

# ENDL TEXAS

Date: 24 June 2008  
To: T10 Technical Committee  
From: Ralph O. Weber  
Subject: SAI, SQN, IV, & Data must be contiguous

## Introduction

In a T10 Reflector posting dated 7 April 2008, Kevin Butt noted the following problem.

The new reserved field was placed between two values used in generating the AAD field used for ICV. A lot of algorithms expect it to be a flat buffer (i.e., contiguous). With the new reserved fields there is a gap. This would disallow generating as the buffer is being built.

Table 70 and 71 (and 75 and 76) have the SAI and SQN contiguous with reserved fields before them. Tables 72 and 73 (and 77 and 78) have a gap between SAI and SQN with that gap being the new reserved bytes.

**SUGGESTED FIX:** The reserved bytes should be before the SAI and SQN.

This proposal identifies the required changes with respect to SPC-4 r15 (n.b., the table references in Kevin's original posting are relative to SPC-4 r14).

## Revision History

r0 Initial revision

Unless otherwise indicated additions are shown in **blue**, deletions in **red-strikethrough**, and comments in **green**.

**Proposed Changes in SPC-4 r15**

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**Table 81 — ESP-SCSI data-out buffer parameter list descriptor without length and initialization vector**

Bit Byte	7	6	5	4	3	2	1	0	
0	<del>(MSB)</del>	<del>DS_SAI</del> Reserved						<del>(LSB)</del>	
3		Reserved DS_SAI							
4	(MSB)	Reserved DS_SAI						(LSB)	
7		Reserved DS_SAI							
8	(MSB)	DS_SQN						(LSB)	
15		DS_SQN							
16		ENCRYPTED OR AUTHENTICATED DATA							
i-1		ENCRYPTED OR AUTHENTICATED DATA							
i	(MSB)	INTEGRITY CHECK VALUE						(LSB)	
n		INTEGRITY CHECK VALUE							

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**Table 82 — ESP-SCSI data-out buffer parameter list descriptor without length**

Bit Byte	7	6	5	4	3	2	1	0	
0	<del>(MSB)</del>	<del>DS_SAI</del> Reserved						<del>(LSB)</del>	
3		Reserved DS_SAI							
4	(MSB)	Reserved DS_SAI						(LSB)	
7		Reserved DS_SAI							
8	(MSB)	DS_SQN						(LSB)	
15		DS_SQN							
16	(MSB)	INITIALIZATION VECTOR						(LSB)	
16+s-1		INITIALIZATION VECTOR							
16+s		ENCRYPTED OR AUTHENTICATED DATA							
i-1		ENCRYPTED OR AUTHENTICATED DATA							
i	(MSB)	INTEGRITY CHECK VALUE						(LSB)	
n		INTEGRITY CHECK VALUE							

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**Table 86 — ESP-SCSI data-in buffer parameter data descriptor without length and initialization vector**

Bit Byte	7	6	5	4	3	2	1	0	
0	(MSB)								
3							AC_SAI Reserved	(LSB)	
4	(MSB)								
7							Reserved AC_SAI	(LSB)	
8	(MSB)								
15							AC_SQN	(LSB)	
16	ENCRYPTED OR AUTHENTICATED DATA								
i-1									
i	(MSB)								
n							INTEGRITY CHECK VALUE	(LSB)	

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**Table 87 — ESP-SCSI data-in buffer parameter data descriptor without length**

Bit Byte	7	6	5	4	3	2	1	0	
0	(MSB)								
3							AC_SAI Reserved	(LSB)	
4	(MSB)								
7							Reserved AC_SAI	(LSB)	
8	(MSB)								
15							AC_SQN	(LSB)	
16	(MSB)	INITIALIZATION VECTOR							
16+s-1									
16+s	ENCRYPTED OR AUTHENTICATED DATA								
i-1									
i	(MSB)								
n							INTEGRITY CHECK VALUE	(LSB)	