ROBOTICS

1. Description:

In this category the participants asked to design, build and program various robots. Currently there is a huge interest in robotics worldwide. Companies as well as people have a certain interest in robotics and it is increasing rapidly. To make the new generation more curious and passionate about robots, several competitions have been held in different countries around the globe. *"INFOMATRIX-ASIA"* invites the best minds from around the world to compete in this category. In competition there are going to be these subcategories for Robotics: Lego Sumo, Lego Mini-Sumo, Sumo robots (over different platforms), Lego Line Follower, and Line Follower. **The specific rules** for each subcategory are written in the documents make sure to read them carefully. There are two stages in this category.

Stage – I : In this stage teams present their robots and compete in the particular subcategory to earn as much points as they can. As explained above there are going to be these subcategories for Robotics: Lego Sumo, Lego Mini-Sumo, Sumo robots (over different platforms), Lego Line Follower, and Line Follower. Make sure to read all rules and specific requirements related to each subcategory in the documents. At this stage, participants can take 50% (percentage subject to change) of the total points.

Stage – II : In the second stage, the participants will have an exam by solving some problems related to robotics category. The questions will be related to programming and generally on C programming language see Figure 1 and information about different hardware components inside robots like sensors, motors etc., and their effect on overall performance of the robot see Figure 2 A-B. The test exam is going to be a paper based. At this stage, participants can take 50% (percentage subject to change) of the total points. These two stages' points will be added, and the final score will be determined and the decision is going to be made based on the points obtained.

```
#pragma config(Sensor, S4,        MySonar,              sensorSONAR)
//*!!Code automatically generated by 'ROBOTC' configuration wizard

task main(){

  int distance = 20; //distance in cm
  int motorVelocity = 60;
  int measuredDistance = 0;

  //The program runs indefinitely
  while(true){
    motor[motorA] = motorVelocity;
    motor[motorC] = motorVelocity;

    measuredDistance = SensorValue[MySonar];

    //If there is an obstacle, turns
    if(measuredDistance<distance){
        motor[motorA] = 0;
        wait10Msec(10);
        motor[motorA] = - motorVelocity;
        wait10Msec(10);
    }
  }
}
```

Figure 1 :   Code example in C programming language

Figure 2 A-B :   Different hardware components in robots

2. Evaluation of projects and determination of degrees:

In the first phase all teams with their robots are going to compete. On the second day all team members will take a test to show their knowledge in robotics field. The evaluation process is going to like explained in the main rules and regulation section (http://infomatrix.kz/rules/). Participants will be given their points based on two phases.

IMPORTANT NOTES:

1. Participants must bring their all needed equipments for the competition