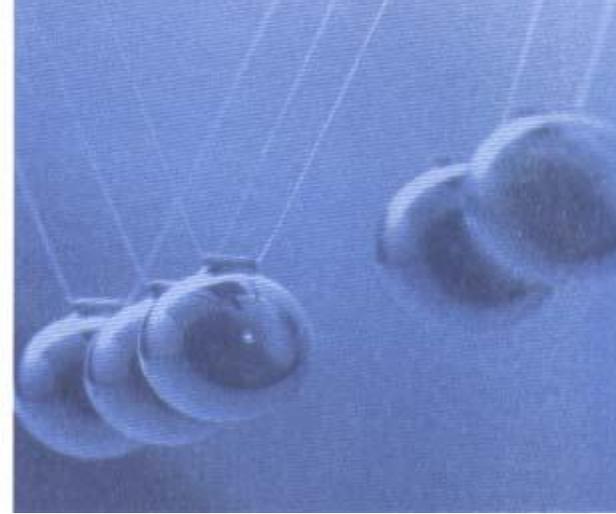


# PROJECT

**precarn**  
INCORPORATED

SUCCESSFUL INNOVATION  
THROUGH COLLABORATION.  
L'INNOVATION RÉUSSIE  
GRÂCE À LA COLLABORATION.



## Autonomous Motorized Orthosis

### Knee Stress Release Device for Human Locomotion Capability Enhancement



### Objective

B-TEMIA proposes the development of a motorized knee brace called "Knee Stress Release Device" (K-SRD™) in order to make available in short term an efficient solution to the sustainability issue of soldiers and troops' mobility during current modern military operations. This project's main objective is the development of the commercial version of the K-SRD™.

### Deliverables

The K-SRD™ is a motorized lower-limb brace for the knee joint. This new generation of knee brace is a computer-controlled orthosis able to actively release the stress at lower extremity joints of the user during heavy-duty tasks such as military operations. Specifically, the K-SRD™ is intended to augment the biomechanical capacity in mobility of soldiers in operation and to protect the soldier's lower extremities against acute and chronic injuries.

### Technology & Benefits

The armed forces around the world envision in the next years to enhance the mobility of their troops in order to improve their efficiency to intervene during strategic missions. Today, a typical load for a soldier reaches around 40kg. This typical overload limits the movement of soldiers in terms of load capacity, travelling speed and distance and ability to overcome obstacles. Moreover, this additional weight cause directly over a short period of time acute and chronic injuries at the lower extremities joints and the back. This means this constant overload carrying has a real negative short and long term impact onto the performance of soldiers but more importantly upon their health. For the last couple of years, the worldwide armed forces such as the Canadian Forces have devoted much recourse to the improvement of soldiers' mobility in a wide sense. The weight reduction in gears has been and will always be one of the

main areas they are focusing on, resulting in a direct positive impact on mobility. B-TEMIA's technology aims to provide solution for this ongoing problem throughout the development and commercialization of its K-SRD™.

### Participants

#### LEAD

B-TEMIA Inc. , Quebec City, QC

#### Academic Participant

McGill University, Quebec City, QC

#### End-User

Department of National Defence, Quebec City, QC

#### TOTAL INVESTMENT

\$1, 087, 500

#### PRECARN CONTRIBUTION

\$100, 000

#### START DATE

July 2010

#### END DATE

March 2011

#### PROGRAM

2010 T-GAP

August 2010