



Background for protopaja-work by JoyHaptics

Sending touch over distance

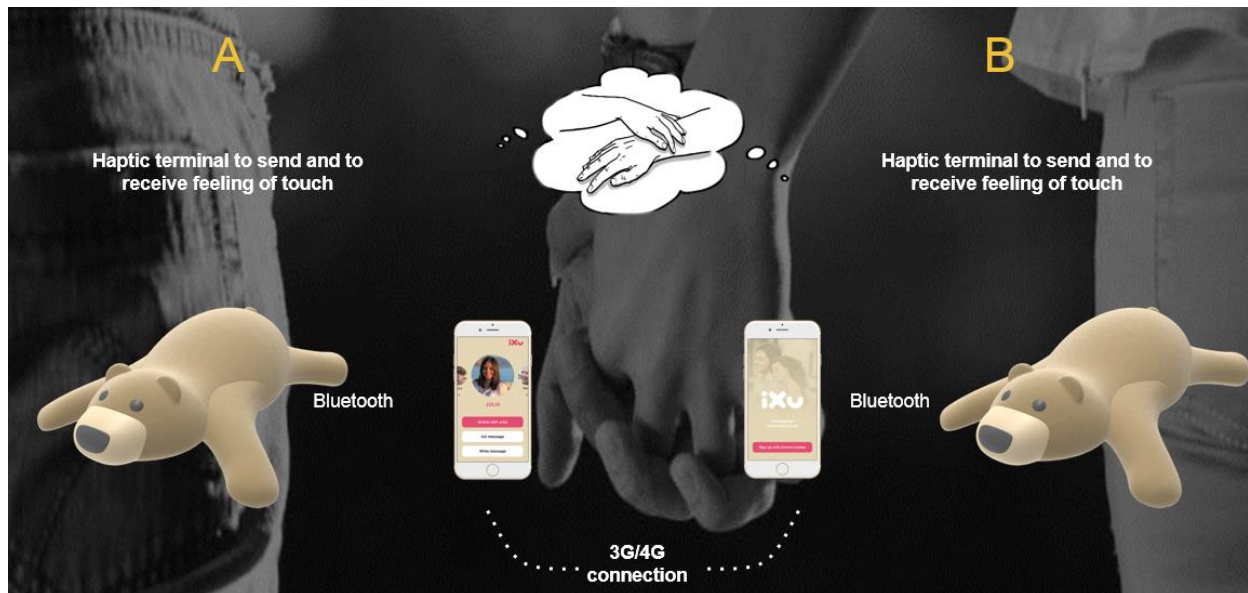
Hundreds of millions of people live in long-distance relationship, their problem is that they miss closeness and touch.

JoyHaptics is a startup developing a new exciting emotional **communication device and solution based on sending a touch over distance**. This is the **next big step** in social human communication.

For more background info, please visit our web-page: <https://www.joyhaptics.com/>

As a quick introduction to our solution and story, please look this video: <https://vimeo.com/334980743>

Our working advanced prototype (MVP) is shown below. **In this work, we take next steps forward**, as described in the see next page.



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Protopaja 2019 summer course

Work definition by JoyHaptics

Challenge to be solved: How to mirror a smooth and gentle touch over distance. Present MVP is taken to the next level.

Following subtasks are needed to be carried out in this project:

- 1) Making touch (caress) sensing unit for the back of the bear. FSR can be used as touch sensors.
- 2) Building a quiet, enough strong moving bear arm, which mirrors hand movement detected by the touch sensors. Movement is made with a quiet DC motor and a gear box. For position sensing of the rotating axis, encoder is used for feedback.
- 3) Main body of the bear: demonstrate how to make a huggable bear with viscos elastic memory foam inside and soft velvet/velour fabric on the surface. Important is that fabric follows the bear's designer shapes tightly.
- 4) Integration into one working system composing following main parts:
 - A) Two bear with memory foam inside and velvet fabric on surface
 - B) 1st bear with sensors in back with wired connection to C) ,
 - C) Controlling unit outside the bear with wired connection B) and D)
 - D) 2nd bear with a quiet arm movement actuation and wire connected to control unit C).

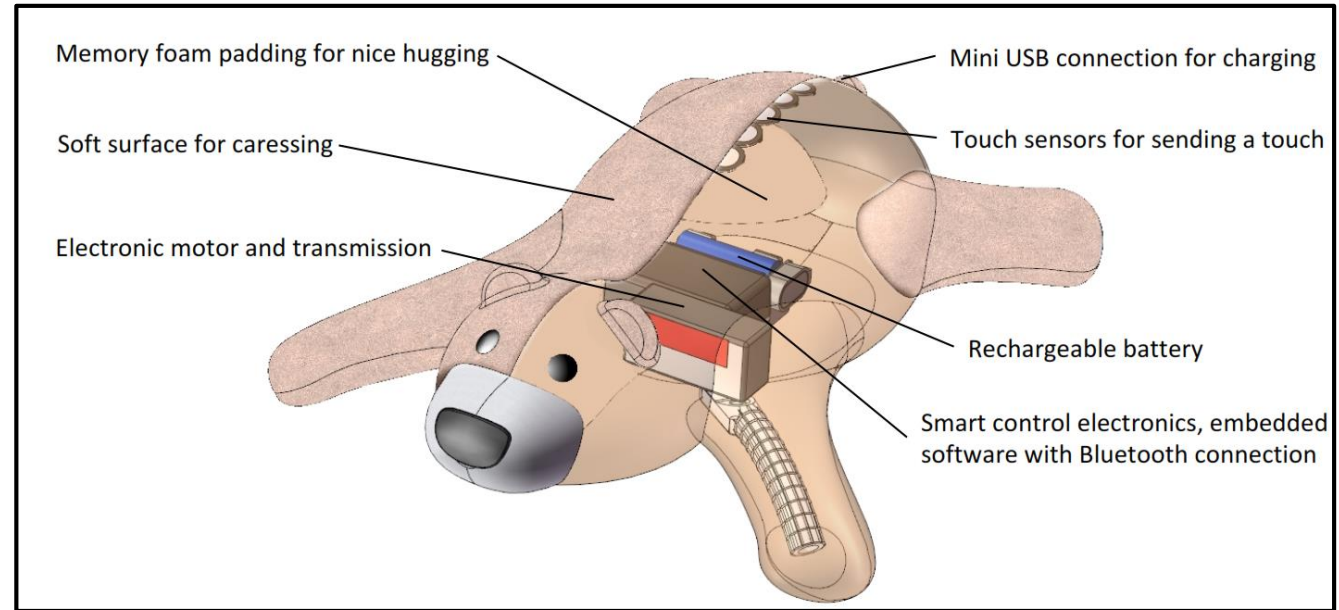


Figure 1. Advanced prototype of the bear concept. In this work, focus is to test further sensors in the back and to build quiet and smooth actuation of the arm.

Outcome of the this work is a test system composing from two bears, one with touch sensors in back and the other one with smooth arm actuation. These two bears are wire connected through a controlling electronics box that can be placed outside the bears.