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Clarification of Designated Initializers

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The following is suggested as a response to DR 413 on designated initializers.

Committee Discussion

6.7.9 paragraphs 17-18 specify that each designator list affects only the smallest subobject to which the designator list refers. As a result, the second clause of paragraph 19 occurs once for the greater object as a whole, filling in only those parts of the whole object that were never initialized explicitly.

Technical Corrigendum

Add a new footnote at the end of 6.7.9 paragraph 18.

> newfootnote) The subobject to be initialized is the smallest subobject that is specified by the designator list.

Replace 6.7.9 paragraph 19 with the following.

> The initialization shall occur in initializer list order, each initializer provided for a particular subobject overriding any previously listed initializer for the same subobject.[oldfootnote)]

Add the following to the end of paragraph 21.

> Implicit initialization does not override explicit initialization.

Add the following example to 6.7.9.

```
typedef struct {
     int k;
     int l;
     int a[2];
} T;

typedef struct {
     int i;
     T t;
} S;
```

```
T x = {.l = 43, .k = 42, .a[1] = 19, .a[0] = 18 };

void f(void)
{
     S l = { 1, .t = x, .t.l = 41, .t.a[1] = 17};
}
```

The value of `l.t.k` is 42, because implicit initialization does not override explicit initialization.