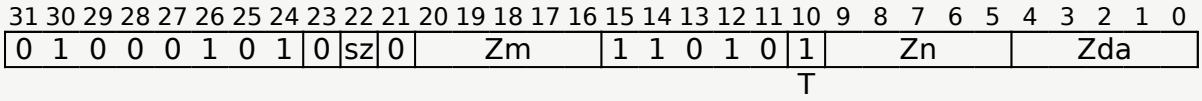
ADCLT

Add with carry long (top)

Add the odd-numbered elements of the first source vector and the 1-bit carry from the least-significant bit of the odd-numbered elements of the second source vector to the even-numbered elements of the destination and accumulator vector. The 1-bit carry output is placed in the corresponding odd-numbered element of the destination vector.



ADCLT <Zda>.<T>, <Zn>.<T>, <Zm>.<T>

```
if !HaveSVE2() && !HaveSME() then UNDEFINED;
constant integer esize = 32 << UInt(sz);
integer n = UInt(Zn);
integer m = UInt(Zm);
integer da = UInt(Zda);
```

Assembler Symbols

<Zda> Is the name of the third source and destination scalable vector register, encoded in the "Zda" field.

<T> Is the size specifier, encoded in “sz”:

sz	<T>
0	S
1	D

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

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

Operation

```
CheckSVEEnabled();
constant integer VL = CurrentVL;
constant integer pairs = VL DIV (esize * 2);
bits(VL) operand = Z[n, VL];
bits(VL) carries = Z[m, VL];
bits(VL) result = Z[da, VL];

for p = 0 to pairs-1
    bits(esize) element1 = Elem[result, 2*p + 0, esize];
```

```
        bits(esize) element2 = Elem[operand, 2*p + 1, esize];
        bit carry_in = Elem[carries, 2*p + 1, esize]<0>;

        (res, nzcv) = AddWithCarry(element1, element2, carry_in);
        carry_out = nzcv<1>;

        Elem[result, 2*p + 0, esize] = res;
        Elem[result, 2*p + 1, esize] = ZeroExtend(carry_out, esize);

    Z[da, 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.

This instruction might be immediately preceded in program order by a `MOVPRFX` instruction. The `MOVPRFX` instruction must conform to all of the following requirements, otherwise the behavior of the `MOVPRFX` and this instruction is unpredictable:

- The `MOVPRFX` instruction must be unpredicated.
- The `MOVPRFX` instruction must specify the same destination register as this instruction.
- The destination register must not refer to architectural register state referenced by any other source operand register of this instruction.

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