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Encoding

Base

Instructions

## **SADDLB**

Signed add long (bottom)

Add the corresponding even-numbered signed elements of the first and second source vectors, and place the results in the overlapping double-width elements of the destination vector. This instruction is unpredicated.

31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 1 0 0 0 1 0 1 size 0 0 0 0 0 0 0 Zm SUT

SADDLB <Zd>.<T>, <Zn>.<Tb>, <Zm>.<Tb>

```
if ! HaveSVE2 () && ! HaveSME () then UNDEFINED;
if size == '00' then UNDEFINED;
constant integer esize = 8 << UInt(size);</pre>
integer n = UInt(Zn);
integer m = \overline{UInt}(Zm);
integer d = UInt(Zd);
integer sel1 = 0;
integer sel2 = 0;
boolean unsigned = FALSE;
```

## **Assembler Symbols**

<Zd>

Is the name of the destination scalable vector register, encoded in the "Zd" field.

<T>

Is the size specifier, encoded in "size":

size	<t></t>
0.0	RESERVED
01	Н
10	S
11	D

<7.n>

Is the name of the first source scalable vector register, encoded in the "Zn" field.

<Tb>

Is the size specifier, encoded in "size":

size	<tb></tb>
0.0	RESERVED
01	В
10	Н
11	S

<Zm>

Is the name of the second source scalable vector register, encoded in the "Zm" field.

## **Operation**

```
CheckSVEEnabled();
constant integer VL = CurrentVL;
constant integer elements = VL DIV esize;
bits(VL) operand1 = Z[n, VL];
bits(VL) operand2 = Z[m, VL];
bits(VL) result;

for e = 0 to elements-1
   integer element1 = Int(Elem[operand1, 2*e + sel1, esize DIV 2], unsinteger element2 = Int(Elem[operand2, 2*e + sel2, esize DIV 2], unsinteger res = element1 + element2;
   Elem[result, e, esize] = res<esize-1:0>;
Z[d, VL] = result;
```

## **Operational information**

If FEAT\_SVE2 is implemented or FEAT\_SME is implemented, then if PSTATE.DIT is 1:

- The execution time of this instruction is independent of:
  - The values of the data supplied in any of its registers.
  - The values of the NZCV flags.
- The response of this instruction to asynchronous exceptions does not vary based on:
  - The values of the data supplied in any of its registers.
  - The values of the NZCV flags.

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