

Description of Additional Supplementary Files

File Name: Supplementary Movie 1

Description: **Performance of the maS³TORM setup.** Video demonstrating buffer preparation, liquid exchange, approaching sample regions and image acquisition by maS³TORM.

File Name: Supplementary Movie 2

Description: **Super-resolution images of three target proteins from different imaging rounds merged in 3D space.** STORM images of phalloidin (red), α -tubulin (green), and Tom20 (blue) rendered and merged in 3D