

The March-May 2017 round of prototype testing will consist of attaching the prototype devices to the assistive device of potential users. The results will be used to make improvements to the device designs and data will be gathered by observing the potential users interacting with devices while completing some or all of the following tasks:

- [R10 & R11] Sending a soccer ball with the prototype
  - Actions: move the ball at 5mph while making a turning radius, test to determine accuracy within 15 degrees of center.
  - Expected Result: 15 degrees for turning radius, accuracy should be within 75% range.
  - Type Improvement:
- [R12] Receiving a soccer ball with the prototype
  - Actions: ball will be passed within the centerlines to test device ability to capture the ball.
  - Expected Result: able to capture the ball 12 inches from the centerline
  - Type Improvement:
- [R11] Moving with a soccer ball with the prototype
  - Actions: move the ball at 5mph while making a turning radius, travel 50 feet while keeping the ball in the “capture” device.
  - Expected Result: 15 degrees for turning and travel 50 feet while the ball is in “capture” mode.
  - Type Improvement:
- [R10] Aiming a soccer ball with the prototype
  - Actions: turning the chair to firing position while the ball is in “capture” device.
  - Expected Result: Ball to be remained in the “capture” mode while turning to 15 degrees
  - Type Improvement:
- [R13] Attaching the prototype to the assistive device
  - Actions: apply/attach the prototype to the assistive device
  - Expected Result: maximum time of 3 minutes to install the device onto the wheelchair
  - Type Improvement:
- [R13] Detaching the prototype to the assistive device
  - Actions: detach/remove the prototype off the assistive device
  - Expected Result: maximum time of 3 minutes to uninstall the device from the wheelchair
  - Type Improvement:
- [R9] Adjusting the prototype
  - Actions: test to determine whether if this prototype can be used by a range of user sizes

- Expected Result: ensure all positions are usable as adjusting the design in range from 6 to 12 inches
- Type Improvement:
- [R8] Sending a bowling ball with the prototype
  - Actions: release/fire the ball from the prototype
  - Expected Result: ensure the ball is traveling within 25 to 30 mph
  - Type Improvement:
- [R10] Aiming a bowling ball with the prototype
  - Actions: turning the chair to a release position while the ball is in “capture” device.
  - Expected Result: Ball to be remained in the “capture” mode while turning to 15 degrees
  - Type Improvement:

In addition potential users may be asked questions the following areas:

- [R6 & R9] Ease of use of the prototype
  - Actions: place the prototype on a scale for a weight measurement
  - Expected Result: the total weight to be in the range between 12 to 15 pounds
  - Type Improvement:
- [R8 & R12] Level of functionality of the prototype
  - Actions: experiment the prototype with different settings to ensure the performance is at its maximum capability
  - Expected Result: able to perform at various settings, 6 to 12 inches adjustability and with receiving ability at 12 inches.
  - Type Improvement:
- [R13 & R9] Comfort of the prototype
  - Actions: Experiment with various settings to ensure its comfortability is at its maximum
  - Expected Result: adjust the prototype anywhere from 6 to 12 inches while able to install and remove at rate of 3 minutes.
  - Type Improvement: