



RAMTERA

TECHNICAL WHITE PAPER SERIES · PHYSICAL IMPLEMENTATION (PRE)

RAMTERA-WP22

The Economics of Pre-Signoff Physical Iteration

Whole-team access at a fraction of signoff seat cost

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The Economics of Pre-Signoff Physical Iteration

Signoff-grade implementation and verification seats are priced for the final mile, yet most of a block's life is spent iterating long before signoff. Ramtera's position — established for physical verification in the earlier papers of this series — extends to implementation: PRE is priced as a pre-signoff iteration environment so that entire teams can afford concurrent access, with signoff tools reserved for the runs that need their name on the report.

fraction of a signoff seat's cost	whole team concurrent access model	same scripts industry-convention commands	30/90 day evaluation, then paid pilot
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Where iteration money goes today

A typical block team time-shares a small number of implementation seats. The visible cost is licensing; the larger invisible cost is serialization — engineers queue for seats, experiments don't run, and the design converges on fewer iterations than it deserves. Seat-constrained teams do not do worse work; they do less of it.

The pre-signoff tier

Question	Ramtera's answer
What runs on PRE?	floorplan exploration, placement and CTS iteration, trial routes, multi-corner timing triage, power-intent bring-up, ECO experiments
What stays on signoff tools?	the runs whose reports go to the foundry or the customer
Migration cost?	flow scripts written to industry-standard command conventions run with minimal changes (WP-13)
Engagement model?	30-day evaluation, 90-day paid pilot, production licensing; seat counts always stated with prices

PRICING PRINCIPLE — Ramtera quotes every price with its seat count. A price without a seat count is not a price.

Why now

Design teams already accept the two-tier model in verification — fast iteration engines during development, signoff engines at the gate. Implementation is following the same curve, and the enabling condition is script compatibility: when the iteration tool speaks the production flow's language, the second tier costs almost nothing to adopt.

About Ramtera

Ramtera Inc. (Delaware, USA), with R&D at Ramtera Design Automation India Pvt Ltd (Bangalore), builds electronic design automation software for physical verification and physical implementation. LVR is Ramtera's physical verification engine (DRC, LVS, ERC, XOR, parasitic extraction); PRE is Ramtera's physical implementation environment (floorplanning, placement, clock tree synthesis, routing, timing analysis and optimization), built on industry-standard command conventions so existing flow scripts and operator skills transfer directly. The company holds granted patents and registered copyrights covering its engines.

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This document reports measurements from Ramtera's engineering environment (Ubuntu 24.04, GCC 13.3, Tcl 8.6) unless stated otherwise. Product behavior and figures are subject to change; no compatibility, certification, or endorsement by any third party is stated or implied.