**Supplementary Material 1. Patient selection.**

Data from redo PVI procedures were collected from Cath lab lists – where repeat or redo procedure was specified. (AI = 68) (CF = 67)

Total procedures eligible for inclusion. (AI =53) (CF= 57)

Studies included for analysis. (AI = 17) (CF = 22)

Procedures excluded as not diagnosed PeAF. (AI= 22) (CF= 25)

Total procedures eligible for inclusion. (AI = 39) (CF = 47)

Procedures excluded as not carried out with Carto 3D. (AI = 14)(CF= 10)

Procedures excluded as it was not the patients first redo PVI. (AI = 15) (CF = 10)