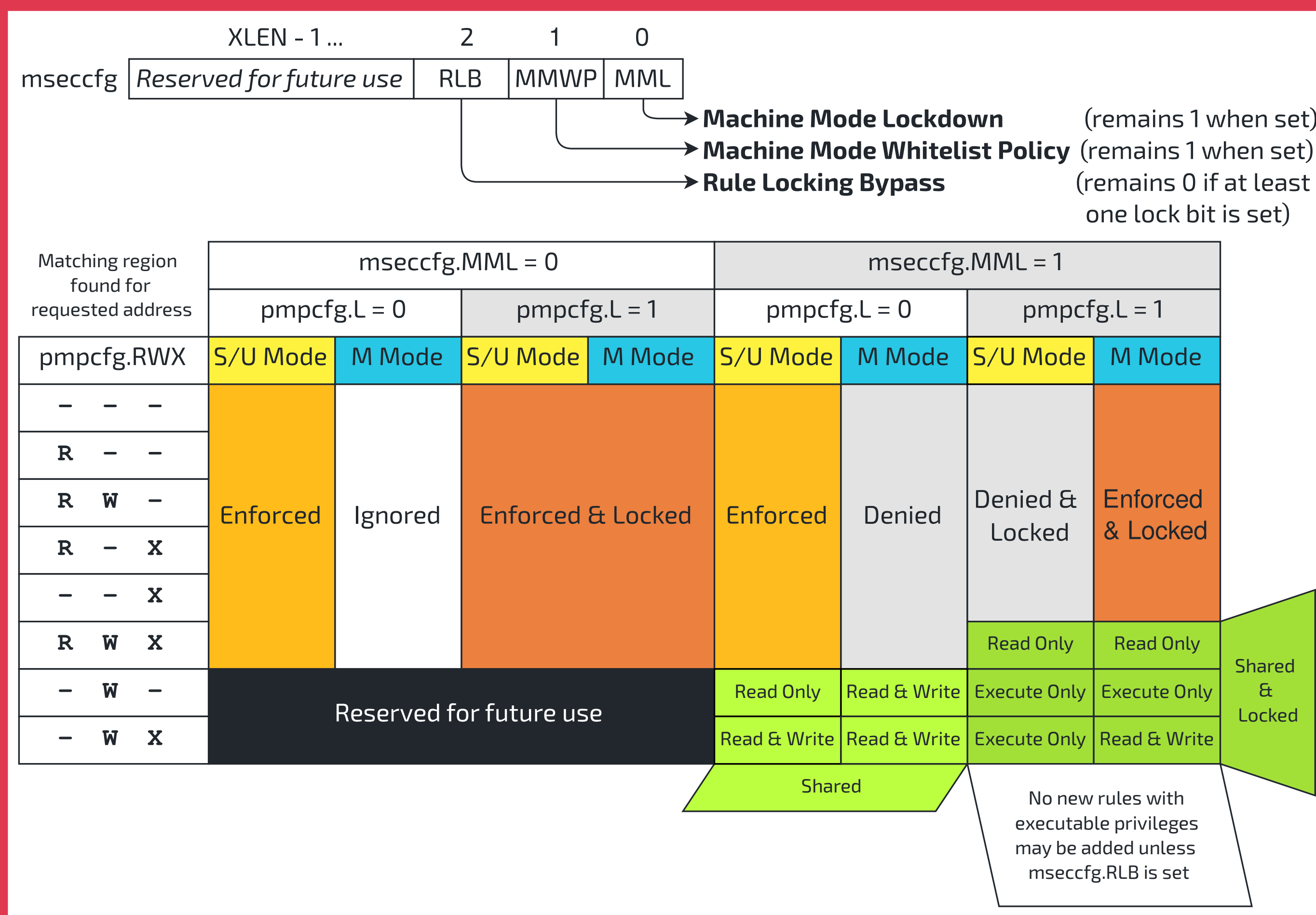


Verifying Enhanced PMP Behavior in Ibex

Marno van der Maas, Andreas Kurth, Harry Callahan, Greg Chadwick

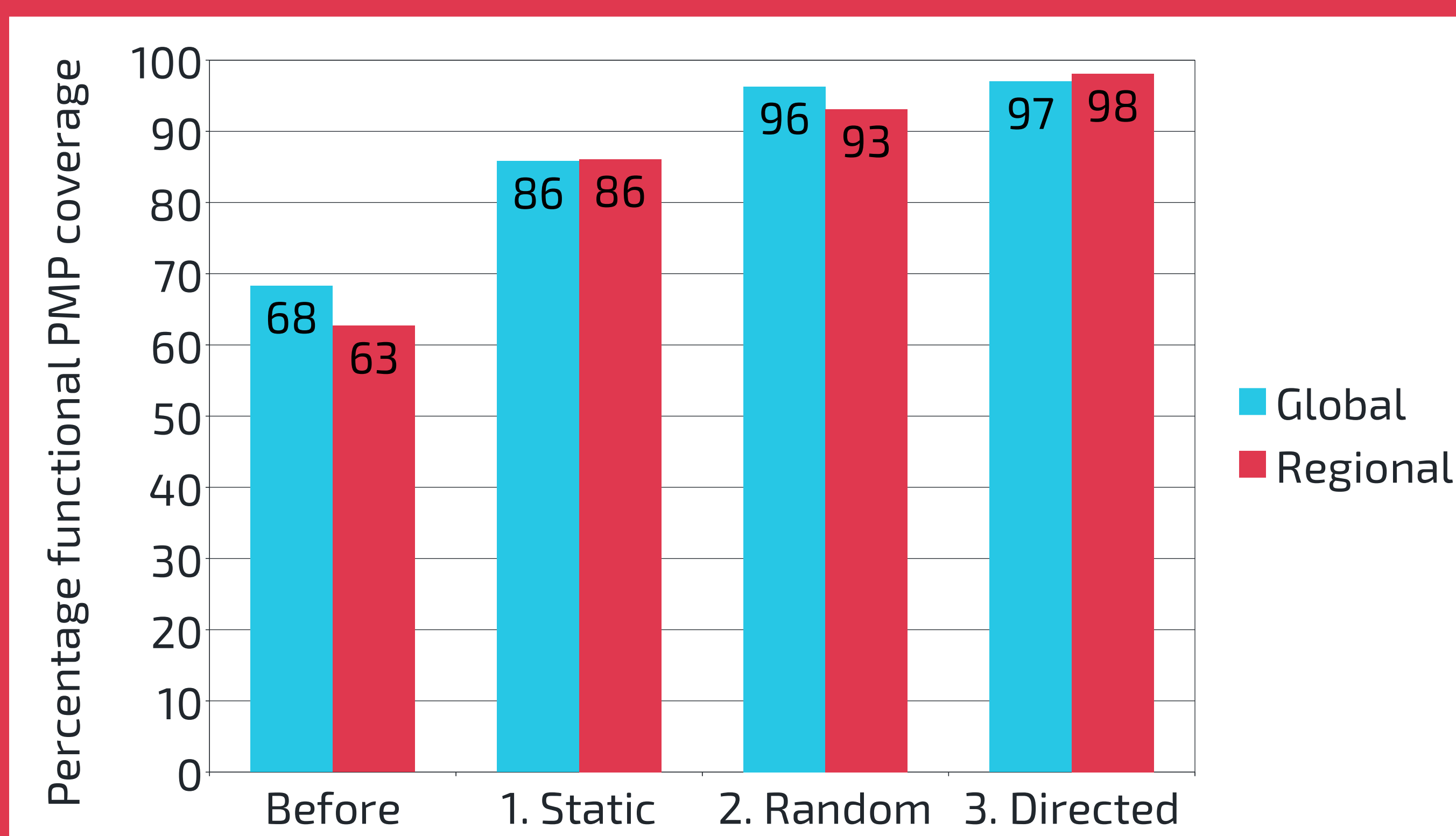
Ibex needs production-quality enhanced PMP (ePMP) with full functional coverage to ensure security.

What is ePMP:



Verifying ePMP steps:

1. Static ePMP configs with msecsfg modes.
2. Random tests while keeping trap handler and code executable, and skipping faulting loads/stores.
3. Directed tests to toggle execute permission in MML mode and execute instructions with each RWX permutation.



PMP coverage with Smepmp improved from 63% to 98%!



Paper



O P E N T O T H E C O R E

lowRISC is a not-for-profit company with a full stack engineering team based in Cambridge, UK and Zurich, Switzerland. We use collaborative engineering to develop and maintain open source silicon designs and tools.

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