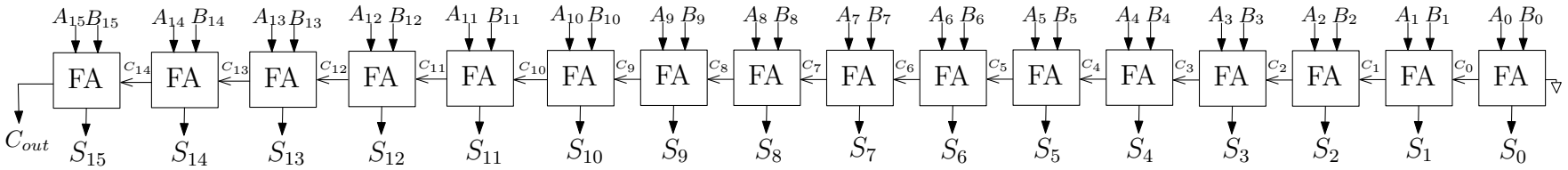
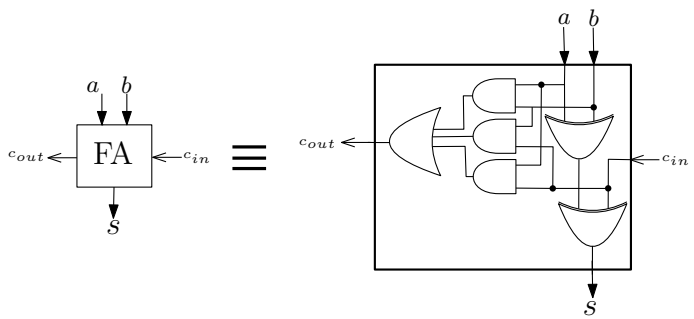
RIPPLE CARRY ADDER ARCHITECTURE



$t_{sum} = 2 * t_{XOR-2}, t_{sum} = 2 * t_{XOR-2},$



16-bit Ripple Carry Adder Delay:

$\longrightarrow T_{SUM} = 15 * (t_{AND} + t_{OR}) + 2 * t_{XOR}$

$\longrightarrow T_{SUM} = 15 * t_{carry} + t_{sum}$

$\longrightarrow T_{CARRY} = 16 * t_{carry}$

N-bit Ripple Carry Adder Delay:

$$T_{SUM} = (N-1) * t_{carry} + t_{sum}$$

$$T_{CARRY} = N * t_{carry}$$