

Description of Additional Supplementary Files:

Supplementary Movie 1: Transmembrane-helix densities of the MS-ring. Animation showing the cryo-EM densities corresponding to the transmembrane helices of the MS-ring in the reconstruction.

Supplementary Movie 2: *In situ* structure of the flagellar export apparatus and MS-ring. Animation showing the *in situ* cryo-EM density map and structural models of the flagellar export apparatus and MS-ring, highlighting their organization within the curved cytoplasmic membrane of *Borrelia burgdorferi*. Components are colored and labelled as indicated in the movie.