ST7 MICROCONTROLLER TRAINING

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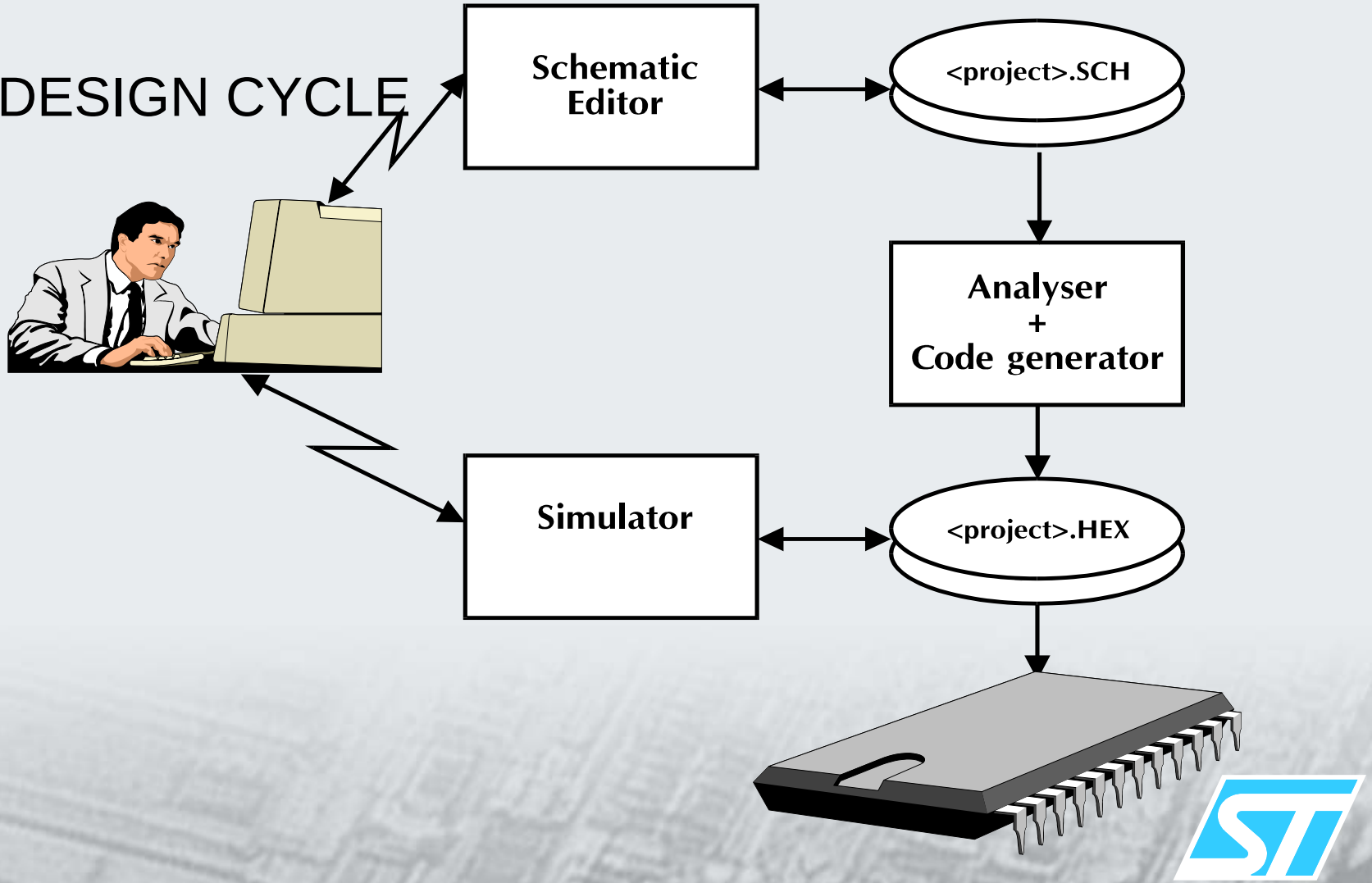
ST-REALIZER Introduction

- Software developped by ACTUM Solutions for ST micros (ST6 and ST7) from their REALIZER product
- ST-REALIZER is a graphical oriented tool
- The application is described as a schematic using symbols
- Symbols are coming from libraries
- From the schematic, ST-REALIZER generates the executable code that will be programmed into the chip.

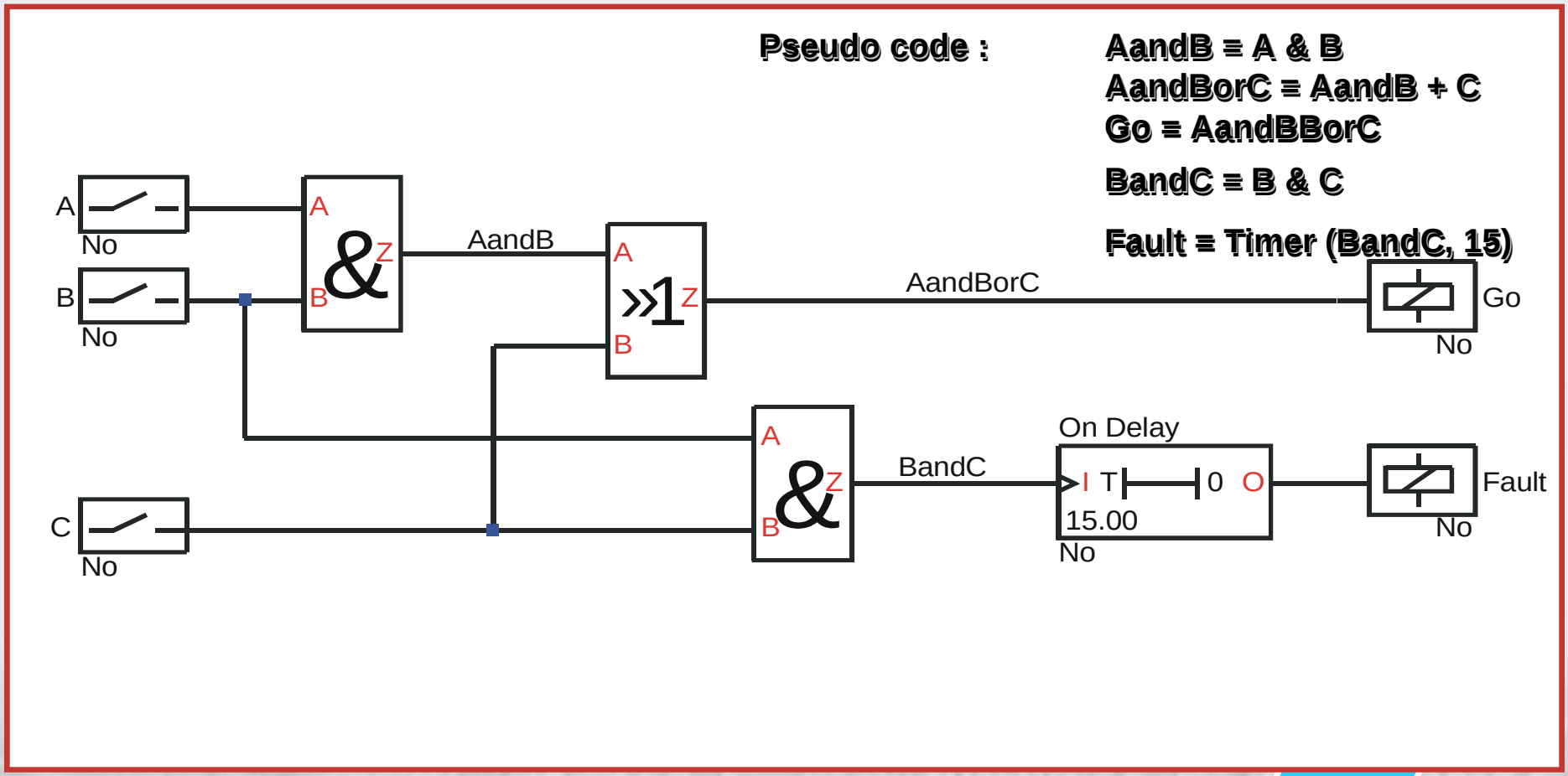
ST-REALIZER Introduction (2)

- DESIGN CYCLE



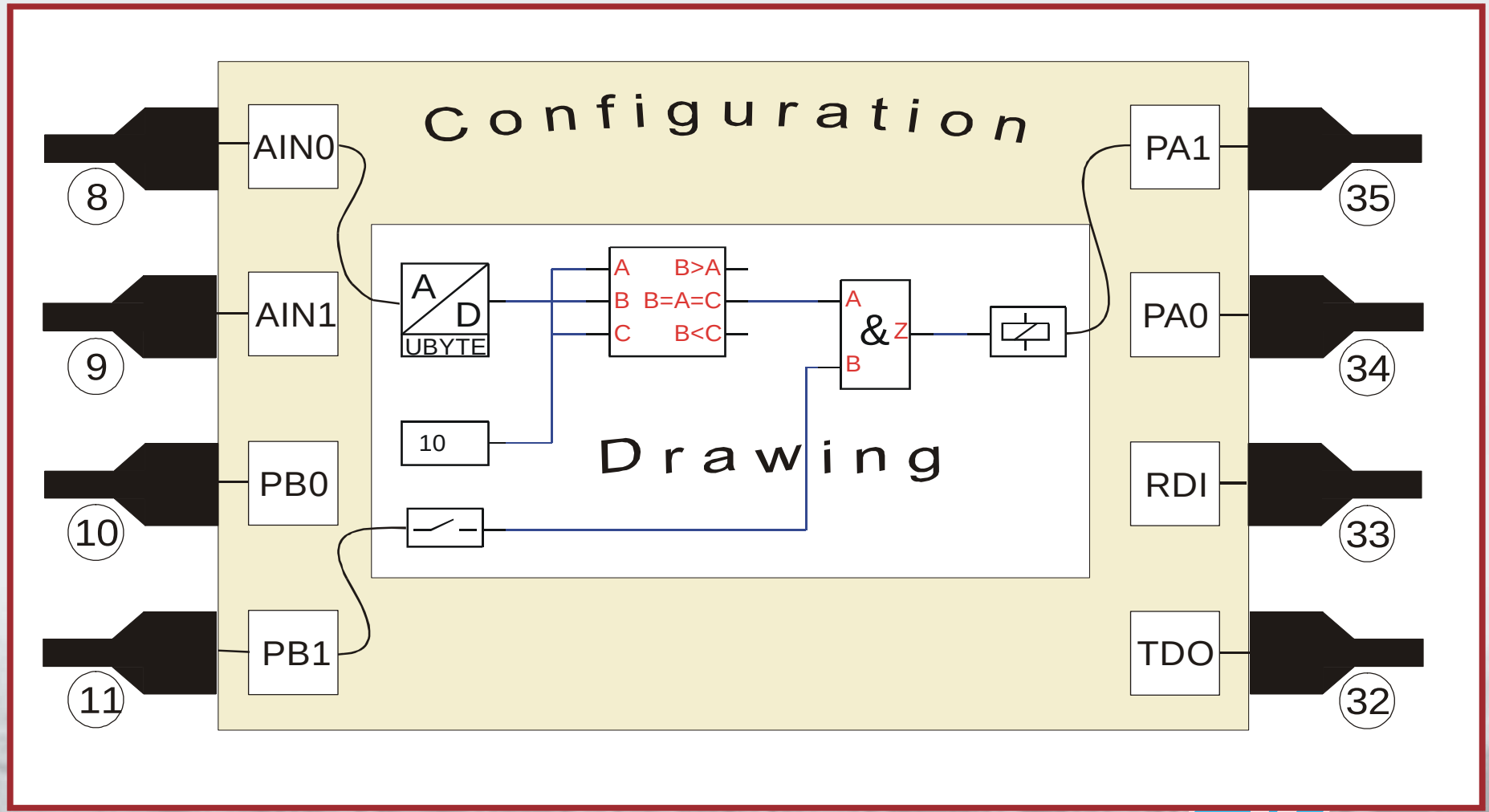
ST-REALIZER
Basic concepts

- EXAMPLE SCHEMATIC



ST-REALIZER
Basic concepts

- CONNECTING I/Os



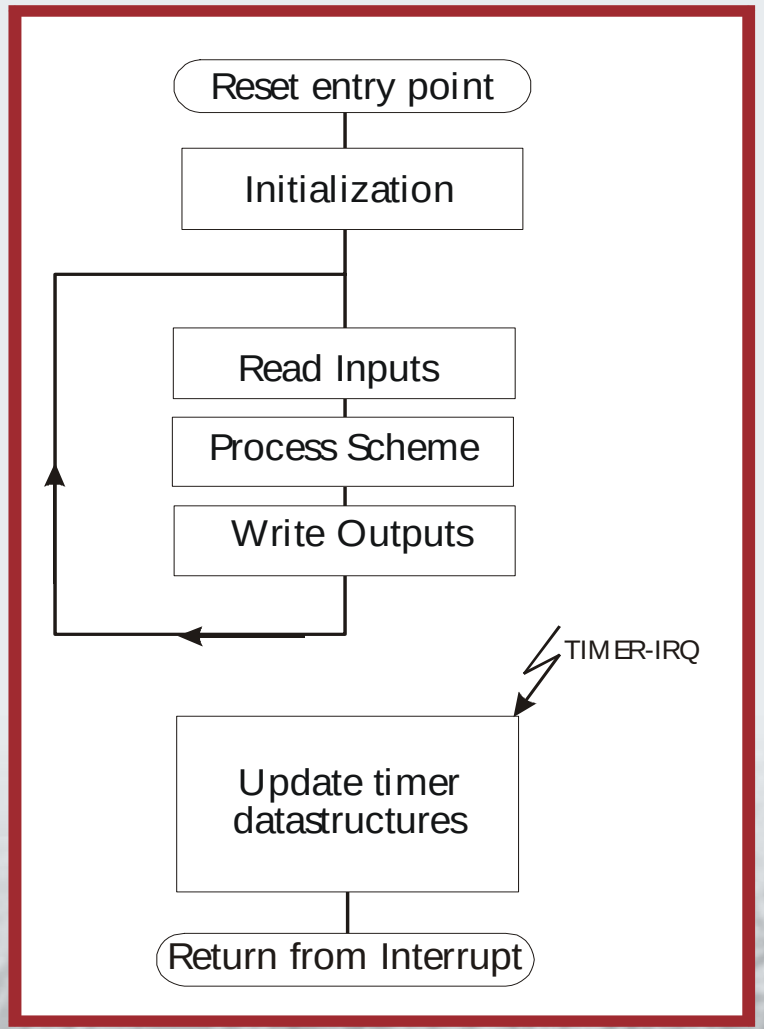
ST-REALIZER
Basic concepts

- REAL CODE

```
C095   1581                .RINPEND: bres     v0n4,#{2}
C097   038105                       btjf     v0n7,#{1},ELOC4
C09A   018102                       btjf     v0n6,#{0},ELOC4
C09D   1481                         bset     v0n4,#{2}
C09F   058110              ELOC4:   btjf     v0n4,#{2},SLOC5
C0A2   06810A                       btjt     pv0n4,#{3},ChkLOC5
C0A5   A6DB                         ld       A,#{low {1499}}
C0A7   B783                         ld       {T00006+1},A
C0A9   A605                         ld       A,#{low {{1499} shr 8}}
C0AB   B782                         ld       T00006,A
C0AD   1F82                         bres     T00006,#{7}
C0AF   0F8207              ChkLOC5: btjf     T00006,#{7},ELOC5
C0B2   1881                SLOC5:   bset     v0n3,#{4}
C0B4   048102                       btjt     v0n4,#{2},ELOC7
C0B7   1981                         bres     v0n3,#{4}
C0B9                       ELOC7:
C0B9   088105              ELOC5:   btjt     v0n3,#{4},SLOC8
C0BC   1308                         bres     PBDR,#{1}
C0BE   CCC0C3                       jp       ELOC8
C0C1   1208                SLOC8:   bset     PBDR,#{1}
C0C3   1D81                ELOC8:   bres     v0n1,#{6}
C0C5   0B8105                       btjf     v0n0,#{5},ELOC9
C0C8   038102                       btjf     v0n7,#{1},ELOC9
C0CB   1C81                         bset     v0n1,#{6}
C0CD   1E81                ELOC9:   bset     v0n2,#{7}
C0CF   0C8105                       btjt     v0n1,#{6},ELOCa
C0D2   008102                       btjt     v0n6,#{0},ELOCa
C0D5   1F81                         bres     v0n2,#{7}
```

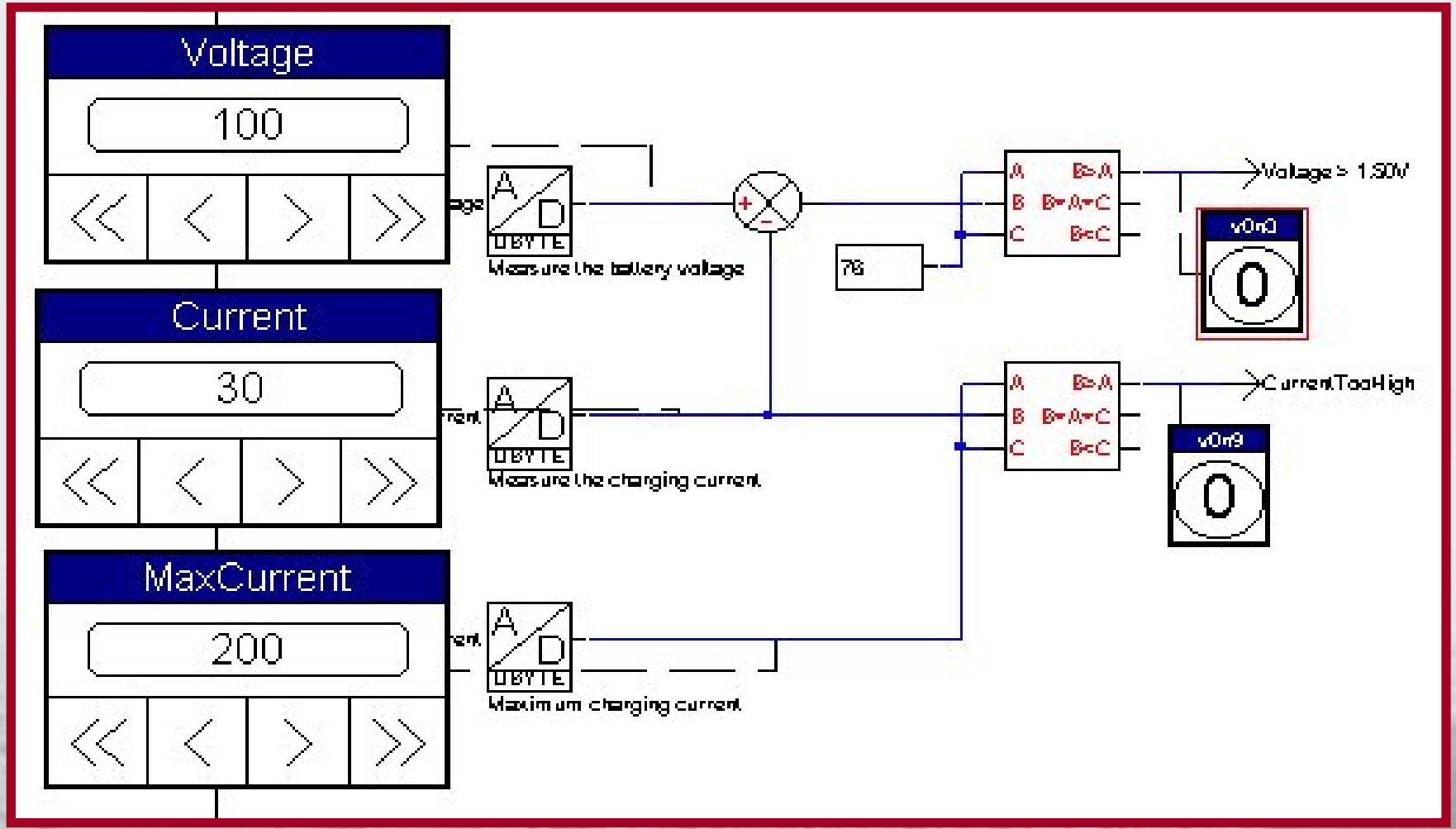
ST-REALIZER
Basic concepts

- STRUCTURE OF THE CODE



ST-REALIZER
Basic concepts

- SIMULATION



ST-REALIZER

- ADDITIONNAL FEATURES
  - Hierarchical design : subschemes
  - User-defined symbols
- RESULT
  - Clear design structure
  - Top down approach
  - Re-use of existing part
  - Flexibility
  - No assembly to write

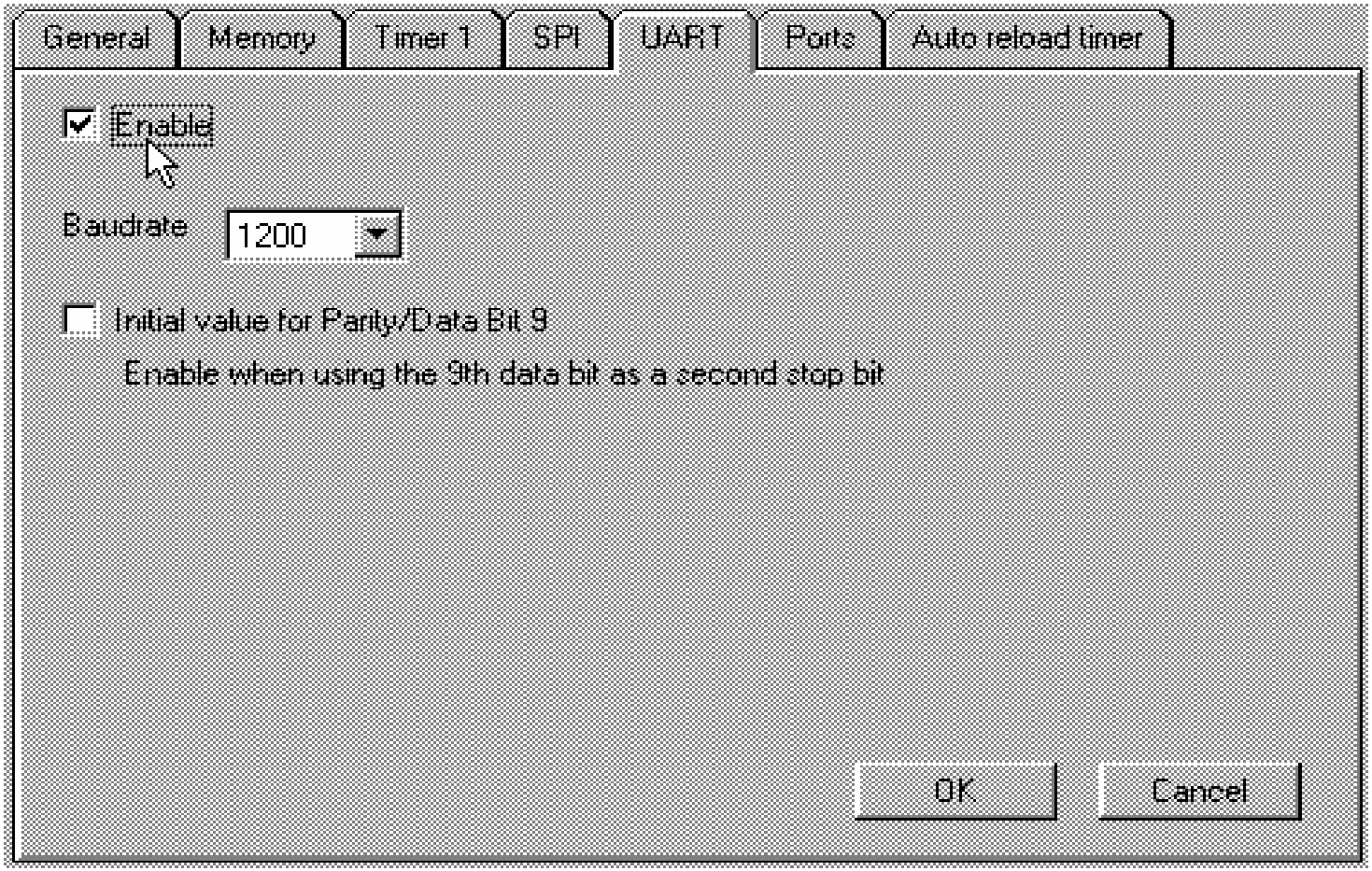
ST-REALIZER Advantages

- COMFORTABLE USER INTERFACE
- SELF DOCUMENTED DESIGN
- SHORT DESIGN CYCLE
  - Concept, design, development, test
- COMPLETE ERROR-FREE CODE
- DEVICE INDEPENDENT
  - Type, family, vendor
- POWERFUL INTERACTIVE & FUNCTIONAL SIMULATION
- NO NEED TO LEARN ASSEMBLY
- NO NEED TO LEARN HOW THE MICRO IS WORKING

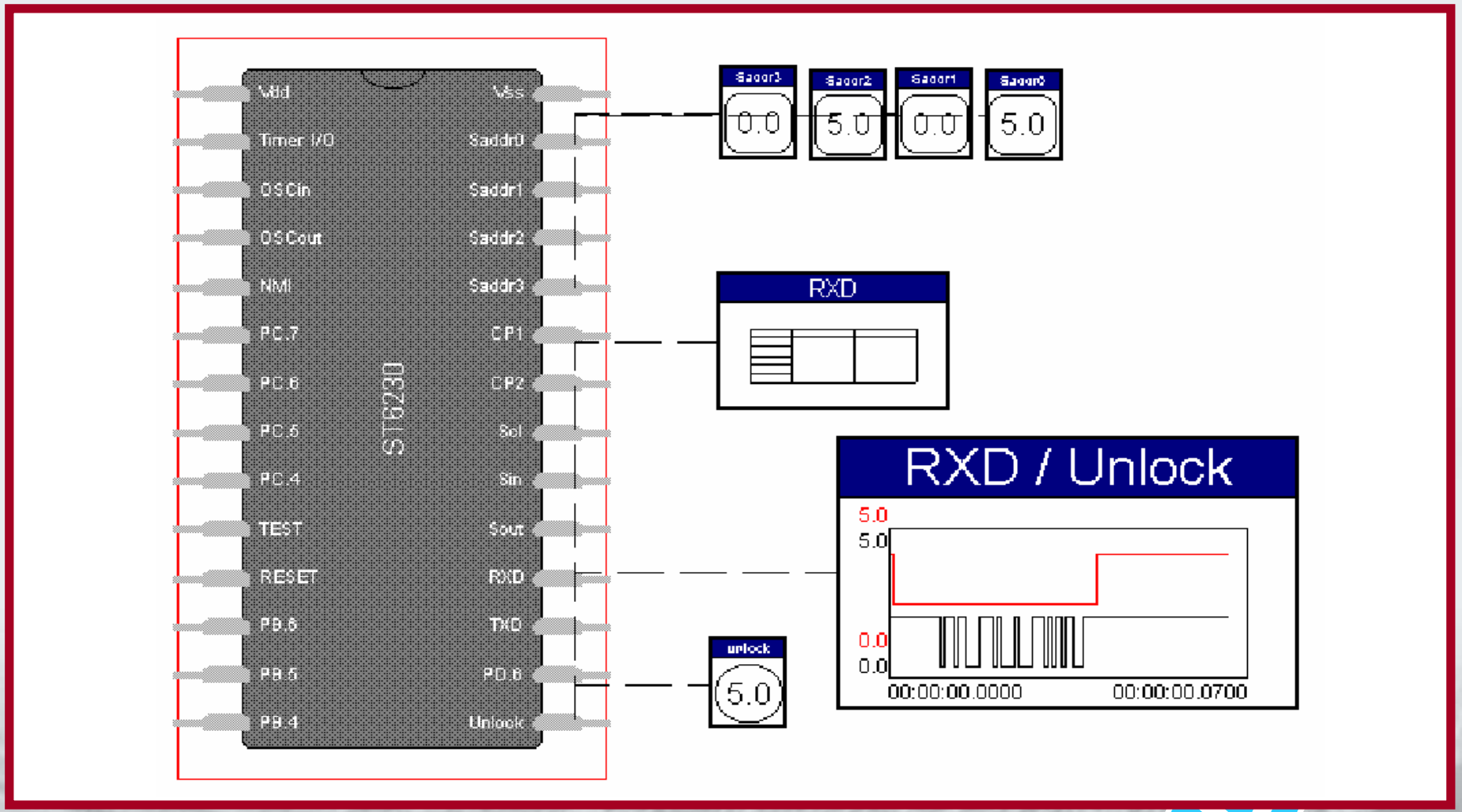
ST-REALIZER II
New features

- IMPROVED USER INTERFACE
- SUPPORT FOR INTERRUPTS
- SUPPORT FOR WAIT AND STOP MODE
- LOW LEVEL PERIPHERALS
- NEW SYMBOLS
- CONDITIONAL EXECUTION FOR SUBSCHEMES
- PIN LEVEL SIMULATION

ST-REALIZER II
Low level peripherals



ST-REALIZER II
Pin level simulation



REALIZER PRODUCTS

- ACTUM PRODUCTS
  - Gold
  - Silver
  - Bronze

  One target module, extendable with others

  Available from ACTUM : www.actum.com

- ST-REALIZER II
  - ST6 and ST7 Target micros
  - Comparable to Silver

  Available from ST