监听程序接口文档

1. **接口说明**

|  |  |  |  |
| --- | --- | --- | --- |
| 仪器厂商 | 希森美康 | 适用型号 | **XN系列** |
| 通讯方式 | **双向** | 仪器类型 | 血球 |
| 医院 |  | | |
| 程序名称 |  | | |
| 附件 |  | | |

1. **连接说明**

**连接方式：**~~串口 串口线接仪器主机/串口线接仪器配备电脑~~

**是否支持其他连接方式**：~~网口，~~读文本~~，读数据库~~

**3.串口盒子设定参数**

**1）串口盒子型号及线序**

**2）盒子及仪器设定参数**

**4.仪器参数设定说明（保留仪器设置图片存档）**

仪器上设置：

仪器管理设置：

配置串:

前处理使用DealDemoMAll,仪器结果Save一次。上传使用DealImage

[{"MachID":"#RowID","Type":"Drect","UpTime":"3000","Address":"D:\\Result\\2","UpCDF":"D:\\Result\\1","UpREF":"D:\\Result\\","DealProcess":"MI.MIFXEMSYS","Para":".cdf","PreDealClass":"PreDeal.DealDemoMAll,PreDeal","UPPreDealClass":"PreDeal.DealImage,PreDeal","UpPara":""}]

上传通道配置：

接口默认上传"CBC"，其他上传通道核实科室需求并核实接口

**5.仪器数据传输说明**

1）仪器自动传输结果：支持

2）手工传输结果：支持

**手动传输操作图片**

**6．修改记录**

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 日期 | 操作人 | 说明 |
| 1 | 20231202 | 刘彬 | 待补充仪器数据及通道配置截图，仪器配置截图 |

1. **仪器结果数据**

8.仪器接口

**M:**

/// 本次支持满足大部分文件和数据库连接的单双向，包括取图，完全在M上控制

/// 监听数据库配置事列[{"MachID":"#RowID","Type":"DataBase","UpTime":"20000","Address":"DSN=监听测试","UpCDF":"1","UpREF":"","DealProcess":"MI.MIFLISMonitorTest","Para":"SELECT ID,EpisNo,PatName,Ca,Fe,Na,K,Mg FROM 仪器结果 #ID####D:\\泰安资料\\","PreDealClass":"PreDeal.DealDemoM,PreDeal","UPPreDealClass":"PreDeal.DealDemoM,PreDeal"}]

/// 监听文件配置事列[{"MachID":"#RowID","Type":"Drect","UpTime":"3000","Address":"D:\\泰安资料\\文本仪器","UpCDF":"1","UpREF":"","DealProcess":"MI.MIFLISMonitorTest","Para":".txt","PreDealClass":"PreDeal.DealDemoM,PreDeal","UPPreDealClass":"PreDeal.DealDemoM,PreDeal","UpPara":"D:\\泰安资料\\文本仪器\\"}]

Class MI.MIFXEMSYS Extends %Persistent

{

// D ##class(MI.MIFLISMonitorTest).fileMTHD("38","1,BASO#,1,0.02,,,,,","1")

// mi:仪器主键

// record:一个数据行合并提交用#enter#分割多行数据

// epis:流水号，前处理提取出了的画

// fileNameOrColName:读文件的是文件全名，数据库的是数据库查询的列名用~分割

//[{"MachID":"#RowID","Type":"Drect","UpTime":"3000","Address":"D:\\Result\\2","UpCDF":"D:\\Result\\1","UpREF":"D:\\Result\\","DealProcess":"MI.MIFXEMSYS","Para":".cdf","PreDealClass":"PreDeal.DealDemoMAll,PreDeal","UPPreDealClass":"PreDeal.DealImage,PreDeal","UpPara":""}]

ClassMethod fileMTHD(mi, record As %String(MAXLEN=99999999), epis, fileNameOrColName, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, Sessions, Output RowCount As %String) As %String

{

s mi=$g(mi)

i '$d(^dbo.BTMIMachineParameterD(mi)) q

//多行数据

s recordbak=record

//返回值

s retcode=""

//解析多行合并数据，按#enter#分隔，监听config开启与否合并提交都支持

d Trace^MI.MIF000(mi,record,"H<--M")

s (sample,result,date,time,QC,image,retimage,imageR,retimageR,imageres)=""

f i=1:1:$l(record,"[13][10]") d

.S resVal=$p(record,"[13][10]",i)

.//0,2020-12-10,00:00:00,40,XS500,17944,35,[13][10]

.//1,RDW-SD,1,41.60,,,,,[13][10]1,WBC,1,4.15,,,,,[13][10]

.//3,,HPLT,C:\Laboman4.0\XS500\gram\20201210\0000000040\_201210153004\_HPLT.gif,1[13][10]

.s type=$p(resVal,",",1)

.i type=0 s epis=$p(resVal,",",4)

.i type=1 d

..s code=$p(resVal,",",2),res=$p(resVal,",",4)

..s result=result\_code\_$c(92)\_res\_$c(44)

.i type=3 d

..s image=$p(resVal,",",3)

..s retimage="\\172.168.20.212\"\_$tr($p(resVal,",",4),":")

..s imageR=imageR\_image\_","

..s retimageR=retimageR\_retimage\_","

.i type=9 d

..s imageres="getimage#"\_epis\_"#"\_imageR\_"#"\_retimageR

..d Trace^MI.MIF000(mi,imageres,"H<--M")

..d Trace^MI.MIF000(mi,epis\_":"\_result,"H<--M")

..i $l(epis),$l(result) d ##Class(MI.Common.MIFBase).Save(mi, epis, result, date, time, QC)

q imageres

}

// D ##class(MI.MIFLISMonitorTest)SaveImageMTHD("7","9999", "","175")

// mi:仪器

// epis：流水号，如果是监听图片模式该位置放图片名称，自己在保存前提取流水

// ImageClass:图片类别，如果是监听图片模式该位置放图片名称，自己在保存前提取图片类型

// FileName:保存在文件服务的相对路径，默认不动

// FullName:文件全路径，如果是监听图片模式该位置放图片全路径名称，满足有的图片名称无法得到流水和图片类别的情况

ClassMethod SaveImageMTHD(mi, epis, ImageClass, FileName, FullName, P5, P6, P7, P8, P9, P10, P11, P12, P13, Sessions, Output RowCount As %String) As %String

{

//通过OtherPara配置取图的在这里通过epis和ImageClass的图片名字提取出流水号和图片类别

s mi=$g(mi)

s epis=$g(epis)

s ImageClass=$g(ImageClass)

s FileName=$g(FileName)

s FullName=$g(FullName)

i '$d(^dbo.BTMIMachineParameterD(mi)) q ""

d ##Class(MI.Common.MIFBase).Trace(mi,epis\_":"\_ImageClass\_":"\_FileName,"H<--M")

s (ReceiveDate, ImageOrder, Caption, DisplayRatio, Height, Width, Sequence)=""

s ret=##Class(MI.Common.MachineResult).SaveImage(ReceiveDate, epis, ImageClass, ImageOrder, FileName, mi, Caption, DisplayRatio, Height, Width, Sequence)

q ret

}

// 返回给监听当前上传文件路径名称，默认不要动

// w ##class(MI.MIFLISMonitorTest).GetFtpMTHD("7")

// mi:仪器

ClassMethod GetFtpMTHD(mi, P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, Sessions, Output RowCount As %String) As %String

{

//文件服务模式必须改的地方，老的FTP模式这么改了也没问题，所以建议都这样

s mi=$g(mi)

q ##Class(MI.Common.MIFBase).GetMiFtpPath(mi)

}

/// Creator： 查询患者信息，监听配置上传前处理类后会定时调用这个query查询数据进行上传操作

/// CreatDate： 20140919

/// Description:：

/// Table：

/// Input： mi：仪器主键

/// Output： 仪器信息

/// Return： 仪器信息

/// Others：

Query QryLabInfo(mi As %String, P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, Sessions, Output RowCount As %String) As %Query(ROWSPEC = "labno,labnoInfo,patInfo")

{

}

/// Query的执行方法

/// d ##class(%ResultSet).RunQuery("MI.MIFLISMonitorTest","QryLabInfo","208","","","","","","","","","","","","","","","")

ClassMethod QryLabInfoExecute(ByRef qHandle As %Binary, mi As %String, P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, Sessions, Output RowCount As %String) As %Status

{

Set repid=$i(^CacheTemp)

Set ind=1

s mi=$g(mi),flag=$g(flag)

i '$d(^dbo.BTMIMachineParameterD(mi)) q ""

s LabnoList=""

//控制输出Excel

//s Data=##class(MI.Common.MIFBase).DemoMOutFileInfo("D:\\OUT\\上传.xls","张三[0][1]男[0][1]28岁[0][1]"\_$h,"900001","1")

//d OutputRow

//Set qHandle=$lb(0,repid,0)

//Quit $$$OK

//控制输出Excel

//查最近8天

s AddDate=$zd($p($h,",",1)-8,8) f s AddDate=$o(^dbo.RPMachineUploadI("IndexSendStatus",mi,##Class(LIS.Util.Common).IndexData("C"),AddDate)) q:AddDate="" d

.s AddTime="" f s AddTime=$o(^dbo.RPMachineUploadI("IndexSendStatus",mi,##Class(LIS.Util.Common).IndexData("C"),AddDate,AddTime)) q:AddTime="" d

..//20秒以内的先不上传，防止没接收完

..i (AddDate=$zd($h,8)),(($p($h,",",2)-AddTime)<20) q

..s MiUploadDR=$o(^dbo.RPMachineUploadI("IndexSendStatus",mi,##Class(LIS.Util.Common).IndexData("C"),AddDate,AddTime,""))

..s labno=$lg(^dbo.RPMachineUploadD(MiUploadDR),3)

..i '$l(labno) q

..//得到通道号

..s chl=$lg($g(^dbo.RPMachineUploadD(MiUploadDR)),7)

..//测试类型0：文本，1：数据库

..s TestType="0"

..i TestType="0" d

...//文本双向上传开始\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

...//控制输出文本的内容

...s labnoInfo=..GetLabnoInfo(mi,labno)

...//cdf 获取标本信息

...s patInfo=..GetPatInfo(mi,labno)

...//s txtInfo=labno\_"^"\_chl

...//s Data=##class(MI.Common.MIFBase).DemoMOutFileInfo("ret.txt",labnoInfo,labno,"")

...Set Data=$lb(labno,labnoInfo,patInfo)

...d OutputRow

...//s labno=labnoOld\_"^"\_$zd($h,8)\_labno\_".ok"

...s Data=##class(MI.Common.MIFBase).DemoMOutFileInfo($zd($h,8)\_"\_"\_labno\_".cdf",patInfo,labno,"")

...//d OutputRow

...//文本双向上传结束\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

..i TestType="1" d

...//数据库双向上传开始\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

...//控制执行sql

...s SqlStr="insert into 仪器上传(EpisNo,Ca,Fe,K,Na,Mg) values('"\_labno\_"'"

...s Ca=""

...s Fe=""

...s K=""

...s Na=""

...s Mg=""

...f i=1:1:$l(chl,"\") d

....s curChl=$p(chl,"\",i)

....i curChl="Ca" s Ca=curChl

....i curChl="Fe" s Fe=curChl

....i curChl="K" s K=curChl

....i curChl="Na" s Na=curChl

....i curChl="Mg" s Mg=curChl

...s SqlStr=SqlStr\_",'"\_Ca\_"'"

...s SqlStr=SqlStr\_",'"\_Fe\_"'"

...s SqlStr=SqlStr\_",'"\_K\_"'"

...s SqlStr=SqlStr\_",'"\_Na\_"'"

...s SqlStr=SqlStr\_",'"\_Mg\_"')"

...//多条命令组装多个SQL语句输出

...s Data=##class(MI.Common.MIFBase).DemoMOutDBInfo("DSN=监听测试",SqlStr,labno)

...d OutputRow

..//数据库双向上传结束\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Set qHandle=$lb(0,repid,0)

Quit $$$OK

OutputRow

Set ColFields="labno,labnoInfo,patInfo"

Set ^CacheTemp(repid,ind)=##Class(LIS.Util.Common).TransListNull(Data,ColFields)

Set ind=ind+1

quit

}

ClassMethod QryLabInfoClose(ByRef qHandle As %Binary) As %Status [ PlaceAfter = QryLabInfoExecute ]

{

Set repid=$LIST(qHandle,2)

Kill ^CacheTemp(repid)

Quit $$$OK

}

ClassMethod QryLabInfoFetch(ByRef qHandle As %Binary, ByRef Row As %List, ByRef AtEnd As %Integer = 0) As %Status [ PlaceAfter = QryLabInfoExecute ]

{

Set AtEnd=$LIST(qHandle,1)

Set repid=$LIST(qHandle,2)

Set ind=$LIST(qHandle,3)

Set ind=$o(^CacheTemp(repid,ind))

If ind="" {

Set AtEnd=1

Set Row=""

}

Else {

Set Row=^CacheTemp(repid,ind)

}

s qHandle=$lb(AtEnd,repid,ind)

Quit $$$OK

}

/// w ##Class(MI.XN9000).GetLabnoInfo(2,1709040020)

ClassMethod GetLabnoInfo(mi, labno) As %String

{

s mi=$g(mi),labno=$g(labno)

i '$d(^dbo.BTMIMachineParameterD(mi)) q ""

//获取项目通道号

d ScanOne^MI.MIF000(mi,labno)

s tcx=""

s tcxF=""

s chl="" f s chl=$o(^TMP("MIFTESTCODE",$j,mi,labno,chl)) q:chl="" d

.s tcx=tcx\_chl\_"+"

s tcx=$e(tcx,1,$l(tcx)-1)

//按照仪器要求拼接通道串

s tcxF="CBC"

i tcx["NEUT#" s tcxF=tcxF\_"+DIFF"

i tcx["RET#" s tcxF=tcxF\_"+RET"

//i tcx["IG#" s tcxF=tcxF\_"+WPC"

i tcx["IPF" s tcxF=tcxF\_"+PLT-F"

i tcx["NEUT#" s tcxF="CBC+DIFF"

i tcx["RET#" s tcxF="CBC+DIFF+RET"

//i tcx["IG#" s tcxF=tcxF\_"+WPC"

i tcx["IPF" s tcxF="CBC+DIFF+RET+PLT-F"

k ^TMP("MIFTESTCODE",$j,mi,labno)

i $l(tcxF) s tcxF=labno\_","\_tcxF\_"|"

q tcxF

}

/// w ##Class(MI.MIFLISMonitorTest).GetPatInfo(6,1001367)

ClassMethod GetPatInfo(mi, labno) As %String

{

s labno = $g(labno),mi=$g(mi)

i $l(labno)=0 q ""

s VisitNumberDR = $o(^dbo.RPVisitNumberI("IndexVisitNumber",##Class(LIS.Util.Common).IndexData(labno),""))

i '$l(VisitNumberDR) q ""

//标本信息

s RPVisitNumberData=$g(^dbo.RPVisitNumberD(VisitNumberDR))

s LocationDR=$lg(RPVisitNumberData,22),Location=""

i $l(LocationDR) s Location=$lg($g(^dbo.BTLocationD(LocationDR)),3)

s DoctorDR=$lg(RPVisitNumberData,23),Doctor=""

i $l(DoctorDR) s Doctor=$lg($g(^dbo.BTDoctorD(DoctorDR)),3)

s ReceiveDate=$lg(RPVisitNumberData,66)

s ReceiveTime=$lg(RPVisitNumberData,67)

s ReceiveUserDR=$lg(RPVisitNumberData,68),ReceiveUser=""

i $l(ReceiveUserDR) s ReceiveUser=$lg($g(^dbo.SYSUserD(ReceiveUserDR)),3)

s RegNo=$lg(RPVisitNumberData,3)

s SurName=$lg(RPVisitNumberData,13)

s GivenName=$lg(RPVisitNumberData,14)

i SurName=GivenName s PatName=SurName

e s PatName=SurName\_GivenName

s SpeciesDR=$lg(RPVisitNumberData,15),Species=""

i $l(SpeciesDR) s Species=$lg($g(^dbo.BTSpeciesD(SpeciesDR)),3)

s AdmTypeDR=$lg(RPVisitNumberData,4),AdmType=""

i $l(AdmTypeDR) s AdmType=$lg($g(^dbo.BTAdmissionTypeD(AdmTypeDR)),3)

s BedNo=$lg(RPVisitNumberData,27)

s Age=$lg(RPVisitNumberData,18)

s AgeUnitDR=$lg(RPVisitNumberData,19),AgeUnit=""

i $l(AgeUnitDR) s AgeUnit=$lg($g(^dbo.BTAgeUnitD(AgeUnitDR)),3)

s CollectDate=$lg(RPVisitNumberData,51)

s CollectTime=$lg(RPVisitNumberData,52)

s Diagnose=$lg(RPVisitNumberData,28)

s Sampleda=$zd($p($h,",",1),3)\_" "\_$zt($p($h,",",2))

s Instrument = "XN"

i $l(mi) s Instrument=$lg(^dbo.BTMIMachineParameterD(mi),22)

s Sampleno=labno //检测号

s Sampletype=""

s Feetype="" ;费别

s Srcdepno=Location ;送检科室

s Srcdocno=Doctor ;送检医生

s Userno=ReceiveUser ;检验医生(录入者)

s Patno=RegNo ;登记号 ""

s BarCode=""

s Patna=PatName ;病人姓名

s Sex=1 ;性别

i Species="男" s Sex="1" ;1:男 ，2 女

i Species ="女" s Sex="2"

s Pattype=AdmType ;病人类型

s Bedno = BedNo ;床号

s Patage=Age ;年龄

s Ageunit="" ;年龄单位

s Reqno=labno ;申请号 = 检验号

s Reqda=""

i $l(ReceiveDate) s Reqda=$e(ReceiveDate,1,4)\_"-"\_$e(ReceiveDate,5,6)\_"-"\_$e(ReceiveDate,7,8)\_" "\_$zt(ReceiveTime,2) ;送检日期 = 接收时间

s Reportda="" ;报告日期 = 初审(保存结果)时间

s Printflag="" ;打印标志

s Resultflag="" ;结果标志

s Errflag="" ;错误标志

s Diagnose = Diagnose ;诊断

s Description="" ;备注

s Reserve="" ;保留字段

s Patnamn="" ;姓名拼音码

i $l(CollectDate) s Getda=$e(CollectDate,1,4)\_"-"\_$e(CollectDate,5,6)\_"-"\_$e(CollectDate,7,8)\_" "\_$zt(CollectTime,2)

e s Getda=Reqda ;接收时间/采样日期

s Wardno="" ;病区

s RetString=""

s RetString=Sampleda\_","\_Instrument\_","\_Sampleno\_","\_Sampletype\_","\_Feetype\_","\_Srcdepno\_","\_Srcdocno\_","\_Userno\_","

s RetString=RetString\_Patno\_","\_Patna\_","\_Sex\_","\_Pattype\_","\_Bedno\_","\_Patage\_","\_Ageunit\_","\_Reqno\_","\_Reqda\_","

s RetString=RetString\_Reportda\_","\_Printflag\_","\_Resultflag\_","\_Errflag\_","\_Diagnose\_","\_Description\_","\_Reserve\_","

s RetString=RetString\_Patnamn\_","\_Getda\_","\_Wardno\_","\_BarCode

q RetString

}

// 监听做上传操作后调用改方法设置标本上传表状态

ClassMethod SaveSDFMTHD(mi, labno, epis, filename, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, Sessions, Output RowCount As %String) As %String

{

s mi=$g(mi),labno=$g(labno),epis = $g(epis),filename=$g(filename)

i '$d(^dbo.BTMIMachineParameterD(mi)) q

s ret=##Class(MI.MachineUpload).SetSendFlag(mi,labno,"S",filename)

q

}

/// w ##Class(MI.MIFX1800IA).QueryCDF(-6,"2015-09-10")

ClassMethod QueryCDF(mi, date) As %String

{

s mi=$g(mi),date=$g(date)

i '$d(^dbo.BTMIMachineParameterD(mi)) q ""

i $l(date) s date=$tr(date,"-")

e s date=$tr($zd(+$h,3),"-")

s retList=""

s cnt=0

s time="" f s time=$o(^dbo.RPMachineUploadI("IndexSendStatus",mi," S",date,time)) q:time="" d

.s MiUploadDR=$o(^dbo.RPMachineUploadI("IndexSendStatus",mi," S",date,time,""))

.s labno=$lg(^dbo.RPMachineUploadD(MiUploadDR),3)

.s datetime=date\_" "\_$zt(time,2)

.s filename=""

.s cnt=cnt+1

.i cnt>300 q

.s retList=retList\_$c(9)\_cnt\_$c(9)\_datetime\_$c(9)\_labno\_$c(9)\_labno\_$c(9)\_filename\_$c(2)

s retList=$e(retList,1,$l(retList)-1)

q retList

}

/// 保存图片Base64串到仪器

/// mi:仪器主键(\*必填)

/// epis:流水号(\*必填)

/// ImageClass:图片类别(\*必填)

/// base64Stream:图片的Base64流(\*必填)

/// fileName:文件名

/// ftpFfolderName:文件服务的文件夹名称

/// w ##Class(MI.MIFLISMonitorTest).SaveBase64ToMachineTest()

ClassMethod SaveBase64ToMachineTest()

{

s charStream=##class(%GlobalCharacterStream).%New()

d charStream.Write("")

s mi=16

s epis=999

s ret=##Class(MI.Common.MIFBase).SaveBase64ToMachine(mi,epis,"DIFF",charStream,epis\_"-DIFF.bmp","ZLZ")

i ret'=1 d Trace^MI.MIF000(mi,"错误"\_ret,"H<--M")

q ret

}

Storage Default

{

<Data name="MIFXEMSYSDefaultData">

<Value name="1">

<Value>%%CLASSNAME</Value>

</Value>

</Data>

<DataLocation>^MI.MIFXEMSYSD</DataLocation>

<DefaultData>MIFXEMSYSDefaultData</DefaultData>

<IdLocation>^MI.MIFXEMSYSD</IdLocation>

<IndexLocation>^MI.MIFXEMSYSI</IndexLocation>

<StreamLocation>^MI.MIFXEMSYSS</StreamLocation>

<Type>%Library.CacheStorage</Type>

}

}