

**Supplementary information, Video S1** | Visualization of macromolecular complexes across the NE on a representative tomogram. Reconstructions of the CR, IR, NR, LR and ribosomal subunits were individually projected back into a representative tomogram (low-passed to 80 Å) containing a piece of 824×824 nm nuclear envelope, which is viewed from three distinct angles. Ribosomes: 40S: Small ribosome subunit; 60S: Large ribosome subunit; TRAP: translocon-associated protein complex; OST: oligosaccharyl-transferase.