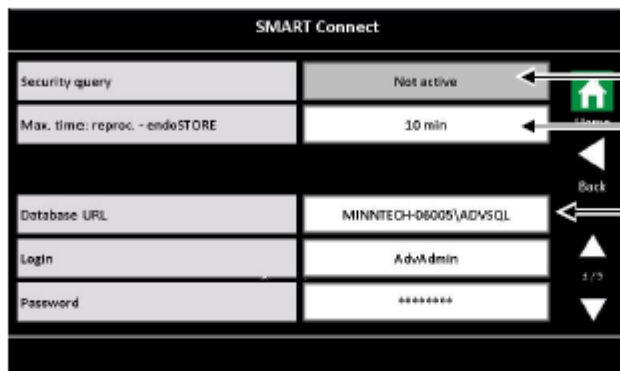## 3 SMART Connect

In connection with an Advantage® Plus 2.0 reprocessing machine, a security query is issued whenever anything is placed in storage to check the correct reprocessing. A maximum permissible time between reprocessing and storage of an endoscope can be specified for this. If the reprocessing was faulty or the maximum permissible time exceeded, a warning is issued when the endoscope is placed in storage. Furthermore, the user and endoscope data can be imported from an Advantage® Plus 2.0 processing machine per click or automatically at adjustable intervals. (see Operating Manual Section 6.7.2.2 and Section 6.8.2.2)

Login as Administrator is necessary.
Licensing for the Add-on *SMART Connect* and network connection are required.

The activated security query is used to query both the status as well as the time of the last reprocessing cycle of the scanned-in endoscope. The maximal allowable time between the correct reprocessing cycle and storage in the endoSTORE® can be adjusted at the operator's discretion.
The necessary data for the connection to the database must be entered when activating the *SMART Connect* add-on.
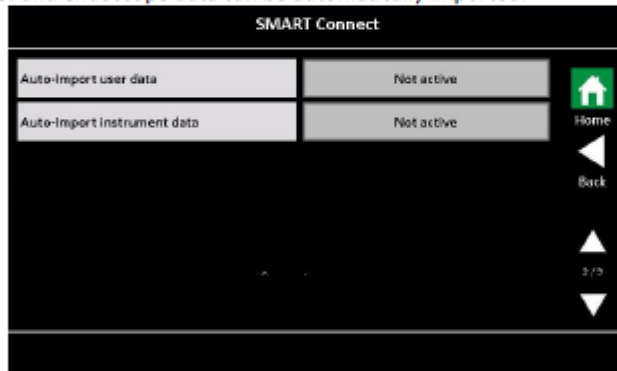

The user and endoscope data can be automatically imported.

The import times must be activated and specified.

4 HIS Interface

Login as Administrator is necessary.
Licensing for the *HIS Interface* add-on and network connection are necessary.

Upon activating the HIS interfaces, an interface is provided between the endoSTORE® and the Hospital Information System (HIS).
The following data are recorded by the storage cabinet and saved in an XML file:

1. Process data (information on loading and unloading every endoscope)
2. Master data (stored user and endoscope data)

The process data are always available to the Hospital Information System when the HIS Interface is activated. The release of the master data can be specified by activating the "Auto Export".

The release times must be activated and specified.

Both the process as well as the master data are released and stored under My Device → NandFlash → HIS. When the file is downloaded, this information is deleted.

Attention!
If the data are not downloaded at regular intervals, the memory capacity may be exceeded and result in system failure.

This directory is accessible via SMB network share \\x.x.x.x\his. Access is possible after successful authorization only.
User: his
Password: his88
This path is fixed and cannot be changed.

The files are stored in the shared directory in the following format:

        YYYYMMDD_hhmmss_n.txt
YYYY: Year:
MM: [month]

DD:	Day
hh:	hour
mm:	minute
ss:	second
n:	number

At each process of loading and unloading an endoscope a separate file is stored. In certain events, which are critical for the documentation process, a file is also stored. For example: resetting the drawers.

As long as the released files are not retrieved by the HIS, the time stamp of the file name is set continuously and the files are stored in the shared directory.

Example:

    20150605_081510_1.xml
    20150605_081828_1.xml
    20150605_082535_1.xml
    20150605_082535_2.xml

Every file corresponds to one process.
Each line of the file starts with a header information followed by defined fields (see description below).

The following header information is used:
- IN   loading information
- OUT   unloading information
- RES   a drawer was reset

4.1 Header IN

Example for a file of a loading process with Header IN:

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<HIS Header="endoSTORE® neo protocol">
  <IN Header="Loading">
    <EndoStore Caption="endoSTORE® neo:" SerialNo="Serial number" GroupID="Number"
    StorageUnitNo="Drawer No.">
      <SerialNo>Forex001</SerialNo>
      <GroupID>1</GroupID>
      <Side>Master</Side>
      <StorageUnitNo>1</StorageUnitNo>
    </EndoStore>
    <Owner Caption="Owner:" Name="Name" Department="Department" Street="Street" Number="No."
    ZIP="ZIP" City="City">
      <Name>
      </Name>
      <Department>
      </Department>
      <Street>
      </Street>
      <Number>
      </Number>
      <ZIP>
      </ZIP>
      <City>
      </City>
    </Owner>
    <Instrument Caption="Endoscope:" Barcode="Bar code" Name="Name" MaxStorageTime="Max.
    storage time (hours)">
      <Barcode>110</Barcode>
      <Name>EC-3801L</Name>
      <MaxStorageTime>72</MaxStorageTime>
    </Instrument>
    <PutIn Caption="Loading:" Time="Date/Time" UserName="User name" UserBarcode="User bar
    code">
      <Time>2015-09-17T13:19:44</Time>
      <UserName>Service</UserName>
      <UserBarcode>101</UserBarcode>
    </PutIn>
    <Processdata Caption="Process data:" Patientinfo="Patient's information"
    SecurityCheck="Security query" WdRunCycle="Cycle (reprocessing)" ActualRunCycle="Current
    cycle" ProcessResult="Process result" LastRunCycle="Last cycle" Runtime="Storage time">
      <Patientinfo>
      </Patientinfo>
      <SecurityCheck>1</SecurityCheck>
      <WdRunCycle>0</WdRunCycle>
      <ActualRunCycle>161</ActualRunCycle>
      <ProcessResult>1</ProcessResult>
      <LastRunCycle>0</LastRunCycle>
      <Runtime>0 d 00:00:00</Runtime>
    </Processdata>
  </IN>
</HIS>
```

4.2 Header OUT

Example for a file of a unloading process with Header OUT:

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<HIS Header="endoSTORE® neo protocol">
  <OUT Header="Unloading">
    <EndoStore Caption="endoSTORE® neo:" SerialNo="Serial number" GroupID="Number"
    StorageUnitNo="Drawer No.">
      <SerialNo>Forex001</SerialNo>
      <GroupID>1</GroupID>
      <Side>Master</Side>
      <StorageUnitNo>1</StorageUnitNo>
    </EndoStore>
    <Owner Caption="Owner:" Name="Name" Department="Department" Street="Street" Number="No."
    ZIP="ZIP" City="City">
      <Name>
      </Name>
      <Department>
      </Department>
      <Street>
      </Street>
      <Number>
      </Number>
      <ZIP>
      </ZIP>
      <City>
      </City>
    </Owner>
    <Instrument Caption="Endoscope:" Barcode="Bar code" Name="Name" MaxStorageTime="Max.
    storage time (hours)">
      <Barcode>110</Barcode>
      <Name>EG-3801L</Name>
      <MaxStorageTime>72</MaxStorageTime>
    </Instrument>
    <PutIn Caption="Loading:" Time="Date/Time" UserName="User name" UserBarcode="User bar
    code">
      <Time>2015-09-17T13:19:44</Time>
      <UserName>Service</UserName>
      <UserBarcode>101</UserBarcode>
    </PutIn>
    <TakeOut Caption="Unloading:" Time="Date/Time" UserName="User name" UserBarcode="User
    bar code">
      <Time>2015-09-17T13:50:10</Time>
      <UserName>Corinna Hofmann</UserName>
      <UserBarcode>150</UserBarcode>
    </TakeOut>
    <Processdata Caption="Process data:" Patientinfo="Patient's information"
    SecurityCheck="Security query" WdRunCycle="Cycle (reprocessing)" ActualRunCycle="Current
    cycle" ProcessResult="Process result" LastRunCycle="Last cycle" Runtime="Storage time">
      <Patientinfo>
      </Patientinfo>
      <SecurityCheck>1</SecurityCheck>
      <WdRunCycle>0</WdRunCycle>
      <ActualRunCycle>161</ActualRunCycle>
      <ProcessResult>0</ProcessResult>
      <LastRunCycle>0</LastRunCycle>
      <Runtime>0 d 00:30:26</Runtime>
    </Processdata>
    <Events Header="Event during the operation:" />
  </OUT>
</HIS>
```

Below several descriptions of process data captions are explained:

Description	value range	Explanation
Patient information	Text	patient barcode (optional)
SecurityCheck	0..6	0: Add-on not activated or undefined 1: no connection to washer disinfector 2: approval from washer disinfector 6: no approval from washer disinfector, cause: no correct reprocessing cycle found in specified interval
WdRunCycle	Text	reprocessing cycle number of washing disinfector
ActualRunCycle	Text	cycle number of the current endoSTORE
Process	0..3	0: drying process finished 1: unloading during drying process 2: Failure; maximum storage time exceeded or pressure malfunction during storage
LastRunCycle	Text	possible cycle number of the previous endoSTORE (with active Transfer add-on and stock transfer of an endoscope)
Runtime	xd hh:mm:ss	total storage time x = day hh= hour mm= minute ss= second