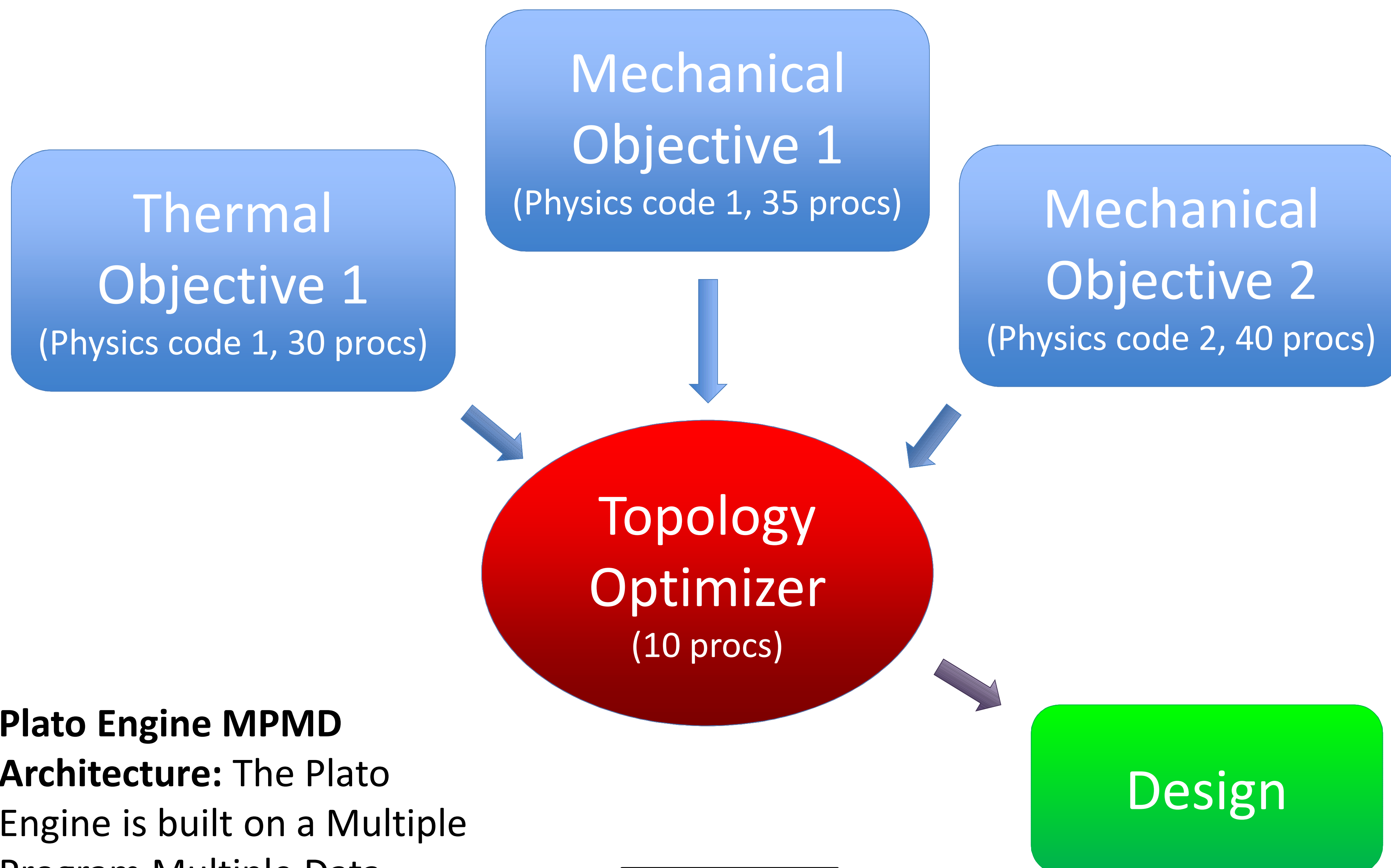


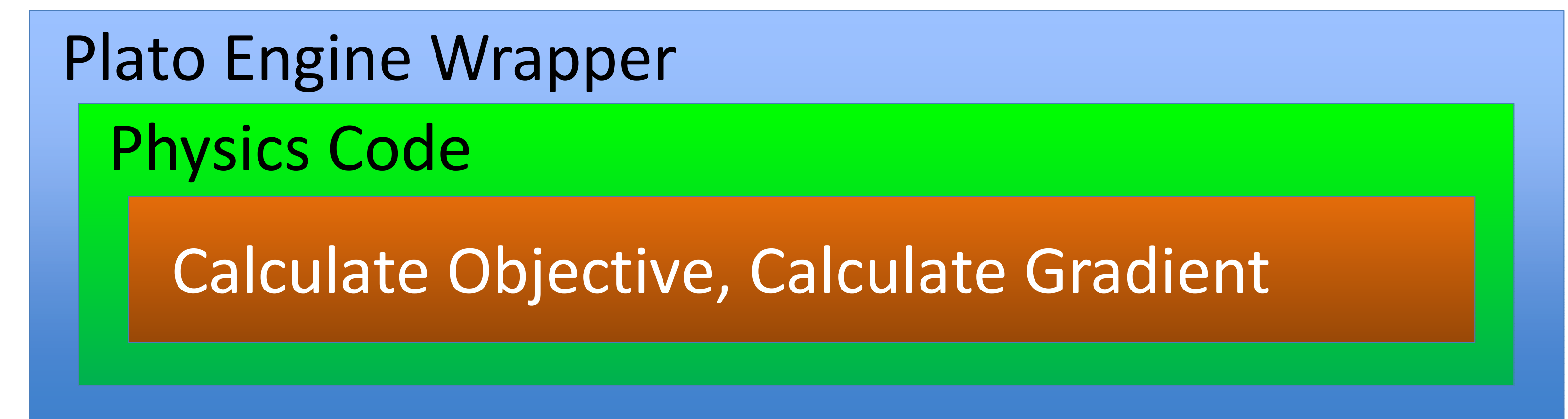
Plato Engine: MPMD-enabled Topology Optimization

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Objective: Develop a framework that facilitates multi-objective, multi-physics Topology Optimization involving independent physics codes.



Retrofitting Your Physics Code: To retrofit your physics code to run in the Plato Engine environment there are two main things you need to do. **First**, you must wrap your code with a layer that contains the Plato Engine code required to communicate data with the optimizer and receive instructions to execute commands. **Second**, within your code you need to be able to calculate the relevant objective and gradient values needed by the optimizer.



Plato Engine MPMD Architecture: The Plato Engine is built on a Multiple Program Multiple Data (MPMD) architecture which allows multiple programs/executables to run independently while communicating with one another. The topology optimizer orchestrates the execution and communication between the various physics codes and aggregates their contributions to generate a design that meets the various objectives.

