Scientific and technical challenges:
- Build a predictive mechanical and 3D model of the product.
- Identify, reconstruct and track muscles shape and deformation during the separation process.
- Define and auto-adapt in real time the cutting/separation trajectories (definition of virtual guides).
- Design specific and adapted tools (holding, handling, cutting/separating...).
- Control a multi-arms system and make several robots cooperating using multi-sensorial feedback (vision/force).
- Reach the cutting precision.

Perspectives
- Ongoing developments of a novel robotized muscle separation process show that each technological bricks we have developed must be optimized to enhance productivity and reliability for industrial applications.
- Related scientific issues are still open problems and new challenges are rising and should be integrated in future projects.
- Continuations of ARMS project will be possible in several domains: more complex separation scenarios, virtual reality learning systems for butcher training, ...

A multi-arm robotic system for muscles separation
Prof. Philippe Martinet
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