

## **ISWP Standards Working Group**

### **October 13, 2015 Meeting Recap**

The ISWP Standards Working Group met by conference call on Tuesday, October 13, 2015 from 12:00 p.m. to 1:30 p.m. U.S. Eastern Time. This document provides objectives, action items and a recap.

#### **Objectives**

1. Discuss the progress with subgroups on design guidelines, casters, rolling resistance, corrosion and whole chair testing.

#### **Action Items**

1. Address comments from the group on test designs and design guidelines document.
2. Send out PO form to rolling resistance group.
3. Send out caster test SolidWorks model to the group.

#### **Discussion**

1. Design guidelines document format:
  - a. Consider a comment section instead of drawback
  - b. Interaction or tradeoff, other considerations column
  - c. Section on how does the part interact with body
  - d. Make selection or logic diagram for the part
  - e. Integrate WHO content - Approval to use images from training packages for presentation, get approval for text (JP).
  - f. Add classification for Diagnoses or sensory loss focus???
    - i. At the beginning of the overview
    - ii. Detail in each of the subsections
  - g. Matrix for summary – too specific info should not be included.
  - h. Adjustability as a separate section from function – Chris
  - i. Feedback and assistance on sections and terminology required from group – Mark
2. Caster testing
  - a. Additions to caster test
    - i. Variable travel – Clamps are tightened against the angled iron

- ii. Turn table – sectors and plates for incorporating surfaces
    - iii. Tank and snap-in plugs
    - iv. Motor on top
    - v. Blower (not drafted in SolidWorks model)
    - vi. Arm is wider at the rod to avoid vibrations
  - b. Anand to conduct statics analysis on forces experienced by casters of different sizes.
  - c. Chris suggested using a ring and leveler approach to include sand in the test
  - d. Group concerned with the splash
    - i. Anand suggested using a larger trough around the test and have a drain close by.
- 3. Rolling resistance test updates:
  - a. Camber and toe-in wheel design in progress
  - b. Testing rolling carriage - difference in forces being analyzed
  - c. Design in progress
  - d. Looking for suppliers for drum
  - e. Wheel Energy Company (Finland) in contact
    - i. Why 1.2 m drum? Flat ground replicated well.
  - f. Validate our machine with company
    - i. Use company test as benchmark
    - ii. What goals with comparison?? – JP
      - 1. Journal paper submission maybe
  - g. To place POs – send a PO form to Norman – Anand, JP
- 4. Nancy to announce outcome of funding rounds soon – votes due 10/14.
- 5. Norman presented the ISO meeting discussion and ways to incorporate ISWP testing into ISO.
  - a. Technical Spec is a good way to go for ISO – ISWP test later can become ISO spec.
  - b. EN - open source (free) and ISO - expensive
  - c. ISO at discount rate possibly? – Norman

### **Subgroups (for reference)**

- Design Guidelines: Mark Sullivan (interim lead), Daniel Martin, Jon Pearlman, Norman Reese, Chris Rushman, Eric Wunderlich

- Casters: Anand Mhatre (lead), Matt McCambridge, Jon Pearlman, Norman Reese, Don Schoendorfer
- Corrosion: Matt McCambridge, Don Schoendorfer
- Rolling Resistance: Matt McCambridge (lead), Jon Pearlman

### **Participants**

- ✓ Daniel Martin, Shonaquip  
Matt McCambridge: DEKA (formerly with Whirlwind)
- ✓ Norman Reese, LeTourneau University  
Karen Rispin, LeTourneau University
- ✓ Mark Sullivan, Convaid, Ride Designs and Polus Center (WG Chair)  
Don Schoendorfer, Free Wheelchair Mission  
Karl-Erik Westman, Handicap International
- ✓ Eric Wunderlich, LDS Church
- ✓ Chris Rushman, Motivation  
Dave Mahilo, Invacare  
Dr. Rory Cooper, University of Pittsburgh
- ✓ Anand Mhatre, University of Pittsburgh
- ✓ Dr. Jonathan Pearlman, University of Pittsburgh
- ✓ Nancy Augustine, University of Pittsburgh

Prepared by: Anand Mhatre, University of Pittsburgh