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The US Magnet Development Program for High Field Accelerator Magnet R&D

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The 2014 Particle Physics Project Prioritization Panel (P5) Report identified a critical need for transformational high field dipole magnet R&D, focused on improving performance and reducing the cost per T-m. This need was subsequently reiterated in the HEPAP Accelerator R&D subpanel report.
In response, the DOE Office of High Energy Physics has initiated an ambitious program to aggressively pursue superconducting accelerator magnet development with the primary goals of minimizing training and minimizing the required operating margin. Breakthroughs in magnet performance, particularly in training and operating margin requirements, will require further understanding and control of the underlying physics mechanisms. The US MDP leverages developments in modeling, materials, and diagnostics that are critical to advancing magnet technology. An outline of the program objectives, a review of the status of these elements, and a summary of the underlying program milestone roadmaps that serve to focus R&D efforts will be presented.

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