

# Examples

## **Hardware design** (VHDL, Verilog)

- ✓ Used by semi-conductor companies such as Intel

## **Critical embedded software** (B/Z, Lustre/Esterel)

- ✓ Urban Transportation  
(METEOR Metro Line 14 in Paris by Alstom)
- ✓ Rail transportation (Eurostar)
- ✓ Aeronautic (Airbus, Eurocopter, Dassault)
- ✓ Nuclear plants (Schneider Electric)

# Pros and cons of using formal methods

- ✓ Nothing better than a mathematical proof
  - ➔ A code “proven safe” is safe
- ⦿ Development is time and effort (and so money) consuming
  - ➔ Should be motivated by the risk analysis
- ⦿ Do not prevent from specification bugs
  - ➔ Example of network protocols