2.2 User specifications – scale dataset

**1) All results must be described and how these results should be presented. = OUTPUT data from new operations.**

Scaling an object is extremely useful for anthropological purposes and is frequently used for reconstruction. This feature is available in lhpFusionBox in *Operations – Modify – Scaledataset.* However, currently, when you scale a dataset – the object that you scale is modified but the landmark clouds and distance meters etc. which are child clouds of that object remain the same.

Therefore the ideal solution would be when you scale a dataset that everything is automatically also scaled below this object. There is currently an option to mirror an object (*Operations – Modify – Surface Mirror)* and the system tells you that it will make a copy (which is very useful if things go wrong). Therefore it would be good for the system to make a copy of the object and all child clouds and distance meters below it. Then to apply the changes of the object to all child clouds. There is also a problem with scale dataset in that when you try to subsequently move an object (either through AL scaling or simply moving the object in space), the scaling disappears. This should be fixed so that the scaled object does not lose the scaling when you perform new operations. If time allows and it is a similar operation - it would also be good to have the same for mirroring a surface so that it is not just one object that is mirrored but all objects and child clouds below this (Operations – Modify – Surface Mirror)

**2) Methods and algorithms (with bibliographic references) to produce these results must be detailed.**

Method and algorithms already implemented and based on estimation of ALs cloud new pose by rigid, similar or affine 6 DoFs transformation applied to the surface and supplementary objects. Method is based on searching in the ALs cloud subset of similar named ALs. Output value of the transformation residual must be compared with “expected residual limit” value and in case of exceed it a warning message must appears.

There is currently an option to mirror an object (*Operations – Modify – Surface Mirror).* You can then mirror the landmarks below the object although you have to copy and paste the landmarks underneath the copied object. *Operations – Modify – Landmark Cloud Mirror.* This is possibly similar to what we are requesting (although we are asking that it is automatic)

**3) User interface and user actions required to inject INPUT data into the algorithms**

*‘Operations – Modify – Scaledataset’ s*hould scale all the child clouds automatically and also create a copy.