

12 GLOSSARY

Term	Definition
ACTIVATION BONUS	At least 26 total CHARGE STATION points earned in AUTO and/or ENDGAME
ACTIVE DEVICE	any device capable of dynamically controlling and/or converting a source of electrical energy by the application of external electrical stimulus
ALLIANCE	a cooperative of up to 4 FIRST Robotics Competition teams
ALLIANCE CAPTAIN	The designated STUDENT representative from each ALLIANCE Lead
ALLIANCE AREA	a 20 ft. (~609 cm) wide by 9 ft. 10¼ in. (~300 cm) deep infinitely tall volume formed by, and including the ALLIANCE WALL, the edge of the carpet, and ALLIANCE colored tape
ALLIANCE WALL	an ARENA element that Error! Reference source not found.
ARENA	a space which includes all elements of the game infrastructure that are required to play CHARGED UP SM presented by Haas: the FIELD, GAME PIECES, and all equipment needed for FIELD control, ROBOT control, and scorekeeping.
ARENA FAULT	an error in ARENA operation
AUTO	The first phase of each MATCH is 15 seconds long and called the Autonomous Period (AUTO). During AUTO, ROBOTS operate without any DRIVE TEAM control or input
BACKUP TEAM	The team whose ROBOT and DRIVE TEAM replaces another ROBOT and DRIVE TEAM on an ALLIANCE during the Playoff MATCHES
BACKUP POOL	the group of teams willing and able to join an ALLIANCE during the Playoff MATCHES, if needed, until up to 8 teams accept
BARRIER	a 7 ft. 4 in. (~224 cm) long assembly that separates each COMMUNITY from its adjacent LOADING ZONE
BUMPER	a required assembly which attaches to the ROBOT frame. BUMPERS protect ROBOTS from damaging/being damaged by other ROBOTS and FIELD elements
BUMPER ZONE	the volume contained between the floor and a virtual horizontal plane 7½ in. (~19 cm) above the floor in reference to the ROBOT standing normally on a flat floor
BYPASSED	the state assigned to any ROBOT which is unable or ineligible to participate in that MATCH, as determined by the FTA, LRI, or Head REFEREE
CENTER LINE	a white tape line that bisects the length of the FIELD.

Term	Definition
CHARGE STATION	an 8 ft. 1¼ in. (~247 cm) wide, 6 ft. 4⅞ in. (~193 cm) deep structure that is located in each COMMUNITY such that its center is 8 ft. 2⅝ in. (~251 cm) from the far edge of the GRID'S tape line and centered in the width of the COMMUNITY
COACH	a guide or advisor
COMMUNITY	an 18 ft. (~549 cm) wide by 11 ft. ⅜ in. (~336 cm) to 16 ft. 1¼ in. (~491 cm) deep infinitely tall volume formed by the ALLIANCE WALL, the plane defined by the BARRIER plastic, ALLIANCE colored tape, and the guardrail. an 18 ft. (~549 cm) wide by 11 ft. ⅜ in. (~336 cm) to 16 ft. 1¼ in. (~491 cm) deep infinitely tall volume formed by the ALLIANCE WALL, the plane defined by the BARRIER plastic, ALLIANCE colored tape, and the guardrail. an 18 ft. (~549 cm) wide by 11 ft. ⅜ in. (~336 cm) to 16 ft. 1¼ in. (~491 cm) deep infinitely tall volume formed by the ALLIANCE WALL, the plane defined by the BARRIER plastic, ALLIANCE colored tape, and the guardrail.
COMPONENT	any part in its most basic configuration, which cannot be disassembled without damaging or destroying the part or altering its fundamental function
CONTINUOUS	describes rule violations that happen for more than approximately 10 seconds
CONTROL	the state of a GAME PIECES if any of the following are true: A. the GAME PIECE is fully supported by the ROBOT, or B. the ROBOT is intentionally moving a GAME PIECE to a desired location or in a preferred direction C.
CONE	a yellow 1 ft. 13/16 in. (~33 cm) tall rubber marker cone
CONE NODE	a 1¼ in. Schedule 40 (1.66 in. (~4 cm) outer diameter) aluminum pipe with a plug installed in the top
COOPERTITION BONUS	At least 3 GAME PIECES scored on each ALLIANCE'S CO-OP GRID
COTS	an adjective that describes a standard (i.e. not custom order) part commonly available from a VENDOR for all teams for purchase
CUSTOM CIRCUIT	Any active electrical item that is not an actuator (specified in R501) or core control system item (specified in R710)
CUBE	cube-like shape, inflated to 9 ½ in. (~24 cm) +/- ¼ in. (~6 mm) as measured from face to face
CUBE NODE	a polycarbonate shelf that is 1 ft. 6¼ in. (~46 cm) wide and 1 ft. 5 in. (~43 cm) deep.
DISABLED	the state in which a ROBOT is commanded to deactivate all outputs, rendering the ROBOT inoperable

Term	Definition
DISQUALIFIED	the state of a team in which they receive 0 MATCH points and 0 Ranking Points in a Qualification MATCH or causes their ALLIANCE to receive 0 MATCH points in a Playoff MATCH
DOCKED	The state of the ROBOT if it is contacting only the CHARGE STATION and/or other items also directly or transitively fully supported by the CHARGE STATION.
DOUBLE SUBSTATION	A SUBSTATION in-line with their opponent's ALLIANCE WALL.
DRIVER	an operator and controller of the ROBOT
DRIVER STATION	Error! Reference source not found.
DRIVE TEAM	a set of up to 5 people from the same <i>FIRST</i> Robotics Competition team responsible for team performance for a specific MATCH
ENGAGED	The state of the ROBOT if the following are true: A. the CHARGE STATION is LEVEL, and B. all ALLIANCE ROBOTS contacting the CHARGE STATION are DOCKED.
FABRICATED ITEM	any COMPONENT or MECHANISM that has been altered, built, cast, constructed, concocted, created, cut, heat treated, machined, manufactured, modified, painted, produced, surface coated, or conjured partially or completely into the final form in which it will be used on the ROBOT
FIELD	an approximately 26 ft. 3½ in. (~802 cm) by 54 ft. 3¼ in. (~1654 cm) carpeted area bound by and including the inward- and upward-facing surfaces of the guardrails, inward-facing surfaces of the ALLIANCE WALLS, inward-facing surfaces of the SINGLE SUBSTATION (excluding the PORTALS), and the outermost vertical and diagonal polycarbonate surfaces of the DOUBLE SUBSTATION (excluding the PORTALS)
FIELD STAFF	REFEREES, FTAs, or other staff working around the FIELD
FMS	Error! Reference source not found.
FOUL	a credit of 5 points towards the opponent's MATCH
FRAME PERIMETER	fixed, non-articulated structural elements of the ROBOT contained within the BUMPER ZONE
FTA	a <i>FIRST</i> Technical Advisor
GAME PIECES	CONES and CUBES
GRID	a 3 ft. 10 in. (~117 cm) tall, 4 ft. 6¼ in. (~138 cm) deep assembly that includes the ALLIANCE colored tape line
HUMAN PLAYER	a GAME PIECE manager

Term	Definition
HYBRID NODE	1 ft. 4 in. (~41 cm) deep carpeted surface contained within the GRID.
INSPECTOR	a volunteer employed to accurately and efficiently assess the legality of a given part or ROBOT
KOP	Kit of Parts, the collection of items listed on the current season's Kickoff Kit Checklists, distributed to the team via <i>FIRST</i> Choice in the current season, or paid for completely (except shipping) with a Product Donation Voucher (PDV) from the current season
LEVEL	A CHARGE STATION within approximately 2½° of parallel to FIELD carpet
LINEUP	the list of the 3 teams participating in the MATCH and their selected DRIVER STATIONS
LINK	3 adjacent NODES in a ROW contains a scored GAME PIECE
LRI	a Lead ROBOT INSPECTOR
MAJOR MECHANISM	a group of COMPONENTS and/or MECHANISMS assembled together to address at least 1 game challenge: ROBOT movement, GAME PIECES manipulation, FIELD element manipulation, or performance of a scorable task without the assistance of another ROBOT
MATCH	a two minute and 30 second period of time in which ALLIANCES play CHARGED UP
MECHANISM	an assembly of COMPONENTS that provide specific functionality on the ROBOT
MOBILITY	The award given to a ROBOT whose BUMPERS have completely left its COMMUNITY at any point during AUTO
MOMENTARY	describes rule violations that happen for fewer than approximately 3 seconds
MPX	myRIO Expansion port, the expansion port on the roboRIO
NODE	1 of 9 GAME PIECE scoring locations within a GRID
OPERATOR CONSOLE	the set of COMPONENTS and MECHANISMS used by the DRIVERS and/or HUMAN PLAYERS to relay commands to the ROBOT
PASSIVE CONDUCTOR	any device or circuit whose capability is limited to the conduction and/or static regulation of the electrical energy applied to it (e.g. wire, splices, connectors, printed wiring board, etc.)
PH	a Pneumatic Hub
PCM	a Pneumatic Control Module
PDH	a Power Distribution Hub
PDP	a Power Distribution Panel

Term	Definition
PIN	the act in which a ROBOT is preventing the movement of an opponent ROBOT by contact, either direct or transitive (such as against a FIELD element)
PORTAL	a three-dimensional volume through which humans transfer GAME PIECES to ROBOTS or the FIELD
RED CARD	a penalty assessed for egregious ROBOT or team member behavior or rule violations which results in a team being DISQUALIFIED for the MATCH
REFEREE	an official who is certified by FIRST to enforce the rules of CHARGED UP
REPEATED	describes rule violations that happen more than once within a MATCH
ROBOT	an electromechanical assembly built by the FIRST Robotics Competition team to play the current season's game and includes all the basic systems required to be an active participant in the game –power, communications, control, BUMPERS, and movement about the FIELD
ROW	a series of 9 horizontally adjacent NODES where GAME PIECES can be scored for a common number of points
RP	a Ranking Point
RPM	a Radio Power Module
RS	the Ranking Score
RSL	a ROBOT Signal Light
SIGNAL LEVEL	circuits which draw $\leq 1A$ continuous and have a source incapable of delivering $>1A$, including but not limited to roboRIO non-PWM outputs, CAN signals, PCM/PH Solenoid outputs, VRM 500mA outputs, RPM outputs, and Arduino outputs)
STAGING MARK	1 of 8 marks used to identify starting locations for GAME PIECES
STARTING CONFIGURATION	the physical configuration in which a ROBOT starts a MATCH
STARTING LINE	a white tape line spanning the ALLIANCE AREA and SUBSTATION AREA located 2 ft. 4 in. (~71 cm) from the face of THE ALLIANCE WALL to the near edge of the tape.
STUDENT	a person who has not completed high-school, secondary school, or the comparable level as of September 1 prior to Kickoff
SINGLE SUBSTATION	a SUBSTATION in-line with the guardrail.

Term	Definition
SUBSTATION	an assembly used to move GAME PIECES from humans to ROBOTS or onto the FIELD. There are 2 types of SUBSTATIONS in each SUBSTATION AREA: a SINGLE SUBSTATION and a DOUBLE SUBSTATION.
SURROGATE	a team randomly assigned by the FIELD Management System to play an extra Qualification MATCH
SUSTAINABILITY BONUS	At least 5 LINKS scored.
TECH FOUL	a credit of 12 points toward the opponent’s MATCH
TECHNICIAN	a resource for ROBOT troubleshooting, setup, and removal from the FIELD
TELEOP	The second phase of each MATCH lasting two minutes and fifteen seconds (2:15) during which DRIVERS remotely operate ROBOTS to retrieve and score GAME PIECES
VENDOR	a legitimate business source for COTS items that satisfies all criteria listed in ROBOT Construction Rules
VRM	a Voltage Regulator Module
YELLOW CARD	a warning issued by the Head REFEREE for egregious ROBOT or team member behavior or rule violations. A subsequent YELLOW CARD within the same tournament phase results in a RED CARD

