

Abstract Submitted  
for the DPP16 Meeting of  
The American Physical Society

**VISRAD, 3-D Target Design and Radiation Simulation Code**  
IGOR GOLOVKIN, JOSEPH MACFARLANE, VIKTORIYA GOLOVKINA, Prism  
Computational Sciences, Inc. — The 3-D view factor code VISRAD is widely used  
in designing HEDP experiments at major laser and pulsed-power facilities, includ-  
ing NIF, OMEGA, OMEGA-EP, ORION, LMJ, Z, and PLX. It simulates target  
designs by generating a 3-D grid of surface elements, utilizing a variety of 3-D prim-  
itives and surface removal algorithms, and can be used to compute the radiation flux  
throughout the surface element grid by computing element-to-element view factors  
and solving power balance equations. Target set-up and beam pointing are facili-  
tated by allowing users to specify positions and angular orientations using a variety  
of coordinates systems (e.g., that of any laser beam, target component, or diagnos-  
tic port). Analytic modeling for laser beam spatial profiles for OMEGA DPPs and  
NIF CPPs is used to compute laser intensity profiles throughout the grid of surface  
elements. We will discuss recent improvements to the software package and plans  
for future developments.

Igor Golovkin  
Prism Computational Sciences, Inc.

Date submitted: 14 Jul 2016

Electronic form version 1.4