Engineering Report

* Replacement of Mecanum wheels

horizontal line **Date:** Wed, April 5, 2017

**Location:** South Kent School, during visit

**Attendees**

Chandler, Coach Bell, Kay, G. Edward, Mentor George

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| **Major Milestones:** |  | **Completion Goal** | **Completed** |
| Worlds Competition |  | Apr 2017 |  |
| Post competition – Hatter’s Scrimmage |  | May 16, 2017 |  |

***Agenda:***

* Replace lower cost Mecanum wheels – upgrade

***Current issues:***

* Lowest cost Mecanum wheels bearing surfaces are plastic on plastic. They seem to get dirty very quickly (after 1 competition). The rollers stop rotating freely when dirty.
* New design of the robot does not use the mecanum wheels capabilities – unable to move sideways, tippy.
* Important that the wheels work nicely during Autonomous. Need to be setup and working prior to Worlds so Autonomous programming can be worked on.

***Observations:***

* Robot drifts diagonally when strifing. Unable to strife.
* New robot design – mass not centered/balanced over the wheels

***Suggested concepts for improvement:***

* Upgrade wheels.
  + Other version used more by successful robots.
  + They do not seem to have problems after running on the wheels for extended periods of time.
  + Heavier duty wheel with metal bushing on metal bearing surfaces
  + Wheel spec shows more weight capacity

***Review comments:***

* Solution may be to keep cleaning the wheels. However unable to determine cleaning frequency needed, and if time between matches is enough for removing the wheels and cleaning and drying, along with keeping the other parts of the robot running. Seems more reasonable to upgrade the wheels. Wheels used by other teams, with good results.

***Status as of 4.05.2017:***

* Unable to mount the new wheels – need thread cutting screws to mount adaptor plate

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| **Action Items** | **Assigned** | **Date/Goal** |
| Get hardware to mount wheels | M. George | 4/06 |
| Move front wheel mounts farther forward – better for balance | Engineering | 4/07 |
| Adjust robot center of balance | Engineering | 4/08 |
| Mount wheels and test | Engineering | 4/08 |
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| **Prepared By:** | Chandler | **Date:** |  |
| **Overview By:** | G. Edward | **Date:** |  |