

# Automatic Mapping of MATLAB Code to Parallel FPGAs on the SGI Altix

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## Abstract

Many engineers and scientists rapidly develop their applications and exploratory tools within MATLAB. In recent years advances have been made in parallelizing MATLAB execution with the pMatlab [1] tool. Star-P from Interactive Supercomputing has similar functionality. For this work we have coupled Star-P to the SGI Reconfigurable Application Specific Computing FPGA product enabling MATLAB users to rapidly go from single threaded performance to parallel CPU execution to parallel FPGA support with minimal changes to their original MATLAB source code. By removing the need to re-code their applications, developer productivity is increased. With the addition of automatic FPGA inclusion, integration efforts are reduced and further performance enhancement is enabled.

## References

- [1] Jeremy Kepner and Nadya Travinin. "Parallel MATLAB: The Next Generation". HPEC 2003 Workshop, 2003.