



Supplementary Figure 1. Example of 10–20Hz phase synchronization aligned by movement onset. In order to test the coherence is related to the decisional stage or motor process, we tried to calculate the wPLI coherence by aligning the same data on the latency of movement onset. For visualization, we selected representative channel pairs between PMd and PPC across bilateral hemisphere during right hand condition. Locations of the channels were indicated in right panel. **(A, C)** show the coherence between left PMd and left PPC. **(B, D)** show the coherence between right PMd and right PPC. The solid white line indicates the movement onset ($t = 0$). The black contour line inside the images indicates the statistical significance (Adjusted $p < 0.05$, FDR corrected).