1- Ejemplo de objeto completo de la estructura de datos Datasheet del Elfin:

{

"PosAndVel": {

"Actual\_Position": [ "-180.314", "-2.028", "90.035", "1.648", "83.557", "-112.772", "-751.997", "-7.533", "427.782", "-175.325", "-0.174", "112.329" ],

"Actual\_PCS\_TCP": [ "-751.997", "-7.533", "427.782", "-175.325", "-0.174", "112.329" ],

"Actual\_PCS\_Base": [ "-733.627", "-0.776", "666.983", "-175.325", "-0.174", "112.329" ],

"Actual\_PCS\_Tool": [ "0.000", "0.000", "0.000", "0.000", "0.000", "0.000" ],

"Actual\_Joint\_Current": [ "-0.049", "3.739", "-5.527", "-0.440", "0.053", "0.073" ],

"Actual\_Joint\_Velocity": [ "0.017", "0.000", "0.000", "0.000", "0.000", "0.000" ],

"Actual\_Joint\_Acceleration": [ "0.004", "0.008", "0.003", "-0.006", "0.008", "-0.010" ],

"Actual\_Override": "1.000"

},

"EndIO": {

"EndDI": [ 0, 0, 0, 0 ],

"EndDO": [ 0, 0, 0, 0 ],

"EndButton": [ 0, 0, 0, 0 ],

"EnableEndBTN": 0,

"EndAI": [ "0.000", "0.000" ]

},

"ElectricBoxIO": {

"BoxCI": [ 0, 0, 0, 0, 0, 0, 0, 0 ],

"BoxCO": [ 0, 0, 0, 0, 0, 0, 0, 0 ],

"BoxDI": [ 0, 0, 0, 0, 0, 0, 0, 0 ],

"BoxDO": [ 0, 0, 0, 0, 0, 0, 0, 0 ],

"Conveyor": "0.000",

"Encode": 0

},

"ElectricBoxAnalogIO": {

"BoxAnalogOutMode\_1": 0,

"BoxAnalogOutMode\_2": 0,

"BoxAnalogOut\_1": "0.000",

"BoxAnalogOut\_2": "0.000",

"BoxAnalogIn\_1": "-0.012",

"BoxAnalogIn\_2": "-0.049"

},

"StateAndError": {

"robotState": 33,

"robotEnabled": 1,

"robotPaused": 0,

"robotMoving": 0,

"robotBlendingDone": 1,

"InPos": 0,

"Error\_AxisID": 0,

"Error\_Code": 0,

"IsReduceMode": 0,

"BrakeState": [ 0, 0, 0, 0, 0, 0 ],

"nAxisStatus": [ 3, 3, 3, 3, 3, 3 ],

"nAxisErrorCode": [ 0, 0, 0, 0, 0, 0 ],

"nResetSafeSpace": [ 1 ],

"nAxisGroupStatus": [ 1 ],

"nAxisGroupErrorCode": [ 0 ]

},

"HardLoad": {

"EtherCAT\_TotalFrame": 40948973,

"EtherCAT\_FramesPerSecond": 251,

"EtherCAT\_TotalLostFrame": 88,

"EtherCAT\_TxErrorFrame": 11,

"EtherCAT\_RxErrorFrame": 1104,

"Box48IN\_Voltage": "48.210",

"Box48IN\_Current": "0.767",

"Box48Out\_Voltage": "48.056",

"Box48Out\_Current": "0.767",

"Slave\_temperature": [ "44.812", "57.000", "56.125" ],

"Slave\_Voltage": [ "47.990", "48.213", "47.990" ]

},

"FTData": {

"FTControlState": 0,

"FTData": [ "0.000", "0.000", "0.000", "0.000", "0.000", "0.000" ],

"FTSrcData": [ "0.000", "0.000", "0.000", "0.000", "0.000", "0.000" ]

},

"RobotAuthorization": {

"DynDeviceCode": "061812",

"AuthorizedTimeLeftMinutes": "166878",

"AuthorizedTimeUsedMinutes": "92322"

},

"Script": {

"errorCode": "0",

"cmdid": [ "", "", "", "", "", "" ],

"GlobalVar": [

{

"a": "-0.5"

},

{

"b": "3.0"

},

{

"t90": "90.0"

},

{

"t\_90": "-90.0"

}

]

}

}

2- Ejemplos de subestructuras que interesaría tener como atributo de primer nivel

PosAndVel.Actual\_Position

PosAndVel.Actual\_PCS\_TCP

StateAndError.robotMoving

StateAndError.InPos

StateAndError.robotEnabled

StateAndError.Error\_Code

StateAndError.Error\_AxisID

EndIO

ElectricBoxIO

ElectricBoxAnalogIO