Naming of coordination compounds using IUPAC guidelines

Coordination Compound : $K_4[Fe(CN)_6]$		
Cation (Simple)	K^+	Potassium
Anion (complex)	$[Fe(CN)6]^{4-}$	
Ligands	CN^-	
Name of the ligand with prefix	6 ligands - prefix: hexa Anionic ligand: cyanido-κC (Coordinating atom in CN^- is carbon)	hexacyanido-κC
Central metal	Fe (in anionic complex)	ferrate
Oxidation state of central metal (x)	x + 6 (-1)= -4 x = -4 + 6 = +2	(II)
IUPAC Name: Postassium hexacyanido-κC ferrate(II)		

Example 2: Coordination Compound : $[Co(NH_3)_4Cl_2]Cl$		
Cation (complex)	$[Co(NH_3)_4Cl_2]^+$	
ligands	NH_3 and Cl^-	
Name of the ligand (NH_3) with prefix	4 ligands - prefix: tetra Neutral ligand: ammine	tetraamminiedichlorido (alphabatically ammine comes before chlorido)
	2 ligands - prefix: di Anionic ligand: chlorido	
Central metal	Co (in cationic complex)	cobalt
Oxidation state of central metal (x)	x + 4 (0) + 2 (-1)= +1 x = 1 + 2 = +3	(III)
Anion (simple)	Cl^-	chloride
IUPAC Name: Tetraamminedichloridocobalt(III) chloride		

Example 3:. Coordination Compound : $[Cr(en)_3][CrF_6]$		
Cation (complex)	$[Cr(en)_3]^{3+}$	
ligands	en - (ethylenediamine)	
Name of the ligand with prefix (Ligand itself contains a Greek prefix - di, use alternate prefix)	3 ligands - prefix: tris Neutral ligand: ethane-1,2-diamine	tris(ethane-1,2-diamine)
central metal	Cr (in cationic complex)	chromium
Oxidation state of central metal (x)	x + 3 (0) = +3 x = +3	(III)
Anion (Complex)	$[CrF_6]^{3-}$	
ligands	6 F^-	
Name of the ligand with prefix	4 ligands - prefix: hexa Anionic ligand: Fluorido	hexafluorido
central metal	Cr (in anionic complex)	chromate
Oxidation state of central metal (x)	x + 6 (-1)= – 3 x = -3 + 6 = +3	(III)
IUPAC Name: Tris(ethane-1,2-diamine)chromium(III) hexafluoridochromate(III)		