

Requirements Specification for XXX University Bespoke Integration Plugin (Facility CMIS - CELCAT Timetabler 6)

Author: Reg Haversham
Review Team: [SG]
History: rel 1.0 18 Feb 2005 following CELCAT in-house peer review
rel 1.1 12 Aug 2005 change request re modetype field

1. Overview

XXX University uses Facility CMIS to construct site-wide timetables. Some of the Schools within XXX University wish to view and publish timetables in CELCAT *Timetabler* 6. The project described here is to create a CELCAT *Timetabler* 6 integration plugin that extracts data directly from Facility tables and inserts it into an existing *Timetabler* database.

Users will interact with the plugin from within the standard *Timetabler* 6 **Tools | Import** form. Execution of the plugin will be a manual operation and one that is easily and quickly set in motion (< 1 minute). The time taken to perform the data transfer operations depends upon a number of factors including the amount of data to process, contention for database and network resources, etc.

Where appropriate, each requirement is followed by a reference (in square brackets) showing the origin of the requirement.

Terminology

Facility	The Facility CMIS software.
Timetabler	The CELCAT <i>Timetabler</i> 6 software.
Plugin	The bespoke plugin to be developed.
User	The user of the Plugin.
Table	A data table in the Facility or <i>Timetabler</i> database.
Column	A Table column (sometimes referred to as a field).
Row	A Table row (sometimes referred to as a record).
SETID	A Column within Facility Tables that identifies Rows as belonging to a particular academic year.

2. Functional Requirements

In all cases, the Plugin should record the origin of the *Timetabler* data, i.e. it should use the *Timetabler* CT_ORIGIN table and associated origin_id columns to store details of the Facility database used and SETID.

The Plugin should communicate with the Facility database using an ADO connection and the MS Ole DB Oracle Driver, and should require the User to login. The Plugin should not store login information (e.g. user name/password).

[Following successful test of application by ..., 16 Feb 2005, XXX]

The User should be able to specify the SETID to use.

[... and ..., 8 Feb 2005, XXX]

Facility is always considered to be the 'master' source of timetable data. When the Plugin runs, the *Timetabler* database should always be overwritten regardless of whether changes have been made within *Timetabler*.

[Mtg 8 Feb 2005, XXX]

The Plugin should warn the User if the week start dates of the timetable as specified in Facility do not correspond with the dates in *Timetabler*, or the number of weeks differs (note to Development: see Facility CCALMAPS table).

The Plugin should extract the following data from Facility, observing the specified column mappings. Data descriptions are split into sections (Resources, Classifications, Membership, Events and Assignments, Rooming and Miscellaneous).

2.1 Resources

Staff

The Facility LECTURER table should be used as data source for the *Timetabler* CT_STAFF table. The column mapping is shown below. The lecturerid column should be considered to be primary key of the Facility LECTURER table.

Facility Columns	Timetabler Columns
LECTURER.lecturerid	CT_STAFF.original_id
LECTURER.lecturerid	CT_STAFF.unique_name
LECTURER.name	CT_STAFF.name
LECTURER.owner	CT_STAFF.dept_id (via CT_DEPT lookup)
LECTURER.category	CT_STAFF.tag1
LECTURER.type	CT_STAFF.tag2
LECTURER.parttime	CT_STAFF.tag3
LECTURER.status	CT_STAFF.title

Staff Email and URL

The Facility EMAILADDRESS table (where itemtype = 'LE' and linenum=0) should be used as data source for the *Timetabler* CT_STAFF table. The column mapping is shown below.

Facility Columns	Timetabler Columns
EMAILADDRESS.itemkey1	CT_STAFF.original_id
EMAILADDRESS.addr	CT_STAFF.email
EMAILADDRESS.urlline	CT_STAFF.www

Rooms

The Facility ROOMS table should be used as data source for the *Timetabler* CT_ROOM table. The column mapping is shown below. The roomid column should be considered to be primary key of the Facility ROOMS table:

Facility Columns	Timetabler Columns
ROOMS.roomid	CT_ROOM.original_id
ROOMS.name	CT_ROOM.name
ROOMS.roomid	CT_ROOM.unique_name
ROOMS.siteid	CT_ROOM.site_id (via CT_SITE lookup)
ROOMS.category	CT_ROOM.tag1
ROOMS.deptid	CT_ROOM.dept_id (via CT_DEPT lookup)

Modules

Facility Modules can have student membership, so these should be treated as both modules and groups in CELCAT *Timetabler*. The Facility MODULES table should be used as data source for the *Timetabler* CT_MODULE table. The column mapping is shown below. The moduleid column should be considered the primary key of the MODULE table.

Facility Columns	Timetabler Columns
MODULES.moduleid	CT_MODULE.original_id
MODULES.owner	CT_MODULE.dept_id (via CT_DEPT lookup)
MODULES.name	CT_MODULE.name
MODULES.category	CT_MODULE.tag1
MODULES.classif	CT_MODULE.tag2

Groups

The *Timetabler* Group table should be populated by both the Facility MODULE and MODULEGROUPS tables. The column mappings are shown below.

Facility Columns	Timetabler Columns
MODULES.moduleid	CT_GROUP.original_id
MODULES.owner	CT_GROUP.dept_id (via CT_DEPT lookup)
MODULES.name	CT_GROUP.name
MODULES.category	CT_GROUP.tag1
MODULES.classif	CT_GROUP.tag2

Facility Columns	Timetabler Columns
MODULEGROUPS.moduleid + grpcode (compound key)	CT_GROUP.original_id
MODULEGROUPS.name	CT_GROUP.name

Students

The Facility STUDENTS table should be used as data source for the CT_STUDENT table. The column mapping is shown below. The studentid column should be considered the primary key of the STUDENTS table.

Facility Columns	Timetabler Columns
STUDENTS.studentid	CT_STUDENT.original_id
STUDENTS.name	CT_STUDENT.name
STUDENTS.courseid	CT_STUDENT.tag1
STUDENTS.deptid	CT_STUDENT.dept_id (via CT_DEPT lookup)

Mobile Equipment

The Facility MEQUIPMENT table (where moves = 'Y') should be used as data source for the *Timetabler* CT_EQUIP table. The column mapping is shown below. Mobile Equipment does not appear to be used in the XXX database, but the Plugin should support it.

Facility Columns	Timetabler Columns
MEQUIPMENT.ecode	CT_EQUIP.original_id
MEQUIPMENT.ecode	CT_EQUIP.unique_name
MEQUIPMENT.name	CT_EQUIP.name
MEQUIPMENT.enumber	CT_EQUIP.notes
MEQUIPMENT.owner	CT_EQUIP.dept_id (via CT_DEPT lookup)
MEQUIPMENT.category	CT_EQUIP.tag1
MEQUIPMENT.type	CT_EQUIP.tag2

2.2 Classifications

Courses

The Facility COURSE table should be used as data source for the *Timetabler* CT_COURSE table. The column mapping is shown below. The courseid column should be considered to be primary key of the Facility COURSE table.

Facility Columns	Timetabler Columns
COURSE.courseid	CT_COURSE.original_id
COURSE.name	CT_COURSE.name
COURSE.category	CT_COURSE.tag1
COURSE.type	CT_COURSE.tag2
COURSE.owner	CT_COURSE.dept_id (via CT_DEPT lookup)

Schools

The Facility DEPTS table should be used as data source for the *Timetabler* CT_DEPT table. The column mapping is shown below. The deptid column should be considered to be primary key of the Facility SCHOOLS table.

Facility Columns	Timetabler Columns
DEPTS.deptid	CT_DEPT.original_id
DEPTS.name	CT_DEPT.name
DEPTS.adminphone	CT_DEPT.tel

Layouts

The Facility CLASSIFICATIONS table (where type = 'ROOM_TYPE') should be used as data source for the *Timetabler* CT_LAYOUT table. The column mapping is shown below. The classid column should be considered to be primary key of the Facility CLASSIFICATIONS table.

Facility Columns	Timetabler Columns
CLASSIFICATIONS.classid	CT_LAYOUT.original_id

CLASSIFICATIONS.name	CT_LAYOUT.name
CLASSIFICATIONS.description	CT_LAYOUT.description

Sites

The Facility SITES table should be used as data source for the *Timetabler* CT_SITE table. The column mapping is shown below. The siteid column should be considered to be primary key of the Facility SITES table.

Facility Columns	Timetabler Columns
SITES.siteid	CT_SITE.original_id
SITES.sitename	CT_SITE.name
SITES.phone1	CT_SITE.tel

Event Categories

The Facility TIMETABLE table should be used as data source for the *Timetabler* CT_EVENT_CAT table. The column mapping is shown below.

Facility Columns	Timetabler Columns
TIMETABLE.moduletype	CT_EVENT_CAT.original_id
TIMETABLE.moduletype	CT_EVENT_CAT.name

2.3 Membership

Group Membership

The *Timetabler* Group-SubGroup relationship (stored in the CT_GROUP_SUBGROUP table) should be constructed using the Facility MODULEGROUPS table according to the following mapping:

Facility Columns	Timetabler Columns
MODULEGROUPS.moduleid	CT_GROUP_SUBGROUP.group_id (via CT_GROUP lookup)
MODULEGROUPS.moduleid + grpcode (compound key)	CT_GROUP_SUBGROUP.subgroup_id (via CT_GROUP lookup)

Student Membership

The Facility STUMODULES table should be used as data source for the CT_GROUP_STUDENT table. The column mapping is shown below. Note that module references in STUMODULES should be resolved using *Timetabler* groups.

Facility Columns	Timetabler Columns
STUMODULES.moduleid + modgrpcode (compound key)	CT_GROUP_STUDENT.group_id (via CT_GROUP lookup)
STUMODULES.studentid	CT_GROUP_STUDENT.student_id (via CT_STUDENT lookup)

Further student membership entries should be constructed by examining the STUMODULES table for references to 'parent' modules (i.e. modules that have no modgrpcode value). The column mapping is shown below.

Facility Columns	Timetabler Columns
STUMODULES.moduleid	CT_GROUP_STUDENT.group_id (via CT_GROUP lookup)
STUMODULES.studentid	CT_GROUP_STUDENT.student_id (via CT_STUDENT lookup)

Course/Module Links

The Facility crscompmodules table should be used as data source for the *Timetabler* CT_COURSE_MODULE table. The column mapping is shown below.

Facility Columns	Timetabler Columns
CRSCOMPMODULES.courseid	CT_COURSE_MODULE.course_id (via CT_COURSE lookup)
CRSCOMPMODULES.moduleid	CT_COURSE_MODULE.module_id (via CT_MODULE lookup)

2.4 Events & Assignments

Events

The Facility TIMETABLE table should be used as data source for the CT_EVENT table. The column mapping is shown below. The slotid column should be considered the primary key of the TIMETABLE table (but see below regarding moduletype). Notes: The Facility TIMETABLE.weekday should be mapped to CT_EVENT.day_of_week with the help of the Facility CCALDAYS table. TIMETABLE.weeks column should be cross-referenced with Facility WEEKMAPSTRING to provide suitable values for CT_EVENT.weeks. The moduletype value is unusual in that it may introduce duplicity into the data set – for a given slotid there may be multiple rows with different moduletypes. This should be resolved by using the most popular moduletype for a specified slotid.

Facility Columns	Timetabler Columns
TIMETABLE.slotid	CT_EVENT.original_id
TIMETABLE.weekday	CT_EVENT.day_of_week
TIMETABLE.starttime	CT_EVENT.start_time
TIMETABLE.finishime	CT_EVENT.end_time
TIMETABLE.weeks	CT_EVENT.weeks
TIMETABLE.owner	CT_EVENT.dept_id (via lookup with CT_DEPT)
TIMETABLE.status	?
TIMETABLE.classif	CT_EVENT.tag1
TIMETABLE.datechanged	CT_EVENT.date_change
TIMETABLE.tobescheduled	?
TIMETABLE.moduletype	CT_EVENT.event_cat_id (via lookup with CT_EVENT_CAT)

Room Assignments

The Facility TIMETABLE table should be used as data source for the CT_EVENT_ROOM table. The column mapping is shown below.

Facility Columns	Timetabler Columns
TIMETABLE.slotid	CT_EVENT_ROOM.event_id (via CT_EVENT lookup)
TIMETABLE.roomid	CT_EVENT_ROOM.room_id (via CT_ROOM lookup)

Staff Assignments

The Facility TIMETABLE table should be used as data source for the CT_EVENT_STAFF table. The column mapping is shown below.

Facility Columns	Timetabler Columns
TIMETABLE.slotid	CT_EVENT_STAFF.event_id (via CT_EVENT lookup)
TIMETABLE.lecturerid	CT_EVENT_STAFF.room_id (via CT_STAFF lookup)

Module Assignments

The Facility TIMETABLE table should be used as data source for the CT_EVENT_MODULE table. The column mapping is shown below.

Facility Columns	Timetabler Columns
TIMETABLE.slotid	CT_EVENT_MODULE.event_id (via CT_EVENT lookup)
TIMETABLE.moduleid	CT_EVENT_MODULE.module_id (via CT_MODULE lookup)

Group Assignments

The Facility TIMETABLE table should be used as data source for the CT_EVENT_GROUP table. The column mapping is shown below. Note the use of both modules and module sub-groups.

Facility Columns	Timetabler Columns
TIMETABLE.slotid	CT_EVENT_GROUP.event_id (via CT_EVENT lookup)
TIMETABLE.moduleid	CT_EVENT_GROUP.group_id (via CT_GROUP lookup)

Facility Columns	Timetabler Columns
TIMETABLE.slotid	CT_EVENT_GROUP.event_id (via CT_EVENT lookup)
TIMETABLE.moduleid + modgrprcode (compound key)	CT_EVENT_GROUP.group_id (via CT_GROUP lookup)

Equipment Assignments

The Facility TIMETABLE table should be used as data source for the CT_EVENT_EQUIP table. The column mapping is shown below.

Facility Columns	Timetabler Columns
TIMETABLE.slotid	CT_EVENT_EQUIP.event_id (via

	CT_EVENT lookup)
TIMETABLE.equipid	CT_EVENT_EQUIP.equip_id (via CT_EQUIP lookup)

2.5 Rooming

Fixtures

The Facility EQUIPMENT table should be used as data source for the *Timetabler* CT_FIXTURE table. The column mapping is shown below. The equipid column should be considered to be primary key of the Facility EQUIPMENT table. Note that there is no EQUIPMENT.name field, so the Plugin should copy the equipid value to CT_FIXTURE.name.

Facility Columns	Timetabler Columns
EQUIPMENT.equipid	CT_FIXTURE.original_id
EQUIPMENT.equipid	CT_FIXTURE.name
EQUIPMENT.description	CT_FIXTURE.description

Room Inventory

The Facility ROOMEQUIPMENT table should be used as data source for the *Timetabler* CT_ROOM_INVENTORY table. The column mapping is shown below:

Facility Columns	Timetabler Columns
ROOMEQUIPMENT.roomid	CT_ROOM_INVENTORY.room_id (via CT_ROOM lookup)
ROOMEQUIPMENT.equipid	CT_ROOM_INVENTORY.fixture_id (via CT_FIXTURE lookup)
ROOMEQUIPMENT.units	CT_ROOM_INVENTORY.quantity

Module Preferred Rooms

The Facility PREFROOMS table (where itemtype = 'MO') should be used as data source for the CT_MODULE_FP table. The column mapping is shown below.

Facility Columns	Timetabler Columns
PREFROOMS.itemkey2	CT_MODULE_FP.module_id (via CT_MODULE lookup)
PREFROOMS.reqroomid	CT_MODULE_FP.resource_id (via CT_ROOM lookup)

Room Layouts

The Facility ROOMS table should be used as data source for the *Timetabler* CT_ROOM_LAYOUT table. The column mapping is shown below. Where a room has several identical layout records with different capacities, the Plugin should create a single record in *Timetabler* using the largest capacity.

Facility Columns	Timetabler Columns
ROOMS.roomid	CT_ROOM_LAYOUT.room_id (via CT_ROOM lookup)
ROOMS.type	CT_ROOM_LAYOUT.room_layout_id (via CT_LAYOUT lookup)

ROOMS.capacity	CT_ROOM_LAYOUT.capacity
----------------	-------------------------

2.6 Miscellaneous

Site Travel Times

The Facility SITETRAVELTIMES table should be used as data source for the *Timetabler* CT_SITE_TIME table. The column mapping is shown below. Note that the lecturertraveltime column should be used rather than other time fields in the Facility SITETRAVELTIMES table.

Facility Columns	Timetabler Columns
SITETRAVELTIMES.siteid1	CT_SITE_TIME.site_id1 (via CT_SITE lookup)
SITETRAVELTIMES.siteid2	CT_SITE_TIME.site_id2 (via CT_SITE lookup)
SITETRAVELTIMES.lecturertraveltime	CT_SITE_TIME.travel_time

Staff Incompatibilities

The Facility LECTEXCLUSIONS table should be used as data source for the CT_INCOMPAT table. The column mapping is shown below.

Facility Columns	Timetabler Columns
LECTEXCLUSIONS.lecturerid1	CT_INCOMPAT.resource_id1 (via CT_STAFF lookup)
LECTEXCLUSIONS.lecturerid2	CT_INCOMPAT.resource_id2 (via CT_STAFF lookup)

3. Phasing

To be decided.