Abstract Submitted
for the DPP15 Meeting of
The American Physical Society

First experiment on LMJ facility: pointing and synchronisation qualification, sequences qualification OLIVIER HENRY, DIDIER RAFFESTIN, DOMINIQUE BRETHEAU, MICHEL LUTTMANN, HERVE GRAILLOT, MICHEL FERRI, FREDERIC SEGUINEAU, EMMANUEL BAR, LOIC PATISSOU, PHILIPPE CANAL, FRANÇOISE SAUTAREL, YVES TRANQUILLE-MARQUES, CEA/CESTA/DLP — The LMJ (Laser mega Joule) facility at the CESTA site (Aquitaine, France) is a tool designed to deliver up to 1.2 MJ at 351 nm. The experiment system will include plasma diagnostics: UV and X energy balances, imagers (Streak and stripe camera, CCD), spectrometers, and a Visar/pyrometer. The facility must be able to deliver, within the hour following the shot, all the results of the plasma diagnostics, alignment images and laser diagnostic measurements. Part of the end of 2014 was devoted to the qualification of system pointing on target and synchronization within and between beams. The shots made with one chain (divided in 2 quads – 8 laser beams) have achieved 50μm of misalignment accuracy and a synchronization accuracy in the order of 50 ps. The performances achieved for plasma diagnostic (in the order of less 100 μm of alignment and timing accuracy less than 150 ps) comply with expectations. At the same time the first automatic sequences were tested. They allowed a shot on target every 6h:30 and in some case twice a day by reducing preparation actions, leading to a sequence of 4h:00. These shooting sequences are managed by an operating team of 7 people helped by 3 people for security aspects.

Olivier Henry
CEA/CESTA/DLP

Date submitted: 24 Jul 2015 Electronic form version 1.4