# Noah 4 Mobile App Certification Test Worksheet

**Important:** Please see the Noah 4 Mobile Certification Introduction version 1.2 for important background information (e.g. color coding)

HIMSA member companies are required to review Noah 4 Mobile Certification Introduction version 1.2 before testing to ensure all information is understood.

## 1.1 General Information

| No. | Topic Title | Topic Details | Response |
|---|---|---|---|
| 1 | **Company and App Name / Version of the App?** | The App must have a version number and be located in a location that could be reasonably discovered by a hearing care professional. | **Company Name**<br>Clearwater Clinical Ltd.<br><br>**App Name**<br>SHOEBOX Audiometry Pro<br><br>**List the version of the App** 5.2<br><br>**Where is the version number located?**<br>In the app menu: Settings>About>Version |

| No. | Topic Title | Topic Details | Response |
|---|---|---|---|
| 2 | **Native App** | Native operation means that the app interacts with special API methods that are provided by an operating system (e.g. iOS, Android, MS Windows)<br>If the App provides native operating system support for many different operating systems a separate report and test submission is required<br>If an app is supported on different operating systems it must also use a different App ID (provided by HIMSA) for each operating system. | **Is this app developed for a specific operating system?**<br>Yes<br>**If Yes, please indicate which operating system (only one) is being represented in this test** iOS<br>**If Yes, confirm that each app/OS is using a different App ID.**<br>No<br>**If Yes, If the app has requirements as to the - version(s) of the operating system that is supported please list them here iOS** iOS 10, 11 & 12 |
| 3 | **Full Test Track for Fast Track** | Inform HIMSA what type of a test procedure you are applying for, Full Test Track or Fast Track, see https://www.himsa.com/default.aspx?tabid=4484 for more details. | **Indicate Full for Fast Track**<br>Full Test Track |
| 4 | **Version of this document** | The latest version from himsa.com must be used at the time of submission to HIMSA.<br>It is possible that HIMSA may update this document while the member company is in the middle of testing internally. HIMSA does allow an exception where the previous version of this document may be used for 3 business weeks after a new version is released. | **What is the latest version of this document published by HIMSA?** V1.2<br>**What version of the document is being used for this test?** V1.2 |
| 5 | **Noah Mobile API** | Record what version of the Noah Mobile API that is being used by this App | **What version of the Noah Mobile API is being used?** V1.4 |

| No. | Topic Title | Topic Details | Response |
|---|---|---|---|
| 6 | **Noah System Version** | The latest released version (build) of Noah System must be used.<br><br>It is possible that HIMSA may update Noah System while the member company is in the middle of testing internally. HIMSA does allow an exception where the previous version of Noah may be used for 3 business weeks after a new version is released. However, if HIMSA performs any validation testing it will be completed on the latest released version. | **What is the latest version of Noah System released by HIMSA?** 4.9.2<br><br>**What version of Noah System is being used for this test?** 4.9.1 |
| 7 | **Production Environment used for testing** | HIMSA provides an external test environment for member company developers to develop and test their apps.<br><br>This external test environment cannot be used for this test. The production environment must be used. | **What test environment was used for this test?** Production |
| 8 | **Web Browser Based App?** | If the App is designed to run from within a Web browser please indicate this as this information impacts a number of items in this document | **Is the App Web browser based?**<br>No<br><br>**If Yes, please indicate if there are any requirements to the web browser that is supported by the App?**<br>_____..... |
| 9 | **Language support** | Which Languages are supported by your App? | **List what languages are supported**<br>English, French, Spanish |

| No. | Topic Title | Topic Details | Response |
|---|---|---|---|
| 10 | **Supported Hardware for the App** | If the App developer has any special notes on supported hardware devices for the App (e.g. type/brand of tablet] it can be noted here | **Note any supported hardware requirements if necessary.**<br>Supported on any of the iPad models listed below:<br>iPad (6th gen) A1893<br>iPad 9.7" (5th gen) A1822, A1823<br>iPad Air 2 A1566, A1567<br>iPad Air A1474, A1475, A1476 |
| 11 | **Limitations when hardware is not present** | HIMSA is aware that sometimes software may react (e.g. make features available) only when hardware (e.g. an Audiometer) is actually connected to the computer.<br><br>HIMSA prefers that NOAH related scenario interactions can be simulated without the need for hardware (e.g. hearing instruments or Audiometers) being connected whenever possible.<br><br>In cases where App functionality is only present when hardware is connected the member company is required to provide HIMSA with sample data records that represent data created by the hardware dependent functionality. | **Are there any hardware limitations?**<br>Yes<br><br>**If Yes, explain and also provide a sample record to HIMSA** The hardware listed above is required in order to generate the audiogram data produced by the SHOEBOX Audiometer.<br><br>Sample patient and audiogram records are provided in the files generated, as per section 2.28.<br><br>SHOEBOX Pro hardware and transducers have been provided to HIMSA for certification testing as well, and will be returned to Clearwater Clinical at the completion of the certification. |

| No. | Topic Title | Topic Details | Response |
|---|---|---|---|
| 12 | **Creation of measurement data formatted via a HIMSA data standard**<br><br>**Please see Appendix A.** | If an App supports saving measurements a patient record (exported .nhax file) with all measurement types that the App supports must be submitted along with a document describing exactly what measurement conditions were used for each measurement.<br><br>This test record will be used by HIMSA to test how well other certified modules and Apps are able to read supported data. | **Does the App create measurement data formatted via a HIMSA measurement data standard?**<br><br>Yes<br><br>**If Yes, explain and also provide a sample record to HIMSA** The SHOEBOX audiometer generates the audiogram which is then pushed to Noah. Sample audiogram measurements are found in the file, as per section 2.28. |
| 13 | **Public Listing** | If an App wishes to be certified then the App developer must agree to have the App + App version number listed by HIMSA's web site as certified.<br><br>It is O.K. for the App developer to decline public listing but the developer cannot be listed as certified, claim certification, or release it outside of development.<br><br>See https://www.himsa.com/default.aspx?tabid=4540 | **If the certification procedure is passed and approved by HIMSA can the App be listed publicly?**<br><br>Yes<br><br>**If No, confirm agreement that the App will not be released(write agreed)** _____ |

| No. | Topic Title | Topic Details | Response |
|---|---|---|---|
| 14 | **Commercial Availability** | Indicate if the App is available commercially. If not yet commercially available then the App developer must indicate to HIMSA when the app will be commercially available and if that date changes the app developer has the responsibility to inform HIMSA.<br><br>Apps will technically not be commercially available during a certification as of the HIMSA requirement that all Apps must first be certified. If the App developer answers yes it is then assumed that it will be commercially available within 2 days.<br><br>https://www.himsa.com/default.aspx?tabid=4540 | **Is the app commercially available?**<br><br>Yes<br><br>If No, specify to HIMSA what future data that it will be commercially available (unknown is not acceptable) _____ |
| | **How is the app obtained** | If the App is commercially available then it must be available to other HIMSA member companies for testing and troubleshooting purposes. The following responses can be used:<br><br>• The App is available via an App Store (please specify)<br><br>• The App is a browser based solution. In this case email the web address and needed credentials separately to your HIMSA certification testing contact<br><br>The App is an program that is installed (e.g. MS Windows install package) | **How is the App obtained by another HIMSA member company? Please indicate contact and method.**<br><br>The app is available via the Apple app store. Please contact info@shoebox.md for details. |

## 1.2 Security Considerations

This section checks for the compliance and support the security related topics as defined in the Noah Mobile API, http://www.himsa.com/default.aspx?tabid=4445 The complete SDK text must be read for a full explanation.

| No. | Topic | |
|---|---|---|
| 1. | **Computing Device Security Tools**<br><br>HIMSA and its member companies need to take responsibility to educate users on the importance of security for mobile devices (and PC laptops). All HCP's need to be encouraged to setup the lock screen functionality as doing so will provide additional security. For example, setting up the lock screen in iOS and Android enables drive/storage encryption.<br><br>Please see https://www.himsa.com/Default.aspx?tabid=4445 for more details | Provide a written description (attach documentation or specific web link) of your companies education materials for this topic.<br><br>Please refer to the SHOEBOX Noah Integration Guide (attached). |
| 2. | **Web Browser Autocomplete Considerations**<br><br>HIMSA and its member companies need to take responsibility to educate users on the importance of making the correct choice when being prompted to save a user name and password in conjunction with the authentication process.<br><br>Please see https://www.himsa.com/Default.aspx?tabid=4445 for more details | Provide a written description (attach documentation or specific web link) of your companies education materials for this topic.<br>_Not applicable for SHOEBOX iOS based solution. _____..... |

## 1.3 Data Use and Access

This section checks for compliance and support of the security related topics as defined in the Noah Mobile API, https://www.himsa.com/default.aspx?tabid=4446 The complete SDK text must be read for a full explanation.

| No. | Topic | How this App addresses the topic |
|---|---|---|

| No. | Topic | How this App addresses the topic |
|---|---|---|
| 1 | **Does the App read or write data to patient records not presently selected by the HCP?**<br><br>With user interactive apps the HCP is, by default, assumed to be in control of informing the App to read or write data to a single or group of patients.<br><br>Example of allowed access:<br><br>A. Using the GUI provided by the App the HCP selects a patient to work with. The App then reads data (e.g. latest audiogram), conducts work and saves an action back to Noah.<br>B. The App could also provide the ability to select many patients (e.g. 10), in this case the HCP has given permission for the App to read/write data with these selected patients.<br>C. It would also be acceptable for the App to offer to perform a simple query (e.g. find all patients that have at least one action created by the app) , show a list of those patients, and then read or write data.<br><br>Example in improper access:<br><br>The App cannot read or write data for any patient without the HCP being aware. For example, based off C above, it is not allowed for the App to perform this simple query in the background, without gaining the HCP consent first. | **Does the App read or write data to patient records not presently selected by the HCP?** Yes<br><br>**If Yes, explain in what situations this occurs**<br><br>In the case where the HCP selects a patient to work with and they are not connected to the internet, they are still able to run an audiometric test using SHOEBOX, resulting in an audiogram for that patient. The patient's audiogram will not be written to Noah until they reconnect to the internet and re-authenticate with Noah. At that time, the audiogram records will sync and an action will be created in Noah for all audiograms that were created while offline.<br><br>This sync process is made visible to the HCP with a visible sync icon on the SHOEBOX app display and any patients where their demographic data has been retrieved from Noah are clearly indicated with a "Noah" label beside them on the GUI. |

| No. | Topic | How this App addresses the topic |
|---|---|---|
| 2 | **Explicit notification?**<br><br>Please see https://www.himsa.com/Default.aspx?tabid=4446 for more details | **Does the App copy data and provide an explicit notification?**<br>No<br><br>If Yes, document what data is copied and what it is used for. |
| 3 | **Implicit notification of data copy?**<br><br>Please see https://www.himsa.com/Default.aspx?tabid=4446 for more details | **Does the App copy data which falls under the category of Implicit notification of data copy, and the copy is reasonably obvious to the HCP?**<br>Yes<br><br>**If Yes – document how the data copy is implicit**<br>The patient demographic data that is pulled from Noah is displayed in the patient demographic fields in SHOEBOX for the selected patient. In addition, any patients where data has been synchronized are clearly indicated with a “Noah” label. |

| No. | Topic | How this App addresses the topic |
|---|---|---|
| 4 | **Does the App provide a formal statement on the use of data obtained through Noah?** | **Does the App provide a formal statement on the use of data obtained through Noah?**<br>Yes<br><br>**If Yes – Provide a written description (or attach documentation or web link) of your companies materials for this topic.**<br>The statement regarding the use of data obtained through Noah is included in the SHOEBOX Noah Integration Guide (included with the certification documents). This also refers to our standard terms of service, which can be found here. |
| 5 | **How does the App handle Noah data after the use of the data is completed?** | What does the App do with the Noah related data once a patient or group of patient is done being worked with? Write an explanation.<br><br>The patient demographic data is stored in the secure SHOEBOX data management cloud, until explicitly deleted by the user. This is consistent with the handling of all patient demographic data in SHOEBOX. |

## 1.4 Test Report

I hereby agree that I have correctly answered all questions in the above section 1 and completed all functional tests and any additional required information in section 2.

HIMSA requires that this report be signed by a Manager that is knowledgeable in how the App interacts with Noah (e.g. use of data and security). Software quality assurance and development employees are asked to make arrangements with a manager to review results and sign.

HIMSA will accept this test when all questions have been answered. Many tests are optional, in theses case you are still required to mark or indicate that you do not support the feature so that it is clear to HIMSA any other company reading the report

Name: _Lynn Innes_____

Title: ___Director of Product Management_____

Signature: _ Lynn Innes _____ Date: __Dec 17, 2018_____

(It is acceptable to type in the name and date if the report is being sent electronically)

**Test Software, this report, and other related information must be received by HIMSA by 8:30 a.m. on the first day of a full test track test.**

# 2. Functional Test Steps

## 2.1 Precondition Test Setup

These are procedural steps used to set the system up for testing.

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Clean Installation of the latest Version of Noah 4.<br><br>The App under test was never registered with this installation of Noah. | There is a clean installation of the latest released version of Noah 4 System. | Pass |
| 2 | Create a login in Noah 4 System with the name “XYZ.” Assign user level “Administrator” rights to “XYZ.” | The”XYZ” administrator account has been created. “XYZ” has “Administrator” user level rights in Noah 4 System. | Pass |
| 3 | Create a login in Noah 4 System with the name “CBA.” Assign this login “Level 2” User Level rights to “CBA.” | The “CBA” Noah 4 System user account with User Level “Level 2” rights has been created. | Pass |
| 4 | Enable Noah Mobile in Noah 4 System with either “Enable Noah Mobile on your Network” or “Enable Noah Mobile over the Internet” selected. Chose the one that the App under test supports.<br><br>If the App under test supports both then check both options. | Noah Mobile has been enabled. | Pass |
| 5 | Verify “Allow Edit Actions” is checked within | Editing of actions within Noah 4 System is allowed. | Pass |

| | | | |
|---|---|---|---|
| | Noah System.<br><br>Setup>Administration>Noah Mobile Configuration | To verify Noah 4 System is setup to allow the editing of actions go to Setup>Administration>Noah Server Setup and make sure there is a check mark by “Allow Edit Actions.” | |
| 6 | Create a patient record within Noah 4 System called “John Doe” | | Pass |
| 7 | Create a patient record within Noah 4 System called “Jane Johnson”<br>*Note: This patient record will be used for testing the editing of actions created on a previous calendar day. This patient has to be created in Noah with data created by the App under test at least one full calendar day before it will be used. If this feature is not supported by the App under test skip this step and the next step. | The “Jane Johnson” patient record has been created in Noah 4 System. | Pass |
| 8 | Create data with the App under test for “Jane Johnson” save this data to Noah System. | The App under test has created data and saved data to Noah for “Jane Johnson.” | Pass |
| 9 | ***If Noah Mobile API Version 1.1 or later was used to develop the App under test the following step needs to be performed. If a version prior to Noah Mobile API Version 1.1 was used this step can be skipped.***<br><br>**1.)Randomly Pick one of the “Field Names” from the list below. Then proceed to number 2.** | | Pass |

| | | | |
|---|---|---|---|
| | a.)Middle Name<br>b.)Gender<br>c.)Birth Date<br>d.)Title<br>e.)Address 1<br>f.)Address 2<br>g.)Address 3<br>h.)Province or State<br>i.)Zip<br>j.)City<br>k.)Country<br>l.)Home Phone<br>m.)Work Phone<br>n.)Mobile Phone<br>o.) email<br>p.) Social Security Number<br>q.)Physician<br>r.)Referral<br>s.)Insurance 1<br>t.)Insurance 2<br>u.)Other 1 | | |

| | | | |
|---|---|---|---|
| | 2.1.1.1.1.1.1.1.1 v.)Other 2<br><br>2.) In Noah System 4 navigate to Setup>Administration>Patient Data Setup. Check the box next for the "Field Name" you randomly picked from the list above to make it "Required" in Noah 4 System. If the "Active box is not checked for the randomly picked "Field Name" you have selected check it. Both "Active" and "Required" are now checked for randomly selected "Field Name." Select OK to save the change. | | |

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## 2.2 App Discovers Noah On A LAN

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | **App discovers Noah on a LAN**<br><br>The App may be able to discover the Noah Server on a LAN Connection. The user will need to be able to select/confirm that the app, in the next steps, will connect to the correct server.<br><br>Precondition: the Noah installation is setup to allow a LAN connection. | **Does the App support functioning over a LAN connection?**<br>No<br><br>If yes, the below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Use the Discovery feature in the App under test to find Noah 4 System on the LAN. | The App under test will be able to find the Noah 4 System Server by the alias name. The Noah 4 Login Screen appears.<br><br>***Note: Do not log the App in to Noah 4 System.** | Choose an item. |

## 2.3 App Discovers Noah Over The Cloud

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | **App Connects to Noah 4 System via the Cloud and the user logs into Noah 4 System**<br><br>The App may be able to discover the Noah Server on a Cloud Connection. The user will need to be able to select/confirm that the app, in the next steps, will connect to the correct server.<br><br>Precondition: the Noah installation is setup to allow a Cloud connection. | **Does the App support functioning on a Cloud connection?**<br>Yes<br><br>If yes, the below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Use the Discovery feature in the App under test to find Noah 4 System on the Cloud. | The App under test will be able to find the Noah 4 System Server by the Alias. The Noah 4 Login Screen appears.<br><br>***Note: Do not log the App in to Noah 4 System.** | Pass |

**Note: From this point on the App under test can be connected via the Cloud or LAN unless otherwise specified.**

## 2.4 User Rights

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | **Noah user does not have sufficient privileges to register the App under test with Noah 4 System**<br><br>The app must be able to handle the situation where a Noah 4 System user account does not have sufficient privileges.(e.g. Admin) to register the app. The user must be informed that they do not have sufficient privileges. | The below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | The user logs on to Noah 4 System from within the App under test using the Noah 4 System user "CBA" account which has level 2 rights. | The user attempts to log on to Noah 4 System. The App under test will display a message that it could not register with Noah due to insufficient Noah 4 System user rights. | Pass |

## 2.5 Registering With Noah and Connecting the App to Noah

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | **App registers with Noah 4 System**<br><br>The app must be able to register with Noah 4 System<br><br>Precondition: The Noah installation is clean from the perspective that this app does not show up in the Noah Mobile setup screen. | The below test steps must be completed |

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | **App Connects to Noah 4 System and the user logs into Noah 4 System on a LAN or on the Cloud.**<br><br>The app must be able to gain access to Noah by having an interactive user log into Noah. | **Does the App connect?**<br>Yes<br><br>If yes, the below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | The user logs on to Noah 4 System through the App under test using the Noah 4 System user “XYZ” account which has administrator rights. | The user is logged on to Noah 4 System through the App under test. | Pass |
| 2 | Register the App under test with Noah 4 System. | The App under test registers with Noah 4 System. | Pass |

## 2.6 Logging On and Logging Off of Noah 4 System from within the App

| No. | Test subject | How this App addresses the topic |
|---|---|---|

| | | |
|---|---|---|
| | Logging on and logging off of Noah 4 System via App<br><br>The App must provide a GUI item that will make it easy for the user to log off Noah. Once this has been selected the App is required to destroy the token that was provided to the app at login – the token is the authentication to Noah access. The GUI item needs to be available at all times.<br><br>At log off any Noah patient related data that may have been stored in the app / or on the mobile device is recommended by HIMSA to be completely destroyed. HIMSA requires that this be the case unless the App developer clearly is offering a feature where the data will reside for a longer period of time than the current working session (see section "Planned Times With No Internet Connection" for more details).<br><br>If the App developer is going to keep the Noah data after log off then the developer will need to document in this test document:<br>• How will the data remain safe during log off<br>• Will the data be transferred to another system<br>• How will app track what users have potentially accessed the data while not connected to Noah | **List where the log off GUI is located** _Select the "Connection Status Icon" at the top right hand corner. A window is displayed whereby the user can select to "Disconnect".<br><br>Does the App destroy all Noah related data after log off?<br>No<br><br>If No, please provide documentation to the below questions:<br>• How will the data remain safe during log off? SHOEBOX protects the data when logged off with an enforced passcode, created by the user. To use Noah features, the SHOEBOX passcode must be enabled, and the user will be prompted to enter the passcode when they login, as well as after a period of inactivity.<br>• Will the data be transferred to another system? Yes, patient demographics and audiometric data are synced to the SHOEBOX Data Management cloud, which transmits all data over HTTPS and encrypts all data at rest. This data can be accessed by customers by logging in to the web portal, with their username & strong password. All access to this data leaves an audit trail in our database which can be accessed by Clearwater Clinical if necessary by contacting support.<br>• How will app track what users have potentially accessed the data while not connected to Noah? SHOEBOX only supports one user to be logged in at a time. After login, the app and all of its data on the device are locked to that user.. In order for another user to use the app, they must delete and re-install SHOEBOX, which removes all SHOEBOX and Noah data from the device.<br><br>The below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Logoff of Noah 4 System from within the App under test. | The user is logged off of Noah 4 System. The token is destroyed. | Pass |
| 2 | Log in to Noah 4 System from within the App under test using the Noah 4 System “CBA” login. | The user is logged on to Noah 4 System and the App under test is connected to Noah 4 System. | Pass |

## 2.7 User Name GUI

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | **Status of this test subject: HIMSA has not yet implemented this feature but does plan to do so in the future.**<br><br>App provides GUI indicating the Noah user name<br><br>The app is required to provide a visual method that clearly and easily shows Noah user account is currently being used. | **There is nothing for the App to do at this time. When the feature is implemented the App will be asked to document where the user name is shown in the App GUI** |

## 2.8 Closing the App

| No. | Test subject | How this App addresses the topic |
|---|---|---|

| | | |
|---|---|---|
| | **App is closed**<br>If the App is closed either by the user or by the operating system the app must consider this a log off<br><br>App technology notes:<br>• Web Browser based Apps / browser technology creates a situation where it is not realistic to perform this test. If the user navigates away from the web page (browse back, open new URL, close browser tab/window) it is not standard that the browser page would for a log off. Web Browser Apps are required to select N/A Browser App for any test steps in this section. | |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Close the App under test. | The App closes. The token is destroyed if the user was logged on when the App closed. | Pass |
| 2 | Open the App under test and attempt to search for the “Jane Johnson” patient record within the App under test. | The “Jane Johnson” patient record is not found. The App should notify the user that they need to log in again. | Pass |

## 2.9 Unregistering the App

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | **App unregisters with Noah**<br><br>The app can offer the user the ability to unregister with Noah in the event the user does not wish the app to be interacting with Noah. As the registration is per Noah Server and not per Noah workstation an App might be registered once but that registration is good for the app running on many devices in the office. | **Does the App support unregistering with Noah?**<br>No<br><br>If yes, the below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Login to Noah with the user “XYZ” account which has administrator rights. | You are logged on to Noah 4 System. | Choose an item. |
| 2 | Unregister the App under test. | The App under test unregisters with Noah 4 System. | Choose an item. |
| 3 | Verify the App has unregistered by checking within Noah 4 System.<br>Setup>Administration>Noah Mobile Configuration. | The App under test does not appear in the list of registered apps. | Choose an item. |
| 4 | Register the App under Test with Noah 4 System. | The App under test is registered with Noah 4 System. | Choose an item. |
| 5 | Log off the App under test. | The App is logged off. | Choose an item. |

## 2.10 Searching for Patients

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | Search for patients<br><br>The app provides the user with the ability to search and select the patient record that the user wishes to work with. | The below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Login to Noah 4 System within the App under test with the Noah user “CBA” which has level 2 rights. | The User is logged on to Noah 4 System within the App is logged on. | Pass |
| 2 | Search for the “John Doe” patient record. | The “John Doe” patient record was found. | Pass |

## 2.11 Add a new Patient

| No. | Test subject | How this App addresses the topic |
|---|---|---|

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|---|---|---|
| | Add a new patient record to Noah<br><br>If the app wishes, it can offer the ability to add patients to Noah. The app will be assigned different levels of access to demographic data by the HCP. The app can only add patient demographic data to Noah that it has access to read. The app cannot give the HCP the ability to collect additional demographic data and then give the impression that it can add it to Noah. The app is responsible for reading the permissions to determine what demographic fields are available to the app. | Does the App support adding new patients to Noah?<br>No<br><br>If yes, the below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Create a patient called “Jane Smith” from within the App under test. | The “Jane Smith” patient record has been added to Noah 4 System and can be found in the Noah 4 System patient list. | Choose an item. |

## 2.12 App Handles Mandatory Demographics

| No. | Test subject | How this App addresses the topic |
|---|---|---|

| | | |
|---|---|---|
| | App handles demographic fields that are marked as mandatory<br><br>If the HCP has set a field to be mandatory and the app has the option to add this data then the App must provide this data in order to add the patient. The app has the responsibility to ask Noah what fields are mandatory | Version 1.0 of the Noah Mobile API is not implemented to the point but in the future it will be. What is possible today is to test the general idea. Today, This can be tested by ensuring that both a first and last name are entered. |

## Noah Mobile API v. 1

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Create a patient with only a first name of "Jack" from within the App under test. | The App under test returns a message stating that not all mandatory fields in Noah 4 System have been entered.<br><br>The patient is not created. | Choose an item. |

## Noah Mobile API v. 1.1

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Create a patient with the name “Jack Johnson” from within the App under test. Leave the randomly selected Noah System “Field Name” you picked above in the Pre-Condition steps blank for “Jack Johnson.” | The App under test returns a message stating that not all mandatory fields required by Noah 4 System have been entered.<br><br>The patient is not created. | Choose an item. |

## 2.13 Updating Patient Demographics

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | Update a patient record’s demographics<br><br>If the App supports updating demographic data then the app will be tested to ensure this is done correctly | Does the App support updating patient demographic data?<br>No<br><br>If yes, the below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Search for the patient called “John Doe” from within the App under test. | “John Doe” is found and is the active patient within the App under test. | Choose an item. |
| 2 | Change “John Doe’s” last name to “Smith” from within the App under test. | The patient record has been updated to “John Smith” and the changed name can be seen in Noah 4 System.<br><br>Note: If Noah 4 System was open during these test steps you may need to close it and reopen Noah System to see the updated patient name. | Choose an item. |

## 2.14 Saving an Action

| No. | Test subject | How this App addresses the topic |
|---|---|---|

| | | |
|---|---|---|
| | Action Creation<br><br>Most apps create some sort of data to be stored in Noah. The app will need to create all of the different types of data that are supported. For data that is publicly formatted (e.g. audiograms) testing will be performed to see how other applications reading this data use it.<br><br>Precondition – The app creates data to be saved in Noah. Almost all apps create data but if the app only views data then this step can be skipped. | Does the App support creating action data?<br>Yes<br><br>If yes, the below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | List all Noah defined data types that the App under test can create. | List all Noah defined data types that the App under test stores within Noah 4 System..<br><br>For example if you have a fitting App:<br>1.)Hearing Selection –Right<br>2.)Hearing Selection-Left<br>3.)Fitting-Right<br>4.)Fitting-Left<br><br>For example if you have a measurement App:<br>1.)Audiometric<br>2.)Real Ear Measurement<br>3.)Impendence | 1.) Audiometric format 500 |
| 2 | Create all datatypes supported by the App under test for the “John Smith” patient record. | All data types that are supported by the App under test have been created. | Pass |
| 3 | Save the data to Noah 4 System. | The data has been saved to Noah 4 System.<br><br>Write down some of the features or settings you made within the App under test while creating data to be saved to Noah 4 System. | Pass |

| | | | |
|---|---|---|---|
| | | **SHOEBOX Features/Settings: Data was created using pure tone. Testing was performed with both DD450 air transducers and the B-81bone oscillator. Testing was performed with and without masking.** | |

## 2.15 Actions Are Saved to the Correct Session

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | Session History<br><br>When an app saves data it will be expected to set any applicable referenced actions and action groups so that the session history is as expected in the Noah 4 System session browser.<br><br>Please see the Noah 4 Module Developers Guide > Action > ActionGroup and ReferencedActions property information for proper use | Does the App support creating action data?<br>Yes<br><br>If yes, the below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | In Noah 4 System actions can be seen in the “John Smith” patient record’s session list. | All data saved to Noah 4 System can been seen as action(s), referenced actions, and/or action groups in the “John Smith” patient record’s session list. | Pass<br><br>Document what actions are saved and how they may be referenced to other Noah actions (using the API feature to set referenced actions)<br><br>Audiograms are the only actions currently created in Noah. |

## 2.16 Devices Are Displayed in the Noah System “Devices” GUI

| No. | Test subject | How this App addresses the topic |
|---|---|---|

| | | |
|---|---|---|
| | The app selects and/or fits hearing instruments. The app under test saves the “Make”, “Model” and “Serial Number” of the devices selected as publicly formatted data so that Noah System will display the information in the “Devices” GUI component.<br>Failure to store this required information is considered a critical failure due to the fact that to the end-user it appears to be data loss. | Does the App select and/or fit hearing instruments?<br>No<br><br>If Yes, the below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Fitting Apps verify that the devices appear in the Noah 4 System “Devices” GUI for “John Smith.”<br><br>Measurement App or an “Other” App skip this step. | The device make, model and serial number are present in the Noah 4 System “Devices” GUI. | Choose an item. |

## 2.17 Recalling Saved Actions

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | Recalling Actions<br><br>Apps that create data should also be able to recall and display or utilize data the app created. | Does the App support recalling action data?<br>No<br><br>If yes, the below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Search for the patient “Jane Johnson” from within the App under test. | “Jane Johnson” is found and is the active patient within the App under test. | Choose an item. |
| 2 | Now search for the patient record “John Smith” within the App under test. | “John Smith” is found and is the active patient within the App under test. Data saved to Noah 4 System for “John Smith” has been retrieved by the App under test. How the data is selected could be performed in many different ways depending on how the App has been developed.<br><br>Use the notes of the settings or features saved to Noah 4 System from above to verify the data created by the App under test was saved correctly. | Choose an item.<br><br>If marked pass list the method in which the saved data that is selected is to be shown _____... |

## 2.18 Editing Actions

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | Editing Actions within the current calendar day<br><br>Apps do have the possibility to edit actions created by the App. Apps are not allowed by Noah to edit actions created by other Apps or other Noah compatible software. If supported, the App will be tested to ensure that it edit the desired actions correctly | Does the App support editing actions?<br>Yes<br><br>If yes, the below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | In the “John Smith” patient record that is selected by the App under test make changes to the data. | The data is updated. | Pass |
| 2 | Save the updated data to Noah 4 System. | The updated data is saved to Noah 4 System. | Pass |
| 3 | Search for the patient “Jane Johnson” from within the App under test. | “Jane Johnson” is found and is the active patient within the App under test. | Pass |
| 4 | Go back to the “John Smith” patient record within the App under test and open the updated action to verify the changes were saved correctly. | The updated data for “John Smith” was saved correctly. | Pass |

## 2.19 Monitoring for Inactivity

| No. | Test subject | How this App addresses the topic |
|---|---|---|

| | | |
|---|---|---|
| | **Monitoring for Inactivity**<br><br>All apps are responsible to monitor for an inactive session. If the user is deemed to be inactive then the app will be responsible for logging the user off of Noah. Inactive means that the user has not performed actions within a number of minutes such as:<br><br>• Moved their mouse or touched the screen<br>• Entered data<br><br>The default maximum number of minutes of inactivity is defined by HIMSA as 20 minutes<br><br>For more details see http://www.himsa.com/default.aspx?tabid=4445 | Does the App set the default to be lower than HIMSA's default?<br><br>No<br><br>Does the App provide a pre-emptive message to the user to stay logged on in the event that the defined period of inactivity has been reached<br><br>No<br><br>Does the app provide the user with the ability to override the default period of inactivity, allowing the user stay logged on to Noah as long as possible?<br><br>No |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | If the App under test does not use the default maximum number of minutes of inactivity as defined my HIMSA, 20 minutes, please note the time out period for the App under test. | What is the time out period of the App under test? | **20 minutes of inactivity prior to logging the user out of Noah** |
| 2 | The App under test has “John Smith” as the active patient record. | “John Smith” is selected by the App under test. | Pass |
| 3 | If the App under test has a feature in which the user is provided with the ability to change the default time before the App under test times out due to inactivity change this time to 5 minutes.<br><br>If the app under test does not support this optional feature this skip this step. | The time before the App under test times out due to inactivity has been changed to 5 minutes. | Choose an item. |
| 4 | Do nothing until the App under test times out due to inactivity. | The App under test notifies the end user that the App has timed out do to inactivity. | Pass |
| 5 | Log on to Noah 4 System within the App under test with the Noah 4 System “CBA” login. | The user is logged on to Noah 4 System from within the App under test. | Pass |

## 2.20 Updating Actions from a Previous Session

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | If the app supports updating action data created before the current calendar day this will be tested well as in a situation where editing of old actions is turned off. | Does the App support updating action data created before the current calendar day?<br>Yes<br><br>If yes, the below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Search for and select the “Jane Johnson” patient record within the App under test. | “Jane Johnson” is the active patient within the App under test. | Pass |
| 2 | Edit some of the data created from the previous calendar day. | The data from a previous calendar day has been updated. | Pass |
| 3 | The updated data is saved to Noah 4 System. | The updated data has been saved to Noah 4 System. | Pass |
| 4 | Close the App under test. | The App closes. | Pass |
| 5 | Open the App under test and connect to Noah 4 System. | The App under test is open and connected to Noah 4 System. | Pass |
| 6 | Search for the “Jane Johnson” patient record within the App under test. | “Jane Johnson” is the active patient within the App under test. | Pass |
| 7 | Verify the changes you saved when updating this action were saved correctly | The data was saved correctly. | Pass |
| 8 | Logoff of the App under test and close it. | The App under test is logged off and closed. | Pass |

## 2.21 Editing Of the Same Action by Two Users

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | Same action edited<br><br>As there is no patient or action locking within the Noah mobile API it is possible that an action is edited by two different instances of the same app at the same time. The first app to save will be accepted but the second app will be informed by Noah when saving that the action has been updated elsewhere. The app will need to be prepared to deal with this situation as it seems fit.<br><br>The app developer will be required to document how the app will deal with this situation. For example the app could choose to stop and let the user reload the new data or it could just automatically choose to create a new action. Or, if supported, the app could take the responsibility to merge the data so that both changes are incorporated. | Does the App support editing actions?<br>No<br><br>If yes, the below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | There are two separate installations of the App under test installed.<br>From this point on these installationswill be referred to asInstallation A and Installation B | There are two different Installations of the App under test.. | Choose an item. |
| 2 | Connect the App under test in InstallationA and log in to Noah 4 System with the Noah 4 System “CBA” logon. Accept the token. | The App under test is connected to Noah 4 System oin Installation A and the user is logged on to Noah 4 System with user login “CBA.” Access has been granted too. | Choose an item. |
| 3 | With the App under test in Installation A search for and select the “John Smith” Noah 4 System patient record. | The “John Smith” patient record has been selected by the App under test in Installation A. | Choose an item. |
| 4 | Connect the App under test in Installation B and log in to Noah 4 System with the Noah 4 System “CBA” logon. Accept the token. | The App under test is connected to Noah 4 System in Installation B and the user is logged on to Noah 4 System with user login “CBA.” Access has been granted. | Choose an item. |
| 5 | With the App under test in Installation B search for and select the “John Smith” Noah 4 System patient record.<br>*Note: At this time the action(s) created by the App under test for the “John Smith” patient record is (are) loaded in both Installation A and Installation B. Both installations have the same action(s) open. | The “John Smith” patient record has been selected by the App under test in Installation B. | Choose an item. |
| 6 | With the App under test in Installation A edit and save the updated action for the “John Smith” patient record. | The App under test saves the updated action for “John Smith” from Installation A to Noah 4 System. | Choose an item. |
| 7 | With the App under test in Installation B now attempt to edit and save an updated action for the “John Smith” patient record. | A message is displayed by the App under test in Installation B that says the action has been updated or changed because the action loaded into Installation B is older than the action in Noah | Choose an item. |

| | | | |
|---|---|---|---|
| | | 4 System. | |
| 8 | If the App under test supports the updating and saving of the data that was created by the App under test in Installation B then save the updated data. | The app under test saves the data created by the app under test in Installation B. | Choose an item. |

## 2.22 Read Standard Audiogram Formats

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | All Noah audiogram data standards for the types of audiometric data supported by the App under test are read and interpreted correctly. | Does the App support reading and displaying of audiometric data?<br>No<br><br>If yes, the below test steps must be completed |

Note: Go to himsa.com and verify that you have downloaded the most current audiometric test data nhax files and the test reports that correspond for each one of the data test records. If the audiometric data file has not been updated since the last time you tested your App with it and HIMSA has your previous test report for this data record, then you may omit testing against this data record.

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| | | | |
| 1 | The tester has downloaded all audiometric test data records, TestRecords.zip, by selecting the All Test Records link on~~from~~ http://www.himsa.com/default.aspx?tabid=1996 The test reports for each data record are included with the same download.<br><br>*Note: If no new audiometric sample data records have been added since the last time the App under test was in for certification testing then this section can be skipped. If there have been new sample audiometric records added since the last time the App under test was in for certification testing only the new data records need to be tested by you. | The audiometric test patient zipped file has been downloaded. | Choose an item. |
| 2 | Import the All_Records.nhax file into Noah System. | All the audiometric test patient records have been imported into Noah 4 System. | Choose an item. |
| 3 | Audiogram Data Standard Support Matrix document, part of the TestRecords.zip, has been filled out by an appropriate member company employee | Before this test begins HIMSA advises that this test report be filled out first to ensure the tester is aware of the App under test's support for different types of Audiometric data | Choose an item. |
| 4 | Open the App under test, login and grant access to Noah 4 System. | The App under test opens and logs in to Noah 4 System. | Choose an item. |
| 5 | Select one of the patient records that was imported into Noah that contains actions from an audiometric measurement manufacturer. | The session list appears. | Choose an item. |
| | The App under test displays and/or uses the | The audiograms are being displayed and or used | 1.) |

| | | | |
|---|---|---|---|
| | data correctly. | correctly.<br><br>Please note the sample patient record name and if the App under test used the audiometric data correctly.<br><br>Please see the example below of how the test patient record should be listed and marked pass or fail.<br><br>1.) –Pass<br>2.) -Fail | 2.)<br>3.)<br>4.)<br>5.)<br>6.)<br>7.)<br>8.)<br>9.)<br>10.)<br>11.)<br>12.)<br>13.)<br>14.)<br>15.)<br>16.)<br>17.)<br>18.)<br>19.)<br>20.)<br>21.)<br>22.) |
| 6 | Perform a simulation to create data and save the data.<br><br>Note: If it is not possible to create simulated data with the App under test, the hardware | The App under test will be able to save data against the audiometric test patient recordproperly. | Choose an item. |

| | | | |
|---|---|---|---|
| | must be connected and a real measurement must be performed.<br>If the App under test does not support the creation of data this step and the next can be skipped. | | |
| 7 | Look at the Noah 4 System session list for the patient record and verify a new action(s) have been created by the App under test. | There is newly created action(s) in the Noah 4 System session list. | Choose an item. |
| 8 | Fill out the test report for the audiometric test patient data record that was just tested. | The report is filled out and documents what the App under test uses and can show from the audiometric test data. | Choose an item. |
| 9 | Repeat the previous 6 steps for the remaining imported audiometric test patient data test records. | Record the name of the test record used. | Choose an item. |

## 2.23 Network Malfunction

| No. | Test subject | How this App addresses the topic |
|---|---|---|

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|---|---|---|
| | App Prepared for network malfunction / network issues<br><br>Please see the “States of Data” section at https://www.himsa.com/default.aspx?tabid=4446<br><br>The App does need to be prepared for cases where a network issue prevents unsaved data from being committed to Noah. There are two main approaches that the App can implement:<br>1) Allow the user to keep trying until the network issue is resolved, but keeping the access token expiration in mind. If the access token is expired the app must permanently delete any unsaved data. If the session is expired then the user can try to continue saving but user must first be authenticated. Saving cannot be attempted until authentication is successful.<br>2) The App can save the data for later use but must then support and document the features covered in the next test section – “Planned Times With No Internet Connection” | The below test steps must be completed<br><br>**Note:** for web browser Apps<br>If the App under test is is a Windows PC based browser the test steps below cannot be performed on the same computer that has the Noah 4 System Server installed on it. |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Connect the App under test to Noah 4 System by logging on with the Noah 4 System logon “CBA” and accept the token. | The App under test is connected to Noah 4 System and the user is logged on to Noah 4 System with access granted. | Pass |
| 2 | Disable the network connection on the device or unplug the network cable if the App under test is browser based. | The App under test no longer has a connection to the Noah 4 System server. | Pass |
| 3 | Search for the “John Smith” patient record in the App under test. | A message appears informing the end user there is no longer a connection to the Noah 4 System server. | Pass |
| 4 | Re-enable the network connection in the device or plug the network cable back in. | There is once again a network connection to the Noah 4 System server. | Pass |
| 5 | The App under test reconnects to the Noah 4 System server. | The App under test is once again connected to the Noah 4 System server and informs the end user of this. | Pass |
| 6 | Search for and select the “Jane Johnson” patient record in the App under test. | The App under test has found and selected the “Jane Johnson” patient record. | Pass |

## 2.24 Planned Times when No connection to Noah is possible

| No. | Test subject | How this App addresses the topic |
|---|---|---|

| | | |
|---|---|---|
| | App supports planned times when no connection to Noah is possible<br><br>Apps do have the possibility to obtain data from Noah and then work in a state where there is no connection to Noah. Data can be read and can be edited and added, but saved in the App. At a later time, when connected to Noah, the app can submit the changes to Noah.<br>If the App supports this feature the developer will need to document how the feature is supported and how it is tested. At minimum the App developer must document:<br>• How does the App ensure that only appropriate users access the Data<br>• What is the user authentication system and how is it implemented?<br>• Provide details to how access to this data is tracked while not connected to Noah – the audit trail<br>• How is the data encrypted | Does this app support adding, editing actions, adding or editing patients to Noah while there is no possible network connection to Noah?<br>Yes<br><br>If Yes, describe the supported features. You will also need to include test steps written by you showing this is working correctly. Please consult with HIMSA certification staff before submitting for comment.<br>_____.....<br><br>Supported features: SHOEBOX allows for audiometric testing even when internet connectivity is not available, however connectivity must be established and login authenticated prior to sending data to Noah. SHOEBOX only retrieves the patient demographics as READ-ONLY during the search task in order to link the audiogram results to the patient retrieved from the Noah database.<br><br>How does the App ensure that only appropriate users access the Data?<br>- Only one set of user credentials can be used with the app. We can therefore ensure that only this user will be interacting with the patient data in the app (regardless of Noah connection status). The only way around this would be to delete the app, which would in turn remove all patient and test data from the device (would not affect Noah database)<br><br>What is the user authentication system and how is it implemented?<br>- The app requires a username and password for login as well as a 4 digit pin if the app has been open & logged in but inactive for more than 15 min (can be configured to be less.)<br><br>Provide details to how access to this data is tracked while not connected to Noah – the audit trail?<br>- Only a single user is able to use the app so it can be assumed that all changes made to patient or test data will have been made by that logged in user.<br><br>How is the data encrypted?<br>- All patient data is encrypted at rest. Additionally, all |

## 2.25 App Relies Upon Noah Data

| No. | Test subject | How this App addresses the topic |
|---|---|---|

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|---|---|---|
| | App relies upon other Noah data<br><br>If an App relies upon actions or types of data that may be part of the patient record the app needs to be prepared for the fact that many apps could be working with this patient. Noah Mobile does not have a messaging feature to alert the app to updated data.<br><br>If there is important data then the app will need to refresh data and look for the necessary changes and react as it necessary for the App.<br><br>Example:<br>A hearing instrument fitting App is open and reads a patient's latest audiogram and uses it as part of the fitting. The app or module that created the audiogram now updates the audiogram while the fitting app is still open.<br><br>The app has the responsibility and choice to check with Noah to see if the data it is using has been updated. | Does the app rely on data ready from Noah to complete operations<br>No<br><br>If yes, document what data and how critical an update of this data, while the app is open, would impact the operation of the app _____..... |

## 2.26 Audit Trail Feature

| No. | Test subject | How this App addresses the topic |
|---|---|---|

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|---|---|---|
| | Noah mobile makes extensive use of the audit trail feature to track all activity which includes HCP's and app activity. If the app supports making entries into the audit trail then document and test that it is functioning as desired. | Does the app support adding app created audit trail entries?<br>No<br><br>If Yes, document what type of entries are made _____..... |

## 2.27 Ensure that action is saved to the correct patient

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | Action save to correct patient<br><br>Although unlikely, it is technically possible for an App to accidently attach an action to Noah where there is a mix-up between patient ID's. Noah has a safeguard to ensure that this does not happen and the Apps response to this scenario will be tested in this section. | Does the App support creating action data?<br>Yes<br><br>If yes, the below test steps must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Within the Noah Console Database Administration Tools select the button to “New Database” | The Noah 4 System database has been replaced with an empty one. | Pass |
| 2 | Launch Noah 4 System and logon with ABC. | Noah 4 System is open. | Pass |
| 3 | Create a patient record named “Jane Doe” in Noah 4 System. | The patient record “Jane Doe” has been created in Noah 4 System. | Pass |
| 4 | Export the “Jane Doe” patient record out of Noah as a .nhax file to the desktop. Name the export “Test.nhax.” | The “Jane Doe” patient record has been exported. | Pass |
| 5 | Close Noah 4 System. | Noah 4 System is closed. | Pass |
| 6 | Within the Noah Console Database Administration Tools select the button to “New Database.” | The Noah 4 System database has been replaced with an empty one. | Pass |
| 7 | Open Noah 4 System and login as ABC. | Noah 4 System is open. | Pass |
| 8 | Create a new patient record, “Joe Johnson,” in Noah 4 System. | The patient record “Joe Johnson” has been created in Noah 4 System. | Pass |
| 9 | Recreate the “XYZ” Administrator logon from above. | The logon with admin rights has been recreated. | Pass |
| 10 | Connect the App under test to Noah 4 System. Log on to Noah 4 System within the App under test using the “XYZ” Noah 4 | The App under test is connected to Noah 4 System and the user is logged on to Noah 4 System. The | Pass |

| | | | |
|---|---|---|---|
| | System user account and accept the token. | user has accepted the Noah 4 token and access has been granted. | |
| 11 | Search for and select the “Joe Johnson” patient record in the App under test. | The App under test has found and selected the “Joe Johnson” patient record. | Pass |
| 12 | Navigate back to Noah 4 System and delete the “Joe Johnson” patient record. | The “Joe Johnson” has been deleted from Noah 4 System. | Pass |
| 13 | Import the “Test.nhax” file on the desktop into Noah 4 System. | The nhax file is imported and “Jane Doe” is the only patient record in the patient list. | Pass |
| 14 | In the Noah Console change the Noah 4 system numbering from automatic numbering to manual numbering. | The patient numbering has been changed from automatic to manual. | Pass |
| 15 | In Noah 4 System select the “Jane Doe” patient record. | “Jane Doe” is selected in Noah 4 System. | Pass |
| 16 | Edit the “Jane Doe” patient record patient number. Change it to “0000001” save the changes. | The “Jane Doe” patient number has been changed. | Pass |
| 17 | In the App under test, which still has “Joe Johnson” selected, create some data and attempt to save the data to Noah 4 System. | The App under test displays a message informing the end user that the patient record “Joe Johnson” does not exist in Noah 4 System and the data cannot be saved. | Pass<br><br>App under test displays red ‘!’ error icon indicating that the patient record could not be synced to Noah. No message is displayed to indicate the cause of the sync failure. |
| 18 | Close the App under test. | The App closes. | Pass |

## 2.28 Creation of Sample Data

| No. | Test subject | How this App addresses the topic |
|---|---|---|
| | If the App under test creates measurement data and saves this data to Noah 4 System this data must be tested to verify it was created following the HIMSA data standards. This data will also be checked to verify it doesn't cause problems for all of the HIMSA certified modules. | The App under test must create it's data correctly by following the HIMSA data standards.<br><br>Does the App support creation of measurement data that is saved to Noah 4 System?<br>Yes<br><br>If yes, list the measurement data type created by the App under test with the HIMSA data standard used when saving the data to Noah 4 System.<br>1.) Audiometric data – Format 500<br><br>Also if yes, the test steps below must be completed |

| Step | Description | Expected Behavior | Test Result |
|---|---|---|---|
| 1 | Create a patient record in Noah 4 System as specified in Appendix A of this document. | A patient record has been created by following the directions specified in Appendix A. | Pass |
| 2 | Connect the App under test to Noah 4 System and login to Noah 4 System from within the | The App under test is connected to Noah 4 System and | Pass |

| | | | |
|---|---|---|---|
| | App under test. | the user has logged on to Noah 4 System. | |
| 3 | Create all Noah 4 System measurement data types the App under test supports as mentioned in Appendix A and save this data to Noah 4 System. | All Noah 4 System measurement data types the App under test can create have been created and saved into Noah 4 System. | Pass |
| 4 | Export this patient record out of Noah 4 System as a .nhax file.<br><br>This .nhax file will be submitted to HIMSA for certification. | The patient record has been exported out of Noah 4 System as a .nhax file.<br><br>**FILENAME IS "SHOEBOX5.2 Export.enhax".** | Pass |
| 5 | Export this patient record out of Noah 4 System as XML. Use the XML export option in Noah 4 System.<br><br>This XML file will be submitted to HIMSA for certification. | The patient record has been export out of Noah 4 System as a XML file.<br><br>**FILENAME IS "SHOEBOX5.2 Export.xml".** | Pass |
| 6 | If the App under test creates Noah 4 System audiogram actions please use the "Template.doc" found in the "All Test Records" zip file that can be found by following the link in Appendix A to create a Audiometric sample test patient report.<br><br>This Audiometric test patient report will be submitted to HIMSA for certification. | The audiometric test patient report has been created for the audiometric data the App under test created and saved to Noah 4 System. | Pass |

## 2.29 Verifying that Measurement Data Created by the Module Under Test can be Read and Displayed Correctly by Other Modules.

| | | |
|---|---|---|
| From this point on the test steps are optional.<br><br>Note: HIMSA will perform the test steps below during a full test track. The member company is also able to perform this testing themselves if they wish to do so. HIMSA recommends the member company completes these test steps. | The steps below were performed by the member company. | Pass |
| All HIMSA certified modules have been installed and appear in the Noah 4 System module toolbar. | All HIMSA certified modules have been installed on the computer that has Noah 4 System installed. | Pass |
| The patient record in Noah 4 System that has been created following the directions in Appendix A is the active patient record in Noah 4 System. | The patient record that contains all measurement action data types that were created by the App under test is the active patient record in Noah 4 System. | Pass |
| Open one of the HIMSA Certified Modules on the patient record containing the measurement action(s) created by the App under test. | A HIMSA certified module opens on the patient record that contains the measurement data created by the App under test. | Pass |
| If the HIMSA certified module displays the measurement data created by the App under test verify the module is displaying data correctly. | The HIMSA certified module displays the data correctly that was created by the App under test. | Pass |
| If possible create simulated data with the HIMSA certified module and save it to Noah 4 System. | The HIMSA certified module can save data to the patient record that contains the measurement actions that were created by the App under test. | Pass |

| | | |
|---|---|---|
| Preform steps 7-9 for all HIMSA certified modules. | Every HIMSA certified module has been opened on the patient record that contains data created by the App under test. If it is possible to create simulated data in the HIMSA certified module this data has been saved to the patient record that contains the measurement that was data created by the App under test in Noah 4 System.<br><br>List all the HIMSA certified modules that were opened on the data created by the app under test. For example<br><br>1.) Noah 4 Audiogram Module<br><br>2.)<br><br>3.)<br><br>4.) | Pass<br><br>1.Noah 4 Audiogram Module |

# Appendix A - Creating test data for integration testing

Please create a Noah 4 patient record using the following naming convention.

Last name: App name and version

First name: List of data types in patient

Example:

Noah 4 Audiogram Module .1

AUD

Using Noah 4, connect the app and **create all measurement  data supported** by your module.

Please use values that can be found in real life.

Audiometric data should mask at least one point on each curve that supports masking.

After the patient record has been saved to Noah 4, navigate to the file menu in Noah 4 and select Export Patients.  Export the patient as a .nhax file using a combination of the first and last name.

Import your .nhax file into an empty database and export it using the for data analysis option which is the XML format.

Review the XML file to make sure that the measurement conditions are written as specified by you

If the App under test creates Audiometric data please complete a test patient sample report. The template can be found by following the link below. You will then need to download the “All Test Records” zip. The Audiometric test patient sample test report template is in this zip. The document in the zip file you want is called “Template.doc.”

https://www.himsa.com/Members/Certification/AudiologicalTestMeasurementData/tabid/1996/language/en-US/Default.aspx

Submit the .nhax file, the XML file and Audiometric Sample Patient Test Report to HIMSA with your conformance test report.