**PEA Card**

*A technological demonstrator for future multimedia smart card*

- Miniaturation of electrical power supplies for electronic and electromechanical Microsystems
- Design of energy management circuits in ultra low power technology.

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**Embedded energy:**

- For chip security, Man-Machine interface …
- For many applications in Identity Control, Banking, Transport …
- Integrated into a smart card
Architecture of the smart card

- Thin Film Power Battery
- Antenna
- µBattery Above IC
- Energy management → IC

Thin Rechargeable Power Battery

- To ensure micro battery charge and to power a thin and flexible display
- To be integrated in the smart card (thickness < 0.4 mm) and thus to be flexible
- To be fast charged (<3 minutes for 20 mA.h under 2V)
Micro battery on chip

- Scaling of the battery to fit the chip size
- Integration on chip: Material & Functional compatibilities
- Encapsulation: To provide an hermetic sealing to the Li-based materials constitutive of the µbattery (sensitive to H₂O, O₂ and N₂)

Power management and demonstrator ASIC

Three main functions:
- Substrate for "above IC" microbattery
- Power management circuit
- Demonstrator of active functions