Executive Summary

Dr. Sujatha Srinivasan
Professor, Department of Mechanical Engineering, IIT Madras

1. Title of the Project: Design and commercialization of an indigenous lever-operated orthotic knee

2. Date of Start of the Project: Feb 01, 2020

3. Aims and Objectives: To develop a functional and affordable alternative to the orthotic drop-lock knee joint used in a Knee-Ankle-Foot Orthosis (KAFO) incorporating user-centric design. The device should be functionally superior to the existing drop-lock knee, while being more suitable and affordable than imported alternatives to the drop-lock.

4. Significant achievements (not more than 500 words to include List of patents, publications, prototype, deployment etc):

Engineering design of the knee orthosis has been refined based on version 1 prototype feedback and fabrication of version 2 prototype is underway. Version 2 prototype would undergo user trials along with testing partner Mobility India, for which MoU has been signed and ethics approval has been obtained. Version 1 prototype of the lock has received encouraging feedback from KAFO users who have reviewed the design. Version 2 of the prototype has been designed to reduce mediolateral play and anterior-posterior play, and to prevent accidental disengagement of the lock during walking.
Version 1 is covered by two Indian Design Registrations - **No. 290751 and 290752.** We will be looking at patentability of the refined designs in the coming months.

5. Concluding remarks: There was delay in developing prototypes due to the COVID-19 situation, we are getting back on track in making the prototypes for user testing.