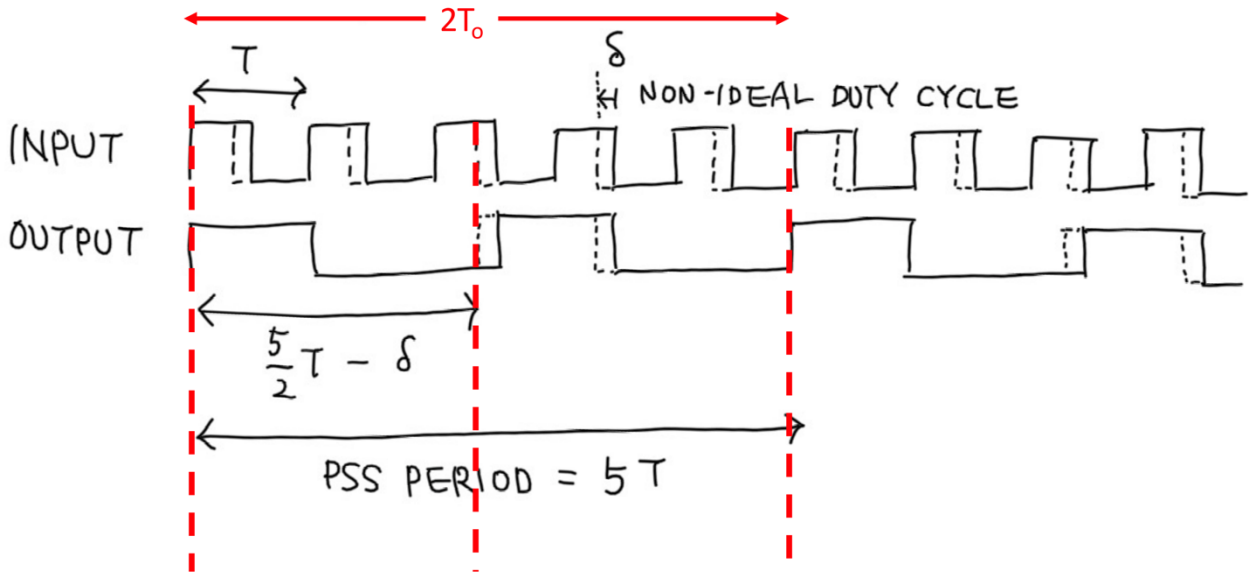

$$T_{in} = t_{on\_in} + t_{off\_in}$$

where:

T_{in} = input clock period

$$t_{on\_in} = \frac{T_{in}}{2}\left(1 - \Delta_{du\_in}(t)\right)$$

$$t_{off\_in} = \frac{T_{in}}{2}\left(1 + \Delta_{du\_in}(t)\right)$$

Determine periodicity of output clock:

$$2\mathrm{T}_{out} = 2\mathrm{T}_{in} + t_{on\_in} + 2\mathrm{T}_{in} + t_{off\_in}$$

$$2\mathrm{T}_{out} = 4\mathrm{T}_{in} + t_{on\_in} + t_{off\_in}$$

$$2\mathrm{T}_{out} = 5\mathrm{T}_{in}$$

Average period of output clock:

$$\mathrm{T}_{out} = \frac{5}{2}\mathrm{T}_{in}$$

Determine period of output clock:

Output period 1:

$$\mathrm{T}_{out\_1} = 2\mathrm{T}_{in} + t_{on\_in} = 2\mathrm{T}_{in} + \frac{\mathrm{T}_{in}}{2}(1 - \Delta_{du\_in}(t)) = \frac{5\mathrm{T}_{in}}{2}(1 - \Delta_{du\_in}(t))$$

Output period 2:

$$\mathrm{T}_{out\_2} = 2\mathrm{T}_{in} + t_{off\_in} = 2\mathrm{T}_{in} + \frac{\mathrm{T}_{in}}{2}(1 + \Delta_{du\_in}(t)) = \frac{5\mathrm{T}_{in}}{2}(1 + \Delta_{du\_in}(t))$$

Duty cycle of output clock:

$$t_{on\_out} = \mathrm{T}_{in}$$

$$t_{off\_out\_1} = \mathrm{T}_{in} + t_{on\_in} = \frac{3\mathrm{T}_{in}}{2}(1 - \Delta_{du\_in}(t))$$

$$t_{off\_out\_2} = \mathrm{T}_{in} + t_{off\_in} = \frac{3\mathrm{T}_{in}}{2}(1 + \Delta_{du\_in}(t))$$