

**Department of National Defense, Defense Research and
Development**

Ottawa, Canada

CAC Project

**Classification and Detection of Micro-Doppler Representation of
Human Arm Swinging Motion**

Project duration: 09/16/2004 - 03/07/2005

The technical work involves modeling, simulation, and measurements. The work will be divided into three phases. The first phase deals with general objects, and it models the object various possible movements, including translation, rotation, and vibration. Existing time-frequency signal analysis techniques will be applied and compared under noisy and noise free environments. Phase II focuses on modeling human arm movements and show which of the time-frequency available tools best describes and classifies the different movements. Emphases will be on modeling natural ways of walking.

Phase III deals with data measurements using CW transmission and reception. The target is a walking human with different speeds. Comparison between the real data and the measured data will be conducted.