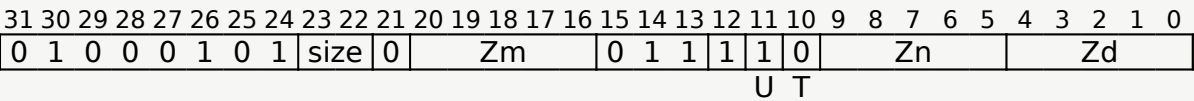


**UMULLB (vectors)**

Unsigned multiply long (bottom)

Multiply the corresponding even-numbered unsigned 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.



**UMULLB** <Zd>.<T>, <Zn>.<Tb>, <Zm>.<Tb>

```
if !HaveSVE2() && !HaveSME() then UNDEFINED;
if size == '00' then UNDEFINED;
constant integer esize = 8 << UInt(size);
integer n = UInt(Zn);
integer m = UInt(Zm);
integer d = UInt(Zd);
```

**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>
00	RESERVED
01	H
10	S
11	D

<Zn> 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>
00	RESERVED
01	B
10	H
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 = UInt(Elem[operand1, 2*e + 0, esize DIV 2]);  
    integer element2 = UInt(Elem[operand2, 2*e + 0, esize DIV 2]);  
    integer 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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Internal version only: isa v33.64, AdvSIMD v29.12, pseudocode  
no\_diffs\_2023\_09\_RC2, sve v2023-06\_rel ; Build timestamp: 2023-09-18T17:56

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