# RESOLVER
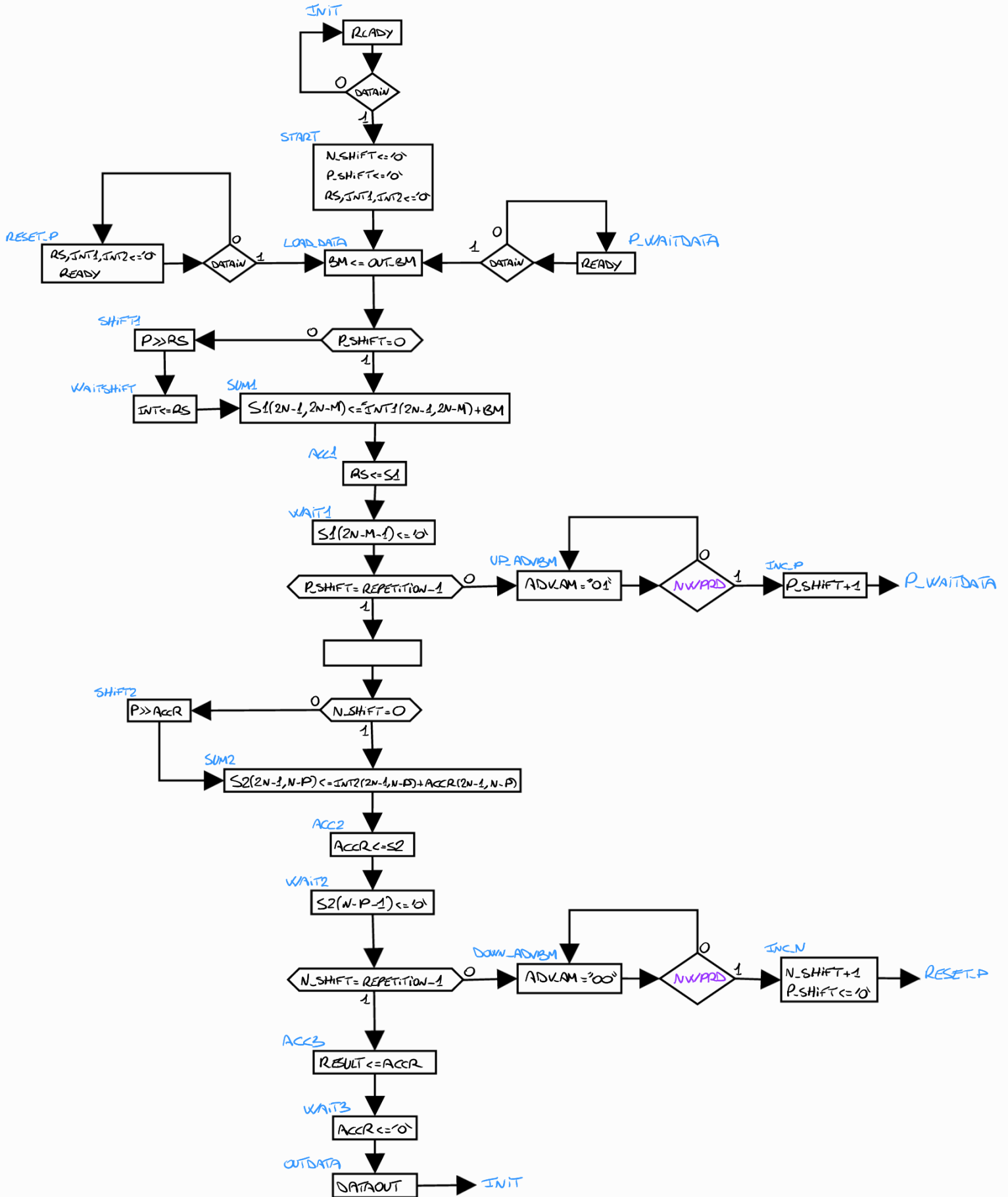
P=4, M=8, REPETITION=4

UN INPUT DA 8 BIT

INIT → RCADY

DATAIN? 0 (loop back) / 1

START:
N_SHIFT <= '0'
P_SHIFT <= '0'
RS, INT1, INT2 <= '0'

RESET_P:
RS, INT1, INT2 <= '0'
READY

DATAIN? 0 (loop) / 1 → LOAD_DATA

LOAD_DATA: BM <= OUT_BM

P_WAITDATA:
DATAIN? 0 (loop) / 1 → READY

$P\_SHIFT = 0$?  0 → SHIFT1 / 1

SHIFT1: P >> RS

WAITSHIFT: INT <= RS

SUM1: $S1(2N-1, 2N-M) <= INT1(2N-1, 2N-M) + BM$

ACC1: RS <= S1

WAIT1: $S1(2N-M-1) <= '0'$

$P\_SHIFT = REPETITION - 1$?  0 → UP_ADVBM / 1

UP_ADVBM: ADVBM = '01'

NWPRD? 0 (loop) / 1 → INC_P

INC_P: P_SHIFT + 1 → P_WAITDATA

(empty box)

$N\_SHIFT = 0$?  0 → SHIFT2 / 1

SHIFT2: P >> ACCR

SUM2: $S2(2N-1, N-P) <= INT2(2N-1, N-P) + ACCR(2N-1, N-P)$

ACC2: ACCR <= S2

WAIT2: $S2(N-P-1) <= '0'$

$N\_SHIFT = REPETITION - 1$?  0 → DOWN_ADVBM / 1

DOWN_ADVBM: ADVBM = '00'

NWPRD? 0 (loop) / 1 → INC_N

INC_N:
N_SHIFT + 1
P_SHIFT <= '0' → RESET_P

ACC3: RESULT <= ACCR

WAIT3: ACCR <= '0'

OUTDATA: DATAOUT → INIT

UN OUTPUT DA N BIT