index for 2 mm - 3 % was over 97% for all the targets except for one which was at 94.7%. Measured DVHs showed a loss of dose coverage of 10% for targets when looking at 95% of volume.

Conclusion
The 3D gamma index passed the acceptance criteria. However, other data showed a slight underdosage and a slight dose distribution shift of all targets. Tests are still undergoing to understand the origin of these discrepancies. This study demonstrates the need to perform “end-to-end tests” before setting up complex treatments such as multiple brain metastases SRS.

EP-1738 Validation of the electron Monte Carlo (eMC) algorithm in Eclipse 13.6
D. Kelly1, S. Meara2, K. Fogarty1, L. Gately1
1The Clatterbridge Cancer Centre NHS Foundation Trust, Medical Physics, Wirral, United Kingdom ; 2The Christie NHS Foundation Trust, Medical Physics, Manchester, United Kingdom

Purpose or Objective
To commission and evaluate the eMC 13.6.23 algorithm in Eclipse. To replace the manual calculation of MU for electron treatments for a TrueBeam linac.

Material and Methods
Beam models at 6, 9, 12 and 16 MeV were built using the Varian representative data for TrueBeam linacs, with calibration points on the PDDs derived from measured values. A block of water was simulated in Eclipse and used to compare to measurements taken in a water tank or phantom. Profiles, PDDs, absolute dosimetry, applicator factors, cut-out factors and stand-off factors were compared using this method.

20 patients, previously treated with manually calculated MU, were re-planned using eMC and the calculated monitor units compared.

End-to-end tests were performed at 12 and 16 MeV. This was to test the accuracy of the beam model in conditions where the previously treated patients had large differences in the number of MUs between eMC and manual calculation. A wax dome was used to test curvature (figure 1) whereas stacked sheets of different density material (plastic, wood, cork and solid water) tested inhomogeneity.

Conclusion
All tests performed to validate the eMC beam model had satisfactory results, including in non-standard conditions. For some patients the eMC calculated MUs are significantly different to previous manual calculation. Patients planned using eMC in Eclipse have shown good agreement with skin dose TLD measurements.

EP-1739 Indicators evaluation for robust dose prescription in SBRT of peripheral non-small cell lung cancer
G. Beldjoudi1, V. Bernard1, R. Tanguy1
1Centre Léon Bérard, Radiotherapy, LYON, France ; 2ORLAM, Radiothérapie, Lyon, France

Purpose or Objective
Lung SBRT is a well-established alternative to surgery for inoperable early stage lung cancers. In our center, small peripheral lesions are mainly treated on a Cyberknife(CK) device at a dose of 3x18Gy (RTGO236 study) usually prescribed on the isodose 80% with a type A algorithm (RayTracing [RT]). However, ESTRO ACROP recommendations are to use type B or type C algorithms when calculating doses in situations of small lesions surrounded by low density tissues and to prescribe 3x15Gy to D95-99PCTV. Nevertheless, these recommendations do not

In-vivo skin surface measurements are performed at first fraction of treatment using TLDs according to local standard protocol. A retrospective audit of these measurements was performed to compare agreement to the predicted dose between manually eMC calculated plans.

Results
The profiles and PDDs were compared using the Venselaar criteria [1]. All were acceptable but approach tolerance close to surface, where Eclipse systematically overestimates the dose in the first 1-5 mm by up to 3 %. The doses to a point in reference conditions matched to ≤±0.8 %. Applicator factors agreed to ≤±1.2 %. Cut-out factors agreed to ≤±1.9 %. Stand-off factors agreed to ≤±1.4 %.

The average difference between eMC and the manually calculated MU for the previously treated patients was 6.2 % with a maximum difference of 14.7 %. Patients with large differences had significant curvature and/or inhomogeneity, hence the need for the end-to-end tests. Eclipse calculated doses matched Roos measurements underneath the wax dome to ≤±2.0 % and TLD measurements at various points underneath the dome to ≤±0.7 %. The inhomogeneity measurements agreed to ≤±3.3 % with the plastic sheet and to ≤±0.9 % in all combinations without the plastic sheet. A CT artefact in the plastic contributed to the poorer result when the plastic sheet was included.

The results of the TLD audit are shown in figure 2. All measurements so far are within the local tolerance level of ±5 %.