Supplementary video captions:

**Video 1:** Spatiotemporal pattern of cortical activation in the HC shown in Fig. 2A. The reference point for the coordinates is the dorsal end of the PES. LFP were normalized to the maximum amplitude, giving a maximum value of 1 (~red colour).

**Video 2:** Spatiotemporal pattern of cortical activation in the HC shown in Fig. 2B. The reference point for the coordinates is the dorsal end of the PES. LFP were normalized to the maximum amplitude, giving a maximum value of 1 (~red colour).

**Video 3:** Spatiotemporal pattern of cortical activation in the CDC shown in Fig. 6A. The reference point for the coordinates is the dorsal end of the PES. LFP were normalized to the maximum amplitude, giving a maximum value of 1 (~red colour).

**Video 4:** Spatiotemporal pattern of cortical activation in the CDC shown in Fig. 6B. The reference point for the coordinates is the dorsal end of the PES. LFP were normalized to the maximum amplitude, giving a maximum value of 1 (~red colour).