There is no shower or bath in the ISS and rockets to Mars. No gravity makes it difficult to drain water/splash. Water drifts in room and clings on the wall, which is very dangerous for astronauts/cosmonauts and machineries in the rocket. On the other hand, soaking a bath/taking a shower is really good thing for relaxing and, of course, keeping sanitary. Although, wet towel and dry shampoo are used in the ISS, we imagine that it is far from perfect.

Our team “de-stress” solves “Rock-It Space Fashion and Design” to care astronauts/cosmonauts physical and mental health. We propose a wearable bath. The wearable bath is a total bath system consisting of bath suits, vital sensors, a fan and hands-free controller. (Please see the following URL: https://github.com/yukinagai/de-stress/blob/master/docs/wearable\_bath.pdf ) The bath suits will be silicon or something waterproof materials for full body below neck with double layered towels. It is equipped with pouring/draining/ventilation tubes for hot/warm water and drying the body roughly. The vital information is monitored using sensors to notify when to finish soaking. The fan is for cooling face/head. He/she can control the bath related things (e.g., the temperature of the water) by shaking the head, which is detected by a depth camera. The controller also collects the sensed data to monitor his/her vital status.

How to use:

1. Put the bath suits on (and may need to wear vital sensors)

2. Pour hot/warm water through the tubes.

3. Enjoy the bath!

3-a. If you feel hot, the fan will cool down your head

3-b. If you want change the temperature of the bath, hot or cold water flows into the suits from one tube and flows out of it from another one.

4. The system will notify you of finishing bath

5. Water in the suits is drained from the tube.

6. Warm wind blows from the ventilation tubes to dry the body roughly.

7. Put the suits off

7-a. The towels with the suits wipe the splash on the body. (Just the behavior of putting off is enough)

7-b. No splash in room/on the wall

In this hackathon, we prototyped a tiny version of the concept, which is just for soaking the leg and the hand. (Please see https://github.com/yukinagai/de-stress/blob/master/docs/wearable\_bath.pdf ). It’s really good thing even this tiny version. We believe that the concept improves the physical and mental health of the crew members. The system on the Earth works fine. We want to know how it works in the space (i.e., no gravity) and find new and special issues there.