Evergreen Field

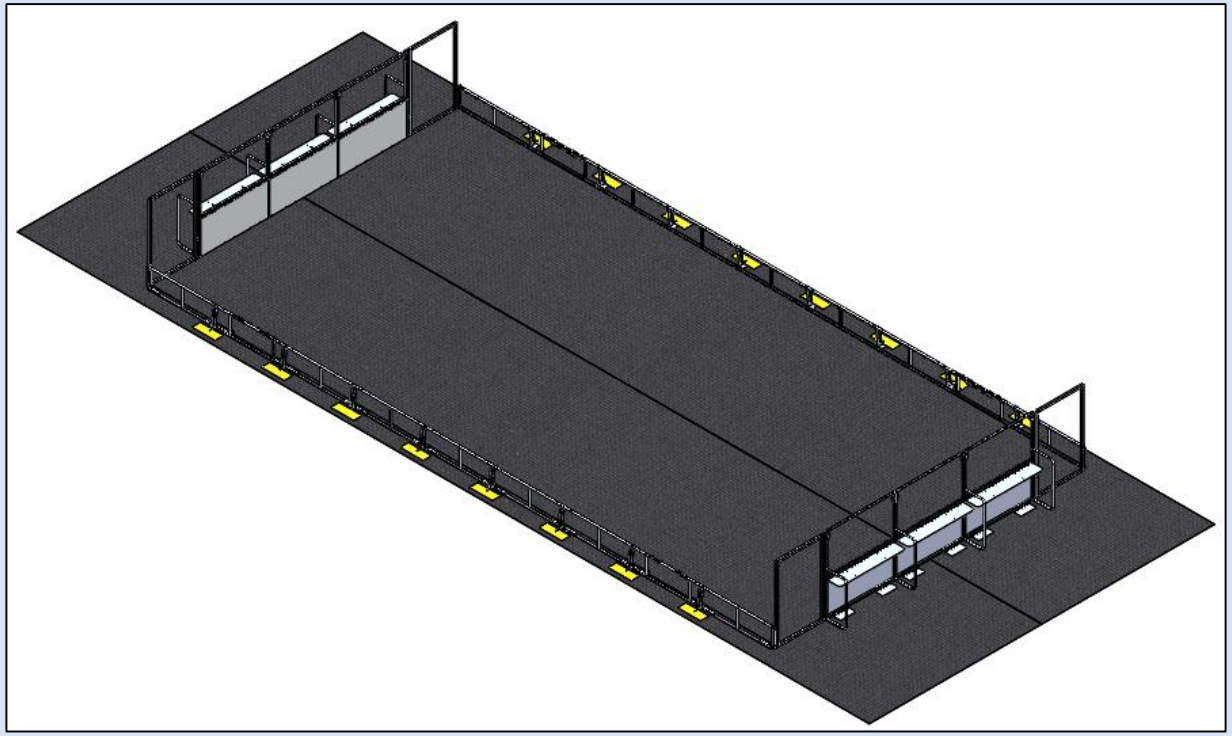
Provided for the 2021 At Home Challenge: Game Design Challenge

FIRST

FIRST ROBOTICS COMPETITION

Playing Field

- The playing field contains “evergreen” elements (elements that are reused year-to-year) that can be assembled in different configurations to change the shape, length, and width of the field.
- Aside from the Truss, side borders, and player stations, *FIRST* does not keep Game/Year Specific field elements from previous years.
- A basic field set up is provided in the Game Design Challenge Evergreen CAD Package (zip folder).

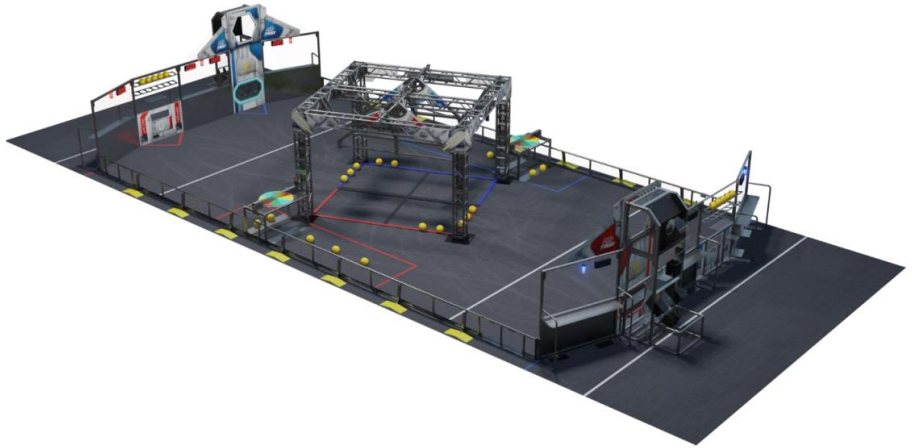


Typical configurations include:

- Removing a section of the Side Border
- Rearranging the Side Border pieces to change where the Gate is
- Rearranging Alliance Wall layout
  - Connecting Player Station to Player Station
  - Connecting Player Station to Side Border
  - Inserting frames that can connect to Player Stations or the Side Border
- Modifying non-Player Station components of the Alliance Wall to angle the corners of the field

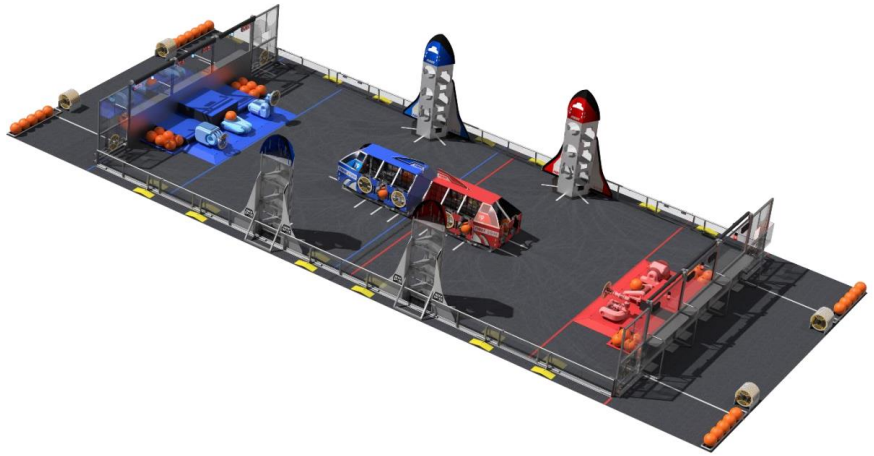
Examples of different field configurations

archive game documentation, including field drawings



2020 – INFINITE RECHARGE℠

- Alliance Wall has angle corners
- Player Stations separated by a Loading Station and Goal
- Side Border removed 1 section (length was made up by angled Alliance Wall)
  - Gates were very close to the Alliance Wall

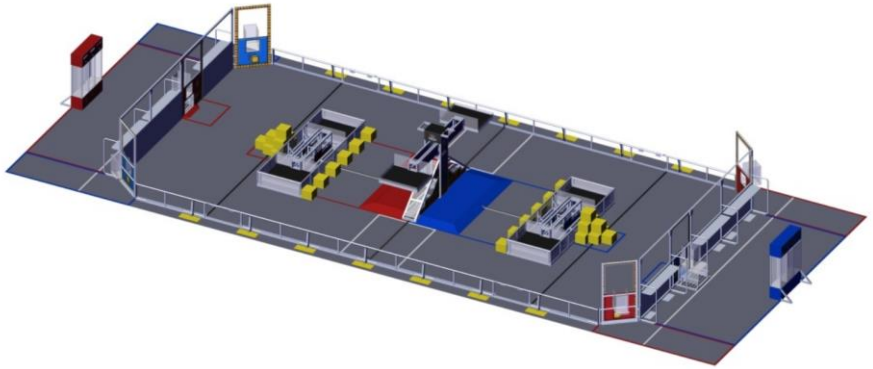


2019 – Destination Deep Space Presented by The Boeing Company

- Alliance Wall is perpendicular to the side border
- Player Stations are together with Loading Stations on the sides
- Side Border was “nominal” length
  - Gates were spaced out from the Alliance Wall

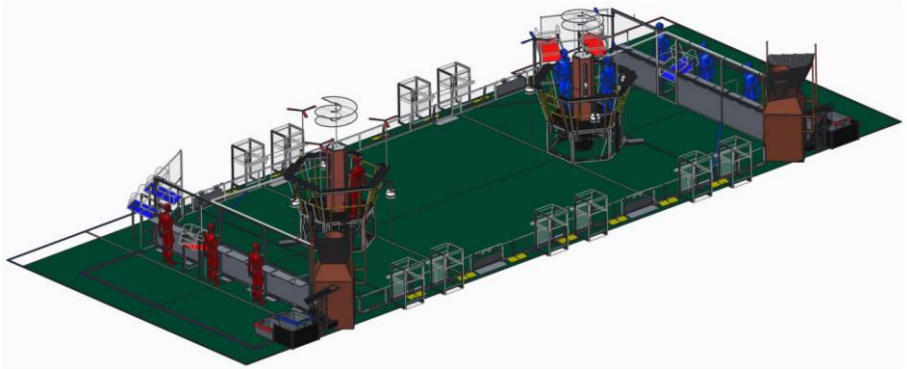
Examples of different field configurations

archive game documentation, including field drawings



2018 – *FIRST* POWER UP℠

- Alliance Wall has angle corners
- 2 Player Stations were together, the remaining Player Station was separated by the Exchange
- Side Border removed 1 section (length was made up by angled Alliance Wall)



2017 – *FIRST* STEAMWORKS™

- Alliance Wall has angle corners
- 2 Player Stations were together, the remaining Player Station was separated by the Overflow Loading Station
- Side Border removed 1 section from the Boiler side of the field & 2 sections from the return Loading Station side (length was made up by angled Alliance Wall)

Additional Evergreen Components

- Truss: (CAD models provided)
  - 4’ Length (~121 cm)
  - 5’ Length (~152 cm)
  - 12’ Length (~365 cm)
  - 3- or 4-sided, 1’ Cube Corner Blocks (~30 cm per side)
  - Single or Stack Cheeseboroughs (pipe clamps)
- Tape:
  - *FIRST* typically uses 2” wide, 3M™ Premium Matte Cloth (Gaffers) Tape

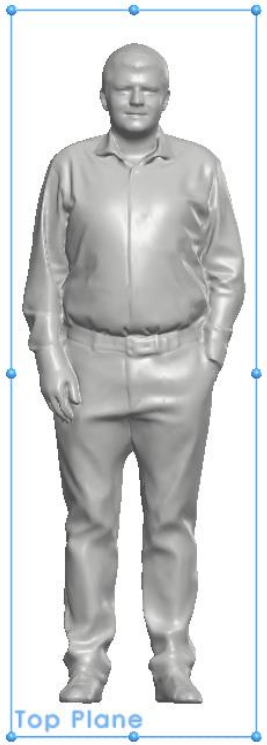
Helpful Models: Humans

CAD Source: GrabCAD (user: mcramblet)

Note: The human models are complex and may slow-down opening/manipulating your model

Man – 5’ 11 3/4” (~182 cm)

Height is approximate, measured from bottom of shoes to top of hair



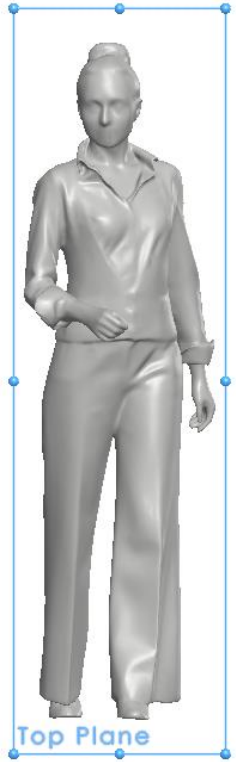
Front Plane:
Bottom of feet

Top Plane: (shown)
approximate middle of person – front to back

Right Plane:
approximate middle of human – shoulder to shoulder

Woman – 5’ 3 1/8” (~160 cm)

Height is approximate, measured from bottom of shoes to top of hair

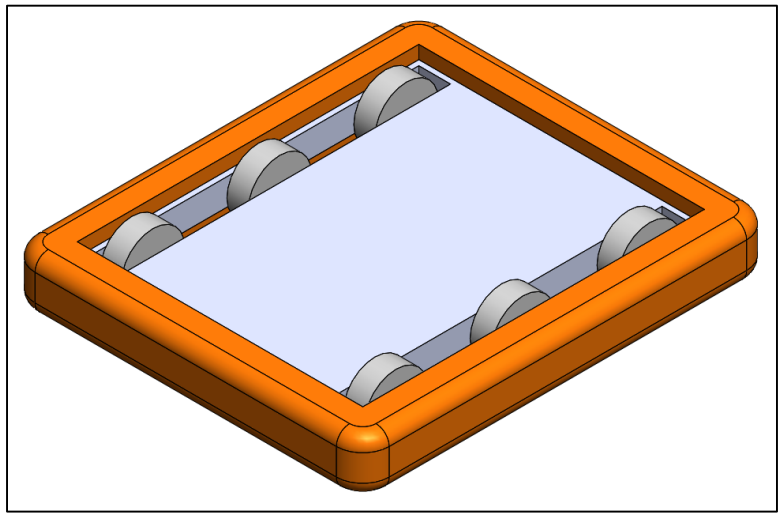


Helpful Models: Basic Kit of Parts Robot

Note: The full Kit of Parts Chassis from AndyMark are complex models and may slow-down opening/manipulating your model

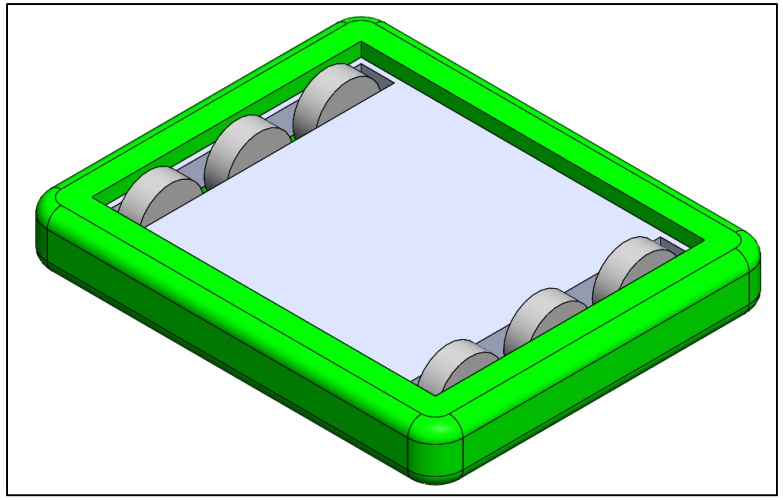
Long Kit Bot with Bumpers

(shown with orange bumpers)



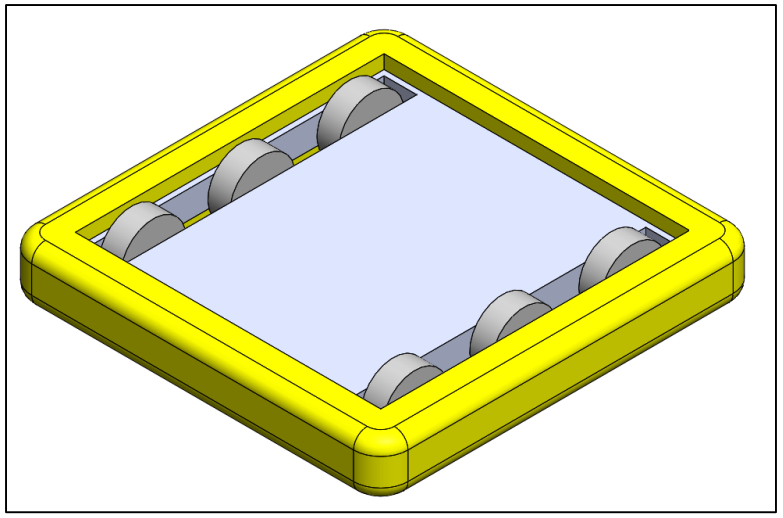
Wide Kit Bot with Bumpers

(shown with green bumpers)



Square Kit Bot with Bumpers

(shown with yellow bumpers)



Flat faces have been added to the bottom of the center wheels for easy mating to the Carpet