

Latch Time Borrow (4C)

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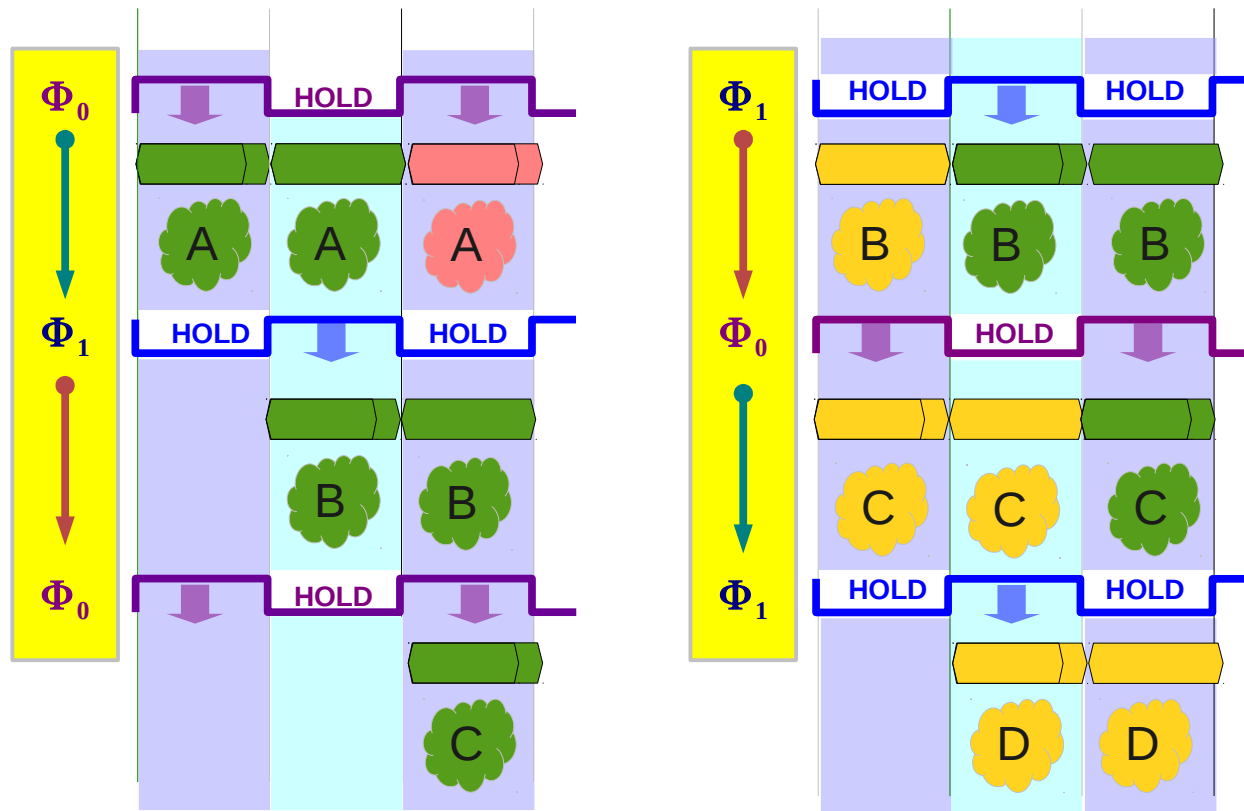
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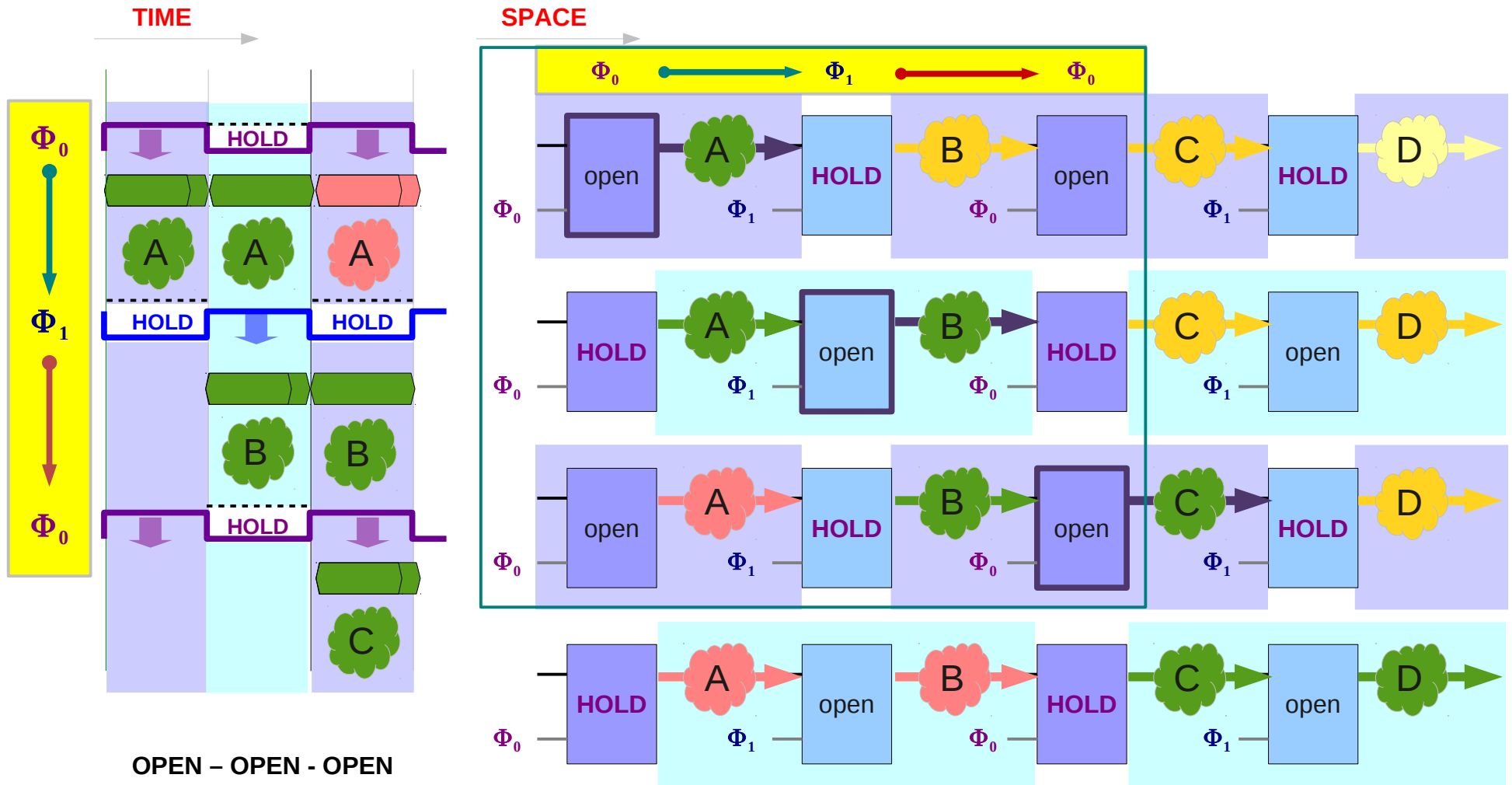
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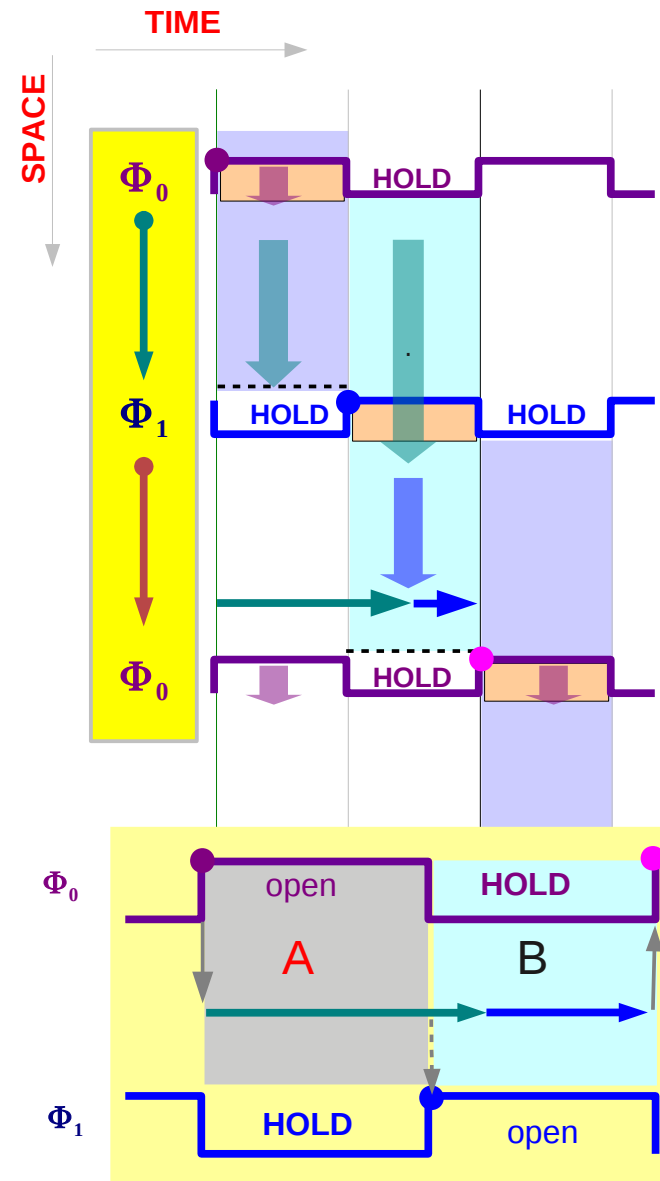
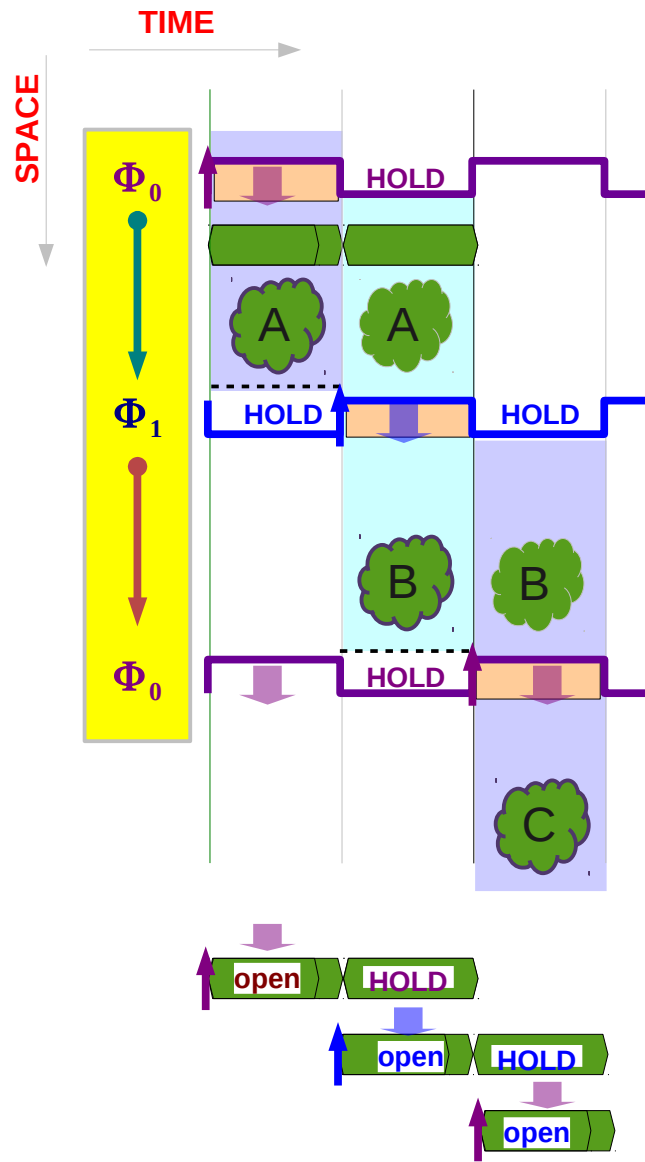
The Combinational Circuits



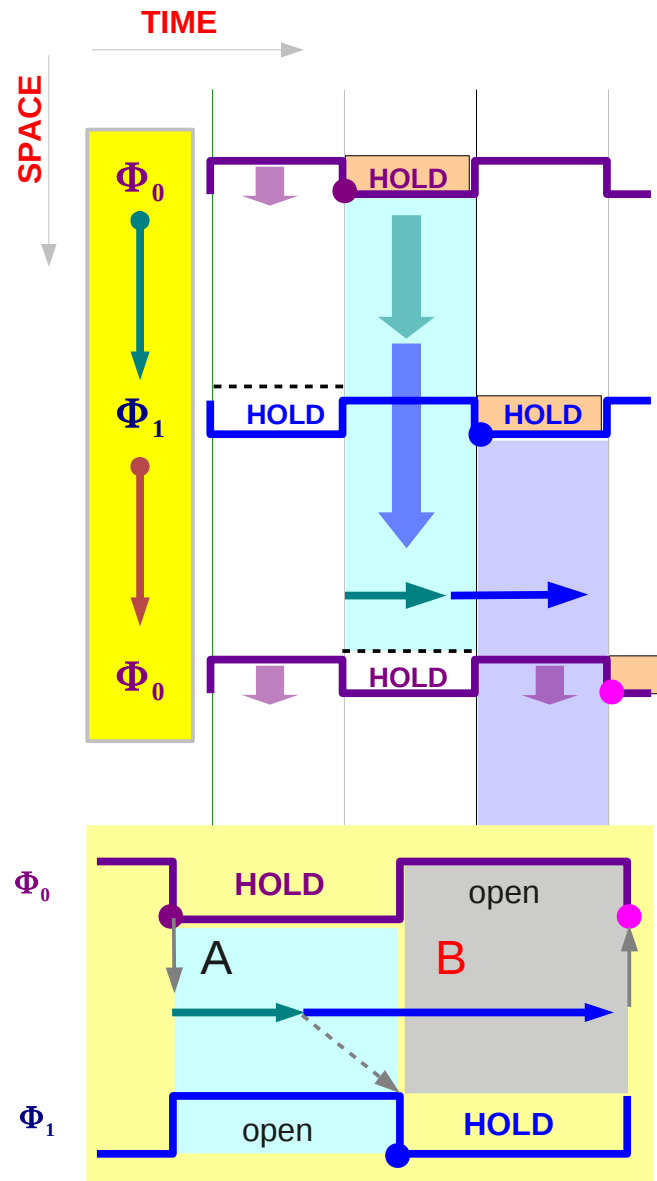
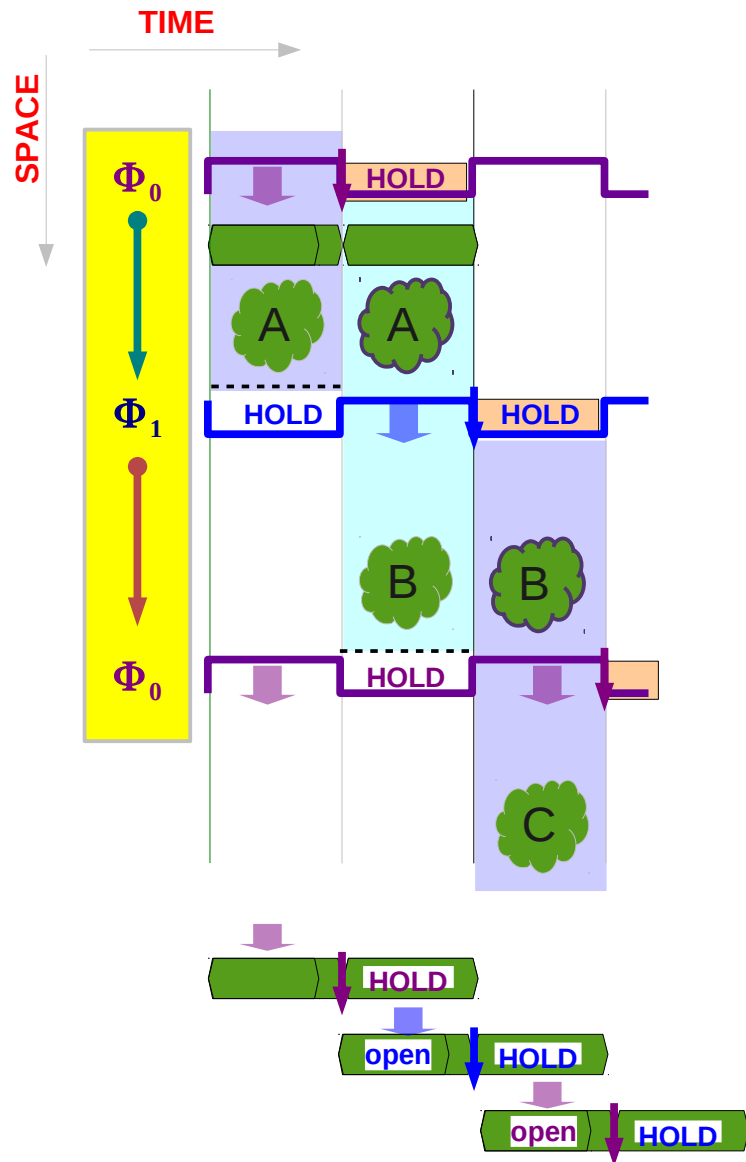
Three Adjacent Latch Timing (A)



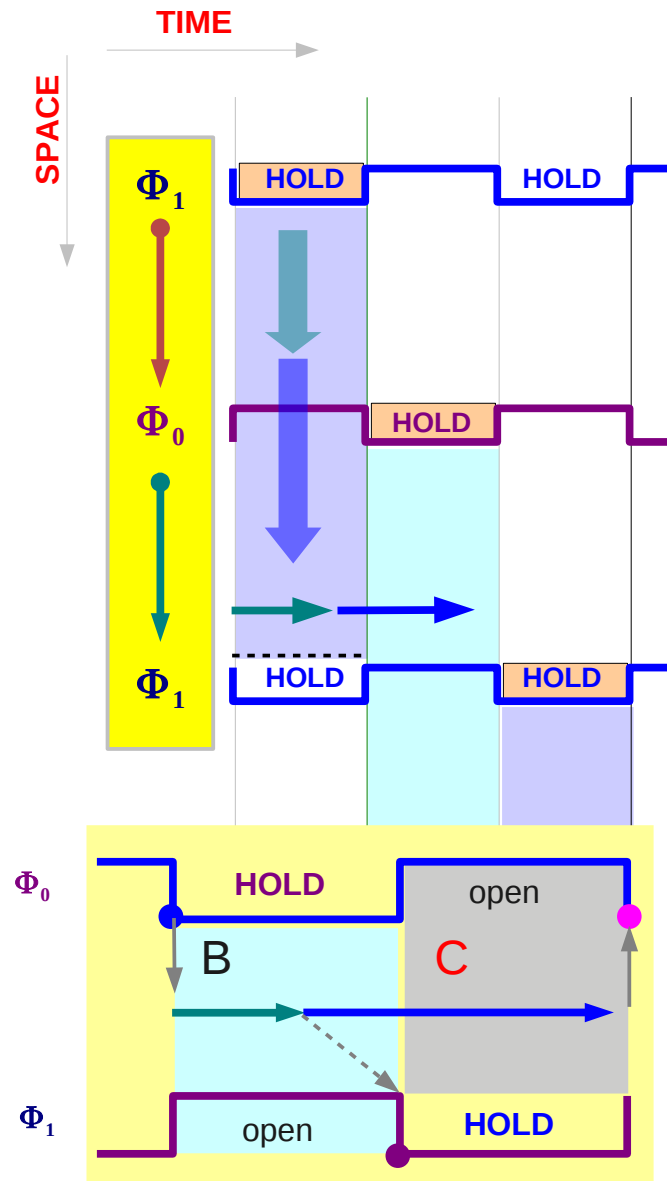
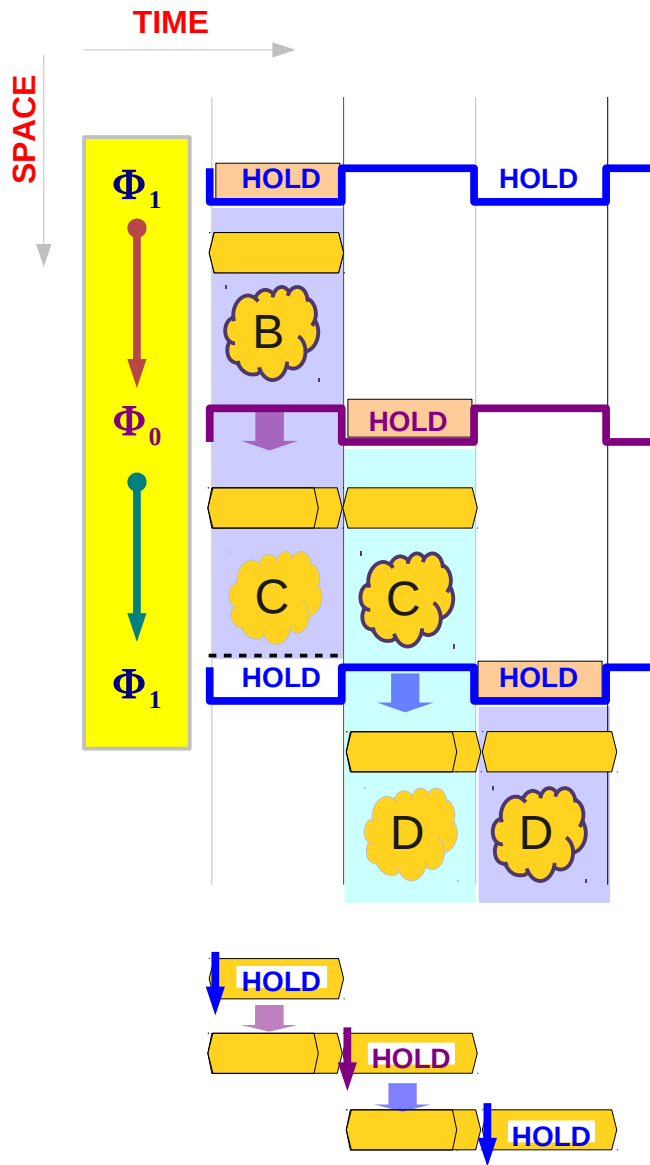
Space-Time Patterns (A1)



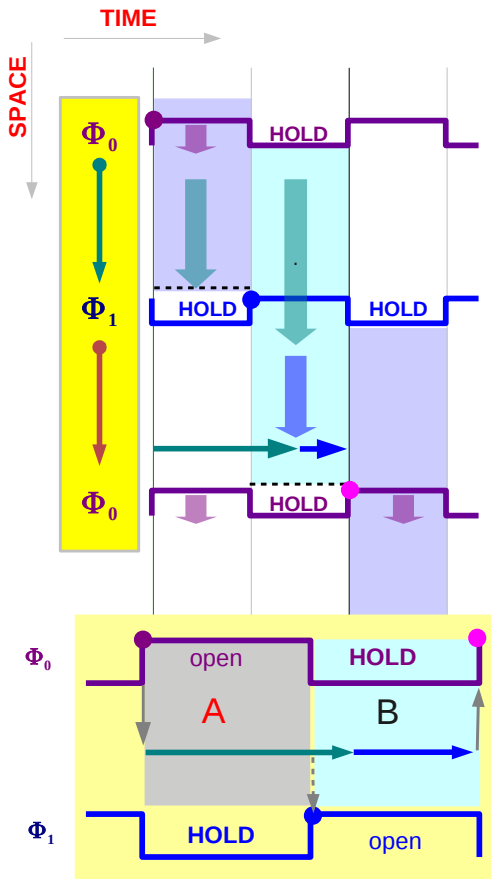
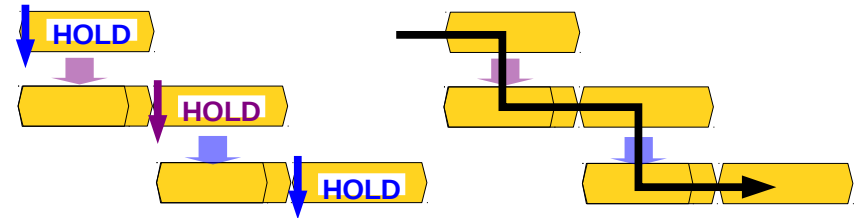
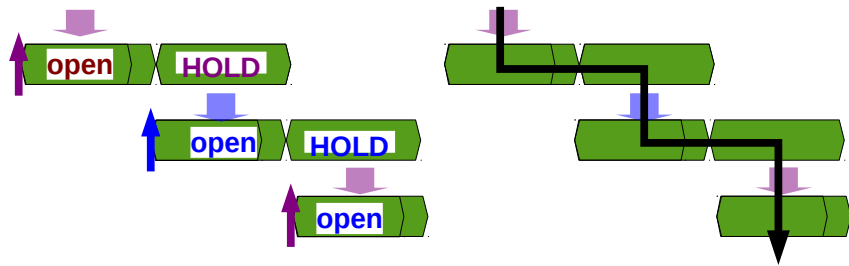
Space-Time Patterns (B1)



Space-Time Patterns (B2)

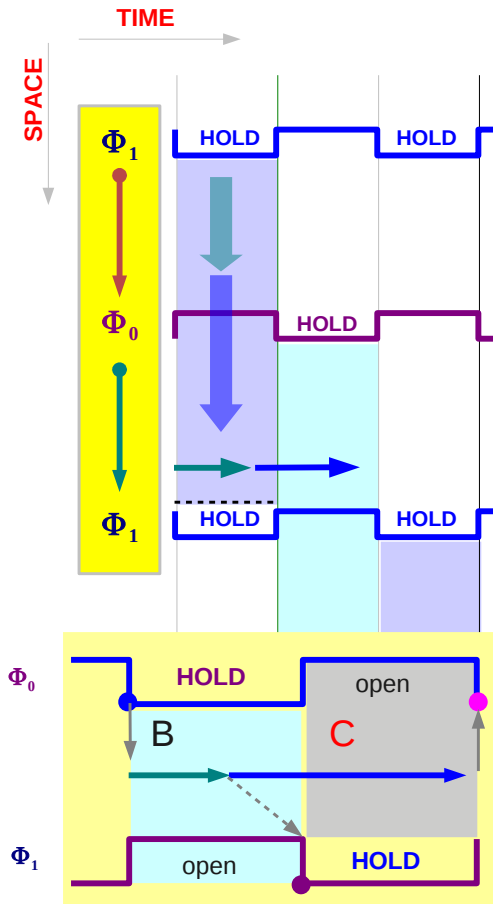


Three Adjacent Latch Timing Patterns



Changing Input to A begins

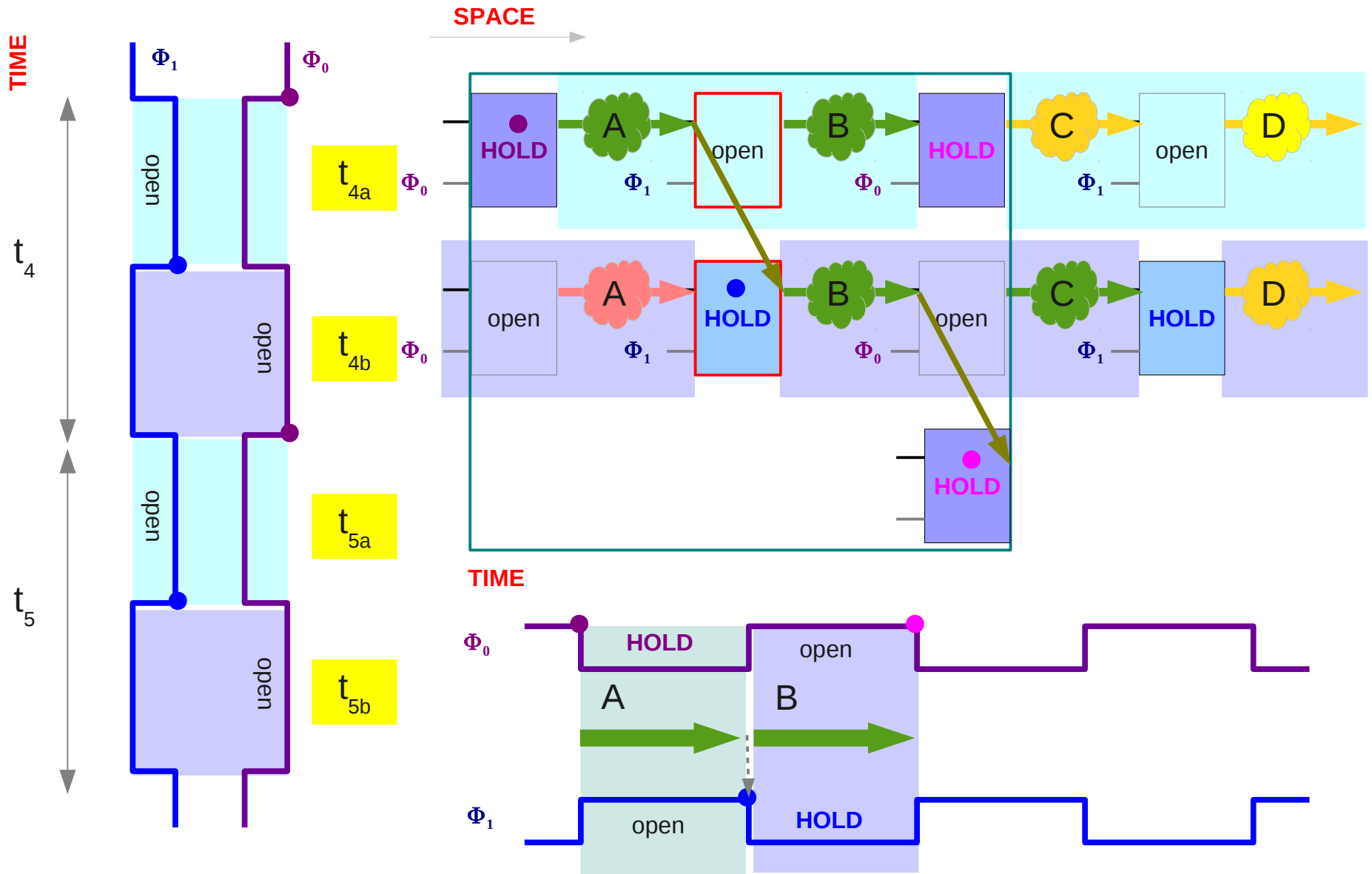
Computation A can spread into the next open state.



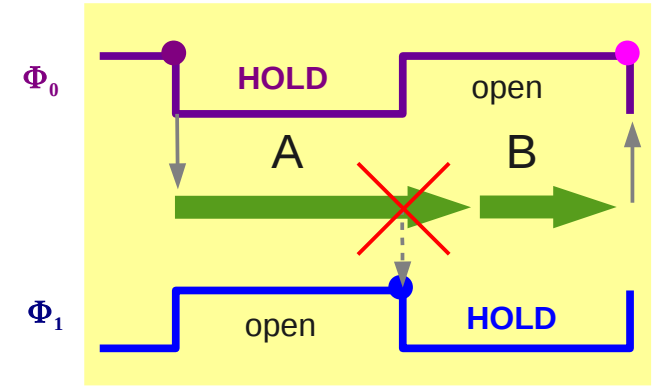
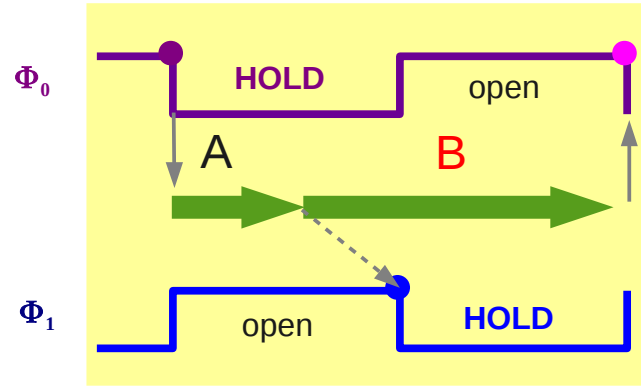
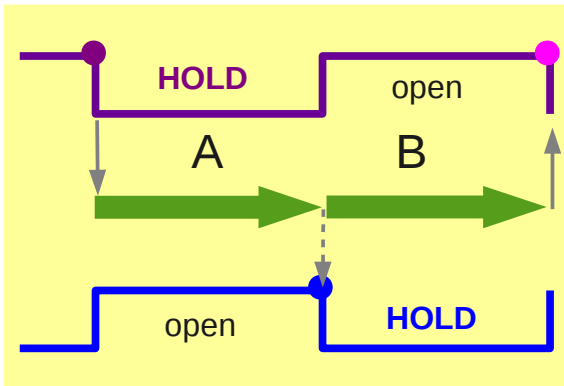
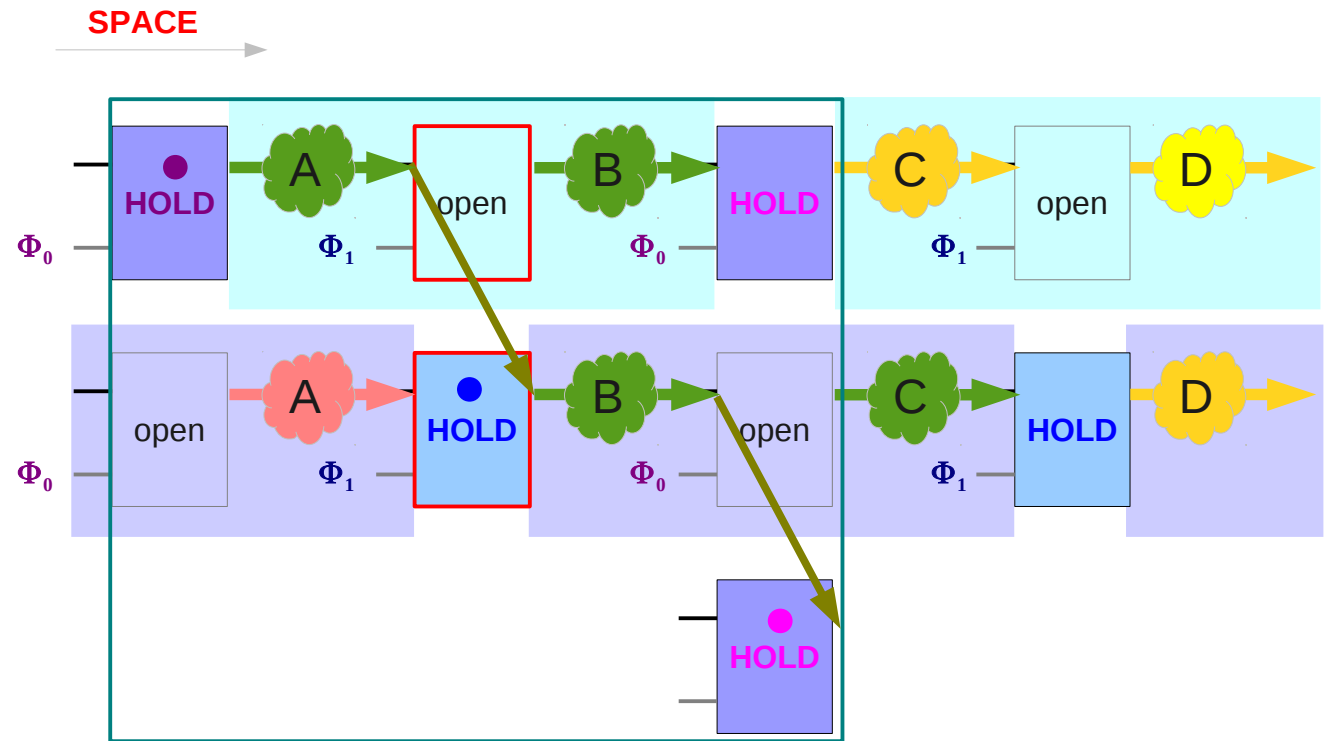
Stable Input to B begins

As soon as Comp B is ended comp C can start. This precomputation remains valid in the next hold state.

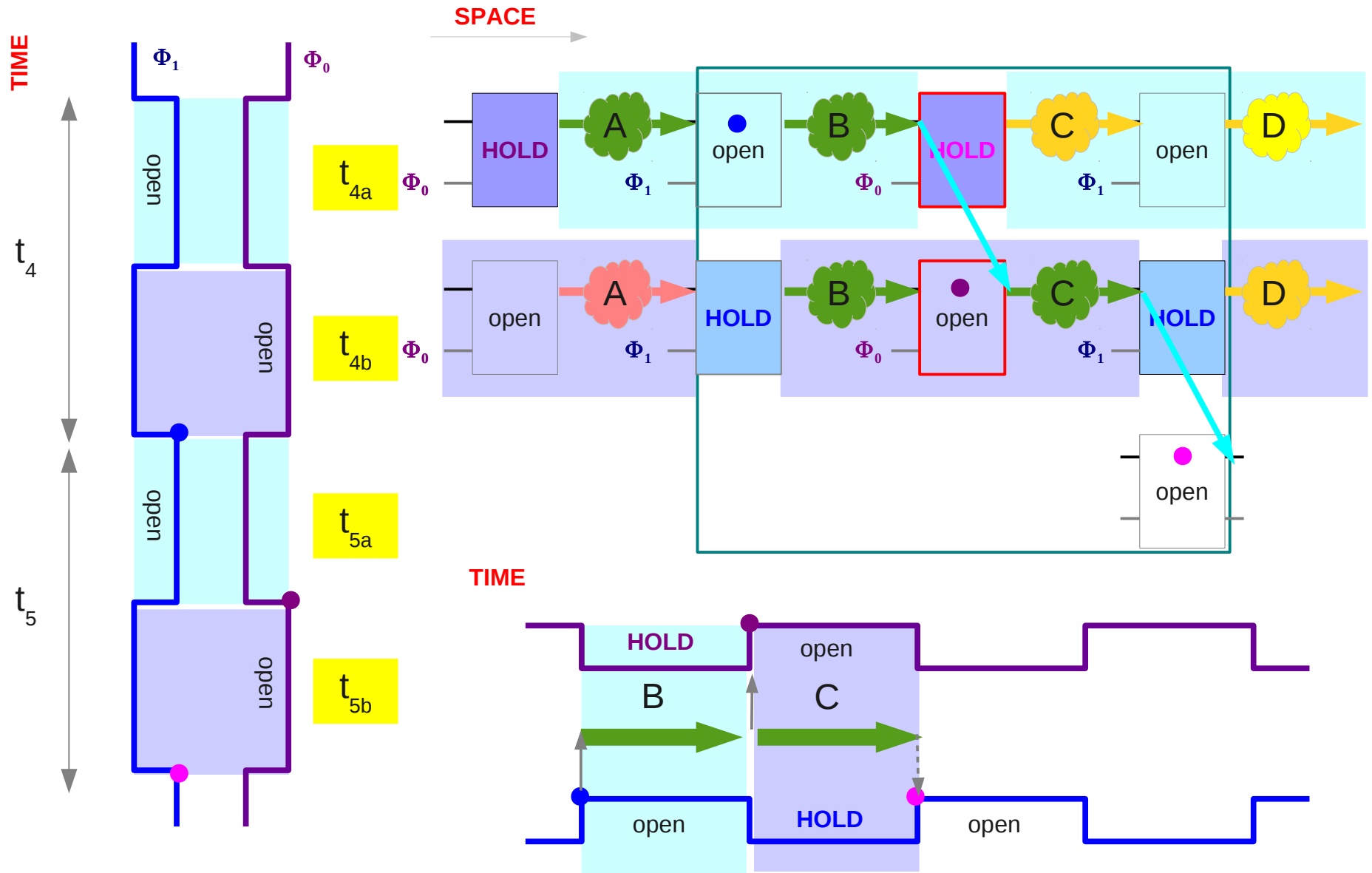
Open to Hold Transition (1)



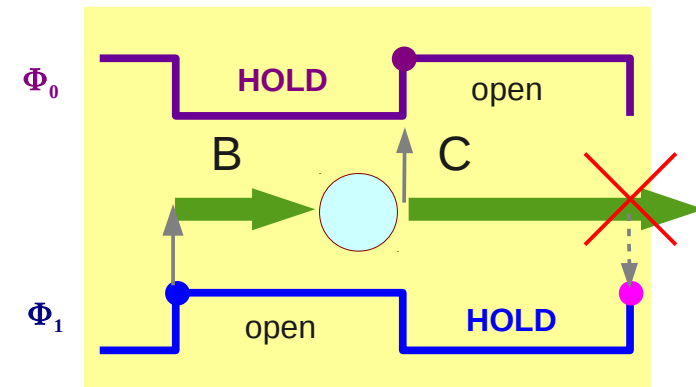
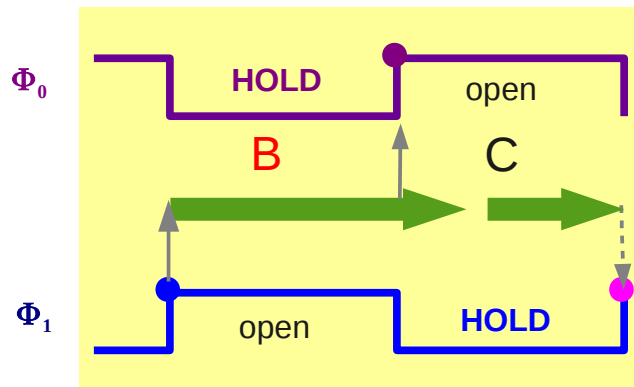
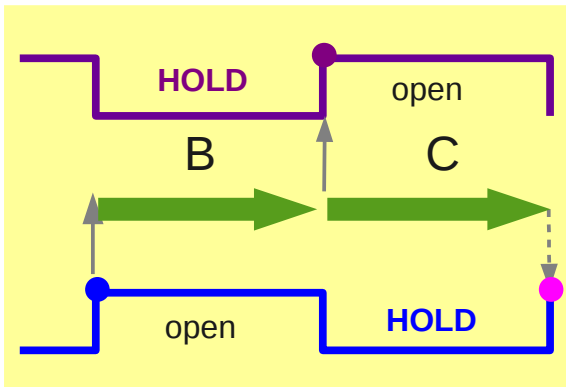
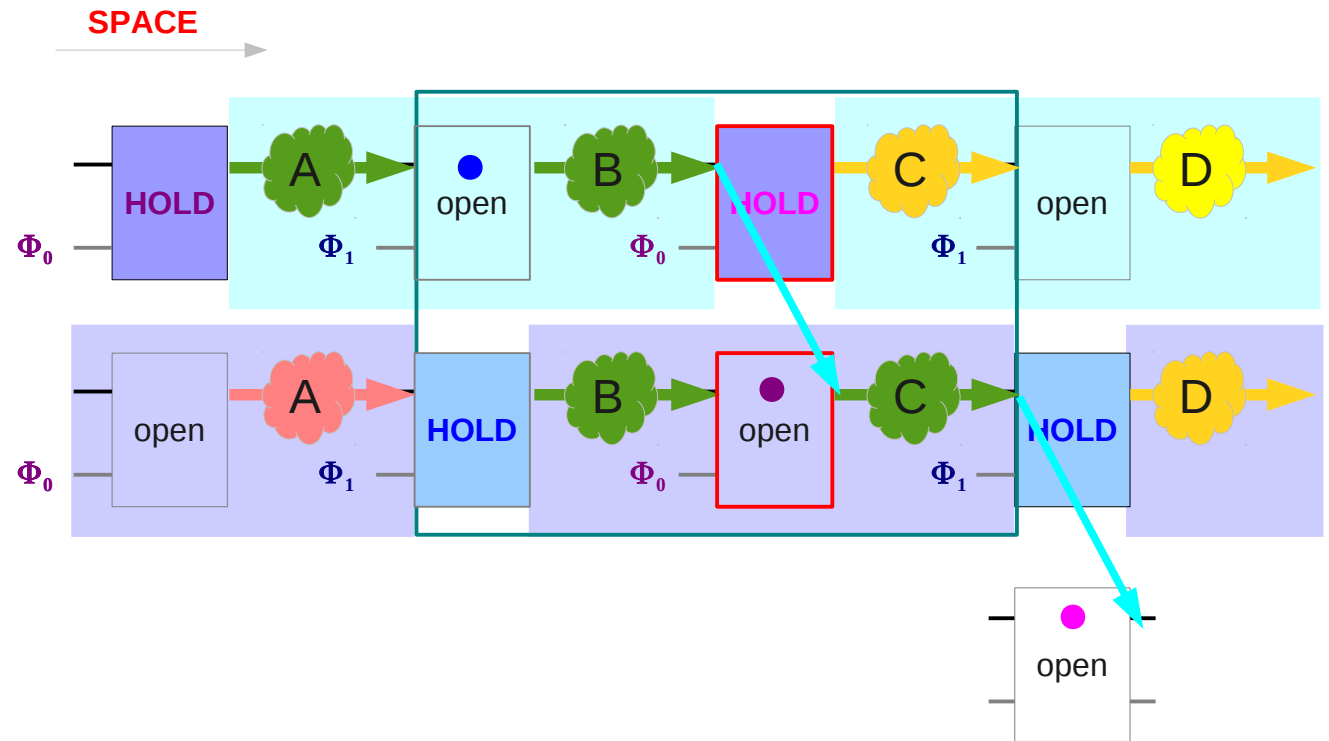
Open to Hold Transition (1)



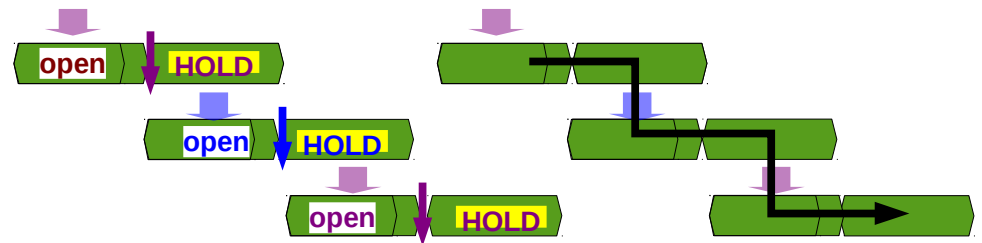
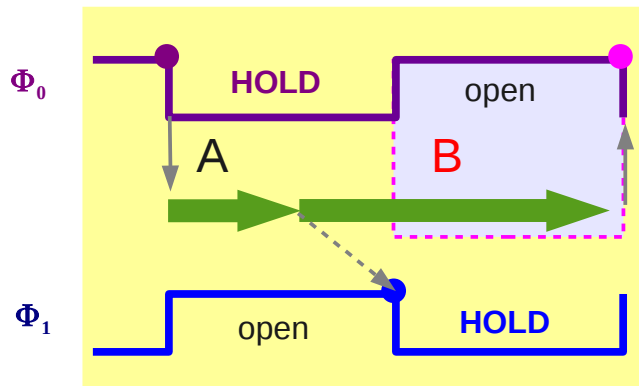
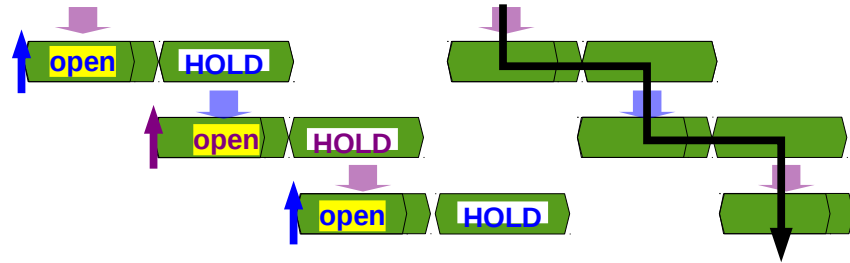
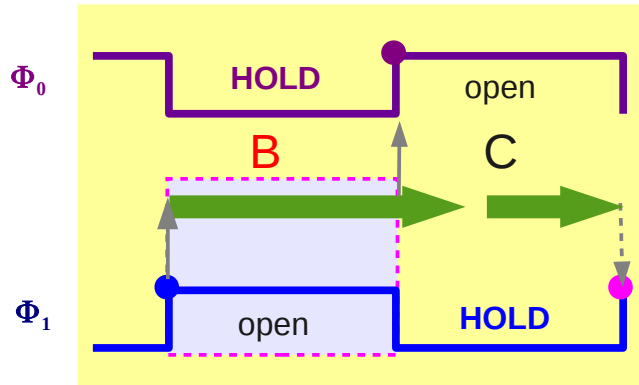
Hold to Open Transition (1)



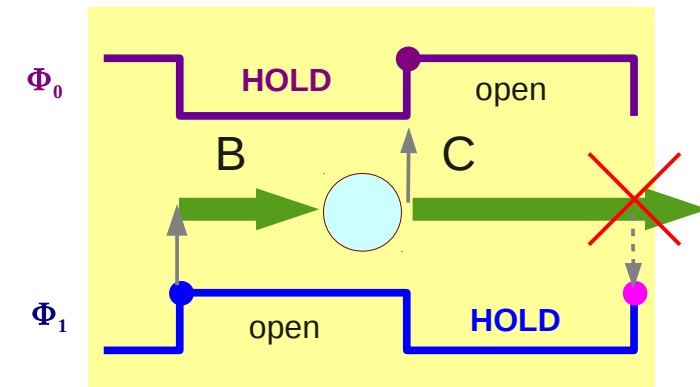
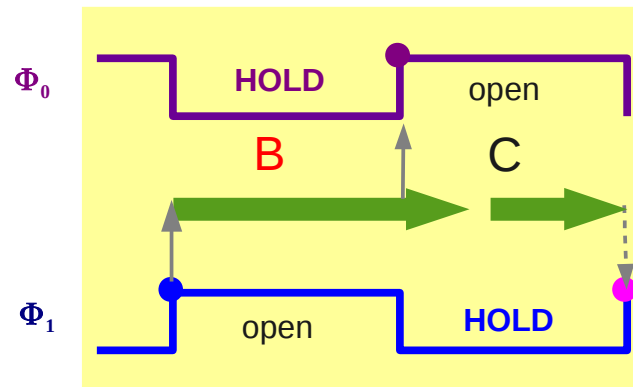
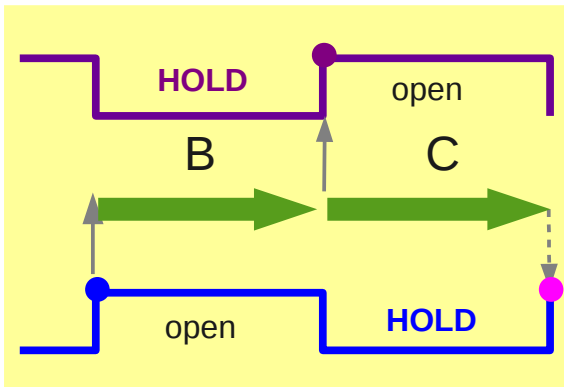
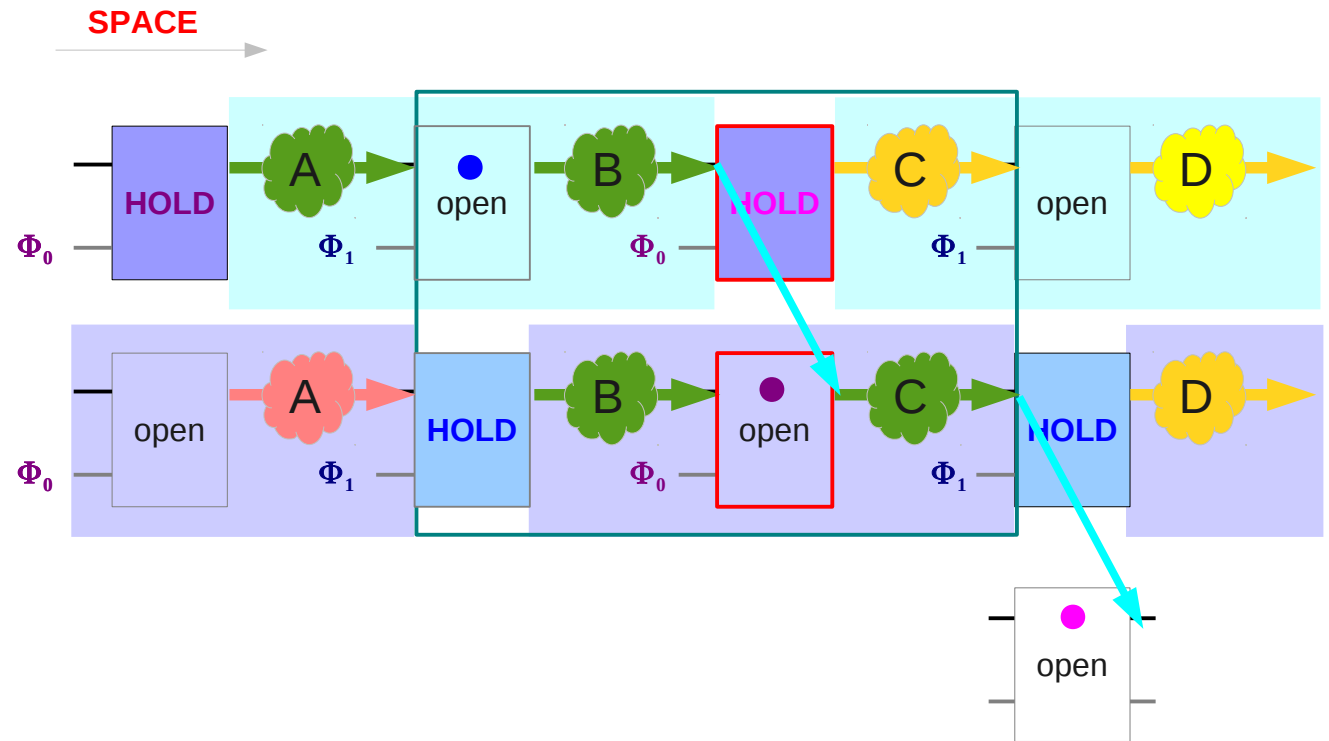
Hold to Open Transition (1)



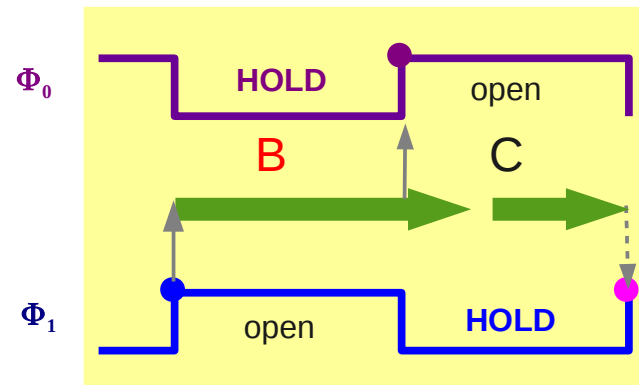
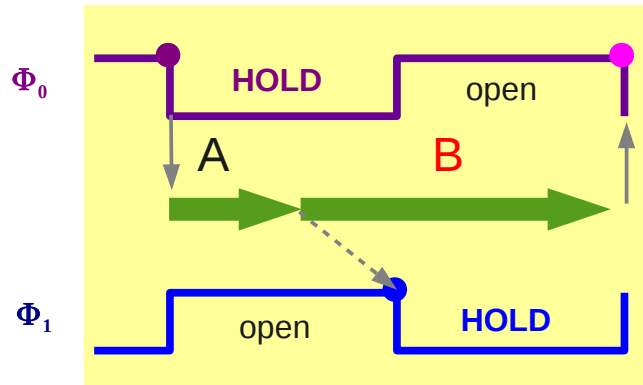
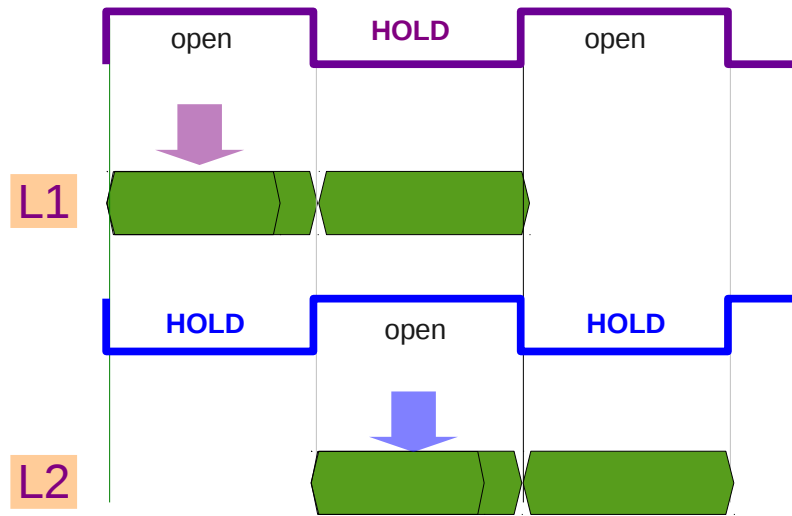
Time Borrow



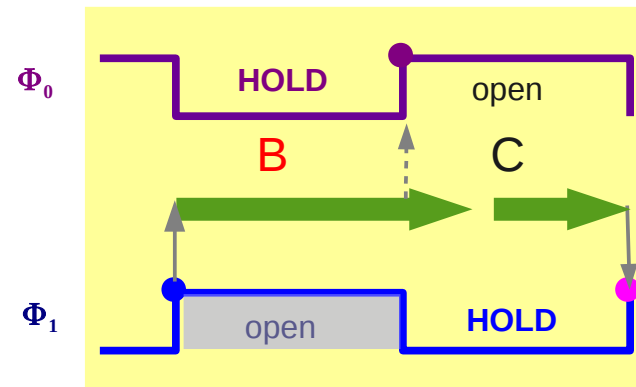
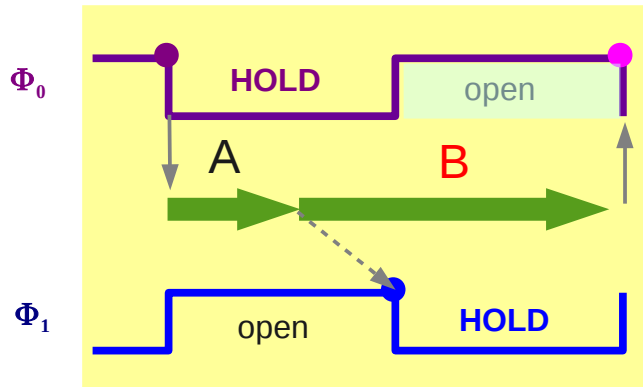
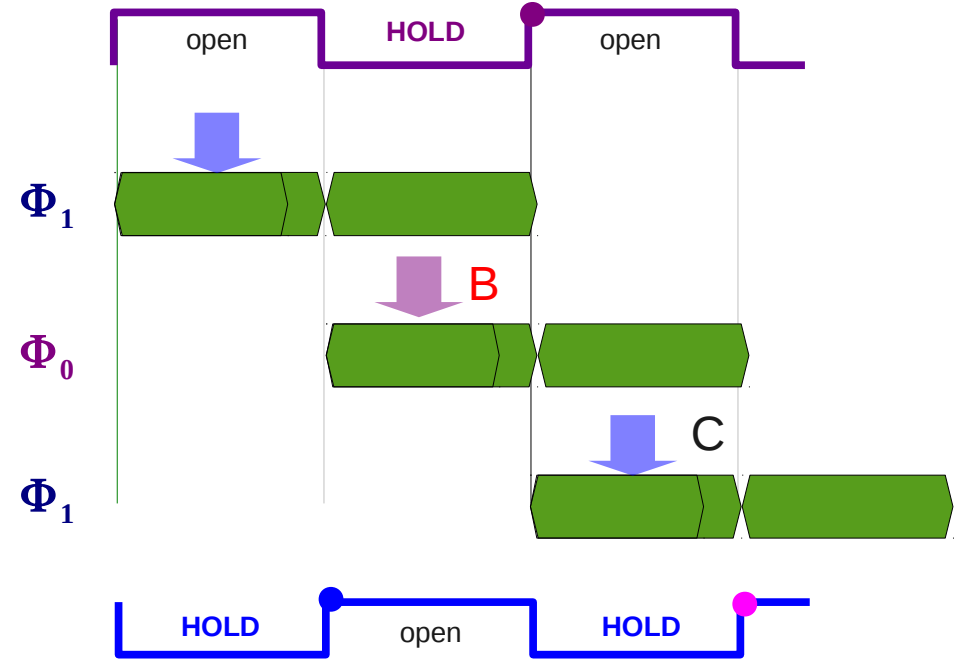
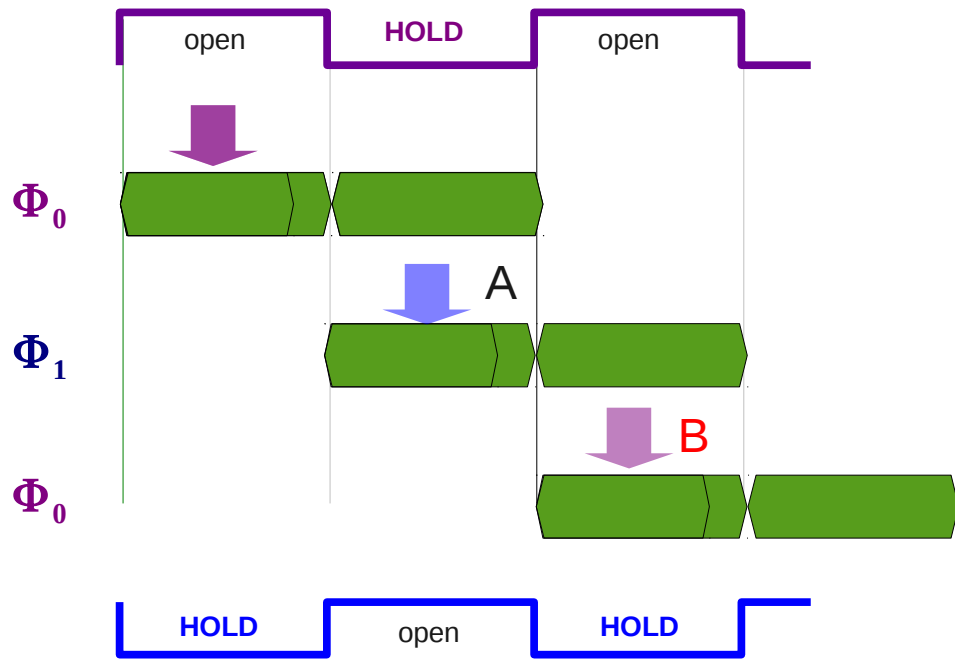
Hold to Open Transition (1)



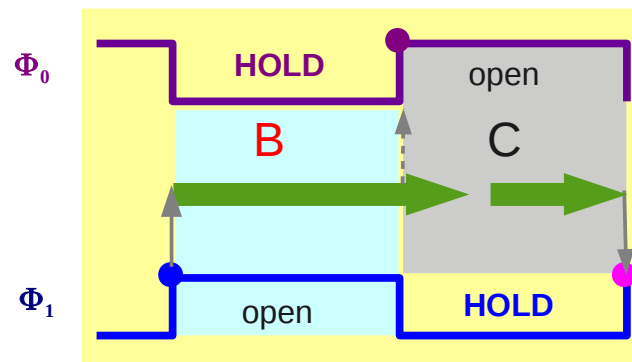
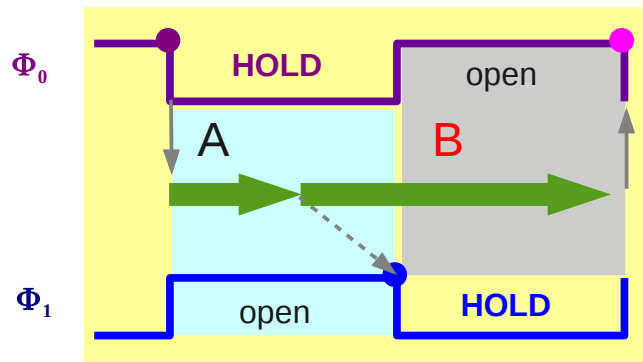
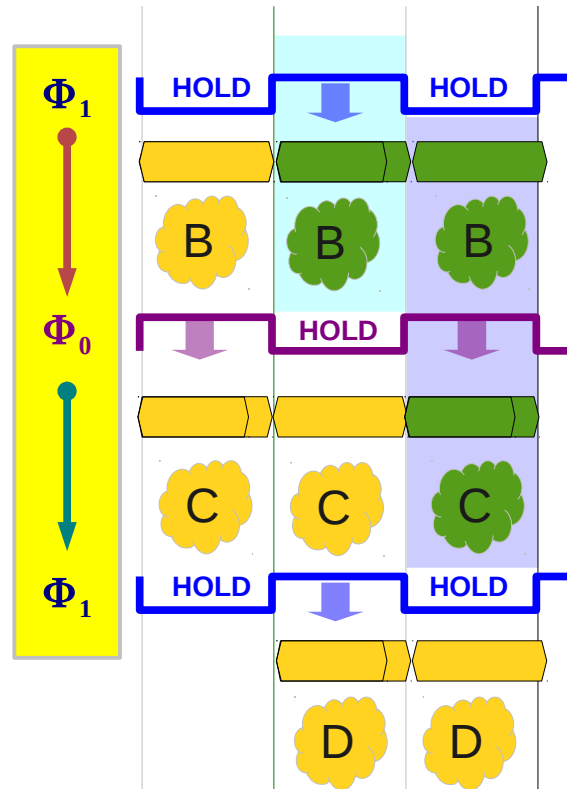
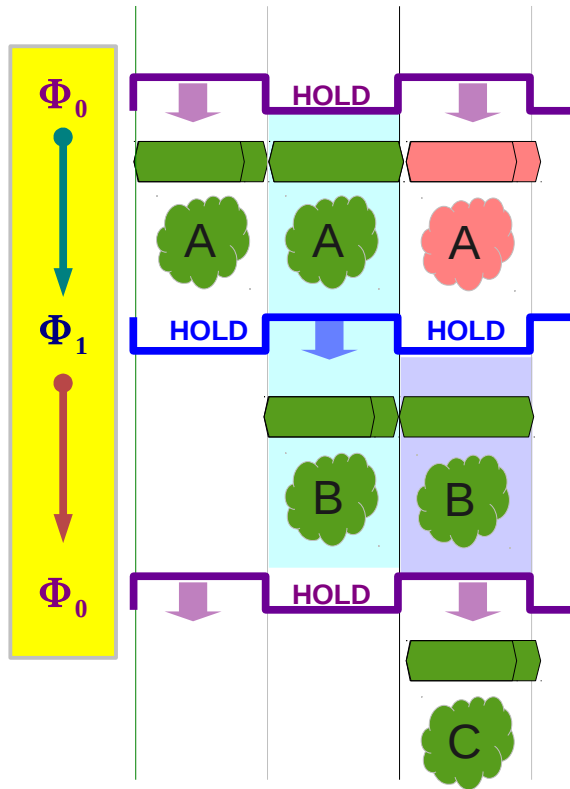
The Latch Based Pipeline Timing



The Latch Based Pipeline Timing



The Combinational Circuits



References

[1] <http://en.wikipedia.org/>