Array Multiplier (1A)

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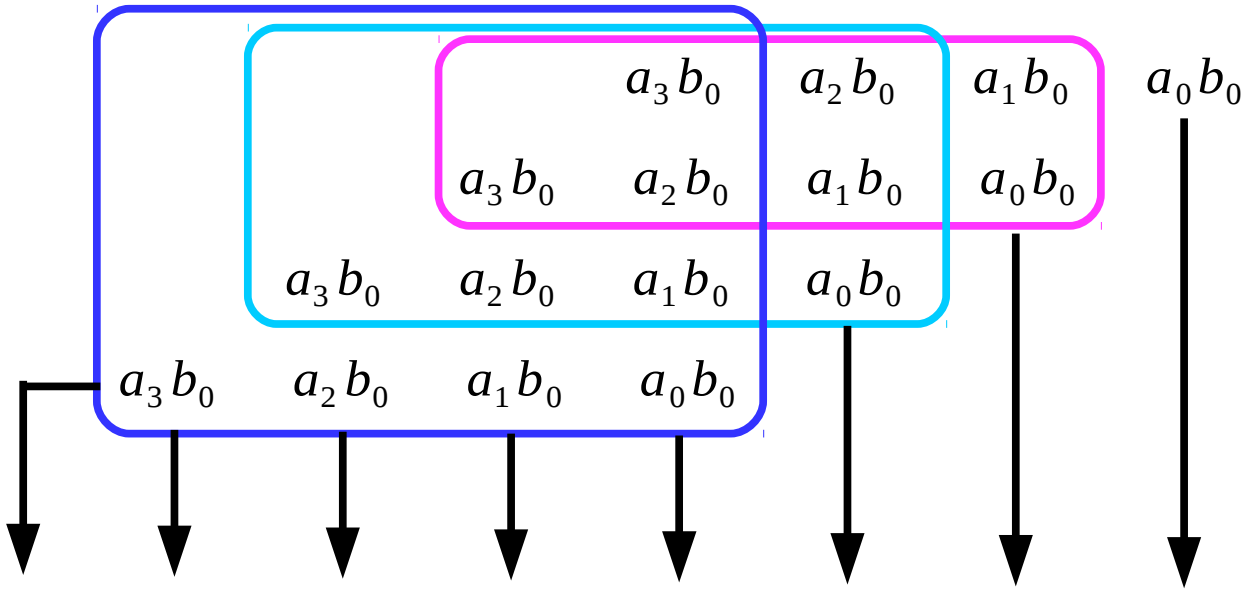
Please send corrections (or suggestions) to youngwlim@hotmail.com.

This document was produced by using OpenOffice and Octave.

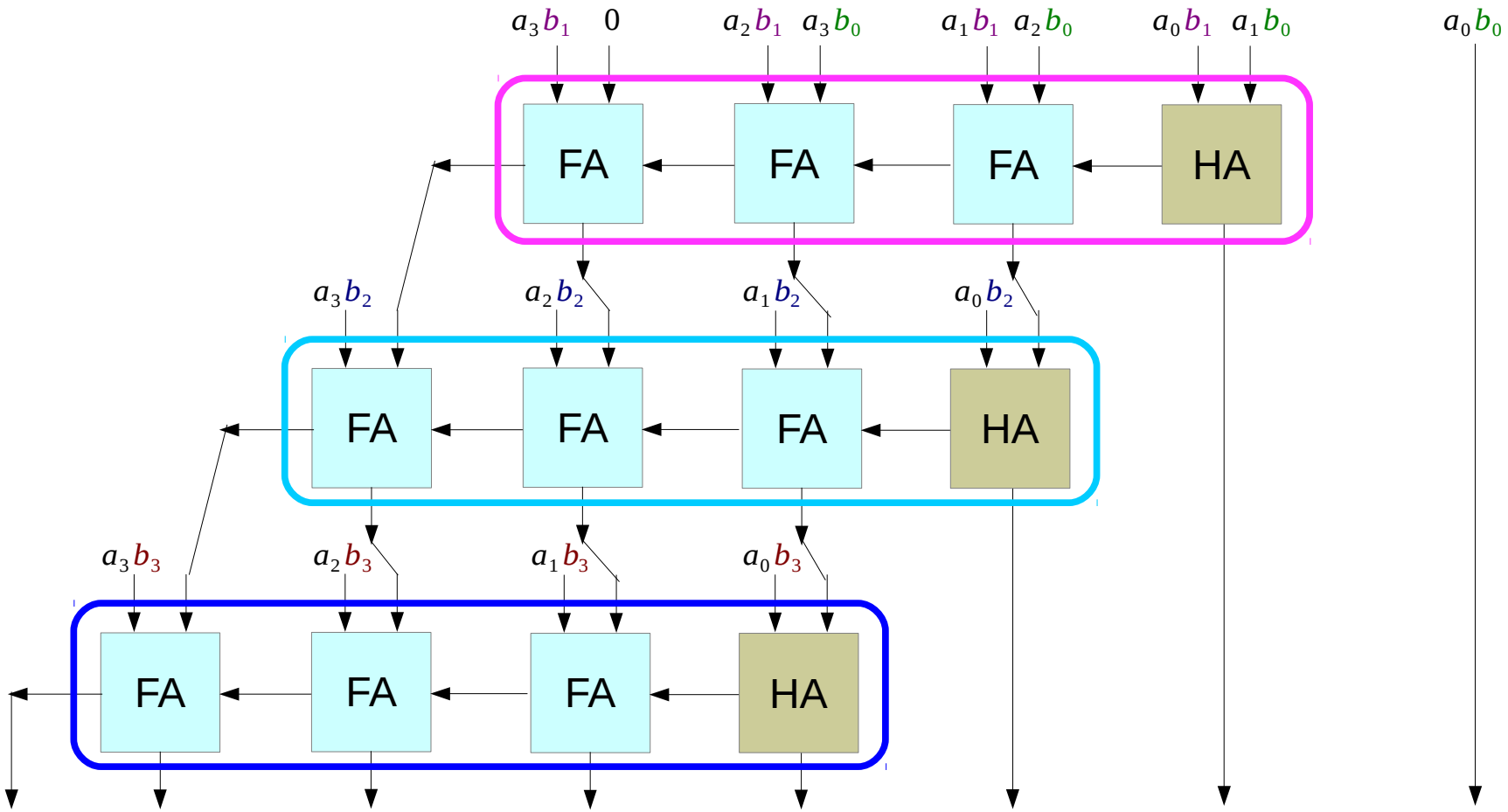
4-bit Multiplication

			a_3	a_2	a_1	a_0
			b_3	b_2	b_1	b_0
			$a_3 b_0$	$a_2 b_0$	$a_1 b_0$	$a_0 b_0$
		$a_3 b_0$	$a_2 b_0$	$a_1 b_0$	$a_0 b_0$	
	$a_3 b_0$	$a_2 b_0$	$a_1 b_0$	$a_0 b_0$		
$a_3 b_0$	$a_2 b_0$	$a_1 b_0$	$a_0 b_0$			

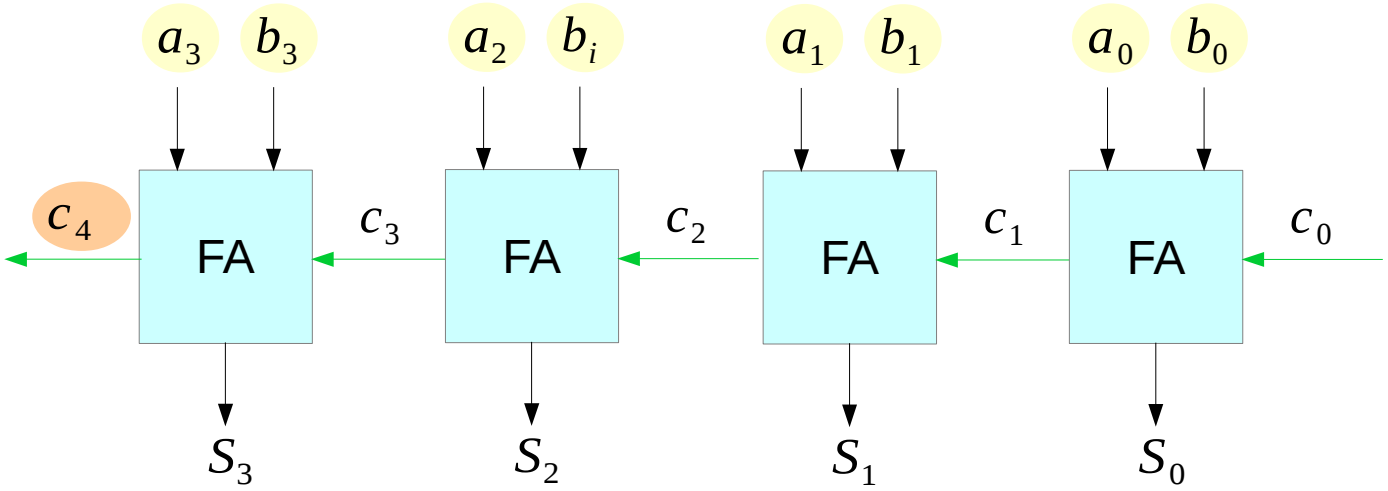
Summing Partial Products



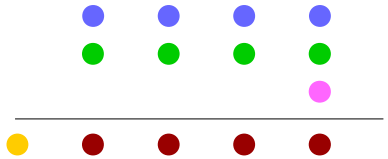
4-bit Array Multiplier

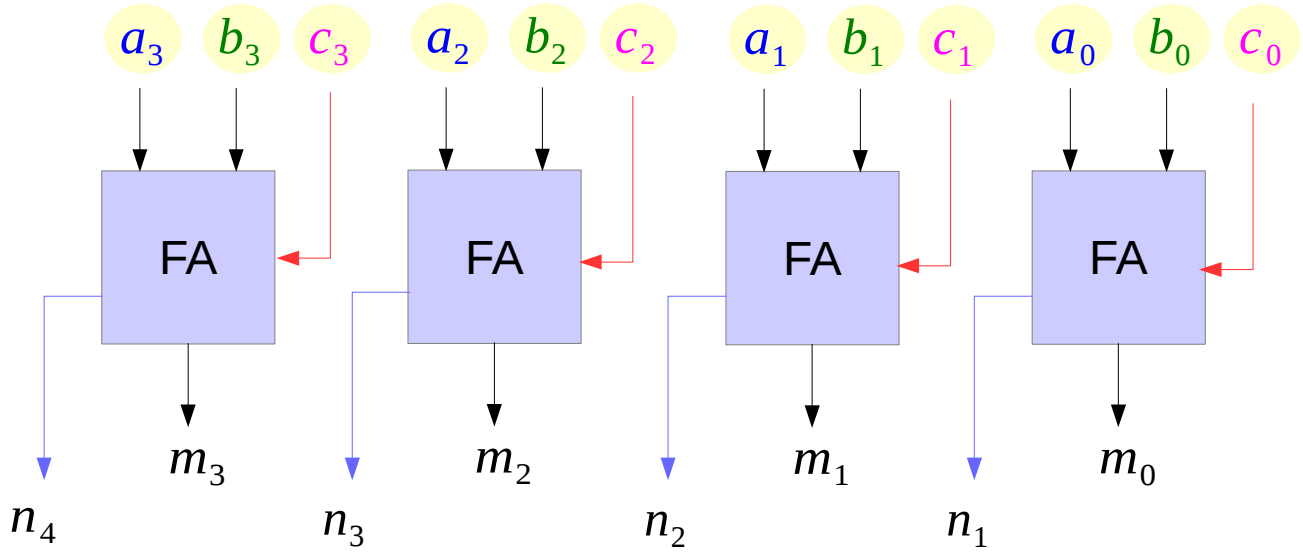


Multi-operand Adders

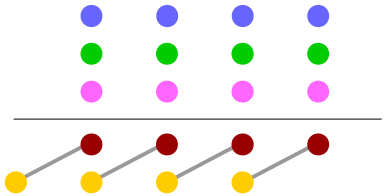


Ripple Carry Adder

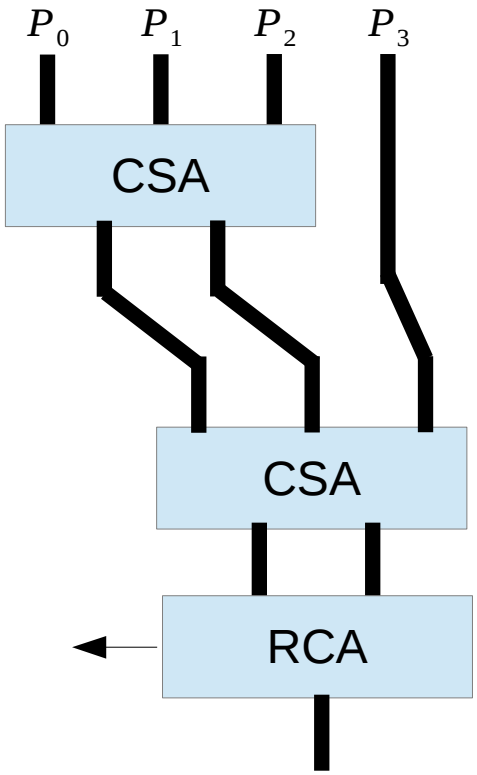


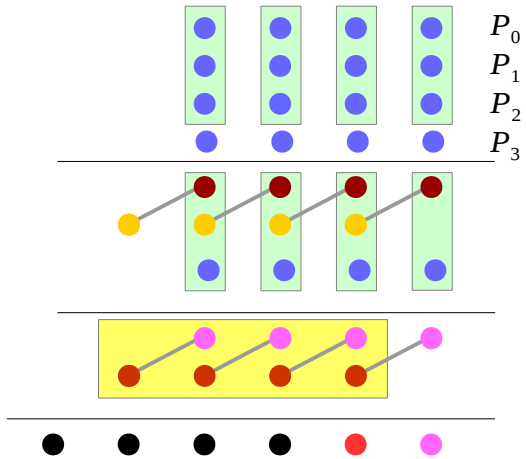


Carry Save Adder

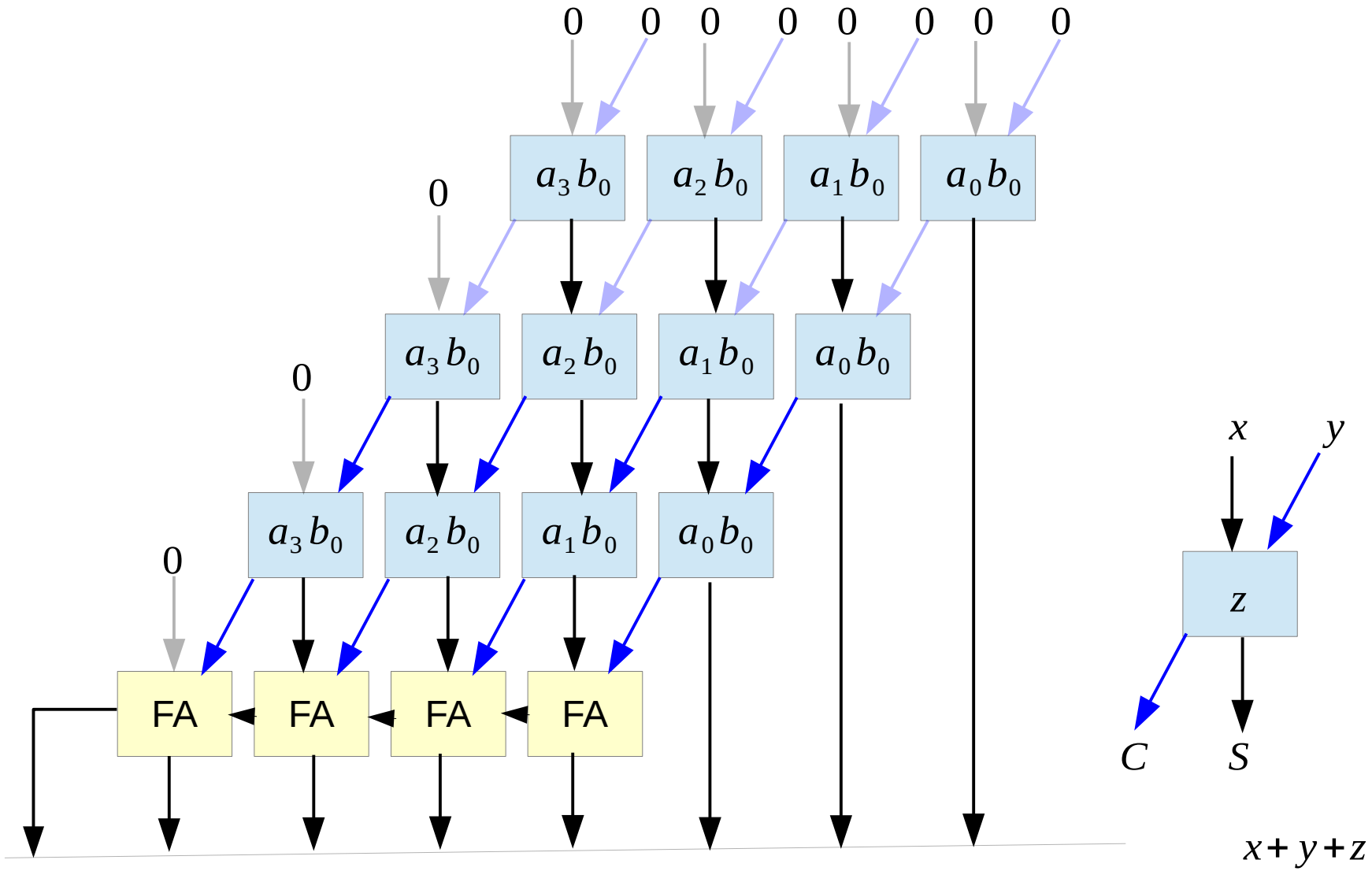


Adding four 4-bit numbers

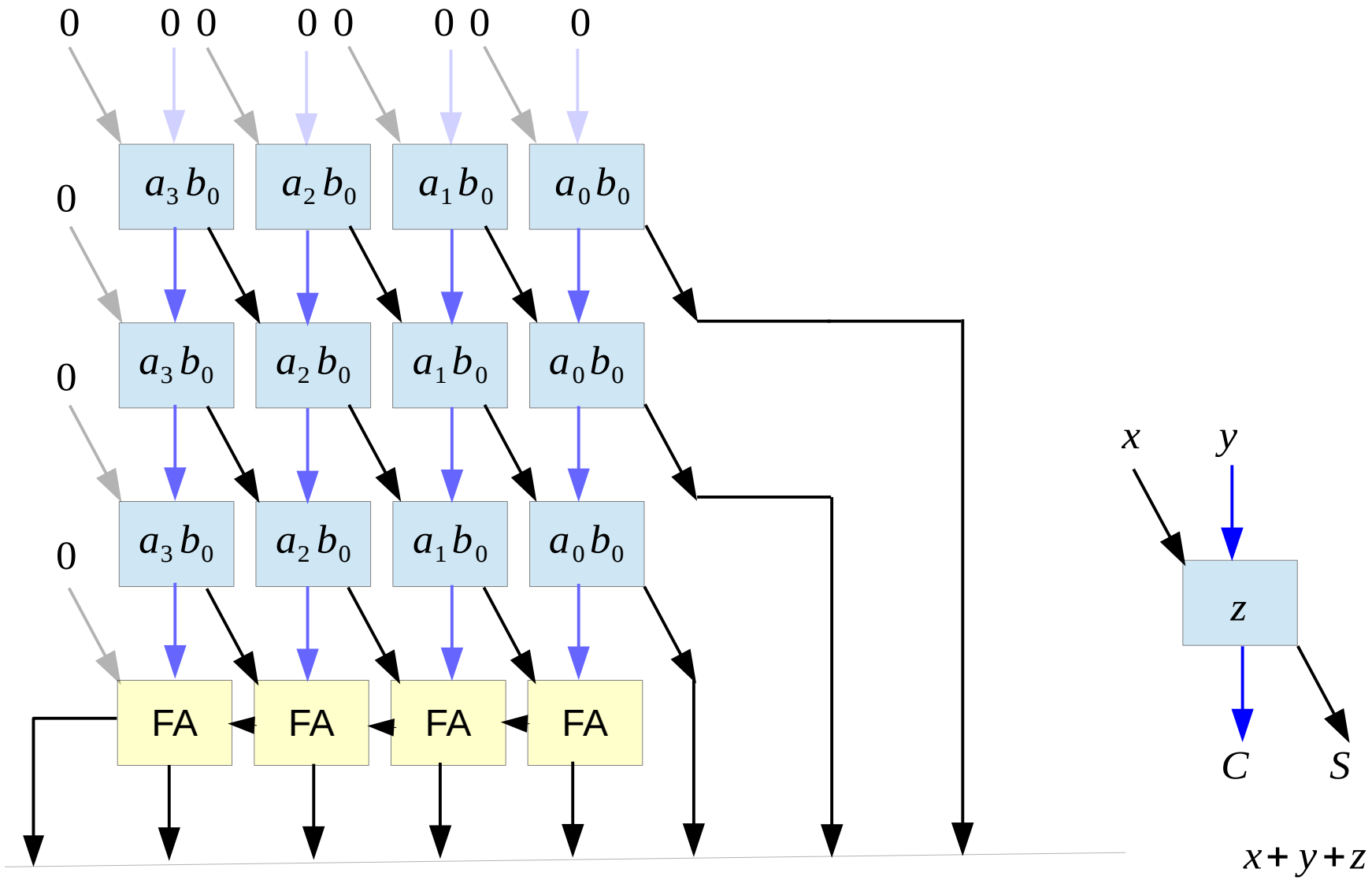




Summing Partial Products – using CSA



4-bit Multiplier using CSA



References

[1] en.wikipedia.org
[2] Parhami, “Computer Arithmetic Algorithms and Hardware Designs”