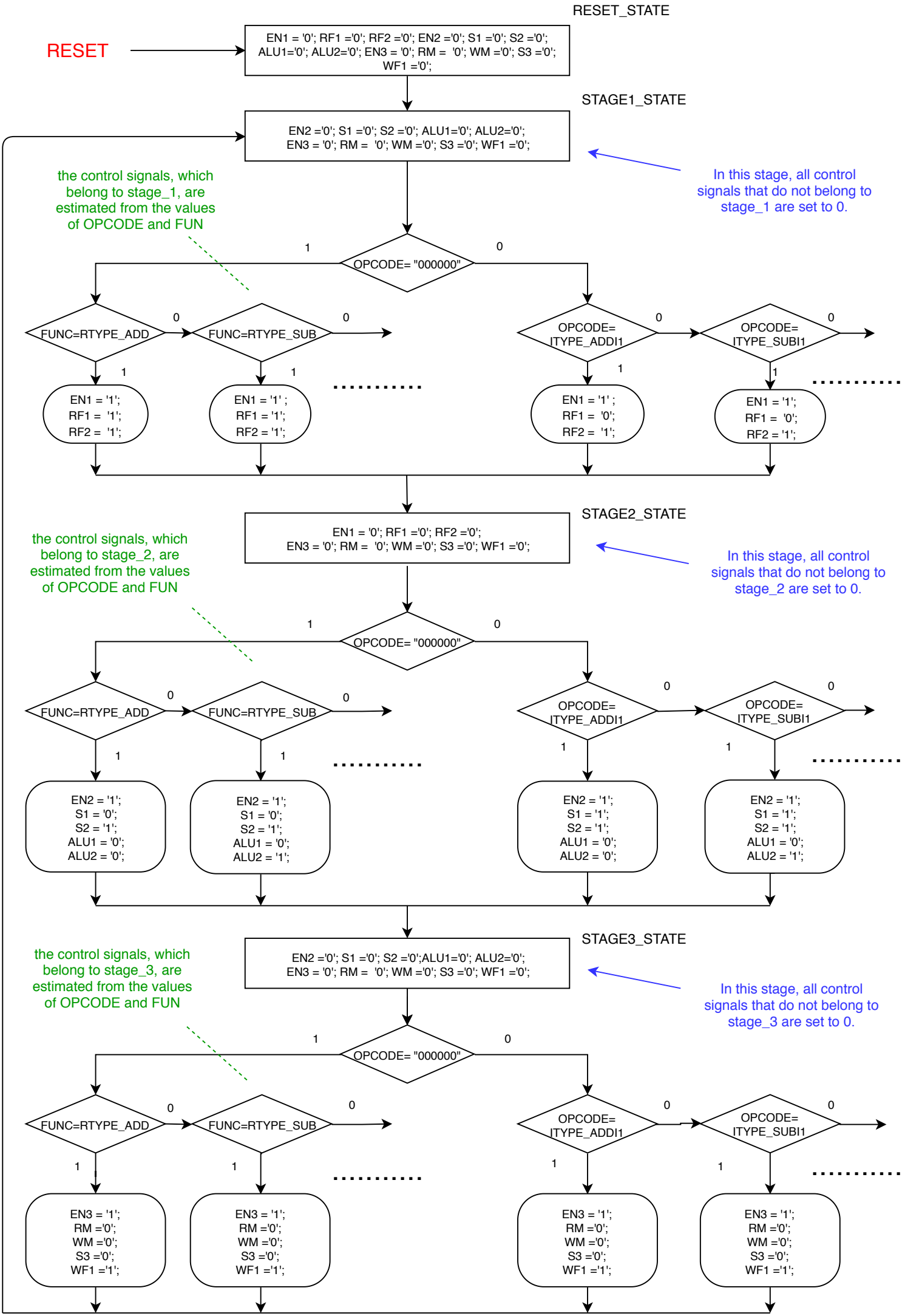
RESET_STATE
RESET
EN1 = '0'; RF1 ='0'; RF2 ='0'; EN2 ='0'; S1 ='0'; S2 ='0';
ALU1='0'; ALU2='0'; EN3 = '0'; RM = '0'; WM ='0'; S3 ='0';
WF1 ='0';
STAGE1_STATE
EN2 ='0'; S1 ='0'; S2 ='0'; ALU1='0'; ALU2='0';
EN3 = '0'; RM = '0'; WM ='0'; S3 ='0'; WF1 ='0';
In this stage, all control signals that do not belong to stage_1 are set to 0.
the control signals, which belong to stage_1, are estimated from the values of OPCODE and FUN
OPCODE= "000000"
FUNC=RTYPE_ADD
FUNC=RTYPE_SUB
OPCODE= ITYPE_ADDI1
OPCODE= ITYPE_SUBI1
EN1 = '1'; RF1 = '1'; RF2 = '1';
EN1 = '1' ; RF1 = '1'; RF2 = '1';
EN1 = '1' ; RF1 = '0'; RF2 = '1';
EN1 = '1'; RF1 = '0'; RF2 = '1';
STAGE2_STATE
EN1 = '0'; RF1 ='0'; RF2 ='0';
EN3 = '0'; RM = '0'; WM ='0'; S3 ='0'; WF1 ='0';
In this stage, all control signals that do not belong to stage_2 are set to 0.
the control signals, which belong to stage_2, are estimated from the values of OPCODE and FUN
OPCODE= "000000"
FUNC=RTYPE_ADD
FUNC=RTYPE_SUB
OPCODE= ITYPE_ADDI1
OPCODE= ITYPE_SUBI1
EN2 = '1'; S1 = '0'; S2 = '1'; ALU1 = '0'; ALU2 = '0';
EN2 = '1'; S1 = '0'; S2 = '1'; ALU1 = '0'; ALU2 = '1';
EN2 = '1'; S1 = '1'; S2 = '1'; ALU1 = '0'; ALU2 = '0';
EN2 = '1'; S1 = '1'; S2 = '1'; ALU1 = '0'; ALU2 = '1';
STAGE3_STATE
EN2 ='0'; S1 ='0'; S2 ='0';ALU1='0'; ALU2='0';
EN3 = '0'; RM = '0'; WM ='0'; S3 ='0'; WF1 ='0';
In this stage, all control signals that do not belong to stage_3 are set to 0.
the control signals, which belong to stage_3, are estimated from the values of OPCODE and FUN
OPCODE= "000000"
FUNC=RTYPE_ADD
FUNC=RTYPE_SUB
OPCODE= ITYPE_ADDI1
OPCODE= ITYPE_SUBI1
EN3 = '1'; RM ='0'; WM ='0'; S3 ='0'; WF1 ='1';
EN3 = '1'; RM ='0'; WM ='0'; S3 ='0'; WF1 ='1';
EN3 = '1'; RM ='0'; WM ='0'; S3 ='0'; WF1 ='1';
EN3 = '1'; RM ='0'; WM ='0'; S3 ='0'; WF1 ='1';