Tdr R1

R1 : le robot doit se **déplacer** de manière rapide et **systématique** maniabilité suffisante.

            R1             Fonctionnalités :test = 10x à la suite - déplacement du             robot sur une table, avant le             lancement du programme, on doit pouvoir paramétrer (rapidement !)             6 points de passage sur la table, loin des bords et des obstacles.             Le robot démarre par activation de la tirette, passe par les 6             points dans l'ordre et revient dans la zone de départ avec une             précision de 10cm en moins de 100 secondes

Deplacement -> Wheels

* The robot shall move **efficiently** and **systematically**
* 2m\*3m (useful 2,5\*1,5m without the balance and the opponent’s zone)
* Error accepted in rotation and in length?
* Precision 6 points 10 cm return (link strategy : 60 cm wide zones for pallets with color, targeting middle, need for <15cm error to bring back pallets)
* Worst scenario 6 points very far from each other (approx 2m) with a complete U turn after each point.

!!!Raph calcluc erreur premises!!!

Solution for deplacements :

* Classical Wheels
  + Easy to use
  + Faster than tracks
  + Difficulties with mecanum wheels
* Separation between encoding and motrcicity
  + Ponctual contact in competition with acceleration capacity
  + Punctual needed to maniability
  + Problems of space optimization (motor + coding wheels too wide)
* Wheels and geometry :
  + Octogonal base (compromise between square=easy to place different cards and circle which optimizes area with a given permimeter which is imposed by the rules)
  + Wheels coding and motors are in the same diameter, coding as far from the center as possible to gain in accuracy.
  + Two free wheels at the front and the rear to acquire stability
  + None of the wheels are directional
* Estimating the minimal precision of the coding wheel:
  + Worst scenario for R1 (which is a good representation of an average match during the cup)
  + Approx. 8m deplacement with 6pi turn
  + Error in the end inferior to 10 cm