



Integrated Device Technology

Technology Overview

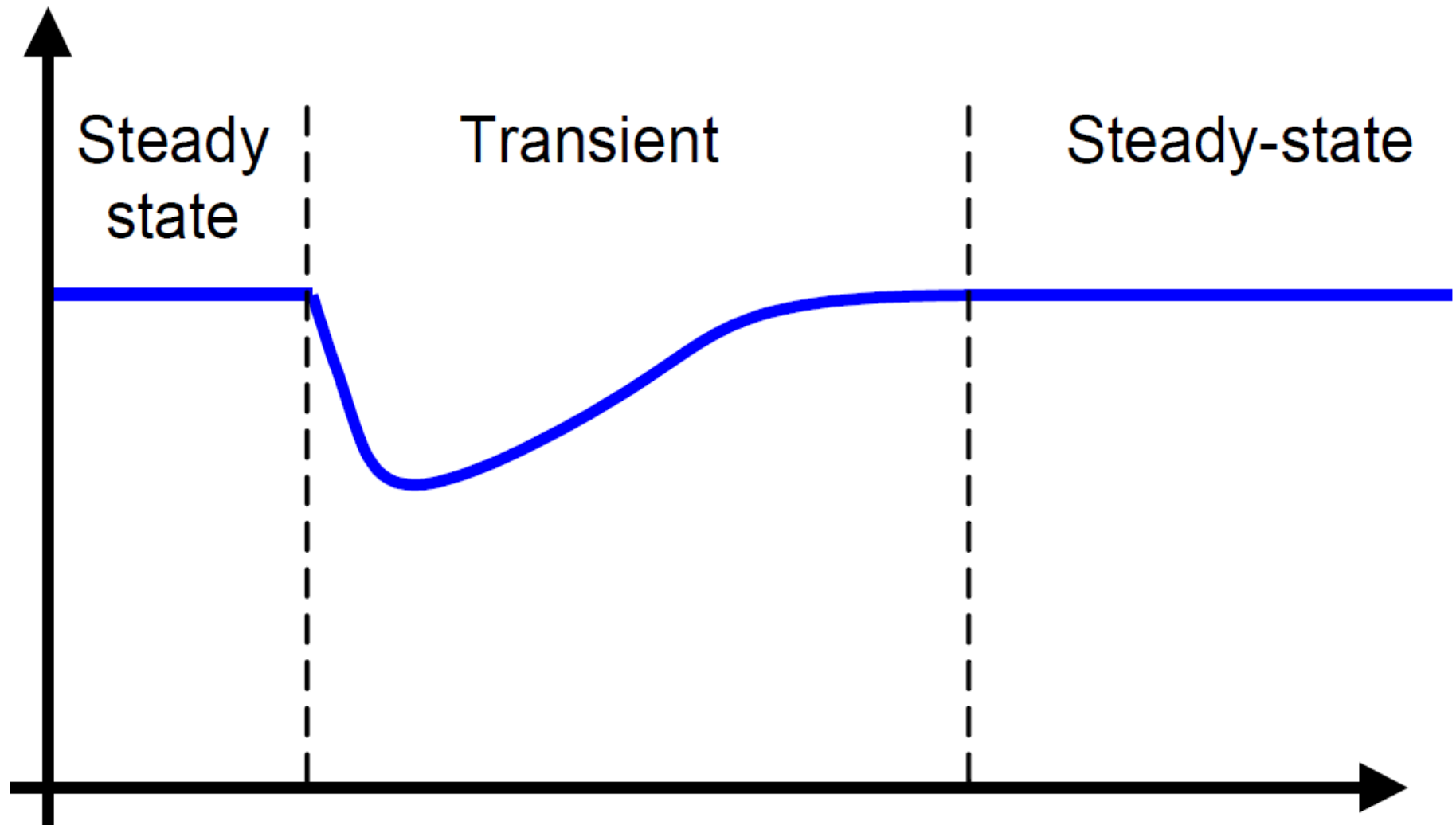
- State-Law™ Control (SLC)
- Tru-sample™ Technology
- Sub-cycle Response™ (SCR)
- Non-linear gain



State-Law™ Control (SLC)

- Optimized controller for each operation condition
 - Steady-state
 - Transient
 - DCM
- Fast and reliable switching between operation conditions required.
- Benefits
 - Quite steady-state (good noise suppression)
 - Excellent transient performance

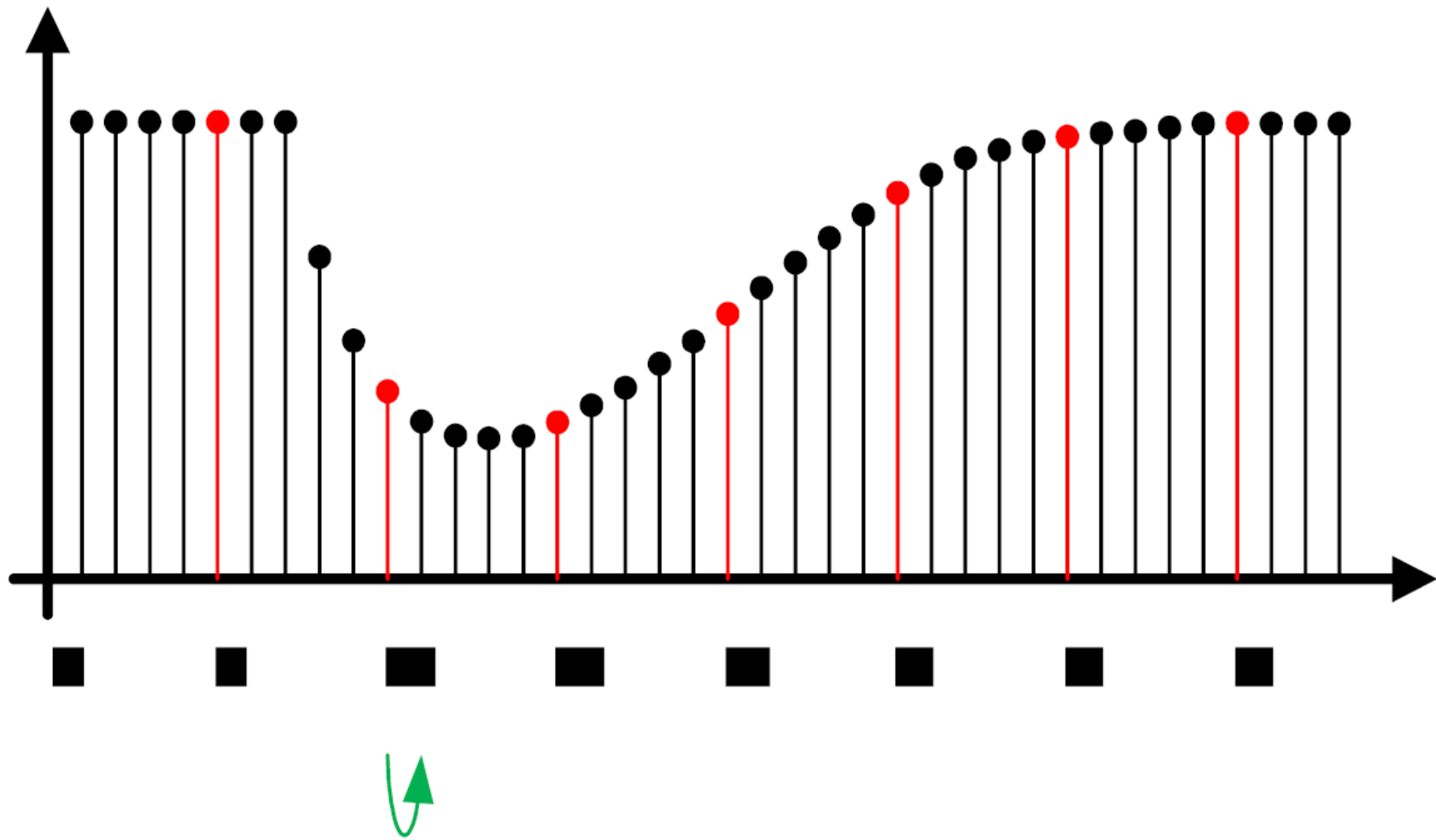
State-Law™ Control (SLC)



Tru-sample™ Technology

- Continuous sampling of output voltage
- Naturally sampled PWM
- Benefits
 - Significantly reduced control delay
 - Improved noise immunity

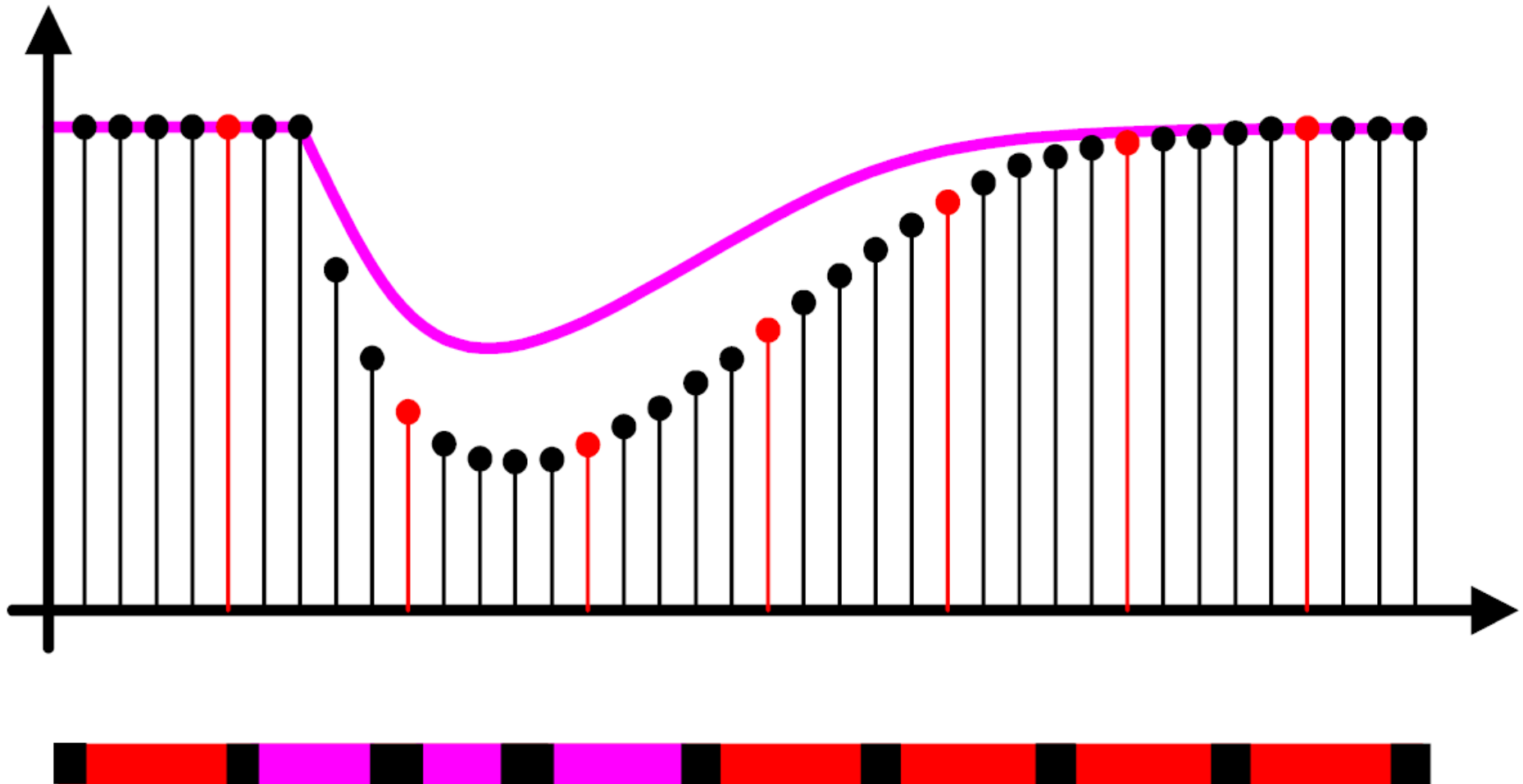
Tru-sample™ Technology



Sub-cycle Response™ (SCR)

- Reduced control delay
- Instantaneous control response
- Closed-control loop operation!!!
- Result
 - Reduction of deviation
 - Reduction of settling time

Sub-cycle Response™ (SCR)



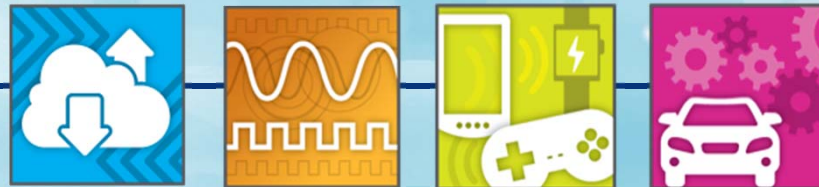
Non-linear gain

- Increased loop gain during fast transient
- Deviation dependent, non-linear gain factor
- Configuration options:
 - On
 - Off
- No need to select a gain value in the GUI
- Further optimization possible by AE on request

Summary

- Tru-sample technology enables all other technologies.
- State-law control allows for optimal compensation in all operation modes.
- Sub-cycle response reduces deviation.
- Combination with non-linear gain is very effective.
- Typical optimization flow:
 - Design compensation without SCR and NLG
 - Activate SCR and optimize threshold level
 - Activate NLG

Thank You



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