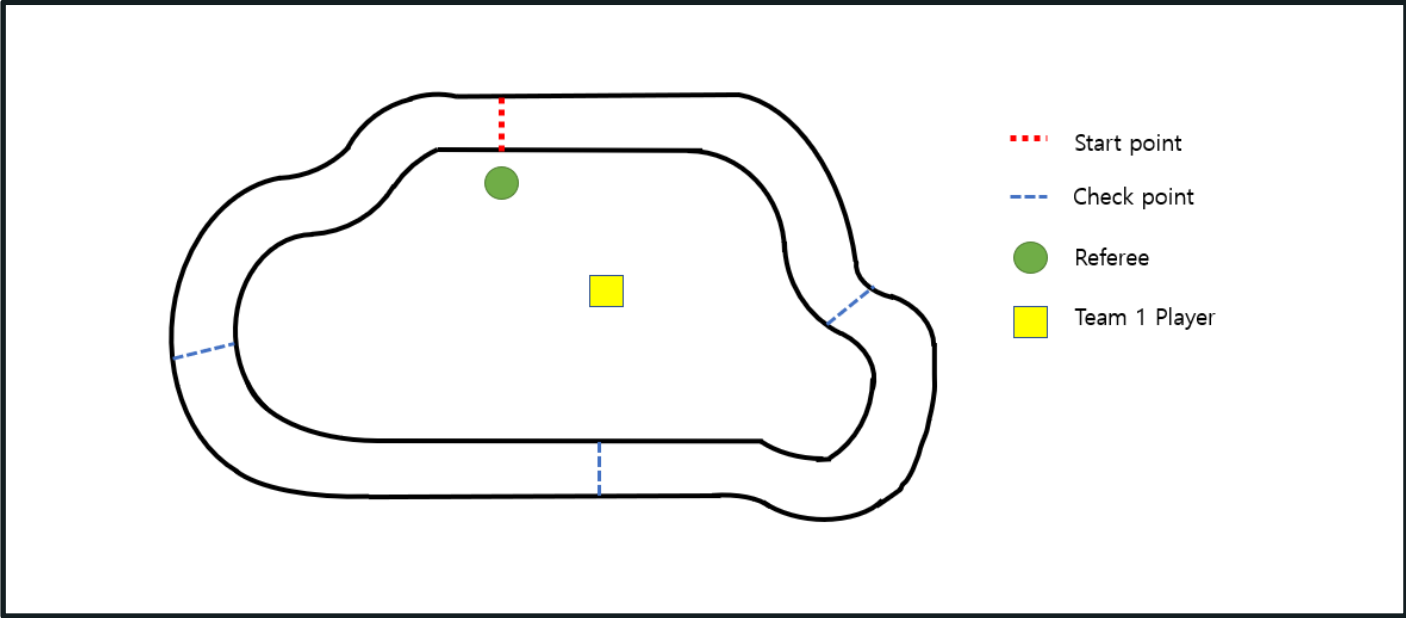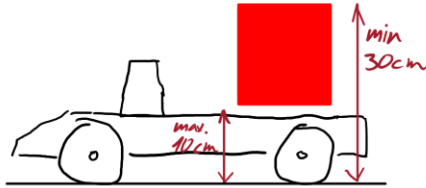
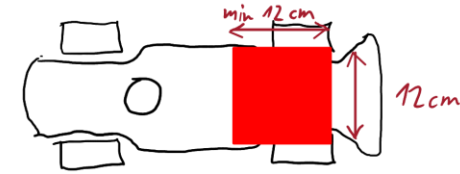# Phase 2: Qualification – Time Trials

- Two heats, each 5 minutes

- Two goals (two leaderboards):
  - Fastest lap time
  - Highest number of completed laps

- Algorithm reconfiguration/tuning
  - Between the heats
  - During the heat, but the car must be stopped.
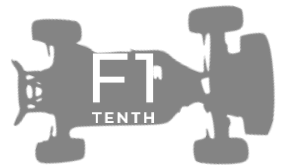
- Crash ⇒ go back to a checkpoint

Example : Time Trial

Phase 3: Head-to-head – Precheck

- Car completed time trials

- Car has a foam bumper

- Car must be perceivable by LiDAR

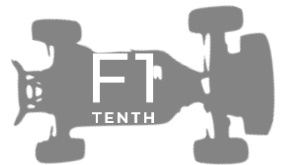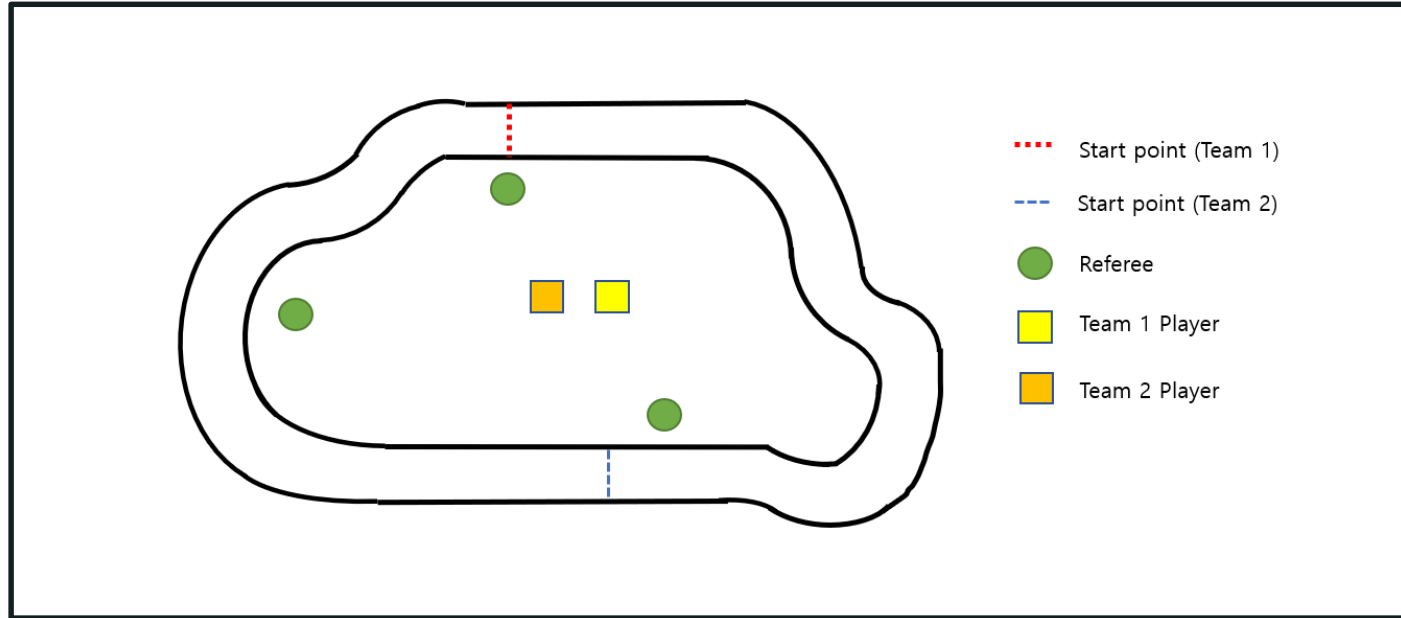- Car can avoid obstacle – static and dynamic obstacles

Phase 3: Head-to-Head Race

- Two cars on the track
- All-play-all or knockout tournament
- Finish 10 laps
- Two start lines
- Crashing
  - Track border ⇒ fix the track and start from the point of the crash
  - Opponent ⇒ allowed once, then disqualification
    - Time (2 mins) to reconfigure/tune the algorithm for both teams
    - Both cars continue from the same line

Example : Head-to-Head Race track

Awards

- 1st : Korea Automotive Technology Institute Director Award,

  Overseas F1tenth Competition Support(prize of about $1,400)
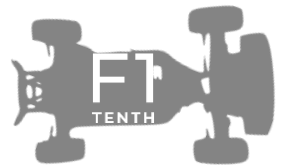
- 2nd : Autonomous Car parts Support

Rules and Regulations

Rules and FAQs

- Can always be found on the event page:
  - http://korea-race.f1tenth.org/rules.html
- FAQ will be updated to include questions from slack as

  we receive and answer them.

  The FAQ will be posted on the event Page.

Rules - General

- Rules provide the competition setup e.g. types of races, allowed hardware etc.

- Rules provide the general guidelines for the races

- Read the rules carefully and ask questions in the Slack channel if something is unclear

Questions?