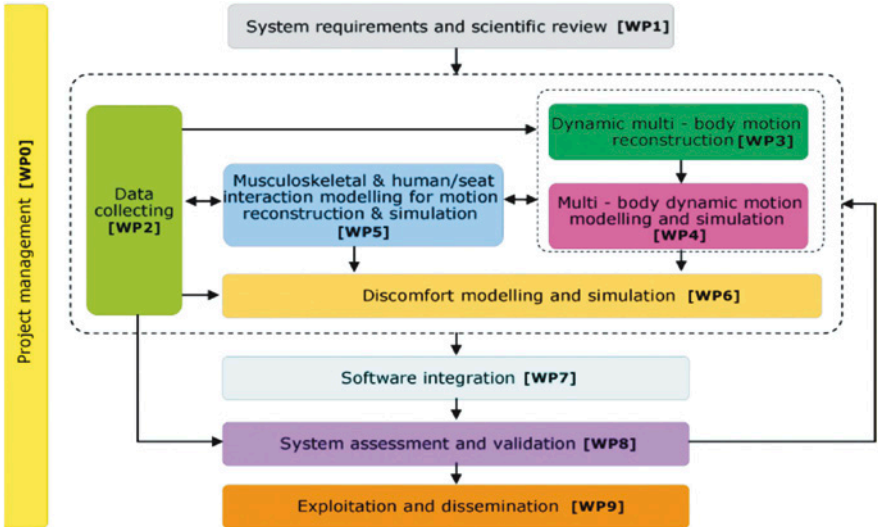


Motivation and Objectives

Currently available digital human models used for ergonomic design of products do not fully meet the designer's expectations. They have to evolve from a purely visual and static representation of humans towards a more sophisticated model evaluating the muscular efforts associated with a task for a better understanding of human performance and perceived discomfort. The project mainly focuses on the following scientific issues:

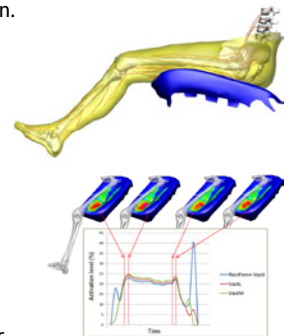
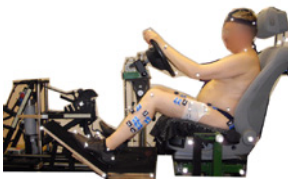
- Development of multi-body dynamic motion reconstruction methods in order to estimate joint motion and joint forces,
- Development of a hybrid optimisation/data based complex motion simulation method,
- Development of a generic motion-based biochemical discomfort criterion,
- The effects of aging on movement and perceived discomfort.

Project Workpackages



Achievements

- Human anatomical and functional data for a more realistic representation of the body and human physical capacity.
- Three case-studies for automotive applications.
- Multi-body kinematic and dynamic motion reconstruction and simulation.
- Musculo-skeletal motion reconstruction with consideration of the physical contact with a deformable environment.
- A generic approach for identifying motion related discomfort criterion.
- DHErgo demonstrator and design orientated solutions.



Budget	4.9 M€	Funding	3.5 M€
Duration	36 + 3 months	Start	September 2008
DG	Research / H2	Contract n°	218525
Coordinator	Fabienne Janin, ERT	Contact	fabienne.janin@ert-sas.fr
Scientific manager	Xuguang Wang, IFSTTAR		xuguang.wang@ifsttar.fr
Partners	10 partners, among them BMW, PSA, Renault		
Website	www.dhergo.org		