Subject: Elemental operations on pointer association status
From: Van Snyder

1 Number

2 TBD

3 Title

4 Elemental operations on pointer association status.

5 Submitted By

6 J3

7 Status

8 For consideration.

9 Basic Functionality

10 Provide for elemental operations on pointer association status.

11 Rationale

12 Elemental operations on pointer association status would be useful. The DIS has syntax for it and lacks
13 a constraint against it, but it has no interpretation of that syntax. We already have some forms of
14 elemental operations on pointer association status indirectly by way of intrinsic assignment. Consider

```
15    type T; real, pointer :: P; end type T
16    type(t) :: X(100), Y
17    real, target :: R
18    y%p => r
19    x = y
```

20 The last statement associates the P component of every element of X with R. One may therefore ask "If
21 the standard already provides it indirectly, why provide it directly?" The answer is that this indirect
22 form only does exactly what is desired in the case that the type `T` has no other components. If `T` has
23 other components, those components in `X` will also be filled from `Y`; that may not be what is desired.

24 Estimated Impact

25 Minor, both for the standard and implementors.

26 Detailed Specification

27	**or** *variable* % *pointer-component-name*	114:2
28 C634$\frac{1}{2}$	(R634) The *pointer-component-name* shall be a component of the declared type of *variable* that	114:3+
29	has the POINTER attribute.	
30	If the *variable* is an array, the component named by *pointer-component-name* in every element of that	114:5+
31	array becomes disassociated.	
32 C720	(R735) If *bounds-remapping-list* is specified, *data-target* shall have rank one; otherwise, *data-*	143:21-22
33	*target* shall have the same rank as *variable-name* or *data-pointer-component-name*.	

1 [Cannonball polishing unrelated to this proposal: Insert "the declared type of" before "*variable*".]   143:25

2 If *variable* is an array, the effect is as if the pointer assignment were executed separately for each element   144:8+
3 of the array.

4 If *variable* is an array, the effect is as if the pointer assignment were executed separately for each element   144:35+
5 of the array.

6 C1224$\frac{1}{2}$ (R1219) The *variable* in *proc-component-ref* (R741) or the *data-ref* shall be scalar.   266:24+
7 [This constraint is probably necessary even if this proposal is not accepted.]

8 **History**