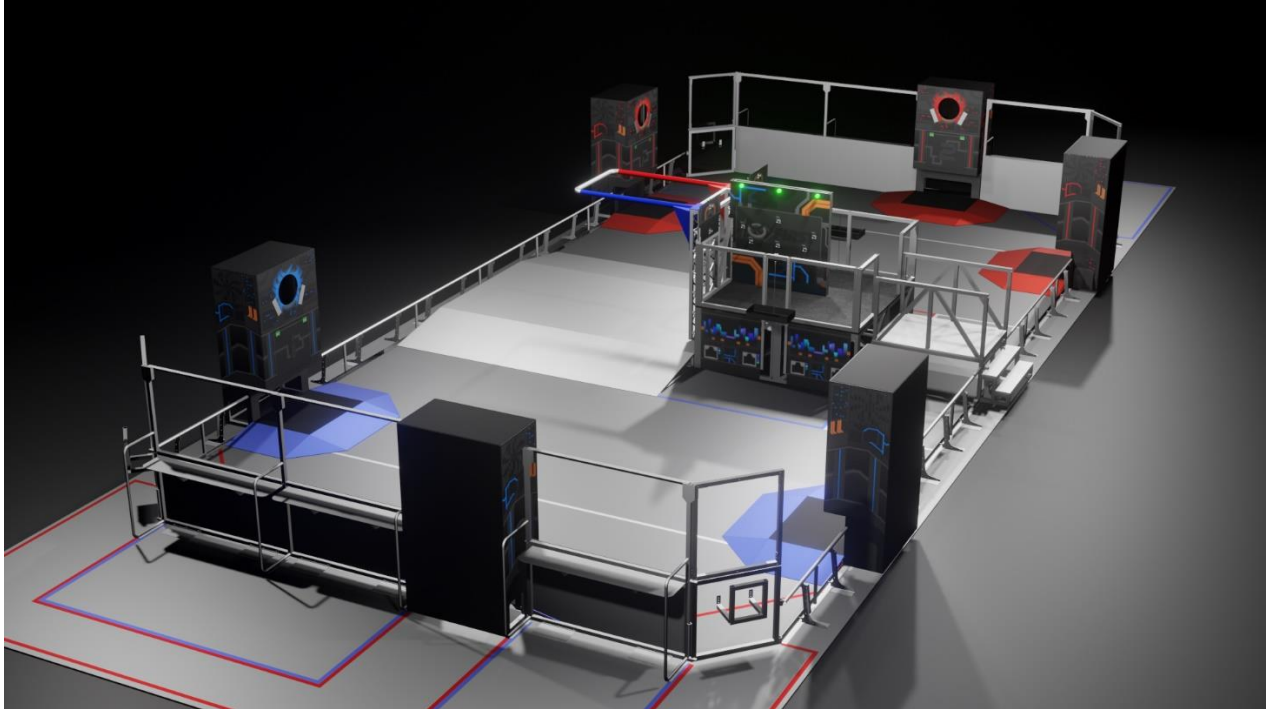# Game Overview

STORY

Novi's new Supercomputer HARVEY-- named after Frog Forces founding mentor-- is being used to research the Great Lakes and its inhabitants. Unfortunately, a recent power surge caused damage to the computer's systems and the impending crash may corrupt all its data. Luckily, the FIRST teams at the Novi STEM Center have developed microbots that are able to be sent into HARVEY to process and preserve as much data as they can.

BEFORE THE MATCH

Each Alliance of robots will consist of three teams. Each team will have two Drivers, a Technician, a Human Player, and a Coach. Each Alliance will have one Human Player on the FIELD, operating inside the NETWORK HUB. The NETWORK HUB will start with one DATALINK in the boost slot for each alliance. It is not allowed to be moved until the teleop period begins. Robots will start on the FIELD behind the initiation line touching the alliance wall. Each robot may preload one DATALINK and up to 3 GIGABYTES.

AUTON

During the autonomous period (fifteen seconds), players will program their robots to drive over the initiation line, each earning 5 points. Robots then can be programmed to deliver DATALINKS to the NETWORK HUB. Human Players will receive the DATALINKS and use them to connect to different NODES around the FIELD, earning 5 points for each DATALINK used. Robots can proceed to gather GIGABYTES and score them in the NODES, earning 2 points in the Low-Speed CORE and 3 points in the High-Speed CORE. After the autonomous period ends, the teleop period will begin.

TELEOP

The teleop period will take place for two minutes. The robots will continue to deliver DATALINKS to the NETWORK HUB and score GIGABYTES to the different NODES, earning 1 point in the Low-Speed CORE and 2 points in the High-Speed CORE. Each NODE must be activated by a DATALINK in the NETWORK HUB while being scored in. DATALINKS can be moved around to change what NODE is active. If a fourth DATALINK is available, the human players can use it to boost one of the active NODES, doubling its point value. The BRIDGE becomes available during teleop providing the alliance with the lower score faster access to their CLOUD.

ENDGAME (OVERLOAD)

The endgame period will take place in the last forty-five seconds of the match. During this OVERLOAD period, all the NODES will be activated, with the Low-Speed CORES earning 2 points and the High-Speed CORES earning 3 points. During this period, preloaded GIGABYTES will be released from all the NODES that have been used. Teams will also have the opportunity to hang from the RESET RELAY, earning 20 points per hang up to 2 times. A total of three robots from either alliance need to be hanging from the RESET RELAY to award both teams a Ranking Point.

Field Elements

FIELD
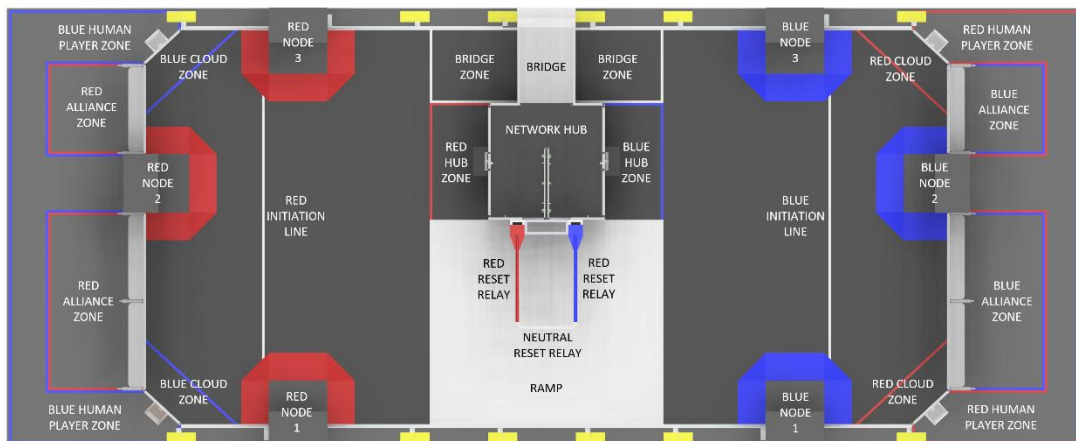
The FIELD for MICRO MAYHEM is 27 feet by 55 feet.

DATALINKS

Robots will deliver DATALINKS (the implementation of the ELEMENT), to an elevator on each side of the NETWORK HUB where the HUMAN PLAYERS will use them to activate NODES, allowing them to be scored in with GIGABYTES. Robots will obtain DATALINKS (Frog green in color, 4 ¼ inches long by 2 ¾ inches wide with a 5/8-inch diameter cross section) from the CLOUD, but the robots can only hold 1 DATALINK at a time. DATALINKS are delivered by a human player through a 4-inch diameter hole which is 12 inches above the ground in the CLOUD.

Each robot will start with 1 DATALINK at the start of the match. DATALINKS are limited in quantity. They can be switched from NODE to NODE, but only a maximum of 8 DATALINKS (4 per alliance) can be used on the FIELD. The DATALINKS need to be connected to notches by HUMAN PLAYERS so the limit switches can then activate the NODES. DATALINKS can be delivered during auton and teleop, but cannot be delivered during endgame. DATALINKS can be obtained by opposing alliances only if they are in a neutral zone. Delivering a DATALINK to the NETWORK HUB will give the alliance 5 points in autonomous and teleoperated period. If the human players have activated all the NODES with DATALINKS, a fourth DATALINK can be used to boost the score of an active NODE. Boosting an active NODE doubles your points.

GIGABYTES

Each GIGABYTE is a 8 ½ -inch rubber playground ball.

CLOUD

Four CLOUDS are positioned in each corner of the field, consisting of a 38" wide by 78" tall panel. DATALINKS are delivered through a 4" diameter hole 12" from the floor. GIGABYTES are delivered through a 10" diameter hole positioned 22 ¾" from the floor. CLOUDS can hold up to 7 GIGABYTES before having to release them.

NODES
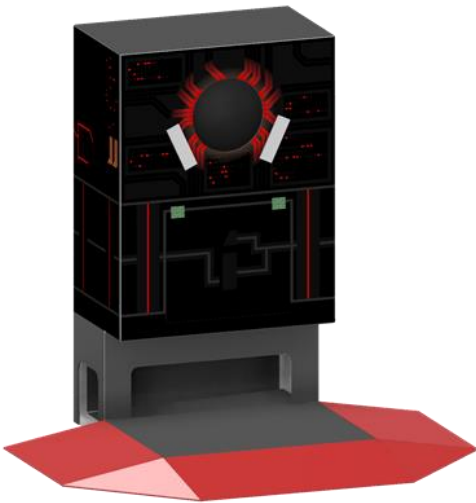
There are 3 different scoring stations called NODES for each alliance.

There are 2 CORES for each NODE. A Low-Speed CORE on the ground that is 36 inches wide, and a High-Speed CORE which is 7 feet from the ground and 16 inches in diameter with vision targets beside it. Each NODE can be OVERLOADED by scoring 6 GIGABYTES in it that will be released in the endgame period.
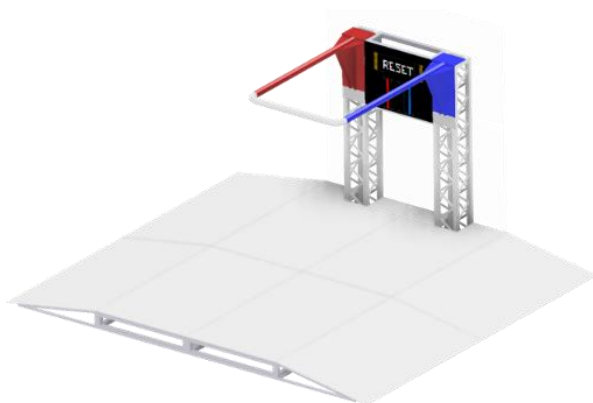
NETWORK HUB
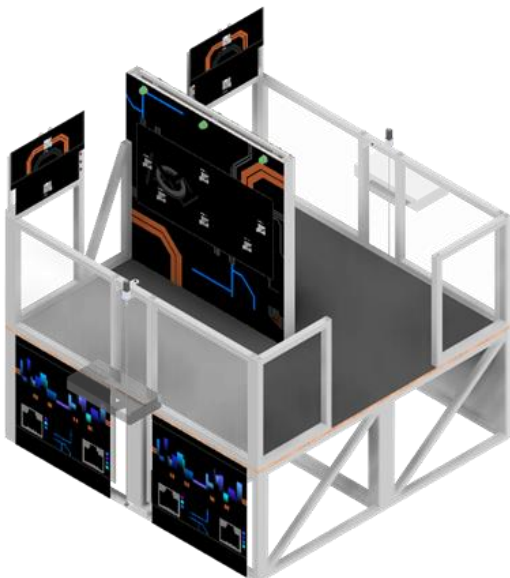
The NETWORK HUB is an 8-foot square 3-foot-high platform at the center of the field. There is an elevator on each side that is used to receive DATALINKS from the robots and bring them to the human players inside the structure. DATALINKS can then be hung on hooks to activate individual NODES. The NETWORK HUB starts with one DATALINK for each alliance that cannot be used until teleop.

BRIDGE
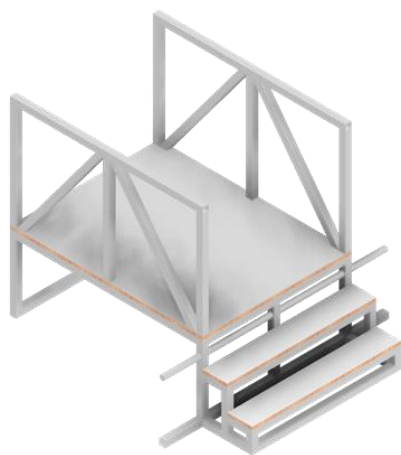
The BRIDGE's height is 22 inches. Robots on the alliance with the lower score may travel under the bridge to move between their CLOUD and NODES faster. LEDs will indicate which alliance has access at the time.

RESET RELAY

The RESET RELAY is a 3-inch diameter bar attached to the NETWORK HUB which is 8 ½ feet above the ground. It can hold 2 robots on the colored sides and 1 on the neutral side.

Scoring Summary

Award	Awarded For...	Value
Autonomous Bonus	Each robot whose bumper crosses the initiation line during Autonomous.	5
High Speed CORE NODE Autonomous	Scoring a GIGABYTE in the High-Speed CORE of any NODE during the Autonomous period.	3
Low Speed CORE NODE Autonomous	Scoring a GIGABYTE in the Low-Speed CORE of any NODE during the Autonomous period	2
DATALINK Delivery	Delivering a DATALINK to the NETWORK HUB during any period before Endgame.	5
High Speed CORE NODE Teleop	Scoring a GIGABYTE in the High-Speed CORE of any NODE during the Teleop period.	2, may get boosted to 4
Low Speed CORE NODE Teleop	Scoring a GIGABYTE in the Low-Speed CORE of any NODE during the Teleop period.	1, may get boosted to 2
High Speed CORE NODE Endgame	Scoring a GIGABYTE in the High-Speed CORE of any NODE during the Endgame period.	3
Low Speed CORE NODE Endgame	Scoring a GIGABYTE in the Low-Speed CORE of any NODE during the Endgame period.	2
RESET RELAY	Each robot that Hangs from the RESET RELAY during the Endgame period. May only be scored twice per alliance.	20
OVERLOAD Bonus	Activating the OVERLOAD in all three of your alliances NODES.	1 RP
RESET COMPUTER	A minimum of 3 robots Hanging from the RESET RELAY regardless of their alliance. Given to both Alliances regardless of if they participated.	1 RP
Tie	Completing a match with the same number of points as your opponent.	1 RP
Win	Completing a match with more points than your opponent.	2 RP