Supporting Information for:

Syntheses and structures of some complexes $[\{M_3(\mu-dppm)_3\}\{\mu-C\equiv CC\equiv C[M'L_x]\}_n]^{(3-n)+}X^-_{(3-n)}$ $[M'L_x = Re(CO)_3(Bu_2^t-bpy), Ru(dppe)Cp^*;$ dppm = $CH_2(PPh_2)_2$; X = PF₆, BF₄; n = 1, 2] and $[Ag_6(\mu-dppm)_4\{C\equiv CC\equiv C[Re(CO)_3(Bu_2^t-bpy)]\}_4](PF_6)_2$

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Figure S1. A representation of the molecular structure of $[Cu_3(\mu - dppm)_3 \{C \equiv CC \equiv C[Ru(dppe)Cp^*\}](BF_4)_2$ [6](BF₄)₂. Ellipsoids have been drawn at the 50% probability level, the anions, hydrogen atoms and the phenyl carbons of the dppm ligands (except the *ipso*-carbons) omitted for clarity.



Figure S2. Representations of the molecular structures of the (a) acetone and (b) THF solvates of $[Ag_3(\mu-dppm)_3\{C\equiv CC\equiv C[Ru(dppe)Cp^*\}](BF_4)_2.Me_2CO$ [8](BF₄)₂. Ellipsoids have been drawn at the 50% probability level with solvate molecules, the anion, hydrogen atoms and the phenyl carbons of the dppm ligands (except the *ipso*-carbons) omitted for clarity.



Figure S3. (a) A representation of the molecular structure of $[Ag_6(dppm)_4\{C\equiv CC\equiv C[Re(CO)_3(Bu_2^t-bpy)\}_4](PF_6)_2$ [12](PF_6)_2. Ellipsoids have been drawn at the 50% probability level with solvate molecules, the anion, hydrogen atoms and the phenyl carbons of the dppm ligands (except the *ipso*-carbons) omitted for clarity. (b) A second view of the structure highlighting the cluster connectivity (ball and stick representation).