



MORT
Glossary of Terms

Parent Guide

2013

GLOSSARY OF TERMS

ALLIANCE: a set of three FRC teams that work together during a match to play against an opposing alliance. Alliances are identified during the match by their assigned color, either red or blue.

ALLIANCE CAPTAIN: the team representative for each alliance lead.

ALLIANCE SELECTION: the process during elimination rounds where the top eight teams pick two other robots to work with

ALLIANCE STATIONS: the areas located at either end of the arena, behind the alliance walls; they extend back eight feet from the alliance wall, and across the 18-foot wide center section of the wall; include three identical player's stations each.

ALLIANCE WALL: a 6-1/2 feet high, 27 feet wide, wall that defines the ends of the field.

ALONE IN THE WILDERNESS: DVD Mr. B. has been known to show the team while traveling to our overnight events. A great DVD about a gentleman who went up to Alaska and lived off the land, built his cabin, etc. by hand and what resources he had at his disposal.

ANALYST: a human player that assists the coaches with strategy. There is one analyst per alliance.

ANDY MARK - supply company created by FIRST mentors Andy Baker and Mark Koors, which supplies many components for FRC, mostly mechanical parts like wheels and transmissions. Their website is <http://www.andymark.com/default.asp>

ARENA: all elements of the game infrastructure that are required to play the game: the field, the alliance stations, the game pieces, and all supporting communications, arena control, and scorekeeping equipment.

AUTONOMOUS PERIOD: driver control of the robot is not permitted at this time. During this period, the robots may react only to sensor inputs and commands pre-programmed into the onboard control system. All robot safety rules are still applicable during the autonomous period.

BACKUP TEAM: one of the eight highest seeded teams remaining after alliance selection that is available to play, should a robot need replacing during the elimination matches.

BANEBOT: team motor and gearbox supplier

BETA TESTING: in the fall before build season some teams apply and are chosen to test new controls software and hardware for FIRST. These team work through a series of tasks to try to troubleshoot and debug any issues in the system before it is releases at kickoff to all the teams. The honor of being a Beta Test team is quite high, but it also demands that the team share their knowledge with everyone, particularly helping teams in their area.

BIG D: Another name given to Mr. DiCicco

BLUE BANNERS: The blue banner that is awarded to teams who either win a Regional, District, Chairman's Award or Engineering Inspiration Award at a FIRST/MAR Event.

BREAKOUT NIGHT: this event is held in early October and provides new team members an overview of MORT and our team structure.

BUILD SEASON: the six-week period between the Kick-off and the shipment deadline. Very intense and at times can be very stressful for all involved!

BUMPER: an assembly designed to attach to the exterior of the robot and constructed as specified in Game Play Manual.

CHAMPIONSHIP EVENT (CMP): the last and largest event at FIRST championships. Will take place in St. Louis, Missouri for 2013.

DELPHI: A website that is run by Team 51, Chief Delphi. They host a very popular unofficial forum that allows anyone involved in FIRST to communicate news, ask questions, or find about anything related to FRC. It is the general hotspot of activity, particularly during build season. One of its best attributes is that since so many people use the website, it is very easy to get a quick response.

EINSTEIN: The FIRST Championship's Final Matches. This is where the National Winners are decided, it's the equivalent to the Super Bowl or NCAA's Final Four.

CIM: large, powerful motors available for use in FRC. They are generally considered the most heavy-duty motors that can be used on the robot, and FIRST limits teams to using a maximum of 4 CIM motors on their robots. They are often used on the drivetrain.

COACH: a student or adult mentor identified as the person wearing the designated "Coach" pin or button during a match. There is one coach per team.

COMMUNITY OUTREACH: robotics activities that seek to promote science and technology or simply benefit the community. May or may not involve robots. Takes place both during and outside of build season.

COMPETITION MANUAL (CP): with the new game each year, FIRST releases a very thick rule book and how-to-guide. The number one piece of advice that is given to everyone is to READ THE MANUAL. It contains all the important rules and specifications that must be followed for the robot to pass inspection.

CONTROL SYSTEM: normally refers to the electrical components of the robot but can include the programming element in some cases. All of the required electrical pieces come in the Kit of Parts.

COOPERTITION™: displaying unqualified kindness and respect in the face of fierce competition. Coopertition™ is founded on the concept and a philosophy that teams can and should help and cooperate with each other even as they compete. Coopertition™ involves learning from teammates. It is teaching teammates. It is learning from mentors. And it is managing and being managed. Coopertition™ means competing always, but assisting and enabling others when you can. **COOPERTITION™ AWARD:** the Coopertition™ Award celebrates the team that best demonstrates the ability to help their opponents compete. The Coopertition™ Award will be granted to the team that earns the most Coopertition™ Bonus points during the competition.

CREATIVITY AWARD sponsored by XEROX: the Creativity Award celebrates creative design, in process, execution, or via a creative or unique strategy of play. It is focused on a feature or features of the machine or development process.

cRIO: "Compact Reconfigurable Input/Output" Device. Part of the robot control system, it is produced by National Instruments. It serves as the on board computer and the main brains of the robot. There are now two versions, the 8-slot (referring to the fact that there are 8 slots for modules) and the 4-slot. The cRIO controls solenoids, digital inputs and analog inputs. The piece of equipment is rather expensive and must be handled with care.

DEAN KAMEN: Founder of FIRST and an inventor, entrepreneur, and tireless advocate for science and technology. His passion and determination to help young people discover the excitement and rewards of science and technology are the cornerstones of FIRST (For Inspiration and Recognition of Science and Technology).

DEAN'S LIST FINALIST AWARD: this award celebrates outstanding student leaders whose passion for and effectiveness at attaining, FIRST ideals is exemplary. The Kamen family hopes this honor not only recognizes these student leaders' tremendous recent accomplishments, but also inspires them to continue their great work for FIRST as alumni. FIRST Dean's List Finalists will compete at the championship for the FIRST Dean's List.

DISTRICT EVENT: Since there are so many teams in certain regions, Michigan and the Mid Atlantic area, they form smaller competition that occur more often. This allows for more team to go to competition in a more organized manner. The teams that do best at the district competition qualify for the state competition which acts similarly to a regional.

DRIVER: a pre-college student team member responsible for operating and controlling the robot. There are two drivers per team.

DRIVE TRAIN: the wheel base of the robot, includes the frame, the wheels and their motors, and the bumpers.

END EFFECTOR: The portion of the robot that manipulates the game pieces during a competition.

END GAME: the final 10 seconds of a match.

ENGINEERING EXCELLENCE AWARD sponsored by DELPHI: the Engineering Excellence Award celebrates an elegant and advantageous machine feature or features. This award recognizes any aspect of engineering elegance that reinforces the principles of FIRST.

ENGINEERING INSPIRATION AWARD: the Engineering Inspiration Award celebrates outstanding success in advancing respect and appreciation for engineering and engineers, both within their school, as well as their community.

ENTREPRENEURSHIP AWARD sponsored by KLEINER PERKINS CAUFIELD & BYERS: the Entrepreneurship Award celebrates the entrepreneurial spirit and recognizes a team which has developed a comprehensive business plan in order to define, manage, and achieve team objectives. This team displays entrepreneurial enthusiasm and the vital business skills to ensure a self-sustaining program.

EXCELLENCE IN DESIGN AWARD sponsored by AUTODESK: Details coming soon.

FIELD: the 27-foot by 54-foot carpeted playing area, bounded by two alliance walls and a guardrail system.

FIRST: For Inspiration and Recognition of Science & Technology, whose mission is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.

FLL: FIRST Lego League, which introduces younger students (grades 4-8) to real-world engineering challenges by building LEGO-based robots to complete tasks on a thematic playing surface. FLL teams, guided by their imaginations and adult coaches, discover exciting career possibilities and, through the process, learn to make positive contributions to society.

FRC: FIRST Robotics Competition. "The varsity Sport for the Mind," FRC combines the excitement of sport with the rigors of science and technology. Under strict rules, limited resources, and time limits, teams of 25 students (grades 9-12) or more are challenged to raise funds, design a team "brand," hone teamwork skills, and build and program robots to perform

prescribed tasks against a field of competitors. It's as close to "real-world engineering" as a student can get. Volunteer professional mentors lend their time and talents to guide each team.

FTC: FIRST Tech Challenge. FTC is designed for those who want to compete head to head, using a sports model. Teams of up to 10 students (grades 9-12) are responsible for designing, building, and programming their robots to compete in an alliance format against other teams. The robot kit is reusable from year-to-year and is programmed using a variety of languages. Teams, including coaches, mentors and volunteers, are required to develop strategy and build robots based on sound engineering principles. Awards are given for the competition as for well as for community outreach, design, and other real-world accomplishments.

GDC: "Game Design Committee" The crew of FIRST engineers who create the game each year. They come up with the game idea and create the manual. Before kickoff, the activities of this group are kept quite secret.

GRACIOUS PROFESSIONALISM™: part of the ethos of FIRST. It's a way of doing things that encourages high quality work, emphasizes the value of others, and respects individuals and the community.

GRACIOUS PROFESSIONALISM™ AWARD sponsored by JOHNSON & JOHNSON: the Gracious Professionalism award celebrates outstanding sportsmanship and continuous gracious professionalism in the heat of competition, both on and off the playing field.

HIGHEST ROOKIE SEED AWARD: the Highest Rookie Seed Award celebrates the highest-seeded rookie team at the conclusion of the qualifying rounds.

HUMAN PLAYER: a pre-college student team member that fills one of the alliance roles of feeder or analyst. There is one human player per team.

IMAGERY AWARD in honor of JACK KAMEN: the Imagery Award is in honor of Jack Kamen, Dean's father for Jack's inspirational dedication to art and illustration, his gifted creativity and devotion to FIRST. The Imagery Award celebrates attractiveness in engineering and outstanding visual aesthetic integration from the machine to the team appearance.

INDUSTRIAL DESIGN AWARD sponsored by GENERAL MOTORS: the Industrial Design Award celebrates form and function in an efficiently designed machine that effectively addresses the game challenge.

INDUSTRIAL SAFETY AWARD sponsored by UNDERWRITERS LABORATORIES: the Industrial Safety Award celebrates the team that progresses beyond safety fundamentals by using innovative ways to eliminate or protect against hazards.

INNOVATION IN CONTROL AWARD sponsored by ROCKWELL AUTOMATION: this award celebrates an innovative control system or application of control components – electrical, mechanical or software - to provide unique machine functions.

JUDGES' AWARD: during the course of the competition the judging panel may decide a team's unique efforts, performance, or dynamics merit recognition. To recognize these unique teams, FIRST offers a "blank" judges' award. The judging panel will select a team to be honored as well as the name of the award.

JUNIOR FLL: Focused on building an interest in science and engineering in children ages 6-9, Junior FIRST®LEGO® League is a hands-on program designed to capture young children's inherent curiosity and direct it toward discovering the possibilities of improving the world around them. Just like FIRST® LEGO® League, this program features a real-world challenge, to be solved by research, critical thinking and imagination. Guided by adult coaches and the Jr.FLL Core Values, students work with LEGO elements and moving parts to build ideas and concepts and present them for review.

KIT OF PARTS (KOP): the collection of items listed in the Kit of Parts Checklist provided by FIRST.

KICKOFF: The day the "game" challenge is release live through webcast on the FIRST site. Founder Dean Kamen gives a speech about the benefit and importance of FIRST, and other significant people such as Woodie Flowers or the occasional pop culture celeb (will.i.am. for 2010-2011) say inspirational things. Annually held at the County College of Morris.

MAR: Mid-Atlantic Robotics, nonprofit organization that runs our MAR District Events and MAR Championship.

MAYA: Autodesk Animation program used by our Animation Team.

MENTOR: A volunteer adult that assists and guides students in various areas of MORT.

MATCH: A single iteration of play in which alliances attempt to complete the objectives of the game during a competition.

MATCH, ELIMINATION: a play-off style, best two out of three, round in which the eight alliances play each other to find the winner. The first and eighth, second and seventh, third and sixth, fourth and fifth play each other initially.

MATCH, QUALIFYING: each team plays twelve matches in order to rank the teams

MATCH SCORE: the total number of points earned by an alliance during a match less any penalties.

McMASTER: Team part supplier

POT BOX/OPERATOR CONSOLE: the collection of the hardware used to run the Driver Station software and any associated equipment, control interfaces, display systems, structure, decorations, etc. used by the drivers to operate the robot.

MORT: Mt. Olive Robotics Team, FRC 11

MORT Beta: Mt. Olive Robotics Team's JV Team

MORTIMER: Team's gnome mascot that brings the team good luck at our competition

MORT University (MORT U.): MORT's fall pre-season program that prepares our teams for the upcoming build FRC Competition Season. The program usually runs from October through November.

OFFSEASON: may or may not exist to some teams. Actually, off-season is defined as the time period a team does not engage in FIRST robot building. The term is misleading in that it implies robotics activity ceases at some point, when in reality it continues year-round in the form of outreach, new member training, and experimental projects.

PENALTY: a decrement in the alliance score assigned when a deserving violation of the game rules has been identified by a referee.

PICKLES: The unofficial nickname of our MORT program here. We'd love to use the name Pickles but understand that it doesn't give a professional image of our program, so we keep it "in-house"!

PIT: At our competitions each team is given a 10' cube to work in. This is their home base where they would keep any tools or materials as well as the robot while it is not competing. Many teams chose to build a wooden or metal frame that they put inside their pit to help structure their work space. It is very important to keep your pit clean and safe. The term "pits" is generally used to the part of the building where all the pits are concentrated.

PLAYER STATION: positions behind the alliance wall where each team sets up their operator console.

QUALITY AWARD sponsored by MOTOROLA: the Quality Award celebrates machine robustness in concept and fabrication.

RED CARD: an indication of disqualification of a team.

ROLL OUT EVENT: MORT's annual event held in February at the completion of our build season. At this event we unveil this year's robot for family, friends, team sponsors and school officials.

REGIONAL: The first level of competitions. At a local "home" regional close to the high school, FIRST teams cooperate and compete for awards that include the Excellence in Design Award, Animation, Website, Dean's List, Woodie Flowers, and Chairman's Award. After two and a half days of robotics competitions, semifinals and then ultimately finals will decide three teams as regional winners of the robot competition. Expect upbeat techno/dance music, dramatic lighting, thunderous cheering, and plenty of robots. Oh, and people.

REGIONAL CHAIRMAN'S AWARD: The highest honor given to FIRST teams on a regional level. The Chairman's Award values dedication to the FIRST message and the innovative, hard work required to imbed in into our culture. While building a robot demands strategy, efficiency, and perseverance in the build facility, the outreach needed to transform cultural values takes those words to a new level. School pep rallies, local fairs, and community service projects are good places to begin. A team can and should submit for this prestigious award in one regional competition every year.

ROBOT: the composite electromechanical assembly designed and built by a FRC team to perform specific tasks when competing in the competition. The robot must include all the basic systems required to be an active participant in the game – power, communications, control, mobility, and actuation. The robot implementation must obviously follow a design approach intended to play the current FRC game (e.g. a box of unassembled parts placed on the field, or a robot designed to play a different game, would not satisfy this definition).

ROOKIE ALL-STAR AWARD: the Rookie All-Star Award celebrates the rookie team exemplifying a young but strong partnership effort, as well as implementing the mission of FIRST to inspire students to learn more about science and technology.

ROOKIE INSPIRATION AWARD: this award celebrates a rookie team outstanding success in advancing respect and appreciation for engineering and engineers, both within their school, as well as in their community.

SHIP DAY: the day six weeks after kickoff when the robot must be packed in a crate and shipped off to the regional competition in New Orleans. Basic functional mechanical build must be completed before then, although finer points in physical and controls design alike may be tweaked later on at competition.

SOLIDWORKS: "Computer-aided design" Using a computer program to design or draft mechanical pieces and parts. This method, as opposed to a paper drawing (or no drawing at all) allows for quicker precision. While there is a bit of a learning curve, once mastered, students can use such programs to bring their ideas to life.

SPONSORS: to build the robot for competition, a lot more than time is required. Parts, tools, replacements, and computers, among other things, cost a lot of money. We look to our generous sponsors to help us make the FRC a financially safe option for every student and team. Sponsors may include large corporations (see our sponsors page for a full list), average-

sized companies, or even small local businesses. They may be robotics-related or non-robotics-affiliated. They may contribute in the form of funds, a build area, food, tools and supplies, or even talented employees who become team mentors. Regardless, all sponsors share an undeniable spirit of generosity.

STEM: Science Technology Engineering and Mathematics

SURROGATE: a team randomly selected by the Field Management System (FMS) to play an extra qualification match. A surrogate receives no qualification, ranking, or Cooperition™ points for the extra match.

TEAM: four representatives from an FRC team that interact with their robot and alliance partners to play the current FRC game. Positions on the team are coach, driver and human player.

TEAM SPIRIT AWARD sponsored by CHRYSLER: the Team Spirit Award celebrates extraordinary enthusiasm and spirit through exceptional partnership and teamwork furthering the objectives of FIRST.

TELEOPERATED PERIOD: at the beginning of the teleoperated period the operator console controls are activated and drivers may remotely control their robots. The drivers continue to teleoperate their robots for the remainder of the match. The teleoperated period ends when the arena timer displays zero seconds. This also indicates the end of the match.

TIMEOUT: a period of up to six minutes, which teams can use to pause elimination match progression. Each alliance is granted one, and only one, timeout.

UL SAFETY AWARD: Award given to the team that works and displays good safety practices while at a FRC Event/Regional.

VICTOR: An electrical component (Speed Controller) used by our Electrical Team

WATER GAME: Since the game is not revealed in till kickoff there is often much speculation as to what the FRC game will be. Part of FIRST pop culture is the idea that one year the game will be in water. Although it is highly unlikely that this will ever happen, everyone gets a good laugh (and groan) out of the possibility.

WEBSITE AWARD: the Website Award recognizes excellence in student-designed, built, and managed FIRST team websites.

WOODIE FLOWERS FINALIST AWARD: The Woodie Flowers Finalist Award celebrates effective communication in the art and science of engineering and design. Dr. William Murphy founded this prestigious award in 1996 to recognize mentors who lead, inspire, and empower using excellent communication skills. The Woodie Flowers Award is presented to an outstanding

engineer or teacher participating in the robotics competition who best demonstrates excellence in teaching science, math, and creative design.

WOODIE FLOWERS - an MIT professor who originated the idea that evolved into FRC. He is the co-founder, along with Dean Kamen, of FIRST as well as a national advisor. He is a serious part of FIRST culture, for creating ideas like "cooperatition" and dressing, well, like a hippie (rock that ponytail Woodie!).

YELLOW CARD: a warning of egregious robot or FRC team

80/20 - a unique framing system made of an aluminum alloy. Its pieces have a special t-shape on each side that allows for flexibility within assembly. Many FIRST teams, including 1912, choose to use it within their robot design.