The Sprocket:
A Robotics Geared Newsletter

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Team 2502 Finishes Building "Rebound Rumble" Robot

After more than six weeks of very hard work, Eden Prairie High School's own robotics team, Team 2502, has finally finished their robot! In recognition of this year's challenge, the robot has been named by some members as "Ricky Robio".

Robio is a robot weighing 115 pounds and standing only 51 inches tall, but it can shoot basketballs into hoops significantly taller than itself! Robio is made out of 80/20 grooved aluminum bars that make him almost indestructible. With the help of Team 2502's programmers, Robio can move in any direction on its tank-drive carpet wheels.

Robio must shoot at any of four baskets to gain points. The shooter that Team 2502 designed is a mix between a tennis ball and baseball shooter. Robio can shoot over 20 feet high and as far as 60 feet. Because of this amazing ability, Robio can try to aim for the hoop scoring the most points, which stands 98 inches above the ground, from the far end of the court. Robio must also balance on one of three plexiglass balance planks in the center of the court at the end of a match.

With an accident occurring on the last day of the build season, the team was struggling to make corrections before the build season ended. Luckily, everything got fixed and running properly before Team 2502 bagged up Robio.

One crucial part of the robot are the bumpers, which serve as extra protection for the robot and helps prevent it from being destroyed during the game. For better or worse, the bumpers failed to show up in Team 2502's build agenda until literally the very last day. As a result, most of the last 9 hours during the build season were spent making the bumpers.

The robot was successfully bagged at 11:59 sharp on February 20th just before the FIRST 2012 build season ended. Although the build season has ended, Team 2502 is still hard at work on a practice robot preparing for the competition at the end of March to be held in Williams Arena.

This is the last Sprocket of the 2012 FIRST build season. Look for us again next year as we cover Team 2502's progress during the 2013 build season!

Up-and-Coming Technology

Cars will soon face many challenging problems such as pollution, congestion, and infrastructural deficiencies. Bring in Autonomo, a fully autonomous vehicle concept developed by Charles Rattray. Autonomo operates on "platoon mode," which allows the cars to travel in tight groups and maintain an uninterrupted flow of traffic while still permitting vehicles to reach their destinations. Platoon mode will also decrease energy consumption by reducing the aerodynamic drag on vehicles further back in the platoon. Sensors will ensure that about 20cm of space will be kept between nearby vehicles, removing the possibility of human error in close quarter driving.

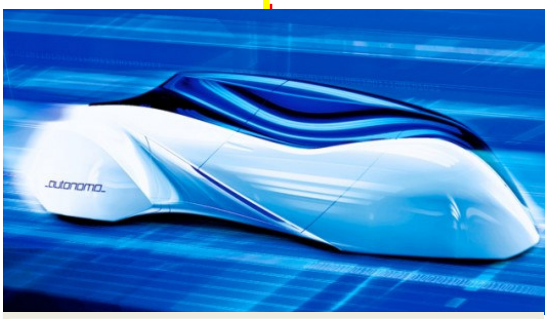

Image courtesy of gizmag.com

This whole operation will be computer operated! Autonomo cars will also be programmed to fully understand their surroundings and react to changes on the road much faster than a human could. Autonomo will be about 4 feet wide and can seat two people. Two Autonomo cars can fit in a single lane on the road together. These vehicles will also have very flexible maneuverability by using wheels that can move in all directions. Autonomo is projected to hit the market by 2030.

Over 17,000 pieces of junk exist in outer space, so why not clean it up? A Swiss satellite called CleanSpace One is currently being built to do just that! EPFL, the Swiss research institute designing CleanSpace One, plans to send CleanSpace One's first prototype into space to exterminate a malfunctioning satellite. Upon locating one of the satellites, CleanSpace One will grasp and stabilize it. This will be the most challenging part of the mission, as the satellite could be spinning and/or moving at over 28,000 km/h (over 17,400 mph)!

The idea is that once CleanSpace One has taken hold of its target, both objects will fall into Earth's atmosphere and burn up. Because CleanSpace One will disintegrate along with the malfunctioning satellite, there will be a whole line of satellites similar to CleanSpace One waiting to be launched. If CleanSpace One can successfully do its job, then it will be known as a turning point in the goal of cleaning outer space.

How Can I Support Team 2502?

1. Come support us at our competition in Williams Arena at the University of Minnesota from March 29 to March 31. It'll be fun!
2. Buy a Team 2502 Superfan T-shirt! If interested, talk to your robotics friends or send an email to mail@team2502.com and we'll place an order for you!
3. The best way to support us is to join Team 2502! Look for us at the Activities Rush next year and sign up there!

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