

12 GLOSSARY



| Term | Definition |
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| ACTIVATED | During TELEOP, the state of a SHIELD GENERATOR Stage that has reached CAPACITY and, if required, has the corresponding CONTROL PANEL action successfully completed. |
| 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 four (4) FIRST Robotics Competition teams |
| ALLIANCE CAPTAIN | The designated student representative from each ALLIANCE in a Playoff MATCH |
| ALLIANCE STATION | a 30-ft. (~914 cm) wide by 10 ft. 9 $\frac{1}{8}$ in. (~328 cm) to 12 ft. 10 $\frac{7}{8}$ in. (~393 cm) deep infinitely tall volume formed by, and including the ALLIANCE WALL, the edge of the carpet, and ALLIANCE colored tape |
| ALLIANCE WALL | The ALLIANCE WALL is the structure that separates ROBOTS from DRIVERS, COACHES, and HUMAN PLAYERS. It consists of three (3) PLAYER STATIONS, the LOADING BAY, and the POWER PORT. ALLIANCE WALLS define the short edges of the FIELD and, along with the guardrails, prevent ROBOTS from exiting the FIELD during the MATCH |
| ARENA | all elements of the game infrastructure that are required to play INFINITE RECHARGESM: the FIELD, POWER CELLS, 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 called Autonomous (AUTO) and consists of the first fifteen (0:15) seconds. |
| BACKUP TEAM | The team whose ROBOT and DRIVE TEAM replaces another ROBOT and DRIVE TEAM on an ALLIANCE during the Playoff MATCHES |
| BOTTOM PORT | a 10 in. (~25 cm) tall, 2 ft. 10 in. (~86 cm) wide rectangle. The bottom edge is 1 ft. 6 in. (~46 cm) above the carpet. |
| BOUNDARIES | 3 in. (~8 cm) wide, 1 in. (~3 cm) tall steel barriers that divide the area inside the SHIELD GENERATOR into two (2) equal sized areas that are 6 ft. 9 $\frac{3}{4}$ in. (~208 cm) wide by 12 ft. $\frac{3}{4}$ in. (~368 cm) deep. |
| BUMPER | a required assembly which attaches to the ROBOT frame |
| BUMPER ZONE | the volume contained between the floor and a virtual horizontal plane 7 $\frac{1}{2}$ 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 FIRST Technical Advisor (FTA), LRI, or Head REFEREE |
| CAPACITY | the number of POWER CELLS, defined in Table 4-1, that must be scored to charge each Stage. |
| COACH | a precollege student or adult mentor member of the DRIVE TEAM who acts as a guide or advisor |

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| COMPONENT | any part in its most basic configuration, which cannot be disassembled without damaging or destroying the part or altering its fundamental function |
| CONTROL | A ROBOT is in CONTROL of a POWER CELL if: <ul style="list-style-type: none"> A. the POWER CELL is fully supported by the ROBOT, B. the POWER CELL travels across the FIELD such that when the ROBOT changes direction, the POWER CELL travels with the ROBOT, or C. the ROBOT is holding a POWER CELL against a FIELD element in attempt to guard or shield it. |
| CONTROL PANEL | a 2 in. (~5 cm) tall, 2 ft. 8 in. (~81 cm) diameter disk constructed of two pieces of ¼ in. (~6 mm) thick polycarbonate, spaced apart by ten ½ in. (~13 mm) diameter metal spacers at regular intervals. |
| CORRAL | the collection area for scored POWER CELLS located at the rear base of the POWER PORT |
| COTS | Commercial off the Shelf, a standard (i.e. not custom order) part commonly available from a VENDOR for all teams for purchase |
| CUSTOM CIRCUIT | any electrical COMPONENT of the ROBOT other than motors, pneumatic solenoids, roboRIO, PDP, PCM, VRM, RSL, 120A breaker, motor controllers, relay modules (per R29-B), wireless bridge, electrical solenoid actuators, or batteries |
| DISABLED | the state in which a ROBOT is commanded to deactivate all outputs, rendering the ROBOT inoperable for the remainder of the MATCH |
| DISQUALIFIED | the state of a team in which they receive zero (0) MATCH points and zero (0) Ranking Points in a Qualification MATCH or causes their ALLIANCE to receive zero (0) MATCH points in a Playoff MATCH |
| DRIVER | a precollege student member of the DRIVE TEAM who is an operator and controller of the ROBOT |
| DRIVE TEAM | a set of up to five (5) people from the same FIRST Robotics Competition team responsible for team performance for a specific MATCH. |
| ENDGAME | The final thirty (0:30) seconds of TELEOP |
| ENERGIZED | Stage 3 ACTIVATED |
| 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 | 26 ft. 11¼ in. (~821 cm) by 52 ft. 5¼ in. (~1598 cm) carpeted area bound by and including the inward- and upward-facing surfaces of the guardrails and inward-facing surfaces of the ALLIANCE WALLS (except Chute surfaces and any surface beyond the face of the POWER PORT) |
| FIELD STAFF | REFEREES, FTAS, or other staff working around the FIELD |
| FMS | the electronics core responsible for sensing and controlling the FIRST Robotics Competition FIELD. The FMS encompasses all FIELD electronics, including computers, REFEREE touchscreens, wireless access point, sensors, stack lights, E-Stops, etc. |

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| FOUL | a credit of three (3) points towards the opponent's MATCH score |
| FRAME PERIMETER | fixed, non-articulated structural elements of the ROBOT contained within the BUMPER ZONE |
| FTA | a FIRST Technical Advisor |
| GENERATOR SWITCH | a 7 ft. 6 in. (~229 cm) wide, 10 ft. 1½ in. deep (~309 cm), and 4 ft. 6 in. (~137 cm) tall assembly that swings from the top of the SHIELD GENERATOR. |
| HANDLE | a structure that consists of a RUNG and the supporting structure below the horizontal beam of the GENERATOR SWITCH. |
| HANGING | A ROBOT that five (5) seconds after the ARENA timer displays zero (0) following TELEOP, it is fully supported (either directly or transitively) by its GENERATOR SWITCH. |
| HUMAN PLAYER | a pre-college student DRIVE TEAM member who acts as a POWER CELL manager |
| INITIATION LINE | a white tape line spanning the width of the FIELD and located 10 ft. (~305 cm) from the face of PLAYER STATION 2 to the near edge of the tape. |
| INNER PORT | a 1 ft. 1 in. (~33 cm) diameter circle concentric with and 2 ft. 5¼ in. (~74 cm) behind (i.e. on the ALLIANCE STATION side of) the OUTER PORT. The center is 8 ft. 2¼ in. (~249 cm) above the carpet. |
| KOP | Kit of Parts, the collection of items listed on the 2020 and 2021 Kickoff Kit checklists, distributed to the team via FIRST Choice in the 2020 and/or 2021 season, or paid for completely (except shipping) with a Product Donation Voucher (PDV) from the |
| LEVEL | the RUNG is within 8 degrees of horizontal. |
| LOADING BAY | a 6 ft. 6 in. (~198 cm) tall by 5 ft. (~152 cm) wide structure located between PLAYER STATIONS 2 and 3. |
| LOADING ZONE | a 5 ft. (~152 cm) wide, 2 ft. 6 in. (~76 cm) deep infinitely tall volume with a triangular base bounded by the LOADING BAY and ALLIANCE colored tape. |
| LRI | Lead ROBOT Inspector |
| MAJOR MECHANISM | a group of COMPONENTS and/or MECHANISMS assembled together to address at least one (1) game challenge: robot movement, game piece control, FIELD element manipulation, or performance of a scorable task without the assistance of another ROBOT. |
| MATCH | a two (2) minute and thirty (30) second period of time in which ALLIANCES play INFINITE RECHARGE |
| MECHANISM | a COTS or custom assembly of COMPONENTS that provide specific functionality on the ROBOT |
| MPX | myRIO Expansion port, the expansion port on the roboRIO |
| OPERATIONAL | when the ALLIANCE'S ENDGAME SCORE is ≥ sixty-five (65) points. |
| OPERATOR CONSOLE | the set of COMPONENTS and MECHANISMS used by the DRIVERS and/or HUMAN PLAYER to relay commands to the ROBOT |
| OUTER PORT | a regular hexagon that measures 2 ft. 6 in. (~76 cm) in height. The center of the OUTER PORT is 8 ft. 2¼ in. (~249 cm) above the carpet. |

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| PARK | A ROBOT that five (5) seconds after the ARENA timer displays zero (0) following TELEOP, it is fully supported (either directly or transitively) by the SHIELD GENERATOR and not in contact with any carpet outside its ALLIANCE'S RENDEZVOUS POINT, but without having met the criteria for HANGING. |
| PASSIVE CONDUCTORS | 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.) |
| PCM | a Pneumatic Control Module |
| PDP | a Power Distribution Panel |
| PINNING | preventing the movement of an opponent ROBOT by contact |
| PLAYER STATION | one (1) of three (3) assigned positions in an ALLIANCE WALL from where a DRIVE TEAM operates their ROBOT. |
| POSITION CONTROL | Rotate CONTROL PANEL so a specified color aligns with the sensor for at least five (5) seconds. |
| POWER CELL | a yellow 7 in. (~18 cm) diameter Medium Bounce Dino-Skin foam ball. The <i>FIRST</i> logo may be printed on each ball in black ink. The ball is made by Flaghouse (PN 1892 YEL) and sold by AndyMark (PN AM-4200a) |
| POWER PORT | a 10 ft. 2¼ in. (~310 cm) tall by 4 ft. (~122 cm) wide (excluding backboards) structure and is located between PLAYER STATIONS 1 and 2. |
| 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 <i>FIRST</i> to enforce the rules of INFINITE RECHARGE |
| RENDEZVOUS POINT | a 6 ft. 9¾ in. (~208 cm) wide, 12 ft. 6¾ in. (~383 cm) deep, infinitely tall volume formed by ALLIANCE colored BOUNDARIES, ALLIANCE colored tape, and the black BOUNDARY pair that divides the Red and the Blue BOUNDARIES. |
| ROBOT | an electromechanical assembly built by the <i>FIRST</i> 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. |
| ROTATION CONTROL | Rotate CONTROL PANEL at least three (3) (but no more than five (5)) complete revolutions in the same direction. |
| RP | a Ranking Point |
| RS | the Ranking Score |
| RSL | a ROBOT Signal Light |
| RUNG | a 1¼ in. schedule 40 aluminum pipe (1.66 in. (~4 cm) outer diameter) with two (2) exposed 4 ft. 7⅝ in. (~141 cm) long sections. |
| SECTOR | a 26 ft. 11¼ in. (~821 cm) wide by 10 ft. 2 in. (~310 cm) deep infinitely tall volume formed by an ALLIANCE'S ALLIANCE WALL, guardrail, and INITIATION LINE. The SECTOR includes the INITIATION LINE. |
| SHIELD GENERATOR | a 14 ft. 1½ in. (~431 cm) wide, 15 ft. ¾ in. (~459 cm) deep, and 9 ft. 6½ in. (~291 cm) tall structure located in the center of the FIELD, oriented at a 22.5 degree angle relative to the guardrails. |

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| 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 Solenoid outputs, VRM 500mA outputs and Arduino outputs |
| STARTING CONFIGURATION | the physical configuration in which a ROBOT starts a MATCH |
| STARTING LINE | a white tape line spanning the width of the carpet and located 2 ft. 4 in. (~71 cm) from the back of the PLAYER STATION 2 diamond plate panel to the near edge of the tape. |
| SURROGATE | a team randomly assigned by the FIELD Management System to play an extra Qualification MATCH |
| TARGET ZONE | a 4 ft. (~122 cm) wide, 2 ft. 6 in. (~76 cm) deep infinitely tall volume with a triangular base bounded by the POWER PORT and ALLIANCE colored tape. |
| TECH FOUL | a credit of fifteen (15) points toward the opponent's MATCH score |
| TECHNICIAN | an adult or precollege student member of the DRIVE TEAM who is a resource for ROBOT troubleshooting, setup, and removal from the FIELD |
| TELEOP | The second phase of each MATCH is called the Teleoperated Period (TELEOP) and consists of the remaining two minutes and fifteen seconds (2:15). |
| TIMEOUT | A TIMEOUT is a period of up to six (6) minutes between MATCHES which is used to pause Qualification or Playoff MATCH progression. |
| TRENCH | a 3 ft. ½ in. (~93 cm) tall, 4 ft. 8 in. (~142 cm) wide, and 3 ft. 5½ in. (~105 cm) deep structure that forms a 4 ft. 4 in. (~132 cm) wide, 2 ft. 4 in. (~71 cm) tall, and 2 ft. 6 in. (~76 cm) deep tunnel. |
| TRENCH RUN | a 4 ft. 7 ½ in. (~141 cm) wide, 18 ft. (~549 cm) deep, infinitely tall volume that is bounded by the guardrail, the edge of the TRENCH vertical support closest to the center of the FIELD, and ALLIANCE colored tape. |
| VENDOR | a legitimate business source for COTS items that satisfies all the criteria listed in the Robot Construction Rules' Overview section. |
| 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 |

