

Subject: BIT data type
From: Van Snyder
Reference: 03-258r1, section 2.2.6

1 **Number**

2 TBD

3 **Title**

4 BIT data type.

5 **Submitted By**

6 J3

7 **Status**

8 For consideration.

9 **Basic Functionality**

10 Provide simpler functionality to access individual bits.

11 **Rationale**

12 Facilities to use individual bits are frequently requested, for a number of reasons that are well known.

13 **Estimated Impact**

14 Small to moderate, depending on how it's done.

15 **Detailed Specification**

16 There are at least three ways to provide facilities to use individual bits. One is an intrinsic BIT datatype.

17 This would be the most work.

18 Another is to provide more control over the LOGICAL type. If the LOGICAL type were extended
19 by providing (1) a length parameter and (2) a SELECTED_LOGICAL_KIND intrinsic function, much
20 of the functionality desired for a BIT data type could be realized. The SELECTED_LOGICAL_KIND
21 intrinsic function should take an argument that gives the number of bits in a logical variable. There
22 should be no assumption that independent logical variables, or different elements of a logical array, are
23 packed, but consecutive elements of a logical string should be packed.

24 A third is to provide for subranges of integers, which is a separate proposal. That proposal would be a
25 bit of work (not nearly as much as a new intrinsic type), but would have numerous other applications.
26 If it succeeds, the other two proposals presented here are less pressingly needed.

27 **History**