

## THE NATIONAL IGNITION CAMPAIGN: GOALS AND PROGRESS

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The NIC national team has developed an approach that evolves from requirements established by the Point Design, to system capabilities, to tuning platforms and tuning experiments, and finally to integrated cryo-layered implosion platforms and implosion output performance. The point design requirements are used to establish system capabilities for the Laser, Targets, Diagnostics, and Facility Infrastructure. Using these system capabilities, we have identified a sequence of experimental platforms that allow us to “tune” and optimize a variety of physical parameters needed to optimize the implosion of the fuel. Finally, we apply these optimized target and laser parameters to cryo-layered implosions and use a variety of diagnostics to assess the implosion outputs. Initial experiments in 2009 focused on meeting hohlraum requirements for drive, symmetry, and hot electrons. Major facility upgrades, focused on nuclear diagnostics, and the infrastructure needed to execute cryo-layered targets at energies up to 1.3 MJ was the focus of much of 2010. This was followed by experiments to activate all the implosion tuning platforms as well as initial experiments on cryo-layered implosions in late 2010 and early 2011. These experiments and the facility capabilities implemented to allow them have put us into position to execute the precision tuning and implosion experiments required to reach ignition. We expect the ignition campaign to involve a series of iterations on tuning in which the tuning targets are interleaved with cryo-layered targets. In this way we will be able to determine if we achieve the expected improvement in performance as the precision of tuning improves. This talk will summarize this sequence of advances and the plan for the coming year as we advance toward ignition and burn propagation.