DISSEMINATION OF RESULTS

The dissemination of the results was delivered to stakeholders, such as mining, petroleum, construction, fisheries, through workshops and seminars, as well as other researchers through conferences, workshops, papers and reports. Workshop-type regular meetings between all partners was organized both in situ consisting cooperative working, integration of knowledge from all work packages, and communication with stakeholders.

Meetings, workshops, seminars and education:

- 20-21 August 2015, Project kick-off, Laboratory visit and WorkShop in Oulu. The workshop consisted visit and demonstrations in the FIOH Laboratory of Clothing and Laboratory of Physiology. Facilities of studying, among others, manual dexterity, contact cooling, glove functionality and thermal protection in the cold were demonstrated.
- 15-16 February 2016, 2nd SmartPro WorkShop in Trondheim. WorkShop included demonstration of the SmartPro sensory system and the SINTEF Work Physiology Laboratory SINTEF presented the SmartPro system and preliminary results from the pilot tests.
- 5th September 2016, International Autumn School «Study of human working capacities in the Arctic» in Arkhangelsk, Russia. Smart solutions for industrial work in the Arctic regions was presented and discussed among participants.
- 15-16 November 2016, 3rd Project meeting in situ and workshop in Helsinki. In the workshop was presented and demonstrated testing of PPE in FIOH and visited laboratories of physiology, sleep and quantified employee.
- 15-16 May 2017, NIVA – Human Factors in Arctic Work. Education on manual performance and protection of hands in the cold. Helsinki.
- 7-8 March 2017, SmartPro Project meeting and Workshop in Oslo. Demonstration of the SmartPro sensory system was presented.
- 6 October 2017, Protection of hands against cold (presentation in Finnish). Työ- ja suojavaatetuksen ajankohtaispäivät, Kuopio.
- 27th February 2018, Final meeting and seminar of SmartPro in Trondheim.
- Project results has been disseminated during laboratory visits to hundreds of visitors during the project period.

Symposiums and conferences:

- Jussila K, Rissanen S and Rintamäki H. SmartPro -Project – Smart protective solutions for industrial safety and productivity in the cold. Abstract. PPE2016 – the 13th European Seminar on Personal Protective Equipment (PPE). Saariselkä, Finland, 26-28th January 2016.
- Jussila K, Wiggen ON, Rissanen S, Mänttäri S, Seeberg TM, Austad HO, Faerevik H and Rintamäki H. Smart protective solutions for industrial safety and productivity in the cold. Abstract. 4th Saf€ra Symposium. Emergence of a New Collaborative Work Programme on Industrial Safety. Athens, Greece. 12-13 April 2016. 17.
- Jussila K, Rissanen S and Rintamäki H. Smart Protective Solutions for Work in the Cold. Injury Prevention. Safety 2016 World Conference, Volume 22, supplement 2, September 2016. A144.
- Wiggen Ø, Seeberg TM, Austad HO, Rissanen S, Jussila K. Smart Protective Solutions for Industrial Safety and Productivity in the Cold – SmartPro. Poster. Technoport, Trondheim, Norway. 8-9 March 2017.

- Jussila K, Wiggen Ø, Rissanen S, Austad HO, Seeberg TM and Rintamäki H. Smart Protective Solutions for Industrial Safety and Productivity in the Cold – SmartPro. Abstract. 5th Saf€ra symposium. Bilbao, Spain. 18-19 May 2017.
- Jussila K, Rissanen S and Rintamäki H. Heated Gloves for Rewarming and Sustaining Hand Temperatures at Cold Work. Proceedings of 17th International Conference on Environmental Ergonomics, Kobe, Japan, November 2017.
- Wiggen Ø, Seeberg TM, Austad HO, Færevik H. Individual variations in perceived thermal sensation and skin temperature of fingers at different work intensities during cold exposure. Proceedings of 17th International Conference on Environmental Ergonomics, Kobe, Japan, November 2017.
- Jussila K and Rissanen S. Use of Heated Gloves to Prevent Cooling of Finger Temperatures at Cold Work. Abstract. PPE2018 – the 14th European Seminar on Personal Protective Equipment (PPE). Saariselkä, Finland, 23-25th January 2018.

Scientific publications:

- Austad H, Wiggen Ø, Færevik H and Seeberg TM. Towards a wearable sensor system for continuous occupational cold stress assessment. Industrial Health. 2018.
- Rissanen S, Jussila K, Kaisto J, and Rintamäki H. Individual finger cooling during cold exposure at rest. Manuscript being prepared.

Popular scientific publications:

- Intelligent clothing for extreme weather. Gemini (online magazine). 20th August 2015. http://geminiresearchnews.com/2015/08/utvikler-intelligente-ekstremklaer/
- Intelligent clothing for extreme weather. Science Nordic (online magazine). 4th September 2015. http://sciencenordic.com/intelligent-clothing-extreme-weather
- Intelligent clothing to protect Arctic workers. Maritime Direct (online magazine) 20th August 2015. https://www.maritime-executive.com/article/intelligent-clothing-to-protect-arctic-workers#gs.bquk8sg
- Article in Norwegian on the Norwegian Broadcasting (NRK) 1th August 2015. https://www.nrk.no/trondelag/utvikler-smarte-klaer-til-ekstremvaer-1.12480760
- Article in Norwegian in Byggfakta (Building and Construction magazine) 27th July 2015. https://www.byggfakta.no/intelligente-ekstremklaer-88829/nyhet.html
- Newsletter published at FIOH web news in Finnish 24th November 2015: http://www.ttl.fi/fi/uutiset/Sivut/alykkaita_suojainratkaisuja_kylmatyohon.aspx
- Kansanuutiset (9.12.2015): http://www.kansanuutiset.fi/artikkeli/3474220-minkalainen-kasine-alyaa-kylmaa