**Reference trajectories and targets**  $Reconfiguration\ phase$ Platooning phase  $(a) In \overline{itial\ formation}$ (c) Final formation  $(b) Intermediate\ formation$ Traingular shape Linear shape  $EucDis{V_1,V_2}$ Main line  $Merging\ vehicle\ trajectory$ In-between distances-20 -80 -60 40 60 80 100 120