



ISWP Standards Working Group June 12, 2019 Meeting Recap

The ISWP Standards Working Group met by conference call on Wednesday, June 12, 2019 from 12:00 p.m. to 1:30 p.m. U.S. Eastern Time. This document provides a recap. Link to call recording and presentation: <https://iswp.adobeconnect.com/pev7f3d57f0t/>.

Next call: Wednesday, September 11, 2019, 12:00 p.m. U.S. Eastern Time/16:00 UTC.

Discussion:

1. **TrailAccess Product Overview:** Ziv Demeter, CEO and founder, TrailAccess, provided an overview of the TrailAccess HTMV (Hard Terrain Manual Wheelchair) hiking wheelchair. The product is designed to reach three segments: Private--families with someone with disability; national parks, authorities and travel/hiking companies; and search and rescue.

Since the U.S. is a potential market, Ziv is interested in learning more about whether U.S. national parks provide off-road wheelchair rentals, as they are popular in Canada and Australia. Jon has seen them for beaches but not for trails. Peter Axelson has developed standards for trails; Ziv is familiar with Peter's work. Keoke provided <https://gowheeltheworld.com>, which is offering tours in the U.S. According to Keoke, parks will not buy off-road wheelchairs due to risks, limited storage and other factors. Private tour companies may be a better option. Another option is <https://shonaquip.co/za/>. In 2011, Shonaquip worked with a U.S. university to address a South Africa region's need to take residents from deep inside a community to paved road for transportation/ambulance. Matt also provided the link to The Okoa Project: <https://www.theokoaproject.com/>.

2. **Rolling Resistance Testing:** Jon presented updates on: Load sensitivity; tire pressure sensitivity; type of surface, recalibration of the load cell and testing including caster, camber, mag wheel load and speed; presentation is attached.

Five to seven casters and rear wheels will be tested. Durability testing also will be conducted. The team is considering: a) developing a low-tech tool to measure toe, as recent findings are showing that toe has an enormous impact on rolling resistance, giving a person the feeling of pushing two times his body weight; and b) adding another study to measure toe in and toe out in the community. There might be an opportunity

for Standards Working Group members to contribute. Matt provided a link to information on alignment check tools: <https://pbase.com/mccambridge/alignment>.

3. **Caster Testing:** The ISWP team is testing bushings to see if bearings can be eliminated and replaced with bushings, as results are showing that corrosion does impact bushings. Corrosion and debris infiltration are being added to the caster testing protocol. A ramp with a two-inch drop, mimicking curb drop, is completed.

Jon Pearlman and Anand Mhatre attended the ISO meeting in Copenhagen, June 3-7. ISO gave approval for a caster testing work item, which is the beginning phase of getting a standard. Recommendations from the ISO group: 1) include as part of Section 8; or 2) include as a technical review, published by ISO and recommended by standards bodies and regulatory bodies, which evolves slowly over time as deemed necessary. A technical note can be published quickly. Standards take three years to develop. The broader voting group will determine which direction it takes.

ISWP will present a poster paper on the standards work at Rehab Week, June 24-June 28. A paper on models to improve AT quality, production, and procurement applied to wheelchairs, prepared in collaboration with CLASP, was accepted for the GReAT Summit in August 2019; the paper describes factors to ensure product quality in wheelchairs, including developing and testing wheelchairs up to and including the procurement process. A paper regarding validation of the caster test was submitted for publication.

4. **Free Wheelchair Mission (FWM) Update:** FWM is looking into testing corrosion; a local environmental testing lab can conduct the testing. Don has found that axles cannot be removed from bearings on the rear wheels after corrosion testing. FWM also is looking for standardized way to scuff products; Jon indicated there are ISO standards on growth of rust and on mass loss through rusting. **Anand Mhatre** to discuss standards related to corrosion and typical surface coatings on wheelchairs on next Standards WG call. Jon mentioned a U.S. study is under way with a large-scale service provider which collects specific maintenance data and types of breakdowns on individual chairs. **Jon Pearlman** to check whether corrosion is a factor that is recorded. Eric Wunderlich reported that Latter-day Saints Charities is gathering data on chairs it provides including overall condition of wheelchair and parts; what parts failed and needed to be replaced; and how much wheelchair users are spending on maintenance and repairs.
5. **ISWP Update:** As part of the new grant, ISWP will create a wiki with information on how to test wheelchairs. Design drawings for caster test, curb drop test, double drum and

testing dummy are available on the ISWP website. (Visit <http://wheelchairnet.org/iswp-library>; search “documentation.”) Rolling resistance and static stability drawings will be completed soon.

6. **Target Product Profiles (TPPs):** ISWP provided extensive feedback on draft Target Product Profiles which are being developed by WHO and UNICEF. Jon felt the profiles were product design driven; a lot of dimensions and requirements came from products in the field, which can have tendency to exclude other products which don’t immediately meet specs. In the feedback, ISWP recommended that the TPPs not be product specific but based on consumer needs. **Jon Pearlman** to send WG members link to folder with materials and to contact WHO to see if there is still time to provide additional feedback. Keoke thinks it is important to emphasize the importance of third-party testing. Jon suggested the Standards WG send a letter to WHO/UNICEF requesting this be added to the profiles.

7. **ISWP Testing Services:** ISWP is available to conduct testing and prepares a cost estimate for each specific project. **Jon Pearlman and Anand Mhatre** to consider a standard price list, which can be referenced in grant proposals and solicitations to support testing.

Participants:

	Bonnie Gonzalez, Free Wheelchair Mission
✓	Keoke King, Participant Assistive Products
	Daniel Martin, Shonaquip
✓	Matt McCambridge, Consultant
	Mark Sullivan, Convaid
	Norman Reese, LeTourneau University
	Chris Rushman, Motivation
✓	Don Schoendorfer, Free Wheelchair Mission
	Scott Walters, Mobility Worldwide
✓	Eric Wunderlich, Latter-day Saints Charities
	Ben Gebrosky, University of Pittsburgh
	Mendel Marcus, University of Pittsburgh
	Anand Mhatre, University of Pittsburgh
	Joe Ott, University of Pittsburgh
✓	Jon Pearlman, University of Pittsburgh
✓	Maria Toro Hernandez, University of Pittsburgh
✓	Nancy Augustine, University of Pittsburgh

Guest: Ziv Demeter, TrailAccess