

CELCAT Timetabler Offline Attendance – User Guide

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1. Introduction

Offline Attendance is a new way of marking CELCAT *Timetabler* registers by using an Opticon 2001 data collector and a service that transforms student time stamps to register marks with minimum user input. This user guide describes how the Opticon 2001 collects the data and uploads the information for the service to process. It also explains how the service can be configured to give optimum performance in the user's environment.

2. Installation

The following software needs to be installed to run the Offline Attendance system:

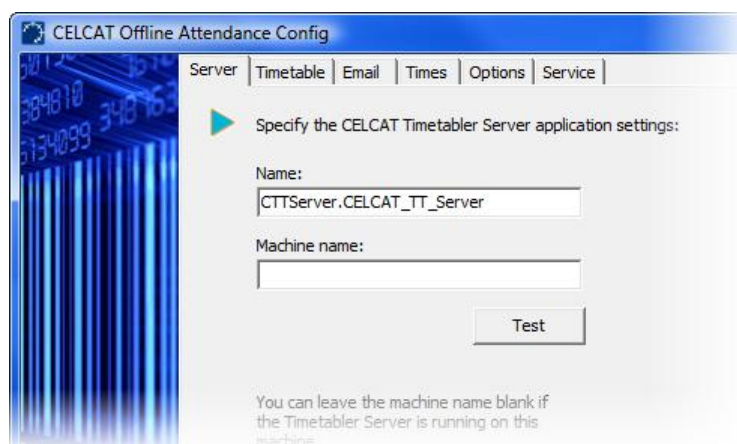
1. CELCAT Offline Marking Service
2. CELCAT Opticon 2001 Manager
3. Opticon 2001 Drivers

We recommend that CELCAT Offline Attendance is installed on a server or a desktop machine with high availability (i.e. A machine that is not switched off). The CELCAT Offline Marking Attendance service should be installed and configured on the server and then left running uninterrupted by users. The CELCAT Opticon 2001 Manager should be installed on the server with appropriate access security to restrict the users who may configure the service. More details on security can be found in section 6.4 of this user guide. Any client machine being used to upload the Opticon data will need the Opticon 2001 drivers installed.

If the software is installed on a network server, the help files are normally accessible from the server just as they would be if installed locally. However, Microsoft have recently released a security patch that prevents some html help from running remotely. See <http://support.microsoft.com/kb/896054> for more information and suggested solutions.

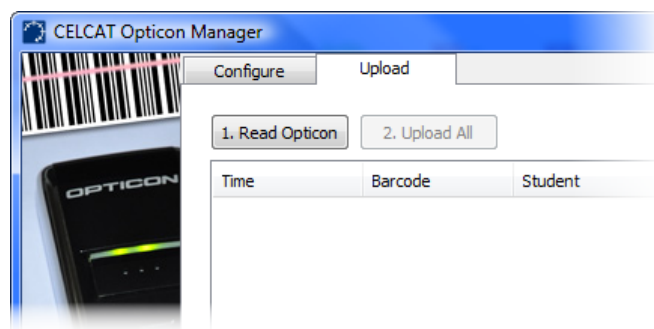
2.1 Installing CELCAT Offline Marking Attendance (OLA) Service

Open the OLA folder from the CELCAT *Timetabler* installation folder and run **Setup.exe**. This launches the Installation wizard for CELCAT *Timetabler* Offline Attendance. Follow the wizard specifying an installation folder. By default "c:\Program Files\CELCAT\Timetabler\ OLA" is used. On completion of the wizard open the specified folder and double-click **CTOLAConfig.exe**.



2.2 Installing CELCAT Opticon 2001 Manager

Open the Opticon folder and run **Setup.exe**. This launches the Installation wizard for CELCAT *Timetabler* Opticon Manager. On completion of the wizard open the specified folder and double-click **CTOLAConfig.exe**.



CELCAT Opticon Manager

2.3 Installing Opticon 2001 Drivers

During the installation for the CELCAT *Timetabler* Opticon Manager the installation program for the Opticon 2001 drivers is copied to the **CELCAT Opticon 2001 Manager** folder. From this location run **USB Drivers Installer.exe** to install the Opticon 2001 Drivers. Check www.opticon.com for driver updates.

3. CELCAT Offline Attendance Config

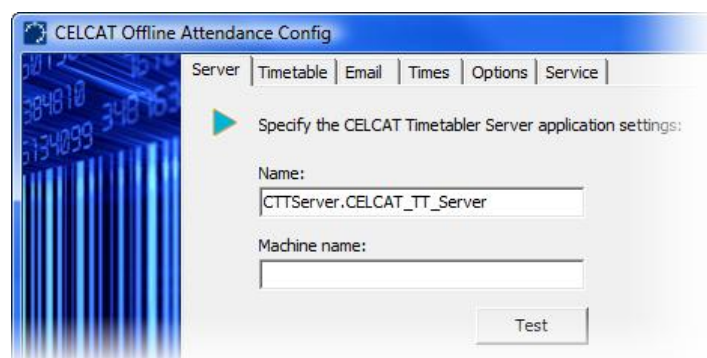
The Offline Attendance Config tool is used to configure the service. It is similar to the configuration tool used by other CELCAT *Timetabler* service applications, and has the following pages:

3.1 Server

The **Server** page is used to specify the *Timetabler* Application Server machine and name. See **Attendance Config Server Page** and explanation below.

Name: This field is the generic DCOM name for the *Timetabler* Server and should be left at the default setting unless changed during installation of CELCAT *Timetabler* Server

Machine Name: Type the name of the computer on which the *Timetabler* Application Server is installed. For a local installation of the server this field can be left blank.



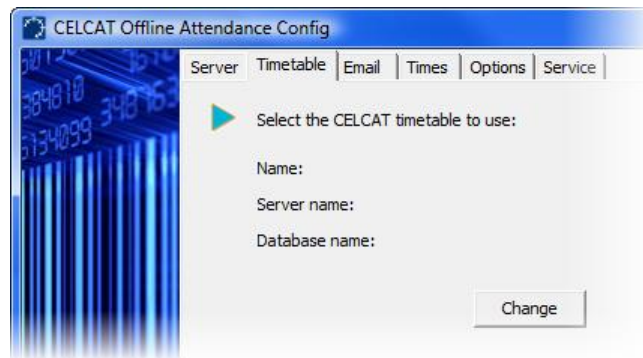
Attendance Config Server Page

After entering the details click the **Test** button.

3.2 Timetable

The **Timetable** page is used to specify the name of the timetable processed by the Offline Marking Service. See below.

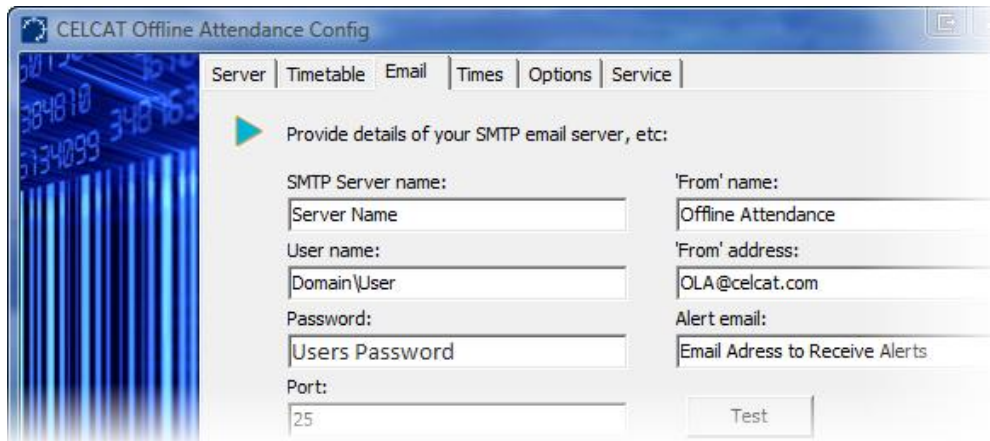
Click the **Change** button to select a timetable to use (i.e. the timetable containing the registers you want to mark). Selecting a timetable updates the following fields on the timetable page: **Name**, **Server name** and **Database name**.



Attendance Config Timetable Page

3.3 Email

The **Email** page is used to specify the SMTP server details and the address of an administrator so that the service can communicate alerts. See below.



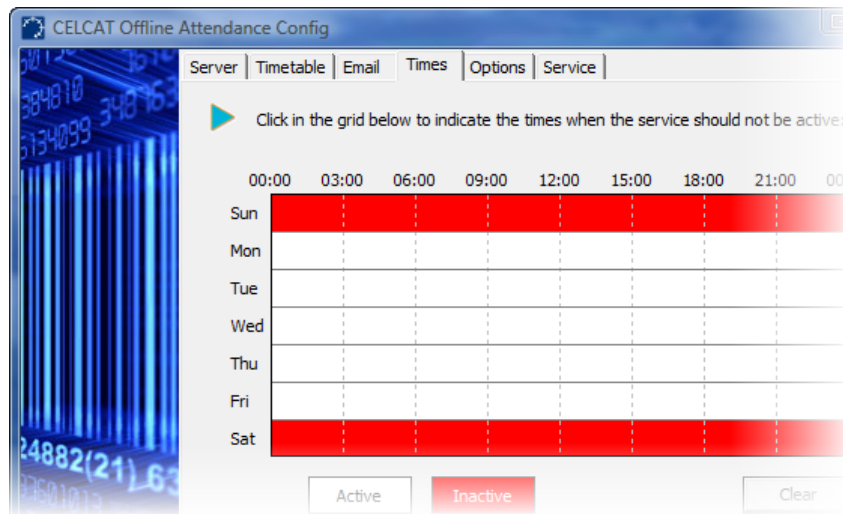
Attendance Config Email Page

Fill in the email credentials then click the **Test** button. An email should be sent to the **Alert email** account.

3.4 Times

The **Times** page is used to stipulate days and times when the service should not be processing. See image below.

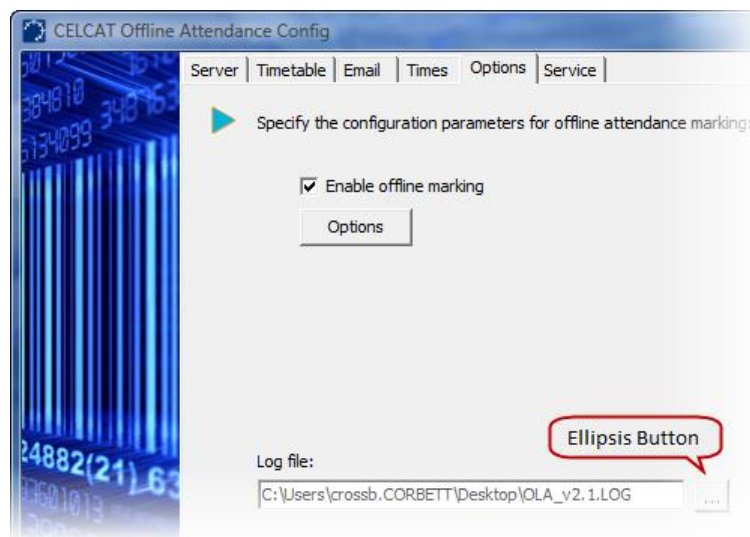
Set the times for the service to be inactive by using the mouse to click on the grid for the appropriate day and time. This turns the grid red indicating the service will *not* run during this period. Inactive periods are selected in half hour slots.



Attendance Config Times Page

3.5 Options

The **Options** page, as shown below, is used to apply custom settings defining how the offline service behaves.

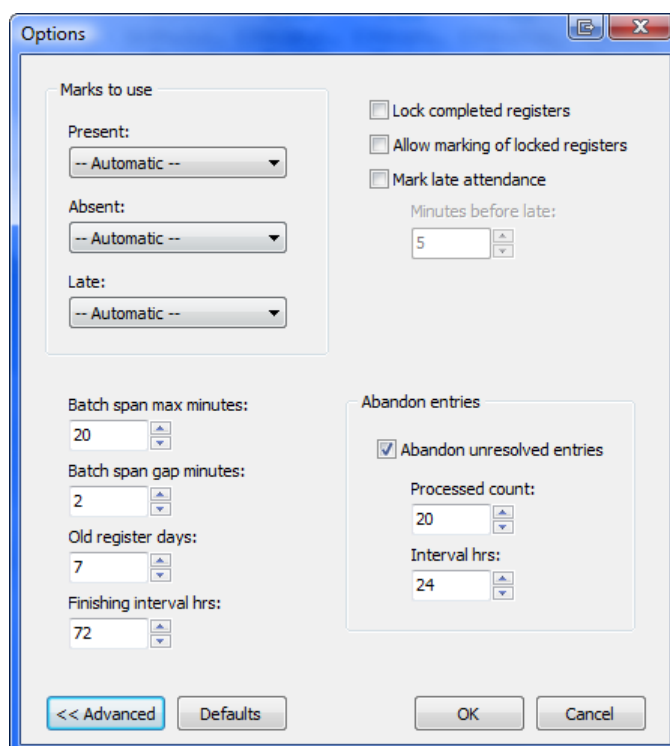


Attendance Config Options Page

For Offline attendance to run as a service the **Enable offline marking** option must be checked and a valid log file path set.

The Log: Use the ellipsis button to browse for a location to store the log file. When the service is running information will be recorded in the log file. This informs the user the service is attempting to transform data and records any errors that occur.

Click the **Options** button to display the Options window as shown below:



Options Window

Marks to use: The following three marks are used in offline marking:

1. Present
2. Absent
3. Late

The marks can be set using the drop down lists. Any marks that are created in CELCAT *Timetabler* Attendance with the appropriate mark definition can be set. If the field for a mark is set to Automatic it uses the mark definition used by the card marking mechanism.

Lock completed registers: Check this option to lock the register when all the marks for a register have been transformed and no more students are available to mark in that register. This means that only users with administrative access rights are able to modify the register.

Allow marking of locked registers: Check this option to allow the Offline Marking Service to mark registers even if they are locked.

Mark Late Attendance: Ticking this checkbox instructs the Marking Service to mark students late if the time stamp is more than the specified **Minutes before late**. The default is 5 minutes.

3.6 Advanced Settings

The following settings are advanced and should usually be left at their defaults:

Batch span max minutes: When analysing offline marks, the Marking Service attempts to group together - or 'batch' - marks that are in the same register. The **mark_stamp** is a date/time value and indicates when the offline mark was read. **Batch span max minutes** is the maximum number of minutes a batch of marks can span; i.e. from the earliest **mark_stamp** to the latest must be less than or equal to this parameter. Default is 20 minutes. See also **Batch span gap minutes** below.

Batch span gap minutes: See **Batch span max minutes** above for an introduction to mark 'batching'.

A batch of marks must also contain a steady chronological stream of entries, with no two adjacent marks having a **mark_stamp** gap of more than **Batch span gap minutes**. Default is 2 minutes.

Old register days: One of the most difficult jobs for the Marking Service is to match offline marks to registers (we call it 'transforming' the marks). If the service has been unable to transform a set of offline marks and the **mark_stamp** values are older than **Old register days** then the Marking Service broadens the search for the corresponding register. This parameter is also used in the identification of offline marks that should be abandoned. Default is 7 days.

Finishing interval hrs: The Marking Service attempts to 'finish' registers by marking as absent any students on a register that do not have a mark. The **Finishing interval hrs** is the interval between such checks. Default is 72 hours.

Note: The registers must be older than the Old register day before absent marks are placed against unmarked students.

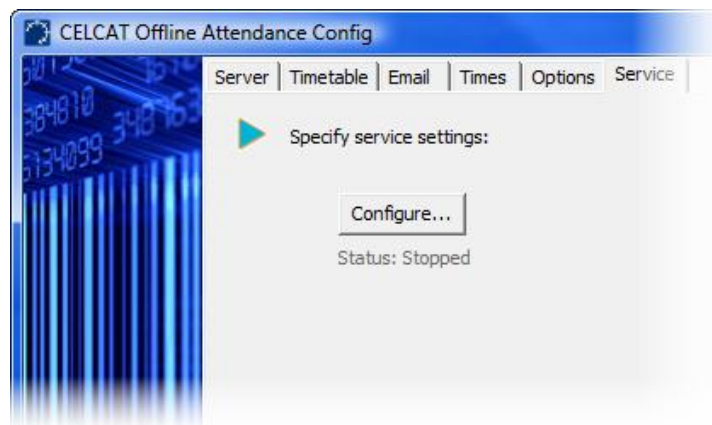
Abandon unresolved entries: Tick this checkbox to instruct the Marking Service to abandon entries that cannot be transformed after many attempts (Three times the Old register days. Default is 21 days). Note that when an offline mark is abandoned its status is set accordingly but it remains in the Holding Database. Default is on.

The **Processed count** parameter is used to specify how many times an offline mark is examined by the service before it qualifies to be abandoned. Default is 20.

The Marking Service occasionally checks for entries that might be abandoned, and the **Interval hrs** parameter is used to specify the minimum interval between such checks. Default is 24 hours.

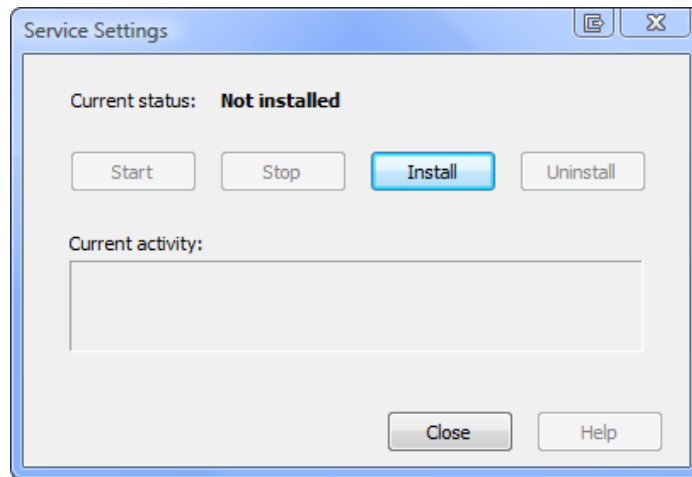
4. Service

The **Service** page allows you to install the service and check its status.



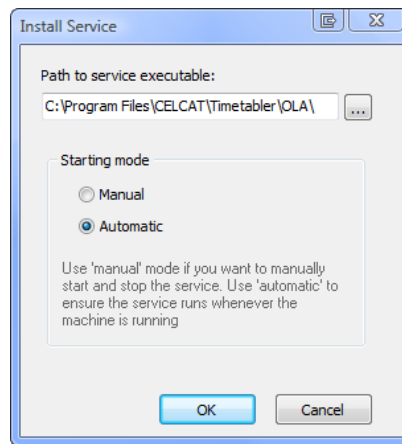
Attendance Config Service Page

Click the **Configure** button to open the **Service Settings** window as shown below:



Service Settings

Click the **install** button to open the Install Service window as shown below:



Install Service

To install the service enter the **Path to service executable** this is the folder where CELCAT *Timetabler* Offline Attendance is installed. Then select the preferred starting mode and click **OK** to install.

Once the service has been installed the 'holding' tables are created inside your CELCAT database.

After the install has completed the **Start** and **Uninstall** buttons become available. Click **Start** to activate the service and the mark stamps will start to be transformed from the holding database once the stamps have been uploaded. Note once the service is running all the other Attendance config pages become view only and options cannot be edited.

Click the **Uninstall** button to remove the service.

5. Opticon Device

5.1 The Opticon 2001

The Opticon 2001 is a barcode data collector with 512k flash memory, integrated real-time clock and USB interface.



Opticon 2001

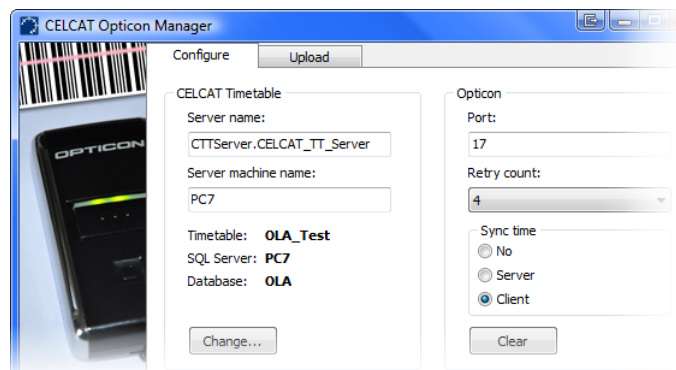
By scanning student cards (or even barcodes from a printed register) it allows a tutor to collect student IDs and associated time-stamps. **Note that no other data is stored in the device** - it knows nothing about registers, rooms, etc; it stores only the ID of a student and the date/time when the ID was recorded. The device can store thousands of register marks in this way, and the tutor may typically mark a day's worth or even a week's worth of registers before uploading data to Attendance.

6. The Opticon Manager

The Opticon Manager is a newly developed application from CELCAT allowing users to upload data stored on an Opticon 2001 device to the CELCAT *Timetabler* holding database at the click of a button.

6.1 Configure Page

The **Configuration** page is shown below. The setting must be set before attempting an upload.



Configuration Page

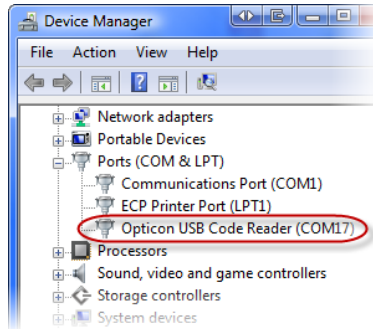
The Settings are explained below:

Server Name: This field contains the *Timetabler* Server name (by default the name is set to CTTServer.CELCAT_TT_Server)

Server Machine Name: Enter the computer name on which the *Timetabler* Server is installed

Timetable: Click the **Change** button to select a timetable (i.e. the timetable containing the registers you want to mark). After selecting a timetable the **Timetable**, **SQL server** and **Database** fields are updated with timetable details.

Port: This is automatically detected by the Opticon Manager. In the event of a communication error with the device you can check the correct port has been detected using the Windows device manager (see below). **NB.** The device must be plugged in.



Device manager displaying Opticon 2001 Port

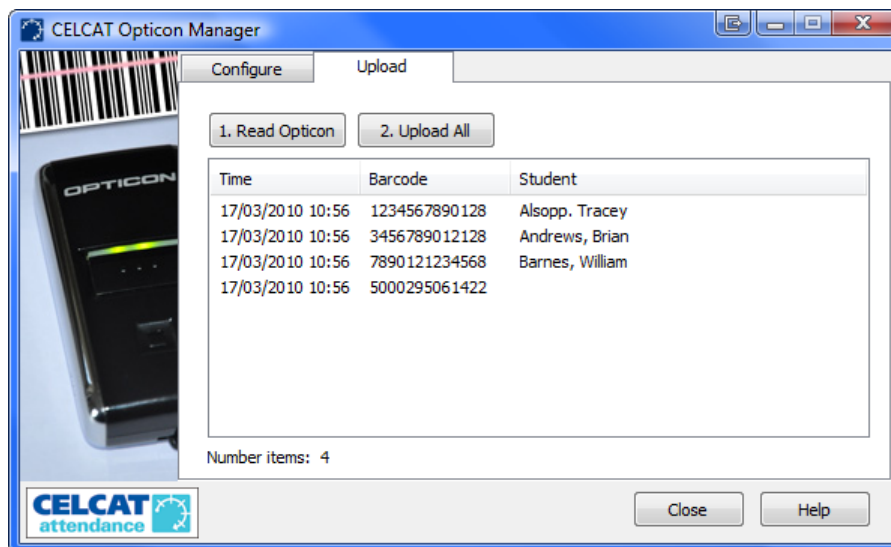
Retry Count: This is a programmatic communication parameter between the Opticon driver and the device. The value selected is the number of times a connection is attempted before it fails.

Sync Time: The sync time allows the user to adjust the Opticon 2001's internal clock to match the clock of **The Server**, (the machine where the SQL server is installed) or **The Client** (the machine you are currently working on). If students have been scanned before the time sync takes place all the entries will be modified accordingly. i.e. if the Option 2001's internal clock is 10 minutes fast, then before each entry is displayed in the list, 10 minutes is deducted from the date stamp. A message is displayed to the user if this occurs (time stamps stored in the data collator are unaffected). Selecting the **No** option will have no effect on the Opticon 2001's internal Clock or data collected

Clear: Pressing the clear button will clear all scanned entries on the Opticon device.

6.2 Upload Page

The **Upload** page is used to display/edit the marks held on the device and to upload the data to the Holding Database. The **Upload** page is shown below:



Upload Page

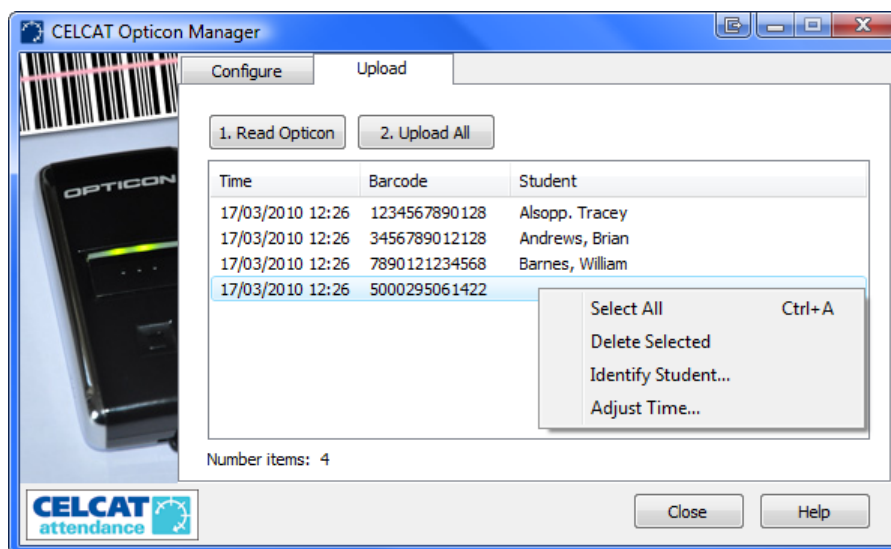
Read Opticon: Click the **Read Opticon** button to read and display the device's data (i.e. any barcodes that have been scanned). The **Time** column shows the date and time at which the barcode was scanned. The **Barcode** column shows the numerical representation of the barcode. The **Student** column shows the name of any student that matches the barcode read (note that the student name

isn't stored in the data collection device; it is simply read from the database). If the student name is blank this means that there is no student associated with the barcode.

Upload All Button: Clicking the **Upload All** button will upload all the data to the holding database and clear the device of *all* records.

6.3 Popup menu

A popup menu that provides a list of commands can be accessed by right-clicking anywhere in the list as shown below:



Popup Menu

Select All - selects all list items

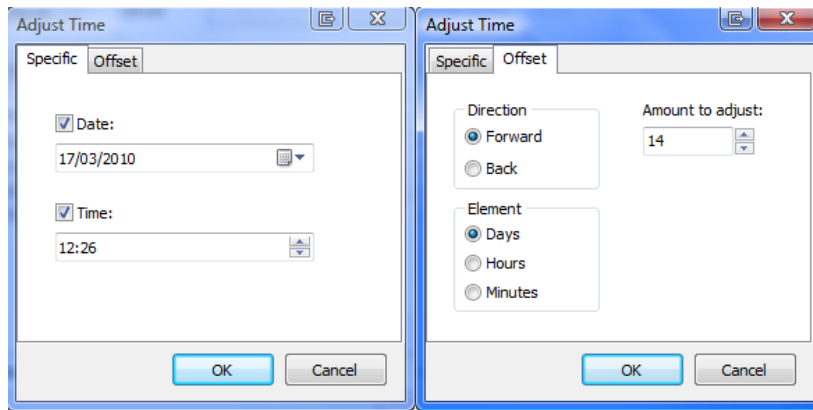
Delete Selected - deletes the selected items from the list (note that this does not delete the items from the device).

Identify Student - Displays a student browse list so that a student can be matched to a barcode. Matching a barcode to a student will automatically update the student record in *Timetabler* Client by adding the barcode to the **student context** field set in the permissions (the default student context field is the card number).

Adjust Time - Displays a form that allows modification of the date/time stamps of the selected entries in the list. This does not modify data on the device. This advanced feature can be used to correct any time stamps which have lost synchronisation with the timetable due to:

- The clock on the Opticon device being out of sync
- Summer / winter clock changes
- Students accidentally not being scanned
- Events taking place at different times to the scheduled time

The 2 pages of the **Adjust Time** form are shown below:



Adjust Time Form

The **Specific** page allows a user to specify a date and/or time. All selected entries in the listed items will adopt the specified settings.

The **Offset** page allows a user to move the date/time values by the specified amount. As with the specific option all selected entries in the listed items will adopt the specified settings.

Note: Any modification to the list will be uploaded to the holding data when the **Upload All** button is pressed. If the **Read Opticon** button is pressed before the modifications are uploaded the adjustments made will revert to data saved on the Opticon 2001.

6.4 Setting Permissions for the Opticon Manager

The Opticon Manager's functions and settings can be restricted if required to provide a uniform operation across a site. This is accomplished using an optional .ini file called OpticonManager.ini which resides in the same folder as the executable. Typical content of this file is shown below:

```
[SETTINGS]
AppServer=MyServer
AppServerName=CTTServer.CELCAT_TT_Server
SQLServer=MyServer
DB=OLA
Sync=1
StudentContext=3
AllowDelete=1
AllowIdentify=1
AllowAdjustTime=1
AllowClear=1
DisableLogin=0
EnableSurrogate=0
```

When one of these settings is specified in the OpticonManager.ini file then the application will be forced to use it; the user is unable to modify the corresponding setting in the application because it is disabled.

The settings are explained below:

- **AppServer** - The Server machine name displayed in the Configuration page

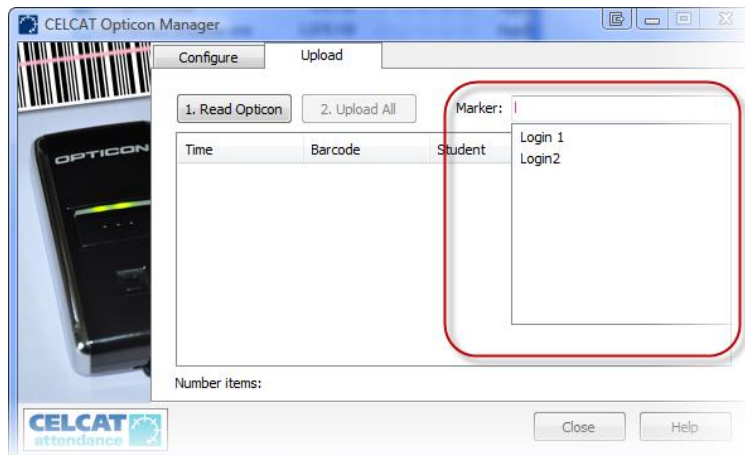
- AppServerName - The Server name value displayed in the Configuration page
- SQLServer - The SQL Server name displayed in the Configuration page
- DB - The Database value displayed in the Configuration page
- Sync - The Sync time option displayed in the Configuration page. 0 = No; 1 = Server; 2 = Client
- StudentContext - There is no graphical user interface for this value. It denotes the student field that is used to store the barcode value, and defaults to the card_num field. Possible values are 0 = student unique name; 1 = student name; 2 = internal student ID; 3 = student card number; 4 = student original ID; 5 = email; 6 = profile; 7 = lookup_id1; 8 = lookup_id2; 9 = lookup_id3
- AllowDelete - If this setting has a value of 0 (zero), it means that the user is unable to delete offline marks from the list before uploading, effectively forcing users to upload all of the data from the device
- AllowIdentify - If this setting has a value of 0 (zero), it means that users are prevented from using the Identify student command (which modifies student records)
- AllowAdjustTime - If this setting has a value of 0 (zero), users cannot modify the date/time stamp of the offline marks before uploading
- AllowClear - If this setting has a value of 0 (zero), users cannot invoke the Clear function on the Configuration page
- DisableLogin - If this setting has a value of 1 users will not be required to login and the application runs using the built-in *Timetabler* administrative account
- EnableSurrogate - If this setting has a value of 1 the operator is able to choose another user (from the Marker control) to be identified as the marker of the register

Note that if no value is specified for one of the settings (or if the setting is completely missing from the file) then the setting is not enforced.

These settings are typically enforced by installing the Opticon Manager on a server and creating an OpticonManager.ini file that is then protected from modification using operating system file security. Users can then run the application from a shortcut to the executable stored on the server.

6.5 Marking User

OLA offers a feature where the marking user can be uploaded to the register. By default the user logged in to CELCAT Opticon Manager will be uploaded as the marking user. The making user can be configured in the OpticonManager.ini by changing the following two options "DisableLogin" and "EnableSurrogate". Setting "DisableLogin=0" and "EnableSurrogate=1" will use the logged in user unless a surrogate user has been set using the drop selection list that now appears on the **Upload** page of CELCAT Opticon Manager (see image below).



CELCAT Option Manager with EnableSurrogate = 1

Setting both options to a value of 1 allows a user to be selected using the marker dropdown list (see image above) if no user has been selected the built-in CELCAT Administrator user will be used to mark the uploaded students.

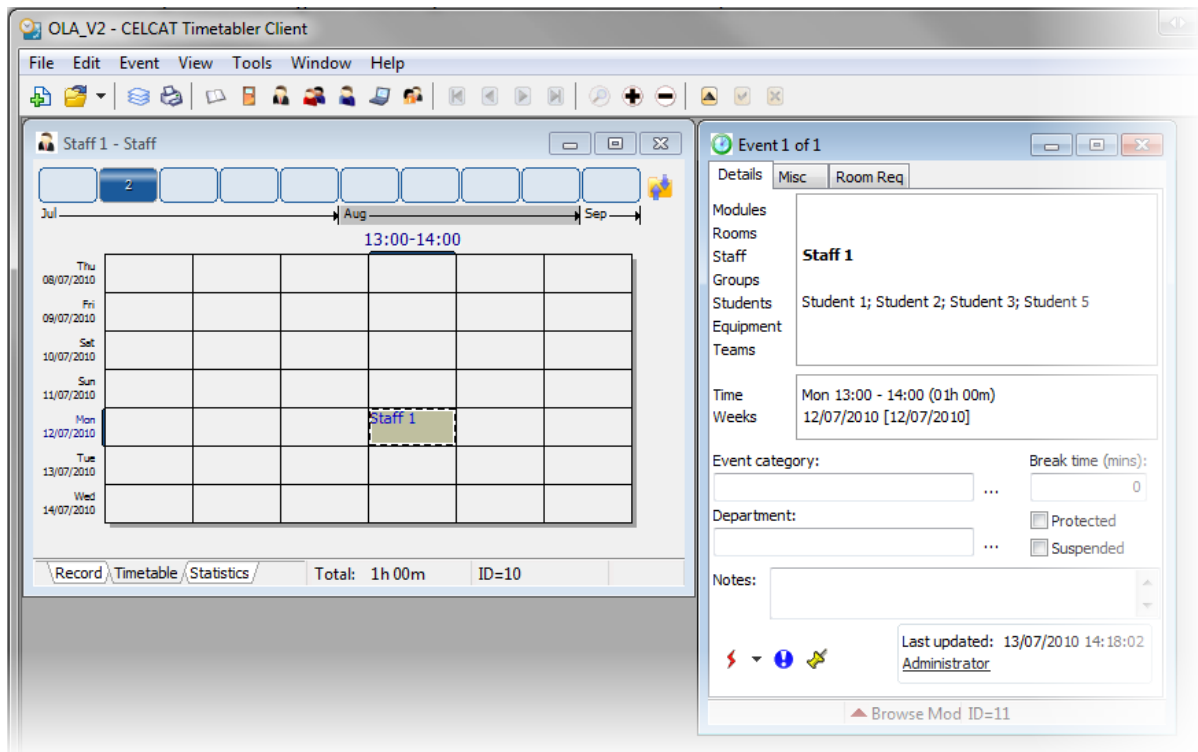
Setting "DisableLogin=1" and "EnableSurrogate=0" effectively disables the feature to specify a marking user and all uploaded students will be marked by the built-in CELCAT Administrator user.

7. Detailed Transforming Principals

This section is technical in nature and is intended for advanced diagnostics.

Transforming is the term used for taking an uploaded student time stamp collected by the Opticon 2001 device and turning it into a student mark on a CELCAT Attendance register. Below is an example of the transforming process from scanning the student card to the student mark appearing on the CELCAT Attendance register using the default setting.

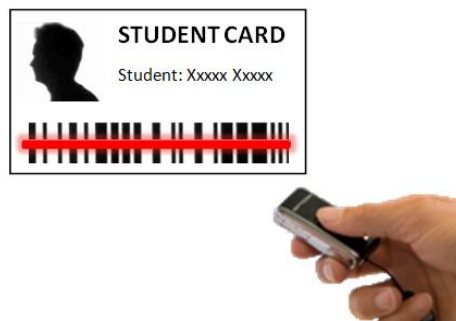
For this example a sample databases has been used called OLA_V2. The database contains an event with four students attached, one staff member and takes place on Monday 12/07/2010 at 13:00 (see full details in screen shot). The event requires Attendance registers and the Internal ID = 11 (in the example the event will be referred to as event 11).



CELCAT Timetabler Client displaying example event 11

Step 1: Collect the student Marks

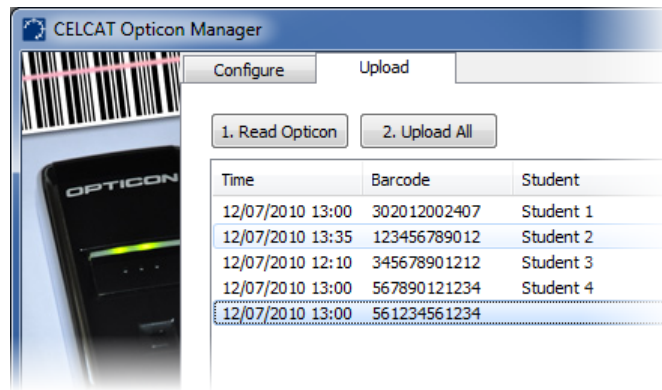
Once CELCAT Offline Attendance has been installed and configured, members of staff can use the Opticon 2001 to collect student mark stamps by scanning students' cards as they enter a classroom.



Opticon 2001 collecting Student Data

Step 2: View and upload student mark stamps

Connect the Opticon 2001 to a client machine that has access to CELCAT Opticon Manager. Check that the configure tab has all relevant credentials set (see section 6.1 for more details) and then press the **Read Opticon** button on the Upload page to display the collected mark stamps. In this example, five mark stamps have been collected - Students 1 to 4 and a mark stamp that is not related to a student.



View of the collected mark stamps

Step 3: Upload mark stamps to the OLA_1 holding table

Using the CELCAT Opticon Manager all the data that has been collected with the Opticon 2001 can be uploaded to the CELCAT OLA_1 holding table by pressing the **Upload All** button. Once the button is pressed all the data will be wiped from the Opticon device ready to be used again. From the SQL Server Management Studio it is possible to view the OLA_1 table containing all the uploaded mark stamps.

ident	session	student	mark_stamp	context	mark_abb	marking_user_id	status	event_id	week	student_id	mark_id	dt_uploaded	processed_count
1	1	1074808543	302012002407	2010-07-12 13:00:00.000	3	NULL	1	0	NULL	NULL	NULL	2010-07-12 14:43:27.793	NULL
2	2	1074808543	123456789012	2010-07-12 13:34:00.000	3	NULL	1	0	NULL	NULL	NULL	2010-07-12 14:43:27.820	NULL
3	3	1074808543	345678901212	2010-07-12 12:10:00.000	3	NULL	1	0	NULL	NULL	NULL	2010-07-12 14:43:27.843	NULL
4	4	1074808543	567890121234	2010-07-12 13:00:00.000	3	NULL	1	0	NULL	NULL	NULL	2010-07-12 14:43:27.860	NULL
5	5	1074808543	561234561234	2010-07-12 13:00:00.000	3	NULL	1	0	NULL	NULL	NULL	2010-07-12 14:43:27.887	NULL

OLA_1 Holding table

Step 4: The first transformations of newly uploaded mark stamps

CELCAT Offline Marking Service uses a set of complex calculations to find the best fitting register for each mark stamp uploaded. The calculations are based on user options and some hard coded values (for details of options and hard coded values refer to sections 3.5, 3.6).

For the example data we can predict what will happen for each of the mark stamps as follows:

Student 1 was scanned at 13:00 on 12/07/2010 and is attached to event 11. Student 1's mark stamp is the top row in the OLA_1 holding table. When it is processed by the marking service we expect that student 1 to receive a 'present' mark on the event 11 register and the status value in the holding table will be set to 1000.

Student 2 was scanned at 13:35 on 12/07/2010 and is attached to event 11. Student 2's mark stamp is the second row in the OLA_1 holding table. When it is processed by the marking service we expect student 2 to receive a 'present' mark on the event 11 register and the status value in the holding table will be set to 1000. A present mark is expected because by default late marks are turned off and also the mark stamp is within 45 minutes (a hard coded value for finding a best fit register) of the start time of event 11.

Student 3 was scanned at 12:10 on 12/07/2010 and is attached to event 11. Student 3's mark stamp is the third row in the OLA_1 holding table. When it is processed by the marking service we expect student 3 *not* to receive a mark on event 11 register and the status value in the holding table will be set to 100. Student 3 will continue to be processed by the offline marking service until a better fit

register becomes available or until the **Old register days** (7 by default) has passed, at which point the search for a register start time is broadened from 45 minutes to the closest register on the day of the mark stamp (in the case of this example the event 11 register).

Student 4 was scanned at 13:00 on the 12/07/2010 and isn't attached to event 11. Student 4's mark stamp is the fourth row in the holding table. When it is processed by the marking service we expect student 4 *not* to receive a mark in event 11 register and the status value in the holding table will be set to 100. Student 4 will continue to be processed until a new event with a register is created or the student is added to event 11 register (NOT the event) through CELCAT Attendance. If no registers are made available within 21 days (default value 3 x **Old register days**) from the first time the mark stamp was processed the mark stamp is abandoned as long as the number of processes is greater than 20 (default value configurable in service options).

Student 5 was scanned at 12:10 on 12/07/2010 and is attached to event 11. Student 5's mark stamp is the fifth row in the OLA_1 holding table. When it is processed by the marking service we expect student 5 *not* to receive a mark on the event 11 register and the status value in the holding table will be set to 100. Student 5 will continue to be processed by the marking service but at the point of the upload student 5 had not been correlated to his barcode (in CELCAT Client the context field for student 5 has incorrect data or is blank). If the issue is not resolved the mark stamp will eventually be abandoned.

Step 5: Observing the holding table and register after the first process

Using SQL Server Management Studio we can observe the table after the initial processing (the marking service processes the OLA_1 table for the first time when you start the OLA service and then every 2 minutes) and use CELCAT Attendance to view the marks transformed on to the events' registers. The images below show the results of the marking services initial processing, the images confirming our expected results.

ID	Barcode	Student ID	Time	Status	Flags
2	1014808243	281534281534	2010-07-13 13:00:00	3	INPT J
4	1014808243	281534281534	2010-07-13 13:00:00	3	INPT J
3	1014808243	342815342815	2010-07-13 13:00:00	3	INPT J
5	1014808243	1534281534	2010-07-13 13:00:00	3	INPT J
1	1014808243	1534281534	2010-07-13 13:00:00	3	INPT J

OLA_1 holding table showing results after initial processing

Mark	Late	Student	Comment	Last change	By user
/		Student 1		13/07/2010 14:20	Administrator
/		Student 2		13/07/2010 14:20	Administrator
/		Student 3		13/07/2010 14:20	Administrator
/		Student 5		13/07/2010 14:20	Administrator

Event 11 register displaying updated marks from Offline Attendance

Step 6: Add missing students to a register

Using CELCAT Attendance it is possible to add students to a register at a later stage if they have initially been missed out or join the class at a later date. Offline attendance can only transform marks stamps to a register if the student is included in the register. In the above example Student 4 has a mark stamp but cannot be transformed as he does not exist on the register. For the purpose of this example, suppose Student 4 is added to the event 11 register within 7 days of the offline data being uploaded. In these circumstances the marking service simply picks up student 4 in the register and generates a present mark. See below for confirmation screenshots:

ident	session	student	mark_stamp	context	mark_abb	marking_user_id	status	event_id	week	student_id	mark_id	dt_uploaded	processed_count
1	1	1074808543	302012002407	2010-07-12 13:00:00.000	3	NULL	1	1000	11	1	3	2010-07-12 14:43:27.793	2
2	2	1074808543	123456789012	2010-07-12 13:34:00.000	3	NULL	1	1000	11	1	4	2010-07-12 14:43:27.820	2
3	3	1074808543	345678901212	2010-07-12 12:10:00.000	3	NULL	1	100	NULL	NULL	5	2010-07-12 14:43:27.843	18
4	4	1074808543	567890121234	2010-07-12 13:00:00.000	3	NULL	1	1000	11	1	6	2010-07-12 14:43:27.860	16
5	5	1074808543	561234561234	2010-07-12 13:00:00.000	3	NULL	1	100	NULL	NULL	NULL	2010-07-12 14:43:27.887	18

OLA_1 Table after Student 4 was added to event 11 register and marking service processed the table

Mark	Late	Student	Comment	Last change	By user
/		Student 1		13/07/2010 14:20	Administrator
/		Student 2		13/07/2010 14:20	Administrator
/		Student 3		13/07/2010 14:20	Administrator
/		Student 4		13/07/2010 14:46	Administrator
/		Student 5		13/07/2010 14:20	Administrator

CELCAT Attendance showing student 4 after mark stamp was transformed

Step 7: After old register days have passed (default 7)

'Old register days' is a configurable option in the CELCAT Offline Attendance options (by default 7). The option is a key setting that can effect several parts of the calculation to find a best fit register (please refer to section 3.6 for more details). It is recommended that all advanced options are left at their defaults. In this example when student 3 has been processed repeatedly for 7 days and no events have been created that meet the criteria for a best fit register, the search is broadened to look for a register that has any start time on the day of the mark stamp. Event 11 is suitable. The event 11 register has also been processed for 7 days. This means this register will now be closed. When a register is closed all unmarked students are marked absent and any corresponding mark stamps in the OLA_1 table with a status of 1000 are purged from the table. See below how the example data has been transformed after 7 days.

ident	session	student	mark_stamp	context	mark_abb	marking_user_id	status	event_id	week	student_id	mark_id	dt_uploaded	processed_count
1	5	1074808543	561234561234	2010-07-12 13:00:00.000	3	NULL	1	100	NULL	NULL	NULL	2010-07-12 14:43:27.887	35

OLA_1 Table after 7 days of processing

Mark	Late	Student	Comment	Last change	By user
		Student 1		13/07/2010 14:20	Administrator
/		Student 2		13/07/2010 14:20	Administrator
/		Student 3		21/07/2010 09:11	Administrator
/		Student 4		13/07/2010 14:46	Administrator
A		Student 5		13/07/2010 14:20	Administrator

The event 11 register after 7 days of transforming marks

Step 8: Abandoned mark stamps

After a mark stamp has been processed 20 times and has been in the OLA_1 table 21 days since it was first processed (default setting that can be user-configured) the mark stamp is abandoned. Once a mark stamp has been abandoned, its status in the holding table will change to 200. The entry will remain in the database and it will not participate in future processing. Errors will be sent to the OLA log file and the service can also be configured to send emails to make users aware of abandoned mark stamps. In the example student 5 was not assigned to a barcode. This made it impossible for the marking service to transform the mark stamp to a register. This issue was not rectified. See below the result after the mark stamp was abandoned.

ident	session	student	mark_stamp	context	mark_abb	marking_user_id	status	event_id	week	student_id	mark_id	dt_uploaded	processed_count	
1	5	1074808543	561234561234	2010-07-12 13:00:00.000	3	NULL	1	200	NULL	NULL	NULL	1	2010-07-12 14:43:27.887	38

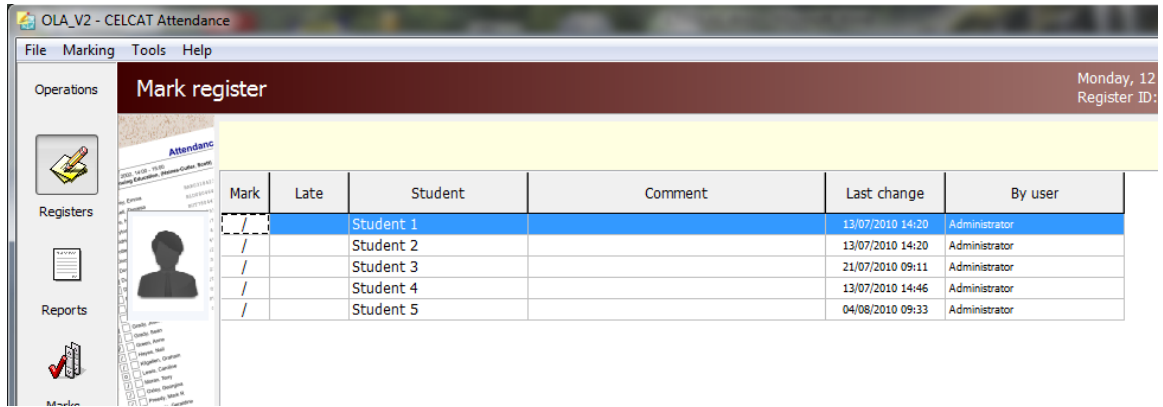
OLA_1 showing student 5's mark stamp after being abandoned

Step 9: Reviving an abandoned mark stamp

It is possible from SQL Server Management Studio to run an update query or depending on the version of SQL, edit the abandoned mark stamp and set its status back to 100. This allows the marking service to continue processing it with the goal of transforming the mark stamp to a register. From the example student 5's record was updated to contain the correct barcode so any future mark stamps created would get transformed. Any previously abandoned mark stamps will not transform as the making service now ignores these entries in the OLA_1 table. By using SQL Server Management Studio the example mark stamps status was changed to 100. Subsequently, the mark will transform to a 'present' mark on event 11 register.

ident	session	student	mark_stamp	context	mark_abb	marking_user_id	status	event_id	week	student_id	mark_id	dt_uploaded	processed_count	
1	5	1074808543	561234561234	2010-07-12 13:00:00.000	3	NULL	1	100	11	1	7	1	2010-07-12 14:43:27.887	40

OLA_1 Table showing student 5's mark stamp after revival



CELCAT Attendance showing event 11 after all students are transformed

Conclusion: Purpose of the example

The example above shows only a very basic transforming process for Offline Attendance and gives an overview of how the service searches for a best fit register to transform a mark stamp into an attendance mark on a register.

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