FRSQRTE

Floating-point reciprocal square root estimate (unpredicated)

Find the approximate reciprocal square root of each active floating-point element of the source vector, and place the results in the corresponding 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	1	0	0	1	0	1	size		0	0	1	1	1	1	0	0	1	1	0	0	Zn					Zd				

```
FRSQRTE <Zd>.<T>, <Zn>.<T>
```

```
if !HaveSVE() && !HaveSME() then UNDEFINED;
if size == '00' then UNDEFINED;
constant integer esize = 8 << UInt(size);
integer n = UInt(Zn);
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 source scalable vector register, encoded in the "Zn" field.

Operation

```
CheckSVEEnabled();
constant integer VL = CurrentVL;
constant integer PL = VL DIV 8;
constant integer elements = VL DIV esize;
bits(VL) operand = Z[n, VL];
bits(VL) result;

for e = 0 to elements-1
    bits(esize) element = Elem[operand, e, esize];
    Elem[result, e, esize] = FPRSqrtEstimate(element, FPCR[]);

Z[d, VL] = result;
```

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