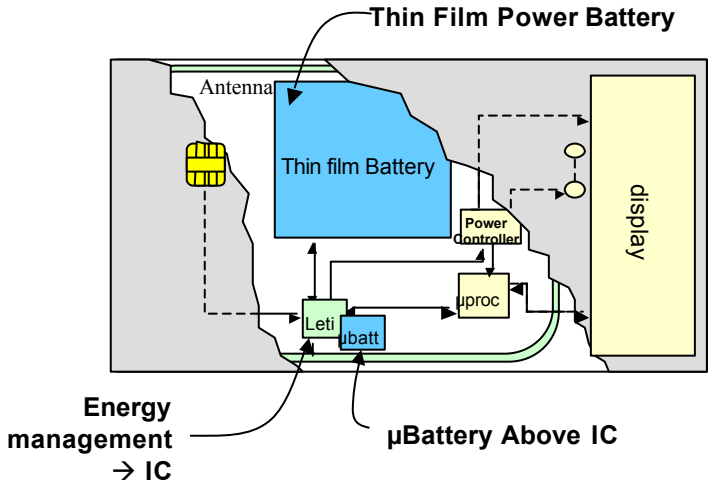
PEA Card
A technological demonstrator for future multimedia smart card

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

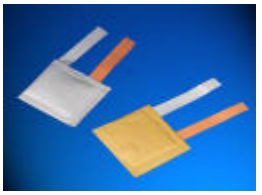
- **Embedded energy :**
  - ✓ For chip security, Man-Machine interface …
  - ✓ For many applications in Identity Control, Banking, Transport …
  - ✓ Integrated into a smart card

Architecture of the smart card



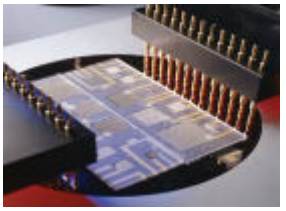
Thin Rechargeable Power Battery

- ✓ 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 H_2O, O_2 and N_2)



Power management and demonstrator ASIC

Three main functions:

- ✓ Substrate for “above IC” microbattery
- ✓ Power management circuit
- ✓ Demonstrator of active functions