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11. Data Synchronization

Some laptops will be capable of both on-line and off-line operation. These laptops will have the appropriate client-side synchronization software as well as a local data store (SQLServer database). Each laptop that is capable of off-line operation will be registered in WIC management console. The laptop will be identified using its MAC address.

Users wanting to *go off-line* must meet the following prerequisites;

- The user must be assigned a role that has the appropriate permission to work in an off-line mode of operation.
- The user must use a laptop registered of being capable of working in an off-line capacity.
- The user must be defined as a staff member of the clinic to be checked out.

It should be noted that the local data store is only utilized by the various WIC applications when the client-side synchronization software indicates that the laptop is working in an off-line capacity and that working off-line requires the user to check out a clinic from the central data store. The laptop will remain in this off-line mode until the clinic is checked into the central data store regardless of whether the laptop is connected to the network.

If the client-side synchronization software detects a network connection while in the off-line mode it will prompt the user to indicate if the clinic should be checked in. If the user indicates that the clinic should be checked in the client-side synchronization software will begin the process of switching to an on-line mode of operation.

11.1 Switching to Off-line Mode

The process of going off-line is a multi-step operation. The process of going off-line involves the following steps:

- Synchronizing software releases and updates
- Synchronizing database changes
- Synchronizing reference data
- Checking out the clinic data
- Reserving check numbers
- Reserving Household and Participant Identifiers
- Synchronizing state-wide data
- Switching to off-line mode

Each of these steps uses a set of web services to interact with the central data store and they are described in detail in the following sections. During the process the client-side synchronization software will keep the user apprised of the current status of the operation via the Data Synchronization application. Updates to the status will be conveyed at the start and end of each step in the process. In all cases, each interaction point is logged on both the client and server. After the complete operation is finished the client-side log is displayed to the user and retained on the laptop as synchronization log file. The server-side log is retained in the central data store and emailed to a designated user.

11.1.1 Synchronizing Database Changes

The client will check for database updates on the server by supplying the date of the last off-line synchronization attempt. If the date of the update package is more recent than the last off-line synchronization attempt the client will request and apply the database changes. Changes will be applied in the form of database scripts executed by the client-side synchronization software.

After applying the updates to the local data store the client will log the event, inform the server of a successful database update and proceed to next step. If an error is encountered during the update process the client will rollback any changes, log the event, report the error to the server, and abort the process, informing the user of the failure and the aborted process.

11.1.2 Synchronizing Reference Data

The client will check for reference data updates on the server by supplying the date of the last off-line synchronization attempt. Using this date, the server will extract and supply a list of all reference changes to be applied to the local data store data to the client. The client will apply the reference data updates accordingly.

After applying the updates to the local data store the client will log the event, inform the server of a successful reference data update and proceed to next step. If an error is encountered during the update process the client will rollback any changes, log the event, report the error to the server, and abort the process, informing the user of the failure and the aborted process.

11.1.3 Checking Out the Clinic Data

The client will request to check out one or more clinics. This will be accomplished by sending the clinic ids as part of the request. The process of checking out a clinic essentially copies the information for the participants currently being serviced at that clinic, (This includes all relevant information for the participant's 3 most recent current certification periods, 3 months of future appointment information, and 4 months of historical appointment information).

While checking out a clinic the laptop will provide to the server a listing of the last date and time the client checked in the specified clinic. The server will use this information to gather only those participants who have been modified since the supplied date or are new since the last check in date. This participant information, (as described above), will be returned to the laptop and will be incorporated into the local data store accordingly. (i.e. old records will be replaced, new ones will be added)

The server will mark the participants in the clinic as being checked out and provide the participant information to the client. The client will update the local data store accordingly.

Once a clinic is checked out no changes are allowed to be made to the clinic information located in the central data store. The information is available for viewing but cannot be modified.

After applying the updates to the local data store the client will log the event, inform the server of a successful clinic data update and proceed to next step. If an error is encountered during the update process the client will rollback any changes, log the event, report the error to the server, and abort the process, informing the user of the failure and the aborted process. If an error is reported to the server, the server will unmark the participant information as being checked out.

11.1.4 Reserving Check Numbers

As part of the process of going off-line the client must ensure that check numbers are available for printing checks while operating in the off-line mode. The client will request a list of check numbers from the server. The server will reserve and provide a list of check numbers to the client.

After updating the local data store with the check numbers the client will log the event, inform the server of a successful receipt of the check numbers and proceed to next step. If an error is encountered during the update process the client will rollback the inserts, log the event, report the error to the server, and abort the process, informing the user of the failure and the aborted process. If an error is reported to the server, the server will release the reserved check numbers and unmark the participant information as being checked out.

11.1.5 Reserving Household and Participant Identifiers

As part of the process of going off-line the client must ensure that household ids and participant ids are available when adding new participants while operating in the off-line mode. The client will request a list of these ids from the server. The server will reserve and provide a list of these ids to the client.

After updating the local data store with the ids the client will log the event, inform the server of a successful receipt of the household and participant ids and proceed to next step. If an error is encountered during the update process the client will rollback the updates, log the event, report the error to the server, and abort the process, informing the user of the failure and the aborted process. If an error is reported to the server, the server will release the reserved ids, release the reserved check numbers, and unmark the participant information as being checked out.

11.1.6 Synchronizing State-wide Data

Additionally, a list of all participants in the statewide database is also copied to the laptop during the process of checking out a clinic. (This includes all relevant information for the participant's current certification period). The information in this list is used to allow the user to locate and potentially transfer participants in to the clinic. (Note that a participant must be transferred into a clinic before the clinic can provide any benefits to the participant.)

Similar to the participant clinic data, the laptop will provide to the server a listing of the last date and time the client checked in the specified clinic. The server will use this information to gather only those participants who have been modified since the supplied date or are new since the last check in date. This participant information, (as described above), will be returned to the laptop and will be incorporated into the local data store accordingly. (i.e. old records will be replaced, new ones will be added)

After updating the local data store the client will log the event, inform the server of a successful receipt of the state-wide information and proceed to next step. If an error is encountered during the update process the client will rollback the updates, log the event, report the error to the server, and abort the process, informing the user of the failure and the aborted process. If an error is reported to the server, the server will release the reserved ids, release the reserved check numbers, and unmark the participant information as being checked out.

11.1.7 Switching to Off-line Mode

The final step in the process is to switch the client to the off-line mode. The client will set the application mode to off-line and inform the server accordingly.

While off-line the user can perform most of the operations that are available while on-line. The features made available to the user will be restricted based on the whether the data is available to the user.

[Unavailable features TBD]

11.2 Switching to On-line Mode

Eventually the user will opt to check one or more clinics back in. During this process the updated and new information is copied from the laptop's local data store and incorporated into the central data store. Once the information is incorporated, the clinic is no longer considered to be checked out, the information in the central data store is once again available for modification, and the laptop is considered to be on-line.

The process of going on-line involves the following steps:

- Checking in the Data
- Releasing Reserved Check Numbers
- Releasing Reserved Household and Participant IDs
- Switch to on-line mode

Each of these steps uses a set of web services to interact with the central data store and they are described in detail in the following sections. During the process the client-side synchronization software will keep the user apprised of the current status of the operation via the Data Synchronization application. Updates to the status will be conveyed at the start and end of each step in the process. In all cases, each interaction point is logged on both the client and server. After the complete operation is finished the client-side log is displayed to the user and retained on the laptop as synchronization log file. The server-side log is retained in the central data store and emailed to a designated user.

11.2.1 Checking in the Data

The client will identify and send all updated and new information from the local data store to the server. The data will be identified using the off-line synchronization date and time. This will include any modifications to participant information including transferred participants. The server will apply the updates accordingly to the central data store.

During the check in process the server may encounter one or more participants that have been transferred into the clinic while the laptop was off-line. This situation could potentially cause a conflict in the transferred participant's data. In this event, the user will be guided by the system to make a selection between the existing data and the replacement data. See the *Detection and Resolution of Data Store Conflicts (Transferred Participants)* section in this document.

Both Medical Home and Fix Night Time Location are reference data fields where the application allows new inserts. The check in process will compare the local and central data stores to determine if there are new reference data records for these two fields. If new records exist, the server will apply the new reference data to the central data store.

After applying the updates to the central data store the server will log the event, inform the client of a successful database update. The client will then proceed to next step. If an error is encountered during the update process the server will rollback any changes, log the event, report the error to the client. The client in turn will log the event, and abort the process, inform the user of the failure condition and the unsuccessful completion of the synchronization attempt.

11.2.2 Releasing Reserved Check Numbers

The client will provide a list of unused check numbers to the server. The server will release these check numbers in the central data store.

After applying the updates to the central data store the server will log the event, inform the client of a successful database update. The client will then proceed to next step. If an error is encountered during the process the server will rollback any changes, and log the event. The server will not report the error to the client as this is not a critical failure condition.

11.2.3 Releasing Reserved Household and Participant IDs

The client will provide a list of unused household and participant ids to the server. The server will release these ids in the central data store.

After applying the updates to the central data store the server will log the event, inform the client of a successful database update. The client will then proceed to next step. If an error is encountered during the process the server will rollback any changes, and log the event. The server will not report the error to the client as this is not a critical failure condition.

11.2.4 Switching to On-line Mode

The final step in the process is to switch the client to the on-line mode. The client will set the application mode to on-line and inform the server accordingly. Note that the application mode will not be set to on-line until all clinics are checked in.

11.3 Data Synchronization Administration

Using the WIC management console, users with the appropriate permissions will be able to manage the list of machines that are capable performing data synchronization. (These are referred to as remote machines.)

The console will also allow the aforementioned users to reserve blocks of appointment times for each clinic so that appointments can be scheduled for a clinic in the central data store while the clinic is checked out. Note that although appointments may be scheduled in these reserved blocks on the central data store they will not be reflected in the local data store of the laptop housing the checked out clinic. This information will only be available to the laptop after the clinic has been checked into the central data store.

11.4 WIC Management Console – Data Synchronization – Remote Machines

The Remote Machines view of the WIC Management Console allows users with the appropriate permissions to add, edit, and delete remote machine profiles.

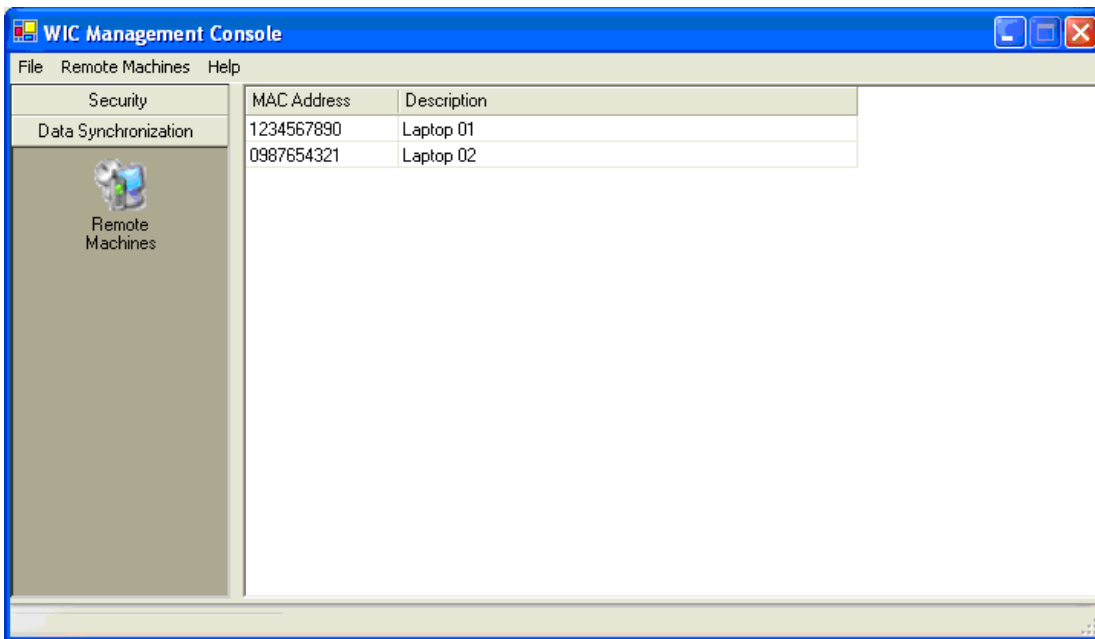


Figure 1 – WIC Management Console – Data Synchronization

11.4.1 File Menu

11.4.1.1 Open Menu Item

Allows the user to view and/or modify the selected machine profile by displaying the selected item using the Remote Machine Profile dialog.

11.4.1.2 Add Menu Item

Allows the user to add a new profile by displaying the Remote Machine Profile dialog.

11.4.1.3 Delete Menu Item

Deletes the selected profile.

11.4.2 Controls

11.4.2.1 Remote Machine List

Lists all machines that have been defined as being capable of operating remotely (off-line). For each item in the list the MAC address and description of the machine is displayed.

11.4.3 Processes

11.4.3.1 Initializing the Interface

When the Remote Machines group item is selected from the left hand list the right hand pane will display the list of designated remote machines.

11.4.3.2 Opening a Remote Machine Profile

To open a remote machine profile the user can double click on the item in the list or select the item and choose the Remote Machines->Open menu item. Opening the item displays the select profile in the Remote Machine Profile dialog. Returning from the dialog refreshes the list of remote machines.

11.4.3.3 Adding a Remote Machine Profile

To add a remote machine profile the user selects the Remote Machines->Add menu item. Selecting the menu item allows the user to add a new profile using the Remote Machine Profile dialog. Returning from the dialog refreshes the list of remote machines.

11.4.3.4 Deleting a Remote Machine Profile

To delete a remote machine profile the user selects the item and chooses the Remote Machines->Delete menu item. Selecting the menu item displays a confirmation message. If the user confirms the delete request the item is deleted and the list is refreshed.

11.5 WIC Management Console – Data Synchronization – Remote Machine Profile Dialog

The Remote Machine Profile dialog allows users with the appropriate permissions to view, add, and/or edit remote machine Profiles.

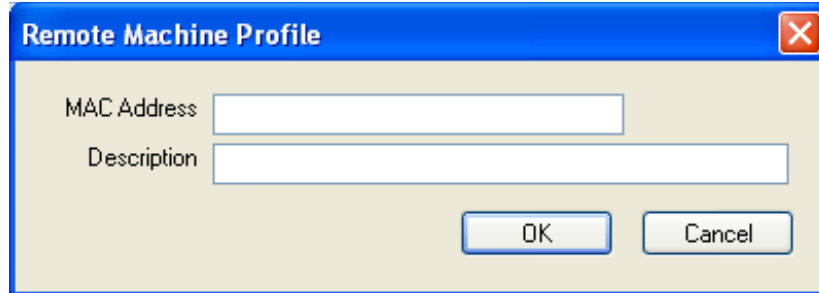


Figure 2 – Remote Machine Profile

11.5.1 Controls

11.5.1.1 MAC Address

Displays the MAC address for the machine. This control allows entry of alphanumeric characters. The maximum number of characters is 20.

11.5.1.2 Description

Displays the user defined description for the machine. This control allows entry of alphanumeric characters. The maximum number of characters is 50.

11.5.1.3 OK Button

Pressing this button saves the data.

11.5.1.4 Cancel Button

Pressing this button dismisses the dialog with out saving any changes

11.5.2 Processes

11.5.2.1 Initializing the Interface

Both the MAC Address and Description fields are cleared and the OK and Cancel buttons are enabled. If the dialog is being invoked in order to display a current profile the data is then loaded.

11.5.2.2 Loading the Data

The MAC Address and description fields are valued with the appropriate data.

11.5.2.3 Saving the Data

The MAC Address and description fields are updated in the database.

11.5.2.4 Data Map

[TBD]

11.6 WIC Management Console – Data Synchronization – Clinics

The Clinics view of the WIC Management Console allows users with the appropriate permissions to cancel the checked out state of the clinic on the central data store.

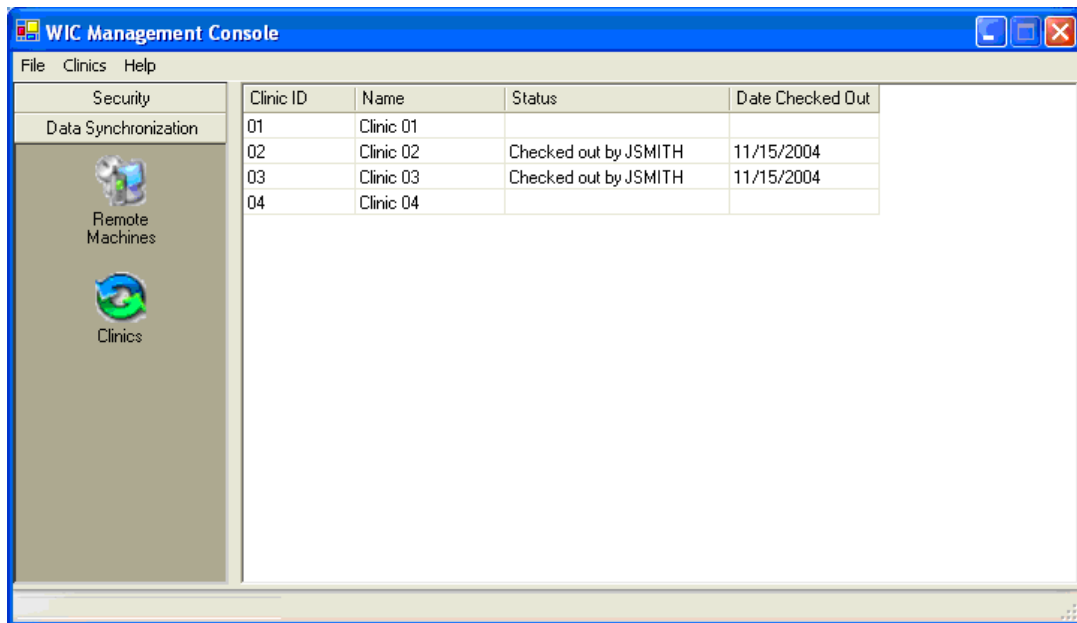


Figure 3 – WIC Management Console – Data Synchronization

11.6.1 Clinics Menu

11.6.1.1 Cancel Checkout Menu Item

Allows the user to cancel the checked out state of the selected clinic.

11.6.2 Controls

11.6.2.1 Clinics List

The clinic list displays all the clinics known to the system. For each item in the list the Clinic ID, Name, Status, and date checked out is displayed. If the clinic is currently checked out the status field will indicate this condition by displaying the text “Checked out by [USER]” where [USER] is the user id of the user who has checked out the clinic and the date field will display the date on which the clinic was checked out. If the clinic is not currently checked out the status and date fields will be blank.

11.6.3 Processes

11.6.3.1 Initializing the Interface

When the Clinics group item is selected from the left hand list the right hand pane will display the list of clinics.

11.6.3.2 Canceling a Checkout

To cancel the checked out state of a clinic the user selects the item and chooses the Clinics->Cancel Checkout menu item. Selecting the menu item displays a confirmation message. If the user confirms the cancel request the checkout out indicator for all data associated with the specified clinic is removed and any reserved check numbers, participant ids, and household ids are released in the central data store.

11.7 Data Synchronization Client Application (Invoking Data Synchronization from Client)

Users meeting the prerequisites outlined earlier will be able to invoke the data synchronization process by starting the Data Synchronization application. The application will list the current mode of operation.

If the laptop is working in an off-line mode the interface will display the name of the clinic that is checked out. If a network connection is detected the “Check in Clinic” button will be enabled allowing the user to switch to on-line mode. (See Switching to On-line Mode)

If the laptop is working in an on-line mode and a network connection is detected the interface will provide a list of clinics that can be checked out by the user (See prerequisites listed earlier). Note that if a clinic is currently checked out the list item will indicate the clinic is checked out and by whom. To check out a clinic the user will select a clinic from the list and press the “Check out Clinic” button. If the clinic is not currently checked out, the application will prompt the user to confirm the request. Upon confirming the request the application will switch to off-line mode, checking out the selected clinic. (See Switching to Off-line Mode)

11.7.1 Data Synchronization Client (On-line) Dialog

The on-line dialog is displayed if the application mode is set to on-line. The dialog allows users with the appropriate permissions to check out one or more clinics and switch to an off-line mode of operation.

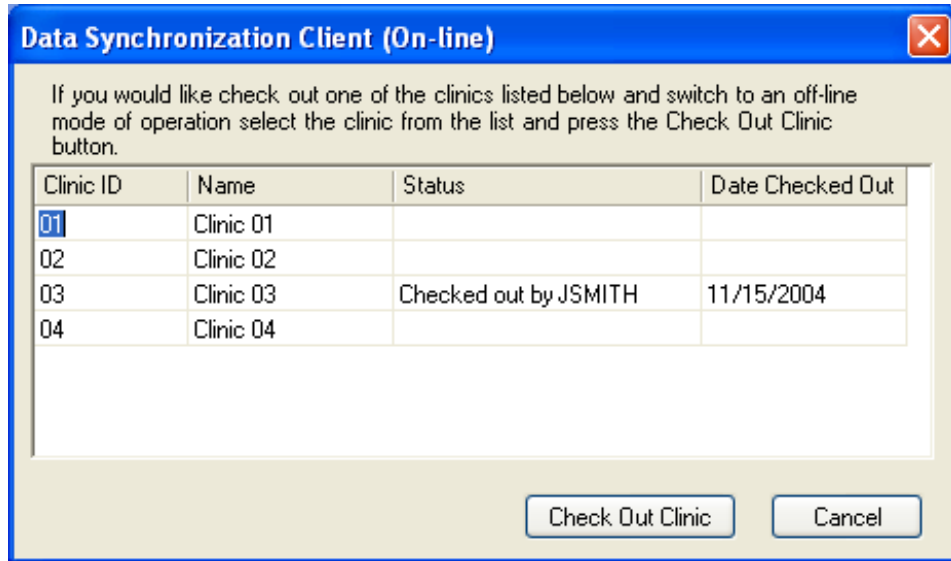


Figure 4 – Data Synchronization Client (On-line)

11.7.2 Controls

11.7.2.1 Clinic List

The clinic list displays all the clinics in which the user has been designated as a staff member. For each item in the list the Clinic ID, Name, Status, and date checked out is displayed. If the clinic is currently checked out the status field will indicate this condition by displaying the text "Checked out by [USER]" where [USER] is the user id of the user who has checked out the clinic and the date field will display the date on which the clinic was checked out. If the clinic is not currently checked out the status and date fields will be blank. The list supports selecting multiple items.

11.7.2.2 Check Out Clinic Button

If the selected clinic is not already checked out, pressing this button checks out the selected clinics and switches the applications to off-line mode. Upon completion of the process the log file is displayed using the system standard View Log File dialog. Upon dismissing the View Log File dialog this dialog is dismissed.

11.7.2.3 Cancel Button

Pressing this button dismisses the dialog.

11.7.3 Processes

11.7.3.1 Initializing the Interface

The list is populated with a list of clinics and their current check out status. The Check out Clinic button and Cancel button are enabled.

11.7.3.2 Checking out a Clinic

Refer to the section entitled *Switching to Off-line Mode*.

11.8 Data Synchronization Client (Off-line) View

The off-line dialog is displayed if the application mode is set to off-line. The dialog allows users with the appropriate permissions to check in a clinic and switch to an on-line mode of operation.

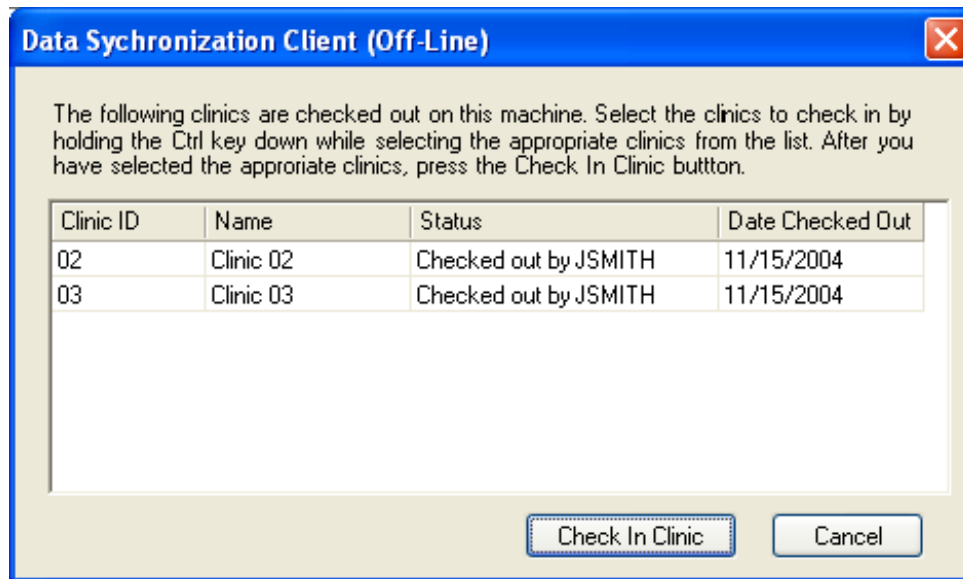


Figure 5 – Data Synchronization Client (Off-line)

11.8.1 Controls

11.8.1.1 Clinic List

The clinic list displays all the clinics current checked out to this machine in which the user has been designated as a staff member. For each item in the list the Clinic ID, Name, Status, and date checked out is displayed. The status field will display the text “Checked out by [USER]” where [USER] is the user id of the user who has checked out the clinic and the date field will display the date on which the clinic was checked out. The list supports selecting multiple items.

11.8.1.2 Check In Clinic Button

Pressing this button checks in the selected clinics and switches the applications to on-line mode. Upon completion of the process the log file is displayed using the system standard View Log File dialog. Upon dismissing the View Log File dialog this dialog is dismissed.

11.8.1.3 Cancel Button

Pressing this button dismisses the dialog.

11.8.2 Processes

11.8.2.1 Initializing the Interface

The list of clinics currently checked out on this machine will display. If a network connection is detected the “Check in Clinic” button will be enabled. Note that if the checked out state of clinic has been cancelled the list item indicates this condition by displaying the text “checkout cancelled by administrator” in the status column of the list. (See the Clinics View of the WIC Management Console for further information regarding canceling a checked out clinic.)

11.8.2.2 Checking in a Clinic

Refer to the section entitled *Switching to On-line Mode*. If the user has selected a clinic that is no longer checked out (was cancelled by the administrator) the clinic will not be checked in, rather all changes made to the related data will not be sent to the central data store and will be lost.

11.9 Detection and Resolution of Data Store Discrepancies (Transferred Participants)

When switching from an off-line mode (checking in a clinic) to an on-line mode, it is essential to maintain the integrity of the central data store for transferred participants.

Upon selection of the *Check in Clinic Button* as described in this document, transferred participants will be the first set of data selected and processed by the check in procedure. The off-line synchronization date and time will be compared to the central data store modification date and time for each of the transferred participant's records. If the off-line synchronization date and time is the most recent date and time, the local data store will replace the information in the central data store. If the central data store indicates records were updated after the synchronization date and time, the system will display one of two dialogs that will require the selection of data. Depending on the data discrepancy, a single data value dialog will display where the selection of a single value is required or a list value dialog will display where the selection of a list of values is required. See *Data Synchronization Discrepancy (Single Value)* dialog and *Data Synchronization Discrepancy (List)* dialogs in this document.

There may be other potential conflicts when new data records have been created for a transferred participant while in the off-line mode. These situations will be handled by the check in process by performing a series of business rule validations. If a violation is detected, the violation will be logged and the user will be notified to check the exception log. The check in process will continue since discrepancies involving new data will require resolution outside the data synchronization check in process.

11.9.1 Data Synchronization Discrepancy (Single Value) Dialog

The Data Synchronization Discrepancy (Single Value) dialog is displayed when there is a single replacement value in question for an existing value as opposed to a list of values that are different.

The number of transferred participant data discrepancies will be identified before the dialog is displayed. If there is more than one discrepancy, the Next control button will be enabled and the Number of Discrepancies will be greater than one.

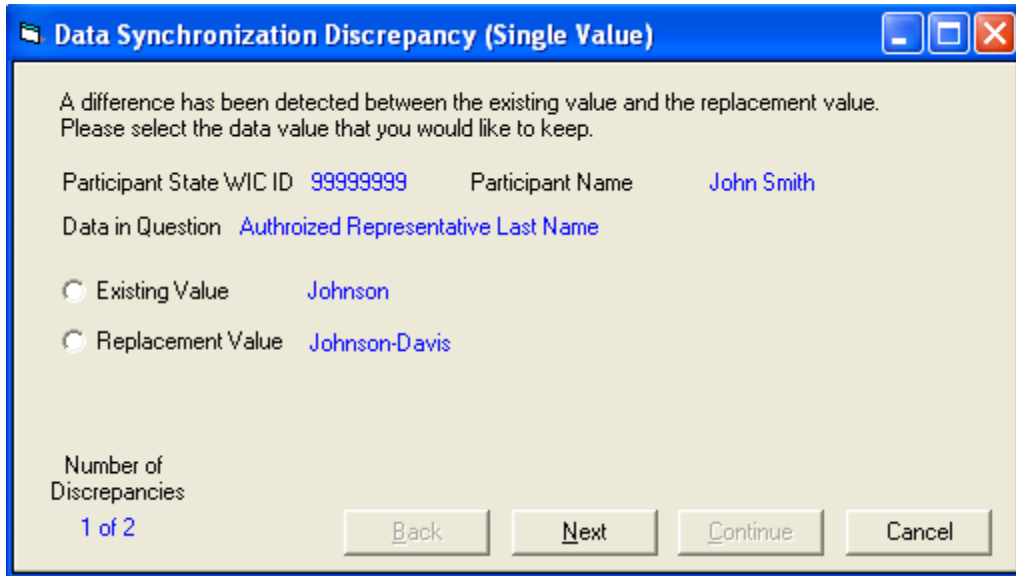


Figure 6– Data Synchronization – Single Data Value Resolution

11.9.2 Controls

11.9.2.1 Participant State WIC ID

The participant state WIC ID for the transferred participant will display.

11.9.2.2 Participant Name

The participant name will display.

11.9.2.3 Data in Question

A description of the field for the data in question is displayed.

11.9.2.4 Existing Value

The data value currently stored in the central data store is displayed.

11.9.2.5 Replacement Value

The data value currently stored in the local data store is displayed.

11.9.2.6 Number of Discrepancies

The total number of discrepancies for transferred participants is displayed. This number is not a record count. It is the number of data fields where there is a discrepancy.

11.9.2.7 Back Button

This button will be enabled if there is a previous data discrepancy dialog to display. It has a mnemonic of “B”.

11.9.2.8 Next Button

This button will be enabled if there is another data discrepancy dialog to display. It has a mnemonic of “N”.

11.9.2.9 Continue Button

This button will be enabled once all data discrepancies have been resolved (single value and list). Pressing this button accepts the selected values and allows the system to continue synchronizing the local data store clinic data with the central data store. It has a mnemonic of “C”.

11.9.2.10 Cancel Button

Pressing this button will dismiss the dialog and terminate the data synchronization process. The check-in process will return to the Data Synchronization Client (Off-line) View as described in this document. If any data selections were made previous to selecting cancel, they will not be saved to the central data store. The cancel button safely allows the user to abort the check in process to further investigate a data discrepancy. The clinic(s) will remain in check out mode until the user re-invokes the check in process.

11.9.3 Processes

This section describes the processes (navigation) that takes place as a result of the actions taken on the Data Value Discrepancy dialog.

11.9.3.1 Continue Button

Upon selection of the Continue button, the system will invoke a standard message box with the confirmation message “By pressing yes, all transferred participant selections will be saved to the database. The system will then proceed to check in the clinic data. Do you want to continue?”

Upon selection of the Yes button, the system will apply the transferred participant data to the database and proceed with checking in the clinic data as described in this document, Switching to On-line Mode.

Upon selection of the No button, the transferred participant selections will be discarded and the check in process terminated. The system will return to the Data Synchronization Client (Off-line) View dialog. The clinic will remain in check out mode.

This button has a mnemonic of "C".

11.9.3.2 Cancel Button

Upon selection of the Cancel button, the system will invoke a standard message box with the confirmation message "Are you sure you want to cancel the check in process? All selections for the transferred participants will be discarded. The clinic will remain as checked out and the entire process will need to be re-invoked."

Upon selection of the Yes button, all transferred participant selections will be discarded. The check in process will be terminated and the system will return to the dialog Data Synchronization Client (Off-line) View. The clinic will remain in check out mode.

Upon selection of the No button, all transferred participant selections will be applied to the database. The system will continue to check in the clinic data as described in this document, Switching to On-line Mode.

11.9.4 Data Synchronization Discrepancy (List) Dialog

The Data Value Discrepancy (List) dialog is displayed when there is a list of replacement values for an existing list.

The number of transferred participant data discrepancies will be identified before the dialog is displayed. If there is more than one discrepancy, the Next control button will be enabled and the Number of Discrepancies will be greater than one.

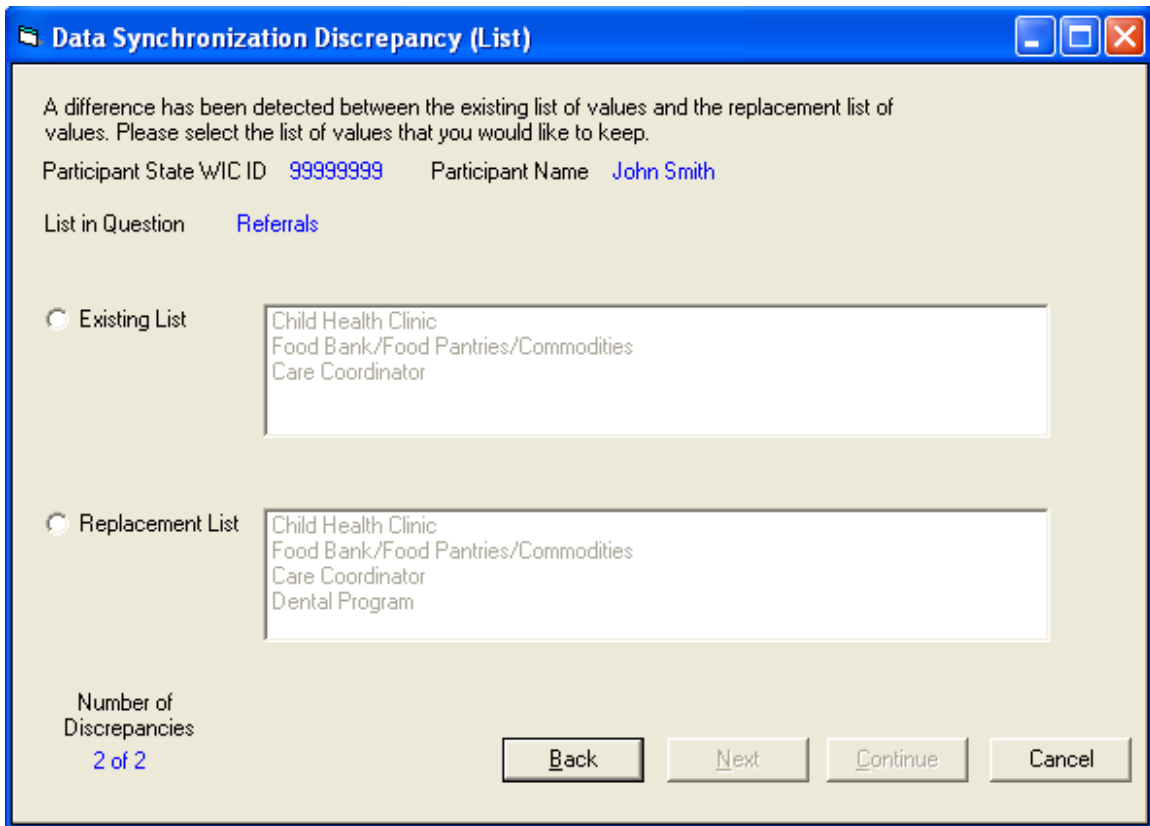


Figure 7 – Data Synchronization – Single Data Value Resolution

11.9.5 Controls

11.9.5.1 Participant State WIC ID

The participant state WIC ID for the transferred participant will display.

11.9.5.2 Participant Name

The participant name will display.

11.9.5.3 List in Question

A description for the list of data in question is displayed.

11.9.5.4 Existing List

The list of data currently stored in the central data store is displayed.

11.9.5.5 Replacement List

The list of data currently stored in the local data store is displayed.

11.9.5.6 Number of Discrepancies

The total number of discrepancies for transferred participants is displayed. This number is not a record count. It is the number of data fields where there is a discrepancy.

11.9.5.7 Back Button

This button will be enabled if there is a previous data discrepancy dialog to display. It has a mnemonic of "B".

11.9.5.8 Next Button

This button will be enabled if there is another data discrepancy dialog to display. It has a mnemonic of "N".

11.9.5.9 Continue Button

This button will be enabled once all data discrepancies have been resolved (single value and list). Pressing this button accepts the selected values and allows the system to continue synchronizing the local data store clinic data with the central data store. It has a mnemonic of "C".

11.9.5.10 Cancel Button

Pressing this button will dismiss the dialog and terminate the data synchronization process. The check-in process will return to the Data Synchronization Client (Off-line) View as described in this document. If any data selections were made previous to selecting cancel, they will not be saved to the central data store. The cancel button safely allows the user to abort the check in process to further investigate a data discrepancy. The clinic(s) will remain in check out mode until the user re-invokes the check in process.

11.9.6 Processes

This section describes the processes (navigation) that takes place as a result of the actions taken on the Data Value Discrepancy dialog.

11.9.6.1 Continue Button

Upon selection of the Continue button, the system will invoke a standard message box with the confirmation message "By pressing yes, all transferred participant selections will be saved to the database. The system will then proceed to check in the clinic data. Do you want to continue?"

Upon selection of the Yes button, the system will apply the transferred participant data to the database and proceed with checking in the clinic data as described in this document, Switching to On-line Mode.

Upon selection of the No button, the transferred participant selections will be discarded and the check in process terminated. The system will return to the Data Synchronization Client (Off-line) View dialog. The clinic will remain in check out mode.

This button has a mnemonic of "C".

11.9.6.2 Cancel Button

Upon selection of the Cancel button, the system will invoke a standard message box with the confirmation message "Are you sure you want to cancel the check in process? All selections for the transferred participants will be discarded. The clinic will remain as checked out and the entire process will need to be re-invoked."

Upon selection of the Yes button, all transferred participant selections will be discarded. The check in process will be terminated and the system will return to the dialog Data Synchronization Client (Off-line) View. The clinic will remain in check out mode.

Upon selection of the No button, all transferred participant selections will be applied to the database. The system will continue to check in the clinic data as described in this document, Switching to On-line Mode.

11.10 Duplicate Search, Duplicate Resolution and External ID Acquisition of new Applicants entered while offline.

When switching from an off-line mode (checking in a clinic) to an on-line mode, it is essential to perform the External ID acquisition that was unavailable during offline mode.

Upon selection of the *Check in Clinic Button* as described in this document, participants that were prescreened while offline will be processed nearly identically to the process that occurs at the end of Applicant Prescreening.

A list of the newly added Participants will be compiled and each Participant in turn will go through the real-time duplicate search, duplicate resolution and DCN acquisition process. As the list is processed, those new Participants that do not return any potential duplicates will automatically have a new External Record created and External ID (DCN) returned. Those Participants that do return potential duplicates will require the user to examine the External System's Potential Duplicate Applicant/Participant dialog and resolve the duplicates. In this second case, the External ID (DCN) will be determined before the rest of the Data Synchronization occurs.

11.10.1 Data Synchronization's External Duplicate Applicant/Participant Dialog

The External Duplicate Dialog is displayed when a potential duplicate is located during the duplicate searches for each Participant added while offline.

The dialog is nearly identical to the External System's Duplicate Applicant/Participant dialog described in the Clinic Chapter 07 Initial Contact. There are two differences. First, the title bar will contain a description of the progress within the entire list of new participants. In the picture below there is a '2 of 5' label tabbed into the title bar. This indicates that there are five new Participants and that the user is making the decision about the second. The other difference is that the Cancel button is no longer available. During online processing it is possible to cancel the duplicate resolution and return to the Prescreening form, but since Participant data has already been collected, cancelling is no longer a valid option, the External ID (DCN) must be determined.

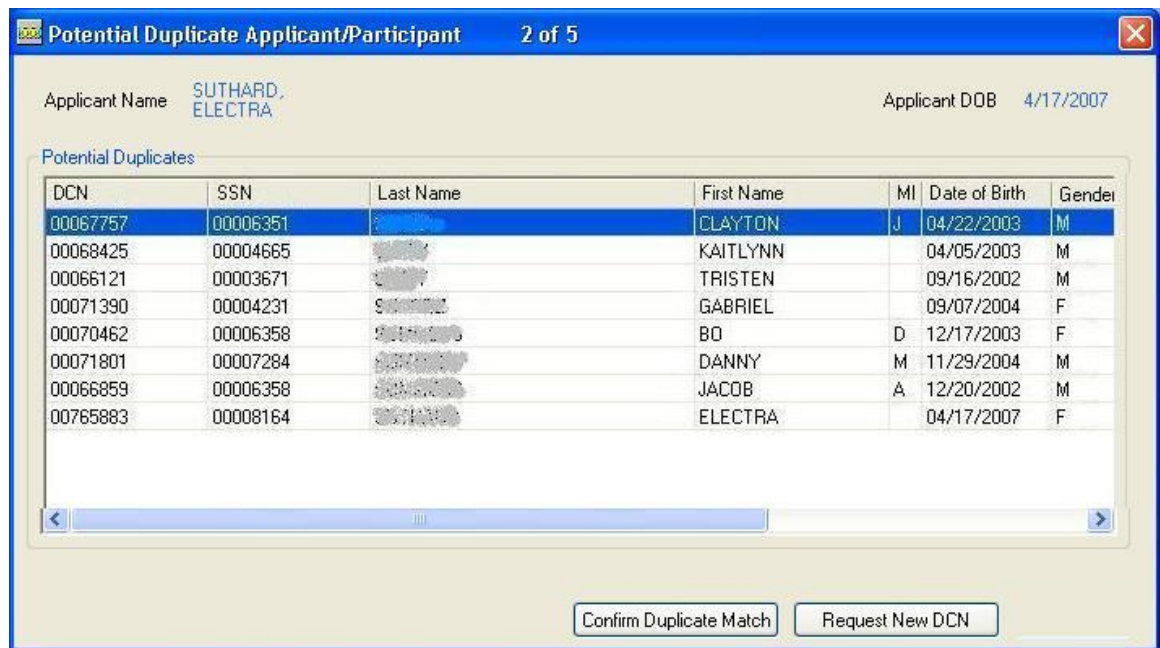


Figure 8– Data Synchronization – External System Duplicate Resolution

11.10.2 Controls

See the Initial Contact chapter of the Clinic for a description of each of the controls.

11.10.3 Processes

This section describes the processes (navigation) that takes place as a result of the actions taken on the Potential Duplicate dialog.

11.10.3.1 Confirm Duplicate Match Button

Upon selection of the Confirm Duplicate Match button, the system will store the External ID (DCN) of the selected row in the Potential Duplicate grid as the External ID for the Applicant being examined. It will then move on to the next Applicant in the list, if there are any.

11.10.3.2 Request New DCN Button

Upon selection of the Request New DCN button, the system will connect to the External System and request that a new record be created and that the External ID (DCN) be returned. The DCN will be stored in the member record's External ID column. It will then move on to the next Applicant in the list, if there are any.

11.10.3.3 Unavailability of the External System

If for any reason the External system is unavailable during the Data Synchronization process. The data sync check in will be aborted and data synchronization will be unavailable until the External system is again available.

11.11 External Updates

After the Duplicate Search, Duplicate Resolution and External ID Acquisition of new Applicants is completed the system will present the external ID to the external database and receive the latest version of basic participant data from the external system as described in *Chapter U - External Updates and Automatic External Duplicate Processing*.