

Tweaker

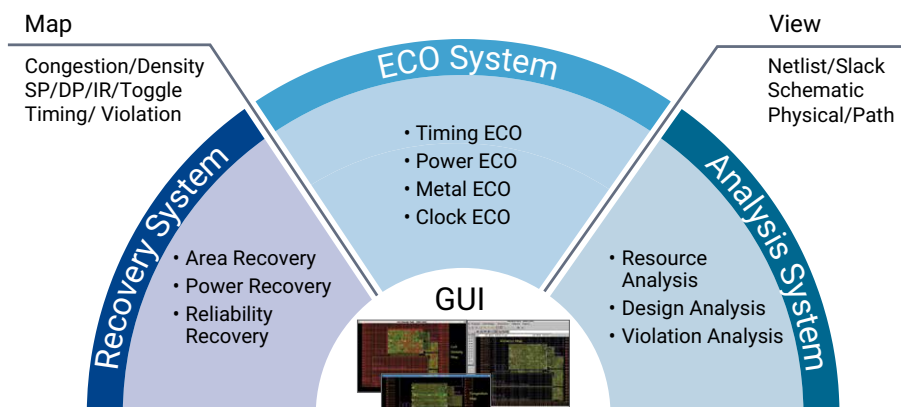
Full-chip ECO closure with fastest performance and fewest iterations

Overview

ECO has become a critical and growing component of the chip implementation mainly driven by rapidly increasing signoff scenarios and physical complexity at advanced nodes. It is already consuming 25-50% of the overall design schedule. This is caused by high number of iterations between P&R tools and ECO tools due to poor Physical/timing correlation. On the other hand, the ECO runs are highly compute intensive requiring very large number of high-capacity machines.

Complete ECO Closure System

The Tweaker solution is a complete ECO Closure System with flexible flow control and integrated GUI, which handles the challenging capacity and complexity issues within ECO problem space in a single machine.



Everything is Incremental

As an ECO tool, Tweaker optimizes a design incrementally and locally, with minimal impact to the existing performance. In all of the ECO fixing operations, Tweaker only focuses on only critical portions of a design, known as the "ECO Domain". For this reason, Tweaker can handle large designs in a very short turn-around time.

Tweaker Covers all Sign-off Scenarios

Timing/power optimization tools require MMMC (Multi-Mode, Multi-Corner) support as a basic ECO feature. Tweaker's ECO-specific architecture takes the MMMC feature further by focusing only on the "ECO Domain" while covering all sign-off scenarios. Due to capacity and runtime concerns, P&R tools are often unable to handle all sign-off scenarios. In the ECO phase, however, Tweaker allows users to fix timing violations and optimize leakage/dynamic power under the scope of all sign-off scenarios.

Physically Aware ECO

Aside from MMMC support, Tweaker is most celebrated for its physical awareness, which is essential to precise RC and timing estimation. In contrast with other timing ECO solutions that lack physical awareness, Tweaker's ability to analyze and apply physical information produces a reduction in ECO iteration count. In Tweaker's manual ECO mode, users can see the input physical layout to choose optimal ECO cell locations. As a result, Tweaker consideration of physical information eases communication between a project's logic team and physical team.

Benefits

- Chip level ECO on a single machine
- Fastest performance with fewest ECO iterations
- Complete physical-awareness
- Incremental optimization for power and area
- Versatile and flexible ECO infrastructure with user customization
- Saves engineering cost and enables team collaboration

OS Platform Support

PrimeECO supports:

- RHEL 6.6+, 7.x, 8+
- CentOS 6.6+, 7.1.1503+, 8+

See the Synopsys Release Specific Support documents for further details.