

Tipos de Instrucciones:

- *Data Operations*
- *Load and Save*
- *Multiple load and save*
- *Branching*
- *SWI*
- *Floating point*

Instrucciones de proceso de datos (Solo entre registros):

INSTRUCCIÓN {cond} {S} <dest>, <lhs>, <rhs>

{OPCIONAL} <OBLIGATORIO>

{S} → Si está, el resultado de la instrucción afecta los FLAGS

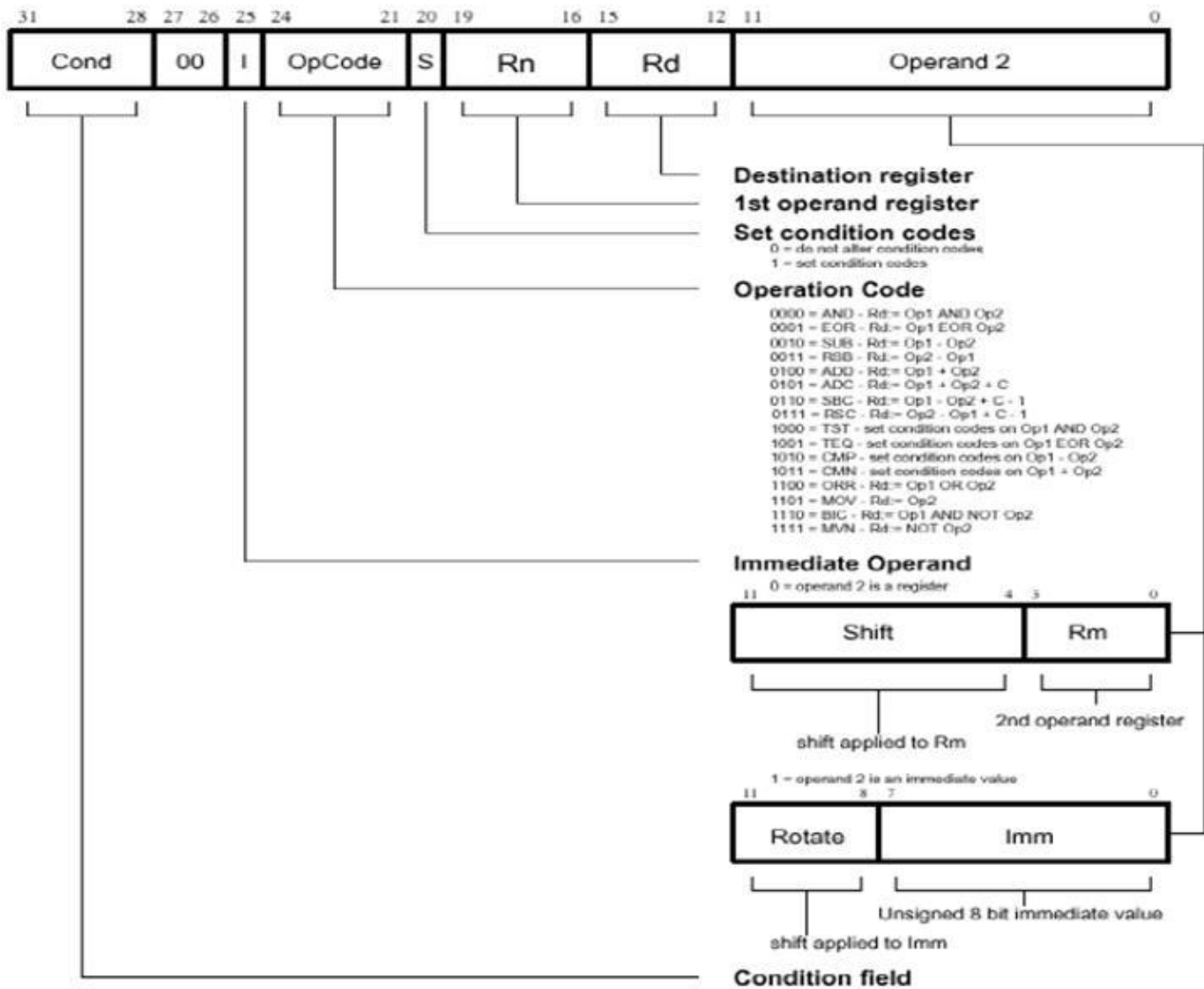
{cond} → Si está, es uno de los siguientes códigos:

| Suffix | Description | Flags tested |
|--------------|-------------------------|----------------------|
| EQ | Equal | Z=1 |
| NE | Not equal | Z=0 |
| CS/HS | Unsigned higher or same | C=1 |
| CC/LO | Unsigned lower | C=0 |
| MI | Minus | N=1 |
| PL | Positive or Zero | N=0 |
| VS | Overflow | V=1 |
| VC | No overflow | V=0 |
| HI | Unsigned higher | C=1 & Z=0 |
| LS | Unsigned lower or same | C=0 or Z=1 |
| GE | Greater or equal | N=V |
| LT | Less than | N!=V |
| GT | Greater than | Z=0 & N=V |
| LE | Less than or equal | Z=1 or N=!V |
| AL | Always | |

Instruction set:

| Opcode | Mnemonic | Operation | Action |
|--------|----------|-----------------------------|--|
| 0000 | AND | Logical AND | $Rd := Rn \text{ AND shifter_operand}$ |
| 0001 | EOR | Logical Exclusive OR | $Rd := Rn \text{ EOR shifter_operand}$ |
| 0010 | SUB | Subtract | $Rd := Rn - \text{shifter_operand}$ |
| 0011 | RSB | Reverse Subtract | $Rd := \text{shifter_operand} - Rn$ |
| 0100 | ADD | Add | $Rd := Rn + \text{shifter_operand}$ |
| 0101 | ADC | Add with Carry | $Rd := Rn + \text{shifter_operand} + \text{Carry Flag}$ |
| 0110 | SBC | Subtract with Carry | $Rd := Rn - \text{shifter_operand} - \text{NOT}(\text{Carry Flag})$ |
| 0111 | RSC | Reverse Subtract with Carry | $Rd := \text{shifter_operand} - Rn - \text{NOT}(\text{Carry Flag})$ |
| 1000 | TST | Test | Update flags after $Rn \text{ AND shifter_operand}$ |
| 1001 | TEQ | Test Equivalence | Update flags after $Rn \text{ EOR shifter_operand}$ |
| 1010 | CMP | Compare | Update flags after $Rn - \text{shifter_operand}$ |
| 1011 | CMN | Compare Negated | Update flags after $Rn + \text{shifter_operand}$ |
| 1100 | ORR | Logical (inclusive) OR | $Rd := Rn \text{ OR shifter_operand}$ |
| 1101 | MOV | Move | $Rd := \text{shifter_operand}$ (no first operand) |
| 1110 | BIC | Bit Clear | $Rd := Rn \text{ AND NOT}(\text{shifter_operand})$ |
| 1111 | MVN | Move Not | $Rd := \text{NOT shifter_operand}$ (no first operand) |

Código de operación:



<lhs> SIEMPRE ES UN REGISTRO

<rhs> puede ser:

- Un registro
- Un valor inmediato
- Un registro "shifted"
- Un registro "Rotated"

Ejemplos:

ADDNE R0,R0,R2

Solo si la flag Z es "0", $R0=R0+R2$

ADDS R0,R0,R2

Posiciona las banderas según el resultado de $R0=R0+R2$

ADDNES R0,R0,R2

Solo si la flag Z es "0", $R0=R0+R2$, y posiciona las banderas según el resultado.