

14 Glossary

Term	Definition
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 <i>FIRST</i> Robotics Competition teams
ALLIANCE AREA	a 26 ft. 11 $\frac{1}{8}$ in. wide by 9 ft. 10 $\frac{1}{4}$ in. deep (~821 cm by ~300 cm) infinitely tall volume formed by, and including the ALLIANCE WALL, the edge of the carpet, ALLIANCE colored tape, guardrail, and the AMP wall
ALLIANCE CAPTAIN	The designated STUDENT representative from each ALLIANCE Lead
ALLIANCE WALL	separates ROBOTS from DRIVE TEAM members in the ALLIANCE AREA
AMP	a structure used by ROBOTS to pass NOTES to the ALLIANCE AREA
AMP ZONE	a 10 ft. 10 in. long by 1 ft. 5 $\frac{3}{4}$ in. wide (~330 cm by ~45 cm) infinitely tall volume defined by the AMP wall, guardrail, ALLIANCE WALL, and ALLIANCE-colored tape. The AMP ZONE includes the tape.
AMPLIFIED	the state in which FMS increases the number of MATCH points awarded for NOTES scored in a SPEAKER per Table 6-2
ARENA	includes all elements of the game infrastructure that are required to play CRESCENDO SM presented by Haas: the FIELD, GAME PIECES, queue area, team media area, designated TECHNICIAN area, and all equipment needed for FIELD control, ROBOT control, and scorekeeping
ARENA FAULT	an error in ARENA operation
AUTO	the first 15 seconds of the MATCH, and the FMS blocks any DRIVER control, so ROBOTS operate with only their pre-programmed instructions
BACKUP POOL	the group of teams willing and able to join an ALLIANCE during the Playoff MATCHES, if needed
BACKUP TEAM	The team whose ROBOT and DRIVE TEAM replaces another ROBOT and DRIVE TEAM on an ALLIANCE during the Playoff MATCHES
BUMPER	a required assembly which attaches to the ROBOT frame. BUMPERS protect ROBOTS from damaging/being damaged by other ROBOTS and FIELD elements.

Term	Definition
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	a state applied 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 line that bisects the length of the FIELD
COACH	a guide or advisor
COACH LINE	a black line in the ALLIANCE AREA that extends from the end of the ALLIANCE WALL (AMP side) to the edge of the ALLIANCE AREA
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 durations that are more than approximately 10 seconds
CONTROL	an action by a ROBOT in which the NOTE is fully supported by the ROBOT or it intentionally pushes a NOTE to a desired location or in a preferred direction (i.e. herding)
COTS	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)
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 0 MATCH points and 0 Ranking Points in a Qualification MATCH or causes their ALLIANCE to receive 0 MATCH points in a Playoff MATCH
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
DRIVER	an operator and controller of the ROBOT
DRIVER STATION	1 of 3 assemblies within an ALLIANCE WALL behind which a DRIVE TEAM operates their ROBOT
ENSEMBLE	a scoring achievement in which an ALLIANCE has at least 10 STAGE points and at least 2 ONSTAGE ROBOTS
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

Term	Definition
	conjured partially or completely into the final form in which it will be used on the ROBOT
FIELD	an approximately 26 ft. 11¼ in. (~821 cm) by 54 ft. 3¼ in. (~1654 cm) carpeted area bounded by inward facing surfaces of the ALLIANCE WALLS, SOURCES, AMPS and AMP pocket walls, and guardrails
FIELD STAFF	the collective group of people working on or near the FIELD responsible for making sure the MATCHES are cycled through efficiently, fairly, safely, and with a spirit of cooperation, Gracious Professionalism, and generosity of spirit
FMS	the FIELD Management System
FOUL	a credit of 2 points towards the opponent's MATCH point total
FRAME PERIMETER	the part of a ROBOT contained within the BUMPER ZONE and established while in the ROBOT'S STARTING CONFIGURATION, that is comprised of fixed, non-articulated structural elements of the ROBOT
FTA	<i>FIRST</i> Technical Advisor
GAME PIECE	a NOTE or a HIGH NOTE
HARMONY	a state when more than 1 ROBOT is ONSTAGE via the same chain
HIGH NOTE	the same size, shape, and material as a NOTE but also has 3 equidistant pieces of white gaffers tape that wrap around the circular cross-section
HUMAN PLAYER	a NOTE manager
INSPECTOR	a person determined by <i>FIRST</i> to accurately and efficiently assess the legality of a given part of a ROBOT
KOP	the Kit of Parts (KOP)
LINEUP	the 3 teams participating in the MATCH and their selected DRIVER STATIONS
LEAVE	a scoring accomplishment in which a ROBOT'S BUMPERS must completely clear its ROBOT STARTING ZONE at any point during AUTO
LRI	the Lead ROBOT INSPECTOR
MAJOR MECHANISM	a group of COMPONENTS and/or MECHANISMS assembled together to address at least 1 game challenge: ROBOT movement, NOTE manipulation, FIELD element manipulation, or performance of a scorable task without the assistance of another ROBOT.

Term	Definition
MATCH	the 2-minute and 30-second in which a ROBOT is enabled to play CRESCENDO
MECHANISM	an assembly of COMPONENTS that provide specific functionality on the ROBOT. A MECHANISM can be disassembled (and then reassembled) into individual COMPONENTS without damage to the parts.
MELODY	a scoring achievement in which an ALLIANCE has at least 18 (15 if <i>Coopertition Bonus</i>) AMP & SPEAKER NOTES
MOMENTARY	describes durations that are fewer than approximately 3 seconds
MXP	myRIO Expansion port, the expansion port on the roboRIO
NOTE	an orange foam torus with a 10 in. (~25 cm) inside diameter, 1 ft. 2 in. (~36 cm) outside diameter, and 2-in. (~5 cm) thickness
ONSTAGE	<p>The state of a ROBOT at the end of a MATCH provided it's only contacting:</p> <ul style="list-style-type: none"> D. truss legs (pink shaded elements in Figure 6-3) via ROBOT BUMPERS, E. GAME PIECES, F. chain-facing vertical surfaces of the core (with regards to the chain used by the ONSTAGE ROBOT, green shaded elements in Figure 6-3), G. carpet facing surfaces of the core (blue shaded elements in Figure 6-3), and H. a single STAGE chain (highlighted in orange in in Figure 6-3), I. another ROBOT qualified for ONSTAGE points, J. another ROBOT awarded the ENSEMBLE RP because of a G424 infraction, and <p>an opponent ROBOT.</p>
OPERATOR CONSOLE	the set of COMPONENTS and MECHANISMS used by the DRIVERS and/or HUMAN PLAYERS to relay commands to the ROBOT
PARK	a state in which a ROBOT'S BUMPERS must be partially or completely contained in the STAGE ZONE at the end of the MATCH (more specifically, per criteria described in item C of Section 6.5 Scoring) and does not meet the criteria for ONSTAGE
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.)
PCM	Pneumatics Control Module

Term	Definition
PDH	Power Distribution Hub
PDP	Power Distribution Panel
PH	Pneumatic Hub
PIN	an action by a ROBOT that is preventing the movement of an opponent ROBOT by contact, either direct or transitive (such as against a FIELD element)
PODIUM	an ALLIANCE colored HDPE panel attached to the STAGE leg facing the ALLIANCE WALL
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 CRESCENDO
REPEATED	describes actions that happen more than once within a MATCH
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
ROBOT STARTING ZONE	a 6 ft. 4 $\frac{1}{8}$ in.-wide by 23 ft. 8 $\frac{1}{8}$ in.-long (~193 cm by ~721 cm) infinitely tall volume bounded by the ALLIANCE WALL, AMP ZONE, opponent's SOURCE ZONE, and black tape. The ROBOT STARTING ZONE includes the black tape and excludes the AMP ZONE and SOURCE ZONE tape.
RP	Ranking Points
RPM	Radio Power Module
RS	Ranking Score
RSL	ROBOT Signal Light
SIGNAL LEVEL	a term used to characterize 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
SOURCE	an assembly through which HUMAN PLAYERS feed NOTES into the FIELD
SOURCE AREA	a 5 ft. $\frac{3}{4}$ in. wide by 15 ft. 10 $\frac{1}{2}$ in. long (~154 cm by ~484 cm) infinitely tall volume bounded by the SOURCE wall, the edge of the

Term	Definition
	carpet, and ALLIANCE-colored tape. The SOURCE AREA includes the tape.
SOURCE ZONE	a infinitely tall parallelogram shaped volume bounded by the SOURCE wall, the opponent's ALLIANCE WALL, and ALLIANCE-colored tape. The SOURCE ZONE is 1 ft. 6¾ in. deep (~48 cm) with respect to the SOURCE wall and includes the ALLIANCE-colored tape.
SPEAKER	consists of a SUBWOOFER and all elements above and behind the ALLIANCE WALL
SPIKE MARK	1 of 11 marks used to identify placement of NOTES before the MATCH.
SPOTLIGHT	a scoring achievement for a HIGH NOTE on a MICROPHONE
STAGE	a 3-legged structure and 10 ft. 1 in. (~307 cm) from its corresponding ALLIANCE WALL. Each STAGE consists of truss feet, truss segments, truss junctions, aluminum framing, and polycarbonate sheets.
STAGE ZONE	an infinitely tall 6-sided volume surrounding the STAGE bounded by and including the ALLIANCE-colored tape
STARTING CONFIGURATION	the physical configuration in which a ROBOT starts a MATCH
STARTING LINE	a white line spanning the ALLIANCE AREA and adjacent SOURCE AREA that is parallel to and located 2 ft. (~61 cm) from the bottom square tube 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
SURROGATE	a team randomly assigned by the FMS to play an extra Qualification MATCH
TECH FOUL	a credit of 5 points towards the opponent's MATCH point total
TECHNICIAN	a resource for ROBOT troubleshooting, setup, and removal from the FIELD
TELEOP	the Teleoperated Period
TRAP	the volume bounded by the 4 square tube segments highlighted in Figure 5-10 and the plastic panels covering the volume's front and back
VENDOR	a legitimate business source for COTS items that satisfies criteria defined in Section 8 ROBOT Construction Rules
VRM	Voltage Regulator Module

Term	Definition
WING	an infinitely tall volume bounded by the ALLIANCE WALL, opponent's SOURCE wall, guardrail, the ALLIANCE colored line that spans the width of the FIELD, and AMP wall.
YELLOW CARD	a warning issued by the Head REFEREE for egregious ROBOT or team member behavior or rule violations

