

Timetable Baseline Profile

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1. Preface

This document details the Proposed Timetable Baseline Profile (TBP) for 2014. It specifically outlines behaviour associated with the 3.x, SIF RESTful Infrastructure.

1.1. Purpose

The SIF Specification contains objects for interaction between a TimeTabling vendor and a Student Information System. The TimeTable Baseline is being prepared for timetabling vendors as a guide which would, once agreed, will provide a set of SIF Objects and behaviours which will enable near 'plug and play' interoperability between a SIS at the school at the School or Jurisdiction Level and a 3rd party TimeTabling vendor, which has developed its agent, up to the base line level.

1.2. Principles

The following principles underpin this document:

- Guidance, not regulation
- Drive simple interoperability, not just allow
- Consistency in expectation of behaviours between consumers and providers of information
- Adherence to SIF rules
- Working together for the benefit of all implementations but based on the experiences of real and specific implementations

This document and any object changes will be based on an alliance between vendor and Jurisdiction members of the SIF AU Data Standards Working Group.

1.3. General Guidance

The TBP is being built as a collaborative effort between key Timetable stakeholders, schools software vendors who need information from Timetable software and the SIF community including international vendors who have sought to find things that would be common to build a useful 'baseline'. The baseline is designed as a view of a data model and the associated behaviour which is listed in a range of scenarios. It is assumed that 'system of entry' or 'system of authority' of the data sources will be configured as the provider of these objects.

The TBP is designed to grow as the need arises. Growth of the Timetable Profile would not change any of the underlying baseline behaviours.

It is expected that the TBP will develop and continue to grow over time, however it will remain the base to be built upon providing the reference point for others looking to start out in SIF.

2. SIF Guidance

2.1. Objects Guidance

Provisioning objects:

- StudentPersonal
- StudentSchoolEnrollment (retrieve all students in a school, for multi-school zones)
- StaffPersonal
- StaffAssignment (retrieve all staff in a school, for multi-school zones)
- SchoolInfo (retrieve all provisioning data for a school, for multi-school zones)
- RoomInfo
- TimetableTeachingSubject
- SchoolCourseInfo TBD

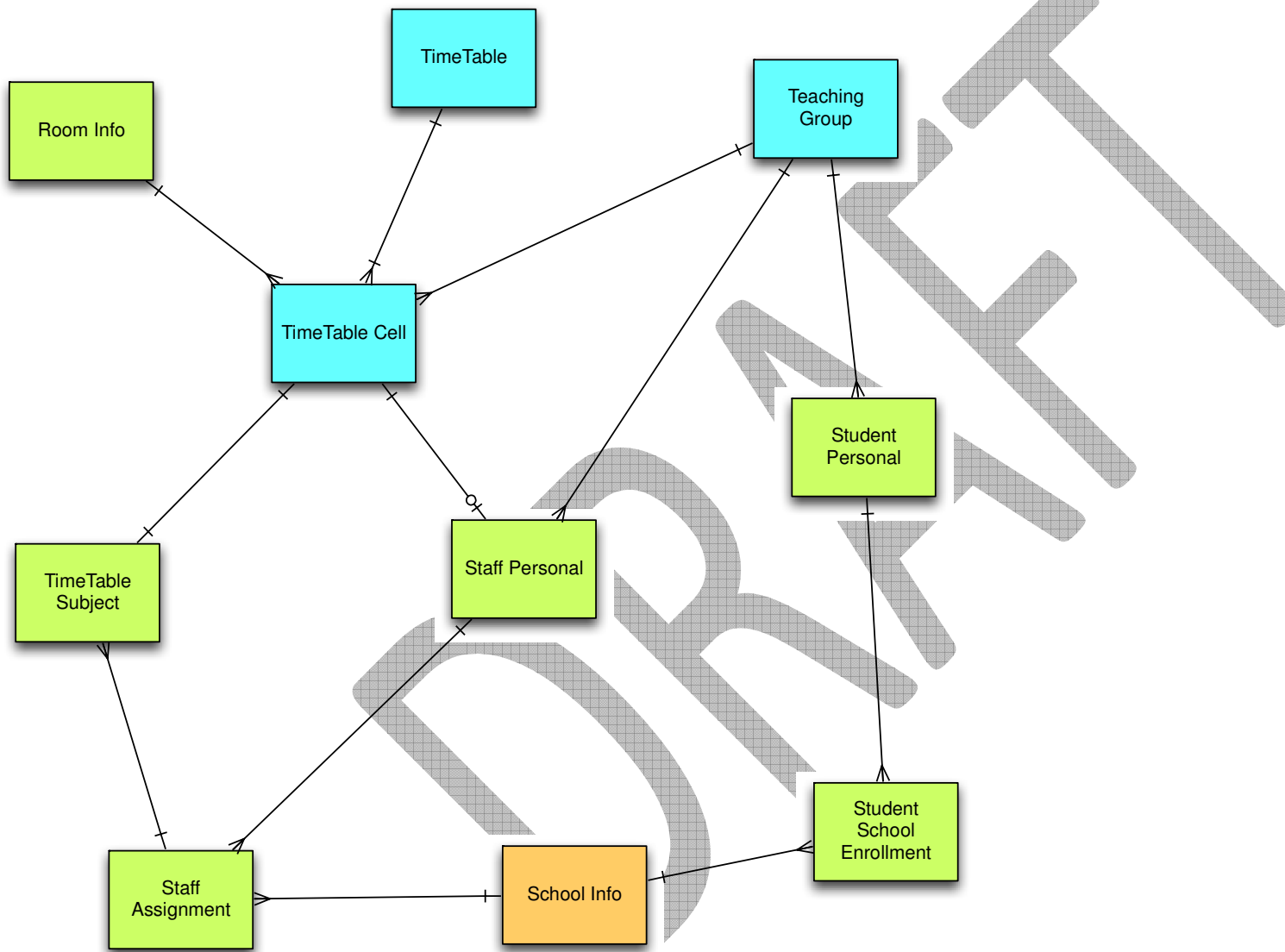
Return path objects:

- TeachingGroup
- TimeTableCell
- TimeTable
- ScheduledActivity* (SIF 1.4)

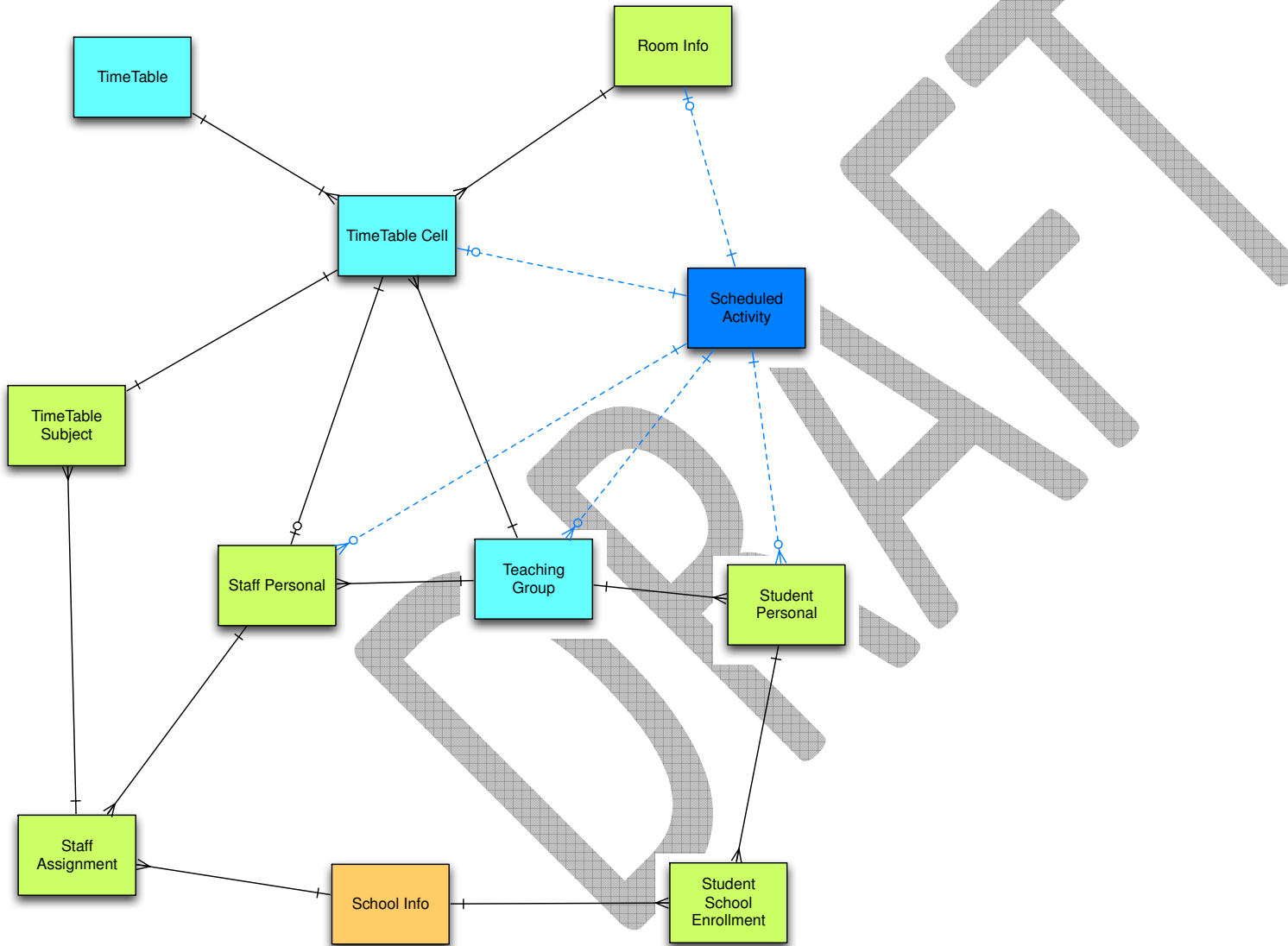
(see Scenarios section for details on the Elements include for each object.)

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Entity Relationship Diagram – TBP



The TBP has simple Entity Relationships: the objects to be provisioned are in the orange and green objects, the return path objects are in blue. ScheduledActivity adds further dependencies; it is invoked in this profile in the Update and Daily Variations use cases, and in the initial provisioning use case for both cyclical and if known, acyclical events.



Missing Objects/Elements:

Where information required to support a particular business process is not included in the proposed Baseline, you should review other existing objects and elements in the SIF Implementation Specification (Australia) which contain the required information rather than attempting a custom extension to the baseline objects.

2.1.1. Request/Response and Events

For the identified Baseline elements, events are generated when they are updated. There are a number of ways to manage this, some systems keep a change log and have a process that checks the changes at intervals and then sends the messages when it detects a change. Another is to use database triggers at the time any change is made to the data.

To assist in identifying what fields are involved in an event:

- In an add event, all mapped fields associated with that event are assumed to be sent
- In a change event, only changed fields **HAVE** to be sent, however all fields **MAY** be sent
- In a delete event, no fields are sent.
- With request/response all mandatory and strongly suggested elements should be included with the Response.

Base Data Objects	Request/Response
SchoolInfo	These objects are to be requested from the Student Information System at the point in time when the Time Table is ready to be created.
StudentPersonal,	
StudentSchoolEnrollment	
StaffPersonal	
StaffAssignment	
RoomInfo	
TimeTableSubject	

Return Path Objects	ADD Event	CHANGE Event	DELETE Event
TimeTable	Create new record or update if already exists	Update record or	Sent to rectify error. No

		create if not existing	scenario conditions
TeachingGroup	SchoolInfo, StaffPersonal, StudentPersonal, TimeTableSubject objects already provisioned. If not request, create new record or update if already exists	Update record or create if not existing	Sent to rectify error. No scenario conditions
TimeTableCell	Timetable, TeachingGroup already sent. If not request, create new record or update if already exists	Update record or create if not existing	Sent to rectify error. No scenario conditions
ScheduledActivity	SchoolInfo, StaffPersonal, StudentPersonal, RoomInfo already provisioned. Timetable, TimeTableCell (if used), TeachingGroup already sent. If not request, create new record or update if already exists	Update record or create if not existing	Sent to rectify error. No scenario conditions

2.1.2. Consumer's guidance

The provider should send all objects in order, and a subscriber should request precedent objects in order. For the Timetable Baseline Profile, these are School, Staff, Student, Room for provisioning, and TimeTable, TimeTableCell, ScheduledActivity and TeachingGroup for return path. When first synchronising (done by sending an unbounded request for an object), requests should be made for these precedent objects first.

The dependencies for the objects are:

- StudentSchoolEnrollment requires StudentPersonal, SchoolInfo. Optionally it also references TimeTableSubject (through StudentSchoolEnrollment/StudentSubjectChoiceList)
- StaffAssignment requires both StaffPersonal and SchoolInfo objects. Optionally it also references TimeTableSubject (through StaffAssignment/StaffSubjectList)
- TeachingGroup requires SchoolInfo, StaffPersonal, StudentPersonal. Optionally it also references TimeTableSubject, SchoolCourseInfo
- TimeTableCell requires TimeTable, TimeTableSubject, TeachingGroup, RoomInfo, StaffPersonal
- TimeTable requires SchoolInfo
- ScheduledActivity requires SchoolInfo. Optionally it also references TimeTable, TimeTableCell, TeachingGroup, RoomInfo, StaffPersonal, StudentPersonal.

For this profile, TeachingGroup does not require TimeTableCell: do not publish the TimeTableCellRefId in the TeachingGroup Object. If you need to define when a teaching group is taught, use DayId and PeriodId to the exclusion of TimeTableCellRefId.¹

When events are subscribed to; in the unlikely case of objects being 'out of order' the preferred behaviour is;

- The Subscribers should request the missing object.
- If there is an 'Add' for an existing object then the subscriber should automatically assume it's a Change

¹ The SIF specification includes a circular reference: TeachingGroup references TimeTableCell in its TeachingGroupPeriodList (optional), and TimeTableCell references TeachingGroup (mandatory). This circular reference was intended for the Student Information System Baseline Profile, to allow TeachingGroup objects to reference TimeTableCell objects for more detailed information about scheduling. However, since TeachingGroup and TimeTableCell are here being published by the same provider, TeachingGroup is defined before TimeTableCell, and TimeTableCell is used as the authoritative source of information about scheduling.

- If there is a Change for a non-existing object subscriber should assume it's an Add.
- If the subscriber does not perform these tasks it must at least alert the operator to the error condition for manual intervention.

2.2. Request/Response Guidance

In Scenario 1 (initial provisioning of timetable), Request/Response is used instead of Event/Subscribe. The provisioning elements are consumed (pulled) by the timetabling application at a time of the timetabling application's choosing. However the return path timetabling objects are provided (pushed) to the school authority, at a time of the timetabling application's choosing. The generation of the timetabling objects is not instantaneous, and may require human intervention.

2.2.1. Queries (Request/Response)

No unbounded queries are expected. Students, Staff and all other base data will be filtered by School in all instances. All activity to populate timetable data will be restricted by school.

Only a limited subset of queries (bounded requests) will be supported as part of the baseline. The table below outlines these.

Object	Key/Mandatory	Restricted by School	Other Queries
SchoolInfo	Return single object based on RefId, where OperationalStatus = "O" (Open)*		Will also need to supply SchoolInfo by StateProvinceId in this profile - this will be the preferred query.
StudentSchoolEnrollment	Return single object based on RefId, where TimeFrame = "C" (Current)*	Return all objects where SchoolInfoRefId=x, and where TimeFrame = "C"	
StudentPersonal	Return single object based on RefId Return single object based on LocalId	Given SchoolInfo RefID x, return all objects whose refID is StudentSchoolEnrollment/[SchoolInfoRefId=x]/../StudentPersonalRefId (i.e. return all students enrolled in the given school)	Given StudentSchoolEnrollment RefID x, return all objects whose refid is StudentSchoolEnrollment[@RefId=x]/StudentPersonalRefId (i.e. return the student mentioned in a given enrolment record)
StaffAssignment	Return single object based on	Return all objects where SchoolInfoRefId=x	

	RefId		
StaffPersonal	Return single object based on RefId, where EmploymentStatus = "A" (Active)*	Given SchoolInfo RefID x, return all objects whose refID is StaffAssignment/[SchoolInfoRefId=x]/../StaffPersonalRefId, and where EmploymentStatus = "A" (Active) (i.e. return all staff assigned to the given school)	Given StaffAssignment RefID x, return all objects whose refId is StaffAssignment[@RefId=x]/StaffPersonalRefId, and where EmploymentStatus = "A" (Active) (i.e. return the staff mentioned in a given assignment record)
RoomInfo	Return single object based on RefId	Return all objects where SchoolInfoRefId=x	
TimeTableSubject	Return single object based on RefId	Return all objects where SchoolInfoRefId=x	
ScheduledActivity	Return objects based on Date	Return all objects where SchoolInfoRefId=x	Return objects based on a date range for Date

*See Currency below

2.2.2. Interpretation of queries

"Currency" query definition

Timetabling needs to know who is a currently enrolled student, rather than a future or past student; who is a currently available staff member; and will only deal with currently open schools. To achieve this the subscriber MUST ignore:

- all enrollments with the "TimeFrame" set to other than "C" (Current)
- all staff members with EmploymentStatus set to other than "A" (Active)
- all schools with OperationalStatus set to other than "O" (Open)

For students in particular, this is because many other schools systems include the next year's students for the planning and census information when they are determining current students. Given that the Timeframe is a coded element it is simple for the subscribing agent to drop the students other than those set to current, and the same zone can then be used for many more purposes.

Definition of students who should be included in a request for a 'current student' query

1. All confirmed (*) students for the current enrolled year.
2. If there is a Change for a non-existing object subscriber should assume it's an Add.

(*) confirmed - the definition of which would be determined by the SIS. E.g. paid enrolment fee, accepted a place, filled out enrolment details etc.

2.2.3. Service Paths

For implementations using SIF 3 infrastructure, service paths can optionally be implemented. The following service paths are recommended for the typical workflows around timetables. Query service paths depend on whether it is necessary to isolate data about a single school (e.g. from a school authority data hub), or whether all instances of the object may be retrieved (because the SIS only describes a single school, or because the client is trusted to do their own filtering)

Timetable Queries, single school data source

/SchoolInfos	GET	SchoolInfo/OperationalStatus = "O"
/StudentPersonals	GET	StudentSchoolEnrollment/TimeFrame = "C", StudentPersonal@RefId = StudentSchoolEnrollment/StudentPersonalRefId
/StudentSchoolEnrollments	GET	StudentSchoolEnrollment/TimeFrame = "C"
/StaffPersonals	GET	StaffPersonal/EmploymentStatus = "A"
/StaffAssignments	GET	StaffPersonal/EmploymentStatus = "A", StaffAssignment/StaffPersonalRefId = StaffPersonal@RefId
/RoomInfos	GET	CalendarDate/SchoolYear = forthcoming school year
/TimeTableSubjects	GET	TimeTableSubject/SchoolYear = forthcoming school year
/ScheduledActivity	GET	ScheduledActivity/ActivityDate >= start of forthcoming school year, ScheduledActivity/ActivityDate <= end of forthcoming school year

Timetable Queries, multiple school data source

/SchoolInfos/{SchoolInfoRefId}	GET	
/SchoolInfos/{SchoolInfoRefId}/StudentSchoolEnrollments	GET	StudentSchoolEnrollment/SchoolInfoRefId = { SchoolInfoRefId }, StudentSchoolEnrollment/TimeFrame = "C"
/SchoolInfos/{SchoolInfoRefId}/StudentPersonals	GET	StudentSchoolEnrollment/SchoolInfoRefId = { SchoolInfoRefId }, StudentSchoolEnrollment/TimeFrame = "C", StudentPersonal@RefId = StudentSchoolEnrollment/StudentPersonalRefId
/SchoolInfos/{SchoolInfoRefId}/StaffPersonals	GET	StaffAssignment/SchoolInfoRefId = { SchoolInfoRefId }, StaffPersonal/EmploymentStatus = "A", StaffAssignment/StaffPersonalRefId = StaffPersonal@RefId
/SchoolInfos/{SchoolInfoRefId}/StaffAssignments	GET	StaffAssignment/SchoolInfoRefId = { SchoolInfoRefId }, StaffPersonal/EmploymentStatus = "A",

		StaffAssignment/StaffPersonalRefId = StaffPersonal@RefId
/SchoolInfos/{SchoolInfoRefId}/RoomInfos	GET	RoomInfo/SchoolInfoRefId = { SchoolInfoRefId }
/SchoolInfos/{SchoolInfoRefId}/TimeTableSubjects	GET	TimeTableSubject/SchoolInfoRefId = { SchoolInfoRefId }, TimeTableSubject/SchoolYear = forthcoming school year
/SchoolInfos/{SchoolInfoRefId}/ScheduledActivity	GET	ScheduledActivity/SchoolInfoRefId = { SchoolInfoRefId }, ScheduledActivity/ActivityDate >= start of forthcoming school year, ScheduledActivity/ActivityDate <= end of forthcoming school year

TimeTable Return Path

/TimeTables	POST	Multiple record payload
/TimeTables/TimeTable	POST	Single record payload
/TimeTables/TimeTable/{RefId}	PUT	Single record payload with given RefId (optional)
/TimeTableCells	POST	Multiple record payload
/TimeTableCells/TimeTableCell	POST	Single record payload
/TimeTableCells/TimeTableCell/{RefId}	PUT	Single record payload with given RefId (optional)
/TeachingGroups	POST	Multiple record payload
/TeachingGroups/TeachingGroup	POST	Single record payload
/TeachingGroups/TeachingGroup/{RefId}	PUT	Single record payload with given RefId (optional)
/ScheduledActivitys	POST	Multiple record payload
/ScheduledActivitys/ScheduledActivity	POST	Single record payload
/ScheduledActivitys/ScheduledActivity/{RefId}	PUT	Single record payload with given RefId (optional)

2.3. Immutable Primary/Alternate keys

In the SIF Implementation Specification (Australia) the RefId is most commonly the Primary Key for an object and in most cases is likely to be the only 'root' attribute. This means Australia has less complex event handling which provides more flexibility and choice. However, in order to keep behaviours in line with expectation of proper key and object management the Immutable Alternate primary keys rule are built. This means particular keys on particular objects must not be changed even though the Specification permits it.

Where an element or attribute is indicated as a primary/alternate key, it cannot be changed throughout the object's lifetime (SIF AU has slightly different rules for the definition of primary keys to other SIF locales).

Other Locales include elements that are not part of their "primary" key as "root" attributes and even though they may not necessarily be "Mandatory" all "root" attributes must be sent with change events. Therefore AU will need to identify what elements cannot be changed – even though they do not form part of the "Primary" key.

In SIF AU, primary/alternate keys (AK) are being explicitly identified in the SIS Baseline Profile.

2.3.1. Key for Tables:

Attribute/Key Identifier	Element/Attribute	Char	Baseline Char	Description	Business Rules
Identifies attribute of element or object key	SIF (Australia) r1.x Implementation Specification Object/Element Name	As identified by the SIF Implementation (Australia) 1.x	Identifies Baseline requirements for SIF Implementation (Australia) 1.x optional elements M = Mandatory S = Strongly Suggested C = Conditional R = Repeatable O = Optional N = Not Used	Object/Element SIF Implementation (Australia) 1.x description	Identifies Baseline SIS business rules for object/element

3. Scenarios

The scenarios identified here are considered 'typical'. They do not necessarily map exactly to the specific needs of any given jurisdiction. Therefore it is expected that some specific implementations may wish to extend this document to exactly match their needs.

All said, the intent of this document is as a baseline such that there is minimal difference between implementations. This reduces the rework required by suppliers and instils consumer confidence in the ability of SIF to work out-of-the-box.

We consider here three major classes of scenario:

- School provisions Timetabling Application with provisioning objects. Timetabling Application generates timetables for School.
- School updates provisioning objects. Timetabling Application generates updates to timetables for School.
- School and Timetabling Application interact via Daily Variations to timetable.

3.1. Scenario Summary Matrix

The following is a list of the scenarios that comprise an Australian TBP.

	Scenario	AU Object element/behaviour	Message	Behaviour	SBP Rules
A	School authority provides timetabling application with objects necessary to create timetables for the school SchoolInfo, StudentPersonal, StudentSchoolEnrollment, StaffPersonal, StaffAssignment, TimeTableSubject, RoomInfo				
	Scenario	AU Object	Message	Behaviour	SBP Rules
a.1	Consume School Data	SchoolInfo	GET	Consume	StateProvinceId must be stated in the query. OperationalStatus = Open
a.2	Consume Enrollments	StudentSchoolEnrollment	GET	Consume	TimeFrame = Current
a.3	Consume Students	StudentPersonal	GET	Consume	
a.4	Consume Assignments	StaffAssignment	GET	Consume	
a.5	Consume Staff	StaffPersonal	GET	Consume	EmploymentStatus = Active
a.6	Consume RoomList	RoomInfo	GET	Consume	
a.7	Consume Subjects	TimeTableSubject	GET	Consume	
B	Timetabling application provides timetabling objects to the school authority, based on the objects it was provisioned with for the school TimeTable, TimeTableCell, TeachingGroup				
	Scenario	AU Object	Message	Behaviour	SBP Rules
b.1	Provide Cycle Grid	TimeTable	POST	Create	
b.2	Provide Classes	TeachingGroup	POST	Create	Do not reference TeachingGroupPeriodList/TeachingGroupPeriod/TimeTableCellRefId
b.3	Provide Cycle Cells	TimeTableCell,	POST	Create	Use TimeTableCell to post the schedule of recurring events
b.4	Provide Daily Instances of Cyclic Activities	ScheduledActivity	POST	Create	Use ScheduledActivity to post individual instances of cyclic events in the timetable
C	Timetabling application updates timetabling objects, in response to updates to the provisioning objects from the school				
c.1	Update Cycle Grid	TimeTable	PUT	Update	
c.2	Update Classes	TeachingGroup	PUT	Update	Do not reference TeachingGroupPeriodList/TeachingGroupPeriod/TimeTableCellRefId

c.3	Update Cycle Cells	TimeTableCell	PUT	Update	
c.4	Update Daily Activities	ScheduledActivity	PUT or POST	Update	Update individual instances of cyclic events in the TimeTable. PUT using the RefId to update a pre-existing instance (DELETE) and/or POST a new Object and where it is an override; OVERRIDE = Yes
D	School and Timetabling Application interact via Daily Variations to timetable				
d.1	Provide non-cyclic Daily Activities	ScheduledActivity	POST	Create	Create individual instances of non-cyclical events such as excursions or other daily activities.
d.2	Update non Cyclic DailyActivities.	ScheduledActivity	PUT or POST	Update	Update individual instances of non-cyclic events in the TimeTable. PUT using the RefId to update a pre-existing instance or POST a new Object and where it is an override; OVERRIDE = Yes

3.2. A. School Authority Provisions 3rd Party Vendor & B. Create Timetable Scenarios

3.2.1. Scope

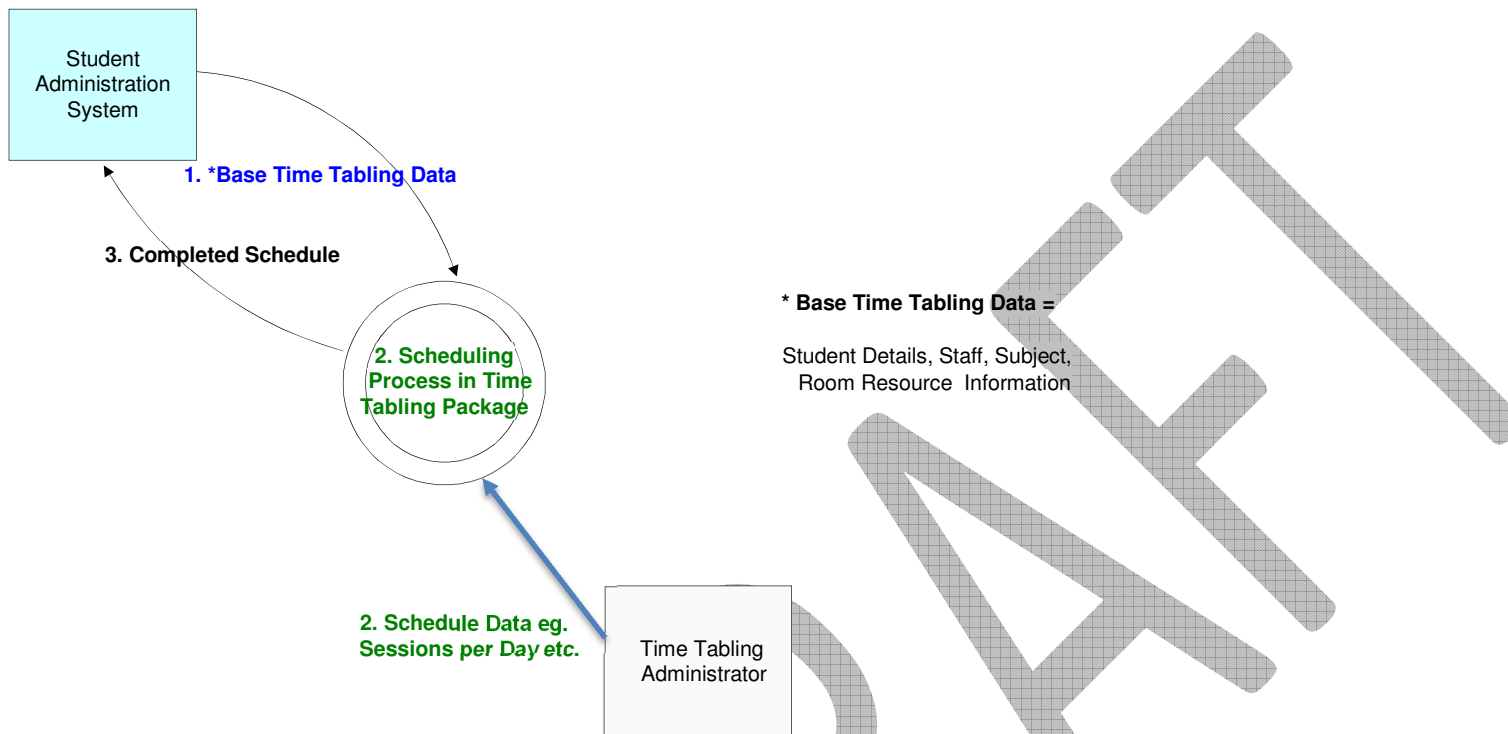
Many schools use TimeTabling packages where student, staff and room information is exported from the Student Administration System into the third party TimeTabling package. Once the timetable is 'bedded down', the information is exported manually from the TimeTabling package and imported back into the Student Administration System.

A sought-after business function to meet expectations of the Australian education community is to respond to a TimeTabling query with accurate information about the whereabouts of a particular student at any particular time of day.

To enable this, sufficient information regarding the scheduling of classes, staff, resources, rooms and students needs to be able to be transferred to and from applications to enable a response from the Schools Administration or Curriculum Delivery System.

It is expected that improved interoperability between systems will lead to more accurate and consistent exchange of TimeTabling data as well as time savings due to streamlined operations of data transmissions versus the existing method of manual exports and imports.

Interaction between third party TimeTabling packages and Schools Administration Systems is currently available at a School Level, and will increasingly also be provided at a Jurisdiction level. Work is already underway to do so at DEC NSW.

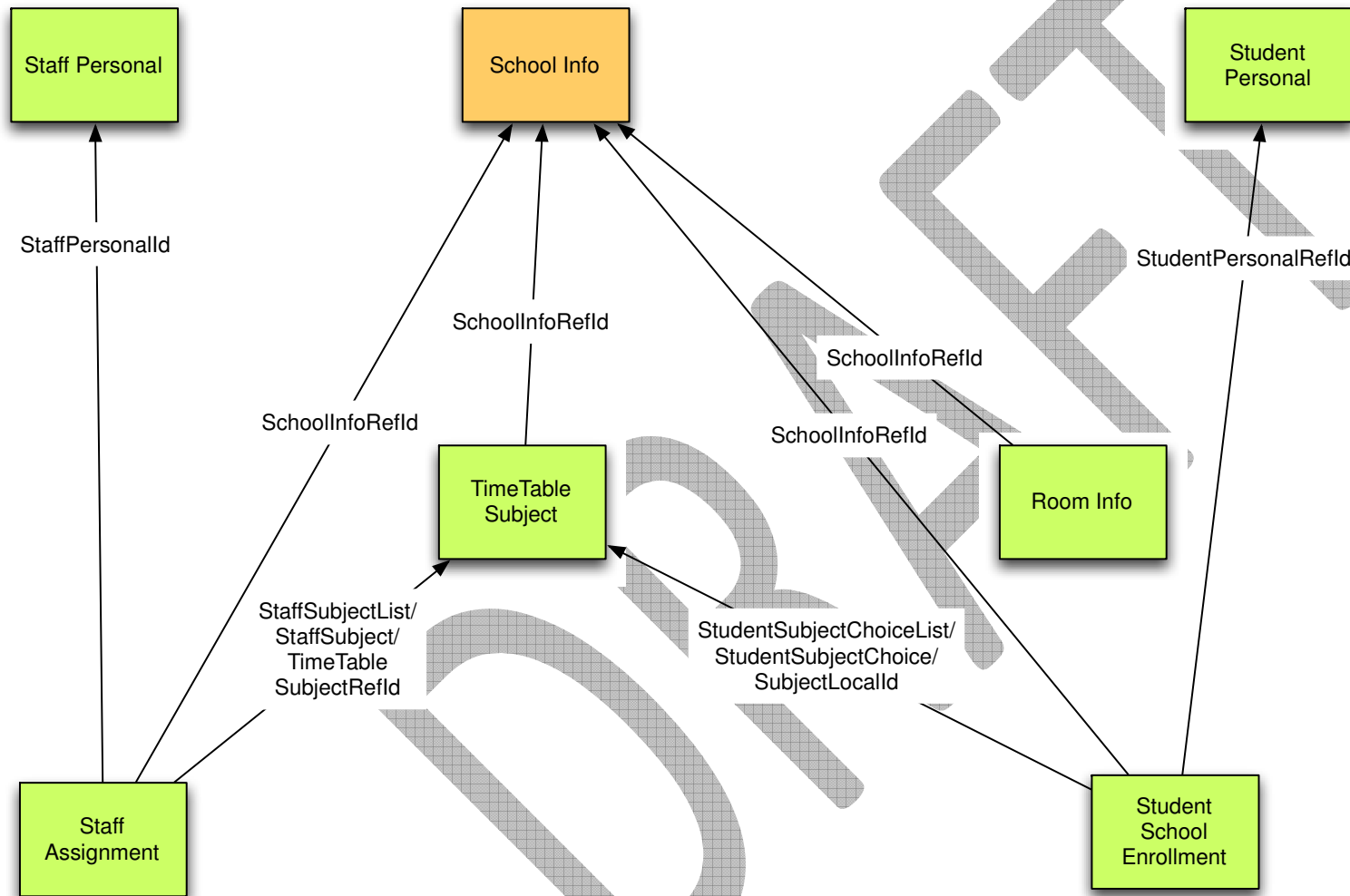


<p>End to End Goal</p>	<p>Information will flow between Schools Student Administration Packages, Curriculum Delivery Systems and third Party TimeTabling packages such that subjects, classes, staff, resources, rooms and students can be scheduled and established. TimeTable data can be passed back such that the location of a class, subject, student or teacher can be known within the School's Student Administration Package or Curriculum Delivery System. (This Business Case is limited to the supply of the 'Schedule' so that the Schools Student Administration Package can associate it with the current Calendar.)</p> <p>The process will involve a number of steps:</p> <ol style="list-style-type: none"> 1. Set up of Base TimeTable information in Student Administration Package, Curriculum Delivery System <ol style="list-style-type: none"> a. Input Student Data b. Input Room/Resource Data
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	<ul style="list-style-type: none"> c. Input Subject Data – Curriculum Offerings d. Input Staff Data e. Input Subjects Staff are qualified to teach –optional f. Input possible Curriculum Offerings g. Create export of base TimeTable Information for third Party Package <p>2. Create Schedule in third party TimeTabling Package</p> <ul style="list-style-type: none"> a. Import Base TimeTable Information b. Additional TimeTabling Data is input by Time Table Administrator Subjects/Curriculum Offerings. c. Scheduling Process Occurs d. School TimeTable Administrator confirms schedule suitability e. Create export Schedule information <p>3. Schedule Export/Import</p> <ul style="list-style-type: none"> a. School Administration System or Curriculum Delivery System loads schedule information <p>4. Additional Organisational information updated or confirmed</p>
<p>Input “Choreography” Expectations</p>	<p>(Input to Schools Student Administration Systems – Step 1 & 3) Base TimeTable Information: Student, Staff, Room, Subject, Class information held in the Schools Student Administration System or Curriculum Delivery System.</p> <p>Trigger: School has collected Student Subject Preferences, Teachers have been identified and their subject areas logged, Availability of Rooms has been recorded and proposed Subjects noted. School needs to schedule classes.</p> <ul style="list-style-type: none"> •School calendar has been recorded (see above) •Sessions and session times per day for each day of cycle has been recorded •Student Subject preferences have been recorded in student management system (optional) <p>Schedule Export/Import Schedule information apportioning students, staff, classes and subjects to rooms has been loaded into the Schools Student Administration Systems.</p> <p>Trigger: Schedule has been created and is ready to be loaded into receiver systems.</p>
<p>Output “Choreography” Expectations</p>	<p>(Output from Schools Student Administration Systems – Step 2 – Import to Time Tabling Package) Create Schedule in third party TimeTabling package Base TimeTable information is loaded into third party package. Schedule Process occurs, is confirmed and export is Created.</p> <p>Trigger: Third party package has scheduled a TimeTable and administration staff have confirmed its validity.</p>

3.2.2. Provisioning object dependencies

The following diagram indicates the dependencies between the provisioning objects in Scenario A:



The objects should thus be provisioned in the following order:

- SchoolInfo, StaffPersonal, StudentPersonal

- RoomInfo, TimeTableSubject
- StaffAssingment, StudentSchoolEnrollment

Conversely, we have seen that the query for all students in a school is restricted to those with a StudentSchoolEnrollment/TimeFrame flag of Current; and students and staff are retrieved based on the enrolment and assignment relations between them and the school. RoomInfo and TimeTableSubject, like StudentSchoolEnrollment, StaffAssingment, depend on the SchoolInfo refID, which is not known to the Timetabling application before the SchoolInfo object is retrieved.

The objects should thus be requested in the following order:

- SchoolInfo
- (StudentSchoolEnrollment, StaffAssingment)
- RoomInfo, TimeTableSubject
- StudentPersonal, StaffPersonal

Data Elements that need to be sent as a minimum – other 'O' optional elements in the full SIF Specification can be published, but as a minimum subscriber's typically need to consume the following:

3.A.1 Consume School Data

School Info

Object	Message	Behaviour	Choreography
SchoolInfo	GET	Consume	A TT vendor needs to issue a SchoolInfo request. The vendor should only request information about currently open schools and campuses.

Event	Description - Trigger	User Input	Agent Action - Consumer
Consume School Data	School is ready to create a TimeTable.	Jurisdiction staff trigger the interface	OperationalStatus and StateProvinceId must be known.

Attribute/ Key	Element/Attribute	Char	Baseline Char	Description	Business Rules
Identifier					

@K	RefId	M	M	The GUID that identifies this school/campus	
	LocalId	M	M	The locally-assigned identifier for this school/campus	
	StateProvinceId	O	S	The state-assigned identifier for this school/campus	
	SchoolName	M	M	Name of school/campus.	
	SchoolType	O	S	An indication of the level of the educational institution	
	SchoolSector _[nn1]	M	M	Government or Non Government	
	Campus (and associated elements)	O	C	Campus identifier	Must be included if the school is defined as multi-campus. (Used to identify type of Campus)
	Campus/AdminStatus	M	M	Is this Campus the Administration Campus?	Must be included if the school is defined as multi-campus
	Campus/CampusType	O	O	Type of campus.	Supply if different from the School Type.
	Campus/ParentSchoolId	C	CS	Parent School Identifier	Parent School Id needs to be supplied if this Campus is not the Admin Campus. This number should be the state-assigned identifier for this school or the locally-assigned identifier for this school. Only available from 1.3 onwards.
	OperationalStatus	O	S	Operational condition of a school.	"O" = Open is a condition on a request.
	SchoolEmailList/Email	O	S		SchoolEmailList is an Optional List of Emails associated with a School.
	AddressList	O	S		AddressList is an Optional List of Addresses associated with a School. It is strongly suggested that at least one address is sent by the authoritative Jurisdiction.
	AddressList/Address	MR	MR		If an Address is supplied it is

					mandatory to send the Type and Role Attributes. e.g. <Address Type="0123" Role="012B">
	AddressList/Address/StateProvince	C	S	The state or province code eg NSW, Vic, ACT	Only supply if in Australia
	AddressList/Address/City	M	M	The city part of the address	
	AddressList/Address/PostalCode	M	M	The ZIP/Postal code	
	AddressList/Address/Street/StreetNumber	O	S	The address number assigned to the building	
	AddressList/Address/Street/StreetName	O	S	The name of the street	
	AddressList/Address/GridLocation/Longitude	O	O	Longitude of school location	
	AddressList/Address/GridLocation/Latitude	O	O	Latitude of school location	
	AddressList/Address/SchoolGeographicLocation	O	O	School Location from MCEETYA.	

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3.A.2 Consume School Enrollments

StudentSchoolEnrollment

Object	Message	Behaviour	Choreography
StudentSchoolEnrollment	GET	Consume	A TT vendor needs to issue a StudentSchoolEnrollment or StudentPersonal request. The vendor should only request information about current enrollments.

Event	Description - Trigger	User Input	Agent Action - Consumer
Consume School Enrollment Data	School is ready to create a TimeTable.	Jurisdiction staff trigger the interface	

Attribute/Key	Element/Attribute	Char	Baseline Char	Description	Business Rules
@K	RefId	M	M	The ID (GUID) that uniquely identifies a particular enrollment.	
AK	StudentPersonalRefId	M	M	The ID (GUID) of the student to whom this information is linked.	
AK	SchoolInfoRefId	M	M	The ID (GUID) of the school to which this enrollment applies.	
	MembershipType	M	M	The type of this enrollment as it relates to the school identified in SchoolInfoRefId	
AK	SchoolYear	M	M	School year for which this enrollment is applicable, expressed as the four-digit year in which the school year ends (e.g. 2007). StudentSchoolEnrollment instances must not span multiple school years.	Must be the current SchoolYear
	TimeFrame	M	M	The timeframe of the enrollment based on the SIF_Date in the SIF_Header of the message. For events, it is determined as of the date the event is generated. For requests and responses, it is calculated	= 'C' for current

				based on the date of the request.	
	YearLevel	O	M	Expected Year level of student when their enrolment becomes 'Current'.	
	FTE	O	S	Full-time equivalent numeric value of the student's course load during this enrollment, expressed in decimal form, where 1.00 represents a full-time enrollment	
	EntryDate	M	M	The date from when this enrollment will be valid.	
	ExitDate	C	C	The last school calendar day of this enrollment. If the student has exited the school or the enrollment has a RecordClosureReason, ExitDate must have a value.	RecordClosureReason has not been requested by TT vendors
	StudentSubjectChoiceList	O	S	List of Student Subject Choices where available	If collected by jurisdiction should be supplied. If this is done in the 3rd party product – this is not required.
	StudentSubjectChoiceList/StudentSubjectChoice	MR		Subjects Students choose	
	StudentSubjectChoiceList/StudentSubjectChoice/PreferenceNumber	O		Subject Priority	
	StudentSubjectChoiceList/StudentSubjectChoice/SubjectLocalId	M		Local Subject Id	
	StudentSubjectChoiceList/StudentSubjectChoice/StudyDescription	O		Description about Study Mode	
	StudentSubjectChoiceList/StudentSubjectChoice/OtherSchoolLocalId	O		LocalId of a school where the student studies this subject if not at the home school	
	Homeroom	O		Homeroom for this enrollment	

3.A.3 Consume Students

StudentPersonal

Object	Message	Behaviour	Choreography
StudentPersonal	GET	Consume	A TT vendor needs to issue a StudentPersonal request. The vendor should only request information about currently enrolled students.

Event	Description - Trigger	User Input	Agent Action - Consumer
Consume Student Data	School is ready to create a TimeTable.	Jurisdiction staff trigger the interface	

Attribute /Key Identifier	Element/Attribute	Char	Baseline Char	Description	Business Rules
@K	RefId	M	M	The GUID of the student.	
	LocalId	M	M	The locally-assigned identifier for this student.	
	StateProvinceId	O	S	The state-assigned identifier for this student.	Provide if this is available.
	OtherIdList	O	O	Lists all "other" identifiers associated with the student.	
	OtherIdList/OtherId	OR	O	Lists an "other" identifier associated with the student.	
	OtherIdList/OtherId@Type	M	M	Code that defines the type of this other ID.	
	PersonInfo/Name/FamilyName	C	M	Family name. That part of the person's name which is used to describe family, clan, tribal group, or marital association.	
	PersonInfo/Name/GivenName	C	M	Given name of the person.	
	PersonInfo/Name/MiddleName	C	S	All other given or middle names, each separated with a single space	

				character.	
	PersonInfo/Name/PreferredGivenName	O	S	The given name preferred most by the person (as written).	If you don't store preferred name then provide GivenName
	MostRecent/YearLevel	O	M	The current or most recent grade level of the student in the district.	
	PersonInfo/EmailList	O	S	The person's e-mail address(es).	
	PersonInfo/EmailList/Email	O	S	The Primary e-mail address associated with an individual or organization. (as per business rule)	If this attribute value is captured and available within the SIS it is suggested that it is published wherever possible. It is recognised that not all SIS make this attribute mandatory, nor do school processes enforce the capture.
@	PersonInfo/EmailList/Email/Type	M	M	Type of email address.	'01' Email Address provided must be the Primary Email address[LM2].
	PersonInfo/Demographics/Sex	O	S	'Sex' is the distinction 'male' and 'female', as reported by the person	May be needed if class scheduling depends on student sex

3.A.4 Consume Assignments

StaffAssignment

Object	Message	Behaviour	Choreography
StaffAssignment	GET	Consume	A TT vendor needs to issue a StaffAssignment or StaffPersonal request. The vendor should only request information about active staff. For events resulting in many new staff members, it is an implementation decision as to whether StaffPersonal and StaffAssignment be paired or all StaffPersonal are sent followed by all StaffAssignment objects.

Event	Description - Trigger	User Input	Agent Action - Consumer
Consume Staff Assignment Data	School is ready to create a TimeTable.	Jurisdiction staff trigger the interface	

Attribute / Key Identifier	Element / Attribute	Char	Baseline Char	Description	Business Rules
@K	RefId	M	M	The GUID that uniquely identifies a particular staff assignment.	
	SchoolInfoRefId	M	M	The ID (GUID) that identifies the school where the staff member is assigned.	
	SchoolYear	M	M	School year for which the information is applicable, expressed as the four-digit year in which the school year ends (e.g., 2007). Release 1.2 allows this to be optional as JobStart and EndDate allow for this Object to be used over more than one year.	
	StaffPersonalRefId	M	M	ID (GUID) of this staff member, as represented in the StaffPersonal object.	
	PrimaryAssignment	M	M	Is this the staff member's primary assignment? Note: There must be one and only one instance of the object with a Yes value in this element per school year.	
	JobStartDate	O	S	This is the date from which the staff assignment is valid (inclusive).	
	JobEndDate	O	S	This is the date through which the staff assignment is valid (inclusive).	
	JobFunction	O	S	The purpose of the activities as related to students.	
	StaffActivity	O	M	The purpose of the Staff Member's role as related to students. Equivalent to 'JobFunction' in US Object.	
	StaffActivity/Code	M	M	Code representing the type of staff activity undertaken.	
	StaffSubjectList	O	M	The purpose of the Staff Member's role as related to students. Equivalent to 'JobFunction' in US Object.	If collected by Jurisdiction then this should be supplied – if entered in 3 rd party vendor then not required.
	StaffSubjectList/StaffSubject	MR	MR	Code representing the type of staff activity undertaken.	

	StaffSubjectList/StaffSubject/PreferenceNumber	M	M	The purpose of the Staff Member's role as related to students. Equivalent to 'JobFunction' in US Object.	
	StaffSubjectList/StaffSubject/SubjectLocalId	O	O	Code representing the type of staff activity undertaken.	
	StaffSubjectList/StaffSubject/TimeTableSubjectRefId	O	M	RefId of TimeTableSubject.	
	YearLevels	O	M	Year level(s) that the teacher is allowed to teach.	

3.A.5 Consume Staff

StaffPersonal

Object	Message	Behaviour	Choreography
StaffPersonal	GET	Consume	A TT vendor needs to issue a StaffPersonal request. The vendor should only request information about active staff. It is recommended (but not a requirement) that the event is published in near real-time. StaffPersonal is sent before StaffAssignment. Multiple StaffAssignment messages can be sent for one StaffPersonalRefId. For events resulting in many new staff members, it is an implementation decision as to whether StaffPersonal and StaffAssignment be paired or all StaffPersonal are sent followed by all StaffAssignment objects.

Event	Description - Trigger	User Input	Agent Action - Consumer
Consume Staff Personal Data	School is ready to create a TimeTable.	Jurisdiction staff trigger the interface	

Attribute / Key Identifier	Element / Attribute	Char	Baseline Char	Description	Business Rules
@K	RefId	M	M	The GUID of the staff member.	

	LocalId	M	M	The locally-assigned identifier for this staff member.	
	StateProvinceId	O	S	The state-assigned identifier for this staff member.	
	OtherIdList	O	O	Lists all "other" identifiers associated with the staff.	
	OtherIdList/OtherId	OR	O	Lists an "other" identifier associated with the staff.	
	OtherIdList/OtherId@Type	M	M	Code that defines the type of this other ID.	
	PersonInfo/Name/FamilyName	M	M		
	PersonInfo/Name/GivenName	M	M		
	PersonInfo/Name/MiddleName	C	S	All other given or middle names, each separated with a single space character.	
	PersonInfo/Name/PreferredGivenName	O	S		
	PersonInfo/Demographics/Sex	O	M		May be needed if class scheduling depends on student sex
	EmploymentStatus	O	S	Flags whether the staff member is currently employed by the organization (Active), no longer/not yet employed, or unavailable (on extended leave)	= "Active"
	PersonInfo/EmailList	O	S	The person's e-mail address(es).	
	PersonInfo/EmailList/Email	O	S	The Primary e-mail address associated with an individual or organization. (as per business rule)	If this attribute value is captured and available within the SIS it is suggested that it is published wherever possible. It is recognised that not all SIS make this attribute mandatory, nor do school processes enforce the capture.
@	PersonInfo/EmailList/Email/Type	M	M	Type of email address.	= '01' Email Address

					provided must be the Primary Email address[LM3].
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3.A.6 Consume Rooms

RoomInfo

Object	Message	Behaviour	Choreography
RoomInfo	GET	Consume	A TT vendor needs to issue a RoomInfo request.

Event	Description - Trigger	User Input	Agent Action - Consumer
Consume Room Data	School is ready to create a TimeTable.	Jurisdiction staff trigger the interface	

Attribute / Key Identifier	Element / Attribute	Char	Baseline Char	Description	Business Rules
@K	RefId	M	M	GUID that identifies this room.	
	SchoolInfoRefId	M	M	GUID that identifies the school that this room belongs to.	
	LocalId	O	O	The locally assigned identifier for the room.[nn4]	
	RoomNumber	M	M	Room number as presented to the user/application.	
	StaffList	O	O		
	StaffList/StaffPersonalRefId	MR	MR	GUID that identifies the staff person assigned to this room (e.g. the homeroom teacher).	
	Description	O	M	Friendly name that can be assigned to the room (e.g. Staff Cafeteria).	

	Building	O	O	Extra building information. In the future Building could become its own object in which case this element will need to be changed to a RefId. Currently it is only required as a free text field.
	HomeroomNumber	O	S	When a room is designated as a homeroom it may have a different number. Usually blank when room is not a homeroom.
	Size	O	M	Size in square meters.
	Capacity	O	M	Number of persons (usually students) that this room can hold.
	RoomType		M	Classification of Room (SIF-AU 1.3r1)

3.A.7 Consume Timetable Subjects

TimeTableSubject

Object	Message	Behaviour	Choreography
TimeTableSubject	GET	Consume	A TT vendor needs to issue a TimeTableSubject request.

Event	Description - Trigger	User Input	Agent Action - Consumer
Consume Timetable Subject Data	School is ready to create a TimeTable.	Jurisdiction staff trigger the interface	

Attribute / Key Identifier	Element / Attribute	Char	Baseline Char	Description	Business Rules
@K	RefId	M	M	GUID that identifies this TimeTableSubject.	
	SubjectLocalId	M	M	SubjectLocalID - Distinct piece of curriculum that is to be scheduled.	

	AcademicYear	C	C	Subject Year Level. Either AcademicYear or AcademicYearRange must be provided.	
	AcademicYearRange	C	C	Range of Academic Years subject spans. Either AcademicYear or AcademicYearRange must be provided.	
	AcademicYearRange/Start	M	M	Lowest year in range.	
	AcademicYearRange/End	M	M	Highest year in range	
	CourseLocalId	O	O	Local Course Id, if associated with a Course.	
	SchoolCourseInfoRefId	O	O	The GUID of the SchoolCourseInfo object.	???
	Faculty	O	O	Faculty	
	SubjectShortName	O	O	SubjectShortName	
	SubjectLongName	M	M	SubjectLongName	
	SubjectType	O	O	Core or Elective or ?	
	ProposedMaxClassSize	O	M _[nn5]	Suggested maximum class size for this subject.	
	ProposedMinClassSize	O	M _[nn6]	Suggested minimum class size for this subject.	
	SchoolInfoRefId	O	M	Optional the GUID of the SchoolInfo Object if this object is known in the zone.	
	SchoolLocalId	O	M	Optional Local School Id	

	Semester	O	M	Semester, Term, or Quarter subject offered.	
	SchoolYear	O	M	School year for which the information is applicable, expressed as the four-digit year in which the school year ends (e.g., "2007").	
	OtherCodeList	O	O	Any other codes this subject is known by; eg VASS code for VCE in Vic.	

3.B. Create Timetable Scenario: Return Timetable

Event	Description/Trigger	User Input	Agent Action Publisher
TimeTable	New timetable ready to be published.		Agent detects the change and POSTS a new TimeTable Object
TimeTableCell			Agent detects the change and POSTS a set of TimeTableCell Objects related to the TimeTable
TeachingGroup			Agent detects the change and POSTS a set of TeachingGroup Objects related to the TimeTable

Object	Message	Behaviour	Choreography
TimeTable	POST	Create	Object provided by timetabling application.
TeachingGroup	POST	Create	Object provided by timetabling application.
TimeTableCell	POST	Create	Object provided by timetabling application. TimeTable and TeachingGroup must already have been provided by the timetabling application.

3.B.1 Provide Cycle Grid

Object	Message	Behaviour	Choreography
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TimeTable	POST	Provide	
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Event	Description - Trigger	User Input	Agent Action
Provide Cycle Grid	School is ready to publish a TimeTable.	Jurisdiction staff trigger the interface	

3.B.1 TimeTable

Attribute / Key Identifier	Element / Attribute	Char	Baseline Char	Description	Business Rules
@K	RefId	M	M	GUID that identifies this TimeTable object.	
	SchoolInfoRefId	O	S	Optional the GUID of the SchoolInfo Object if this object is known in the zone.	Since zone may be shared with multiple zones, school should be identified
	SchoolYear	M	M	School year for which the information is applicable, expressed as the four-digit year in which the school year ends (e.g., "2007").	
	LocalId	O		Local TimeTable ID	
	Title	M	M	Unique Name of the proposed Time Table	
	DaysPerCycle	M	M	Max Number of days per Time Table cycle	
	PeriodsPerDay	M	M	Max Number of periods per Time Table Day	
	TeachingPeriodsPerDay	O		Teaching periods per day if different to PeriodsPerDay	
	SchoolLocalId	O		Optional Local School Id	

	SchoolName	O		The school name in plain text.	
	TimeTableCreationDate	O		Date Schedule was created or last edited.	
	StartDate	O		First day of TimeTable.	
	EndDate	O		Last day of the TimeTable.	
	TimeTableDayList	M	M	Container for TimeTableDays in Schedule	
	TimeTableDayList/TimeTableDay	MR	MR	This element identifies a 'day' in a TimeTable.	
	TimeTableDayList/TimeTableDay/ DayId	M	M	Local Time Table Identifier	
	TimeTableDayList/TimeTableDay/ DayTitle	M	M		
	TimeTableDayList/TimeTableDay/ TimeTablePeriodList	M	M	Title of Day eg. Monday or Day 1	
	TimeTableDayList/TimeTableDay/ TimeTablePeriodList/TimeTablePeriod	MR	MR	Container for TimeTablePeriods in a Time Table Day	
	TimeTableDayList/TimeTableDay/ TimeTablePeriodList/TimeTablePeriod/ PeriodId	M	M	Period in Day Identifier	
	TimeTableDayList/TimeTableDay/ TimeTablePeriodList/TimeTablePeriod/ PeriodTitle	M	M	Title of Period eg. Session 1 or Period 1	
	TimeTableDayList/TimeTableDay/ TimeTablePeriodList/TimeTablePeriod/ BellPeriod	O		Indicates if this Period will require a 'bell', if 'yes' the following elements can be provided in the TimeTable Object.	

	TimeTableDayList/TimeTableDay/ TimeTablePeriodList/TimeTablePeriod/ StartTime	O		The starting time for the bell period.	
	TimeTableDayList/TimeTableDay/ TimeTablePeriodList/TimeTablePeriod/ EndTime	O		The ending time for the bell period.	
	TimeTableDayList/TimeTableDay/ TimeTablePeriodList/TimeTablePeriod/ RegularSchoolPeriod	O		Indicates if the bell period is part of the regular school day (i.e. is not a before or after school or break period).	
	TimeTableDayList/TimeTableDay/ TimeTablePeriodList/TimeTablePeriod/ InstructionalMinutes	O		The number of minutes to be counted for instruction for the bell period.	
	TimeTableDayList/TimeTableDay/ TimeTablePeriodList/TimeTablePeriod/ UseInAttendanceCalculations	O		Indicates if the bell period should be included in attendance calculations.	

3.B.2 Provide Classes

3.B.2 TeachingGroup

Per the definition of TeachingGroup:

"All local ids in non-authoritative objects are optional. It is therefore up to the provider and the actual agent's design and choreography to determine whether or not to use local ids from parent objects. There are cases in some subscribing systems where it might not possible to add RefId columns and therefore the RefId of related objects cannot be stored. For example a target system that listens to TimeTableSubject events and updates them may not be able to store the associated SchoolCourseInfoRefId with that object. The only way it can link the TimeTableSubject object with the appropriate course might be through its local course id. Having local ids that link the parent objects with the child object can simplify the agent design. Generally it is suggested to use the appropriate RefIds whenever possible and only use local ids if there is no other way to use RefIds."

As a result, both LocalIds and RefIds are provided, and RefIds are made mandatory.

Note: TeachingGroupPeriodList/TeachingGroupPeriod/TimeTableCellRefId is not to be populated in the object, in order to avoid circular references.

Attribute/ Key Identifier	Element/Attribute	Char	Baseline Char	Description	Business Rules
@K	RefId	M	M	The GUID of the TeachingGroup	
	SchoolYear	M	M	School year for which the information is applicable, expressed as the four-digit year in which the school year ends (e.g., "2007").	
	LocalId	M	M	LocalId of the Teaching Group (previously ClassIndicator).	
	ShortName	M	M	Short free format label that describes the group.	
	SchoolInfoRefId	O	S	GUID of SchoolInfo object this teaching group belongs to.	Since zone may be shared with multiple zones, school should be identified
	SchoolLocalId	O	O	Local School Id.	
	TimeTableSubjectRefId	O	O	GUID of TimeTableSubject object this teaching group belongs to	
	TimeTableSubjectLocalId	O	O	Local subject Id.	
	StudentList	O	M	List of Students in this Teaching Group	
	StudentList/TeachingGroupStudent	MR	MR	Students who belong to the TeachingGroup	
	StudentList/TeachingGroupStudent/StudentPersonalRefId	O	O	GUID from the StudentPersonal or StudentSnapshot Object (if known), that identifies the student.	
	StudentList/TeachingGroupStudent/StudentLocalId	M	M	Local Id of the Student	
	StudentList/TeachingGroupStudent/Name	M	M	Name of student	
	TeacherList	O	S	A List of TeacherList associated with the group – may or may not include the teacher timetabled in the schedule.	
	TeacherList/TeachingGroupTeacher	MR	MR	Teacher associated with the Teaching group – may or may not be the teacher timetabled in the schedule	
	TeacherList/TeachingGroupTeac	O	O	GUID from the StaffPersonal Object that identifies the Staff	

	her/StaffPersonalRefId			member	
	TeacherList/TeachingGroupTeacher/StaffLocalId	M	M	LocalId of the Staff member	
	TeacherList/TeachingGroupTeacher/Name	M	M		
	TeacherList/TeachingGroupTeacher/Association	M	M	An association with the Teaching Group.	
	TeachingGroupPeriodList	O	S	A List of scheduled meeting times for this Teaching Group	
	TeachingGroupPeriodList/TeachingGroupPeriod	O	S	A scheduled meeting time for this Teaching Group	
	TeachingGroupPeriodList/TeachingGroupPeriod/RoomNumber	O	O	Room number as presented to the user/application.	
	TeachingGroupPeriodList/TeachingGroupPeriod/StaffLocalId	O	O	Staff LocalId	
	TeachingGroupPeriodList/TeachingGroupPeriod/DayId	M	M	Day Id	
	TeachingGroupPeriodList/TeachingGroupPeriod/PeriodId	C	C	Period Id within the Day Id. Either Period Id or starting time must be provided.	
	TeachingGroupPeriodList/TeachingGroupPeriod/StartTime	C	C	Starting time of class within the Day Id. Either Period Id or starting time must be provided.	
	TeachingGroupPeriodList/TeachingGroupPeriod/CellType	O	O	Type of Lesson/Session e.g. Teaching, Lunch etc.	

3.B.3 Provide Cycle Cells

The information about a cyclical timetable cell is provided through both the TimeTableCell object and the ScheduledActivity object. The TimeTableCell object provides the schedule of events; the ScheduledActivity object provides the individual instances of events described in TimeTableCell. The Timetabling Application must generate a ScheduledActivity object for each instance in time that an event described by TimeTableCell will occur. Providing ScheduledActivity instances is the responsibility of the Timetabling application and not the data hub.

The instances of ScheduledActivity for cyclical events are used in updating: if timetable events are to be overridden temporarily, this will be done through an update to the ScheduledActivity object, for the instance overrides; the original TimeTableCell schedule remains unchanged.

For example:

TimeTableCell:

- Wednesday Period 3
- Friday Period 5

ScheduledActivity:

- Wednesday July 2 Period 3
- Friday July 4 Period 5
- Wednesday July 9 Period 3
- Friday July 11 Period 5
- Wednesday July 16 Period 3
- Friday July 18 Period 5
- etc

3.B.3a TimeTableCell

<i>Attribute / Key Identifier</i>	<i>Element / Attribute</i>	<i>Char</i>	<i>Baseline Char</i>	<i>Description</i>	<i>Business Rules</i>
@K	RefId	M	M	The GUID of the TimeTableCell	
	TimeTableRefId	M	M	The GUID of the TimeTable to which this Cell belongs	
	TimeTableSubjectRefId	M	M	The GUID of the Subject that this Cell is scheduling	
	TeachingGroupRefId	M	M	The GUID of the TeachingGroup being scheduled	
	RoomInfoRefId	M	M	The GUID of the Resource being Scheduled	
	StaffPersonalRefId	O		The GUID of the Staff Member being Scheduled	

	TimeTableLocalId	O		Time Table Local Identifier	
	SubjectLocalId	O		Subject Local Id	
	TeachingGroupLocalId	O		Teaching Group	
	RoomNumber	O		Room number as presented to the user/application.	
	StaffLocalId	O		Staff LocalId	
	DayId	M	M	Day Id	
	PeriodId	M	M	Period Id within the Day Id	
	CellType	M	M	Type of Lesson/Session eg Teaching, Lunch etc	
	SchoolInfoRefId	O		Optional the GUID of the SchoolInfo Object if this object is known in the zone	
	SchoolLocalId	O		Optional Local School Id	

3.B.3b ScheduledActivity

Provide information on instances of TimeTableCell (cyclical). These will need to be created for each instance of a TimeTableCell in the schools calendar. As part of the provisioning, this object should be sent one term in advance prior to the commencement of each term. Any elements specific to acyclical events are omitted.

Attribute / Key	Element / Attribute	Char	Baseline Char	Description	Business Rules
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Identifier					
@K	RefId	M	M	The Id (GUID) of the activity	
AK	SchoolInfoRefId	M	M	The Id (GUID) of the school scheduling the activity. Constitutes secondary key.	
	TimeTableCellRefId	O	M	An optional Id (GUID) for the timetable cell that this activity is scheduled in. Instances of cyclical classroom sessions will have this element, but one-off events such as excursions will not use this element.	Only applies to cyclical events
	DayId	O		Day Id of the day in the timetable cycle for which the activity is scheduled. DayId is meaningless without TimeTableRefId.	Popuiated from TimeTableCell
	PeriodId	O		Period Id of the period in the timetable cycle for which the activity is scheduled. Period is meaningless without TimeTableRefId	PeriodId should be supplied for cyclical events Popuiated from TimeTableCell
	TimeTableRefId	O		The timetable against which the event is scheduled; provides the interpretation for DayId. Note that TimeTableCellRefId is also expected to be provided for recurring activities.	Popuiated from TimeTableCell
	Date	O		Date for which the activity is scheduled. If the activity is acyclical, the date should be provided even if the object is used for preplanning excursions: a tentative or notional date and time should be provided if a finalised date is not available. If the activity is cyclical, a date is not expected.	Only applies to acyclical events, and dated instances of cyclical events
	StartTime	M	M	Starting time for activity. This element is mandatory even if the object is used for preplanning excursions: a tentative or notional date and time	

				should be provided if a finalised date is not available.	
FinishTime	M	M		Finish time for activity. This element is mandatory even if the object is used for preplanning excursions: a tentative or notional date and time should be provided if a finalised date is not available.	
CellType	O			Type of Lesson/Session eg Teaching, Lunch etc. Used if ScheduledActivity is used to create or update TimeTableCell information.	
TimeTableSubjectRefId	O			The GUID of the Subject that this Cell is scheduling. Used if ScheduledActivity is used to create or update TimeTableCell information, for a class.	Only applies to teaching events Populated from TimeTableCell
TeacherList	O			A listing of the TeacherList assigned to the activity, and the type of supervision they are credited with. If no TeacherList are listed, the activity is assumed to be unsupervised.	For cyclical events, is derived from TeachingGroup where available
TeacherList/TeacherCover	MR	MR		Substructure to allow representing instances where TeacherList only take subsets of an event. Most typically, this occurs with exam supervision, where each teacher gets a 1-period duty. It also happens with schools with e.g. 4 long periods per day: a period of 1hr20mins can be split into 2 halves of 40 minutes each.	
TeacherList/TeacherCover/StaffPersonalRefId	M	M		The Id (GUID) of the StaffPersonal record for the teacher supervising the event or event subset.	At least one instance is populated from TimeTableCell
TeacherList/TeacherCover/StaffPersonalLocalId	O			LocalId of the StaffPersonal record for the teacher supervising the event or event subset.	

	TeacherList/TeacherCover/StartTime	O		Start time for the subset of the event which the teacher supervises. If not present then we assume this teacher will be on the event for the full duration	
	TeacherList/TeacherCover/FinishTime	O		Finish time for the subset of the event which the teacher supervises. If not present then we assume this teacher will be on the event for the full duration. Either both or neither StartTime and FinishTime should be provided.	
	TeacherList/TeacherCover/Credit	O		How the activity is credited, from the perspective of the teacher(s) supervising the event. If a teacher is substituting for the normal teacher supervising, the credit indicates how the substituting teacher is credited.	
	TeacherList/TeacherCover/Supervision	O		How intensively the teacher supervises the activity .	
	TeacherList/TeacherCover/Weighting	O		Weighting of credit assigned to teacher for activity. Assumes default of 1.0 assigned for classroom duty.	
	RoomList	O		List of rooms in which the scheduled activity is held. Used for onsite venues which are represented in the source system as rooms. Can include large venues (ovals, library, etc.), if they have been represented as rooms; source system practice varies.	
	RoomList/RoomInfoRefId	MR	MR		At least one instance is populated from TimeTableCell
	Addresses	O		List of Addresses. Can be empty. Used for offsite venues.	

	Addresses/Address	MR	MR		
	Location	O		Text description of venue. Can be used for either onsite or offsite venues. Can be used if neither Room nor AddressList is appropriate or supported by the source system. (E.g. the venue is the oval, which is not represented as a room; the venue is a specific part of the park). If Rooms, AddressList, and Location conflict, the order of priority in interpreting the object is Rooms, then AddressList, then Location.	
	Type	M	M	The type of activity undertaken	
	Name	O		This element is required if this is a one-off event, i.e. there is no TimeTableCellRefId provided, in order for excursions to be uniquely identified	
	Comment	O		Allows free-text information, e.g. for excursions. Comment should not be used to identify the location of the venue, since the contents of Comment are open-ended.	
	Students	O		Students who are scheduled to attend the event. Not required for cyclical events, as this would be expected to be provided from TimeTableCell/TeachingGroup or TeachingGroups/TeachingGroup instead.	For cyclical events, is derived from TeachingGroup where available
	Students/StudentPersonalRefId	MR	MR		
	TeachingGroups	O		Teaching groups which are scheduled to attend the event. Not required for cyclical events, as this would be expected to be provided from	Must be provided when scheduling cyclical

				TimeTableCell/TeachingGroup instead.	event, to the exclusion of TimeTableCell
	TeachingGroups/TeachingGroupRefId	MR	MR		Only one instance is provided, populated from TimeTableCell
	YearLevels	O		Year levels which are scheduled to attend the event. Not required for cyclical events, as this would be expected to be provided from TimeTableCell/TeachingGroup or TeachingGroups/TeachingGroup instead.	

3.B.4 Provide Daily Activities

3.B.4 ScheduledActivity

Provide information on Daily Activities (acyclical). Any elements specific to cyclical events are omitted.

Attribute / Key Identifier	Element / Attribute	Char	Baseline Char	Description	Business Rules
@K	RefId	M	M	The Id (GUID) of the activity	
AK	SchoolInfoRefId	M	M	The Id (GUID) of the school scheduling the activity. Constitutes secondary key.	
	DayId	O		Day Id of the day in the timetable cycle for which the activity is scheduled. DayId is meaningless without TimeTableRefId.	
	PeriodId	O		Period Id of the period in the timetable cycle for which the activity is scheduled. Period is meaningless without TimeTableRefId	PeriodId should

					be supplied for cyclical events
	TimeTableRefId	O		The timetable against which the event is scheduled; provides the interpretation for DayId. Note that TimeTableCellRefId is also expected to be provided for recurring activities.	
	Date	O		Date for which the activity is scheduled. If the activity is acyclical, the date should be provided even if the object is used for preplanning excursions: a tentative or notional date and time should be provided if a finalised date is not available. If the activity is cyclical, a date is not expected.	Only applies to acyclical events, and dated instances of cyclical events
	StartTime	M	M	Starting time for activity. This element is mandatory even if the object is used for preplanning excursions: a tentative or notional date and time should be provided if a finalised date is not available.	
	FinishTime	M	M	Finish time for activity. This element is mandatory even if the object is used for preplanning excursions: a tentative or notional date and time should be provided if a finalised date is not available.	
	CellType	O		Type of Lesson/Session eg Teaching, Lunch etc. Used if ScheduledActivity is used to create or update TimeTableCell information.	
	TimeTableSubjectRefId	O		The GUID of the Subject that this Cell is scheduling. Used if ScheduledActivity is used to create or update TimeTableCell information, for a class.	Only applies to teaching events
	TeacherList	O		A listing of the TeacherList assigned to the activity, and the type of supervision they are credited with. If no TeacherList are listed, the activity is assumed to be unsupervised.	
	TeacherList/TeacherCover	MR	MR	Substructure to allow representing instances where TeacherList only take subsets of an event. Most typically, this occurs with exam supervision, where each teacher gets a 1-period duty. It also happens with schools with e.g. 4 long periods per day: a period of 1hr20mins can be split into 2 halves of 40 minutes each.	
	TeacherList/TeacherCover/StaffPersonalRefId	M	M	The Id (GUID) of the StaffPersonal record for the teacher supervising the event or event subset.	

	TeacherList/TeacherCover/StaffPersonalLocalld	O		Localld of the StaffPersonal record for the teacher supervising the event or event subset.	
	TeacherList/TeacherCover/StartTime	O		Start time for the subset of the event which the teacher supervises. If not present then we assume this teacher will be on the event for the full duration	
	TeacherList/TeacherCover/FinishTime	O		Finish time for the subset of the event which the teacher supervises. If not present then we assume this teacher will be on the event for the full duration. Either both or neither StartTime and FinishTime should be provided.	
	TeacherList/TeacherCover/Credit	O		How the activity is credited, from the perspective of the teacher(s) supervising the event. If a teacher is substituting for the normal teacher supervising, the credit indicates how the substituting teacher is credited.	
	TeacherList/TeacherCover/Supervision	O		How intensively the teacher supervises the activity .	
	TeacherList/TeacherCover/Weighting	O		Weighting of credit assigned to teacher for activity. Assumes default of 1.0 assigned for classroom duty.	
	RoomList	O		List of RoomList in which the scheduled activity is held. Used for onsite venues which are represented in the source system as RoomList. Can include large venues (ovals, library, etc), if they have been represented as RoomList; source system practice varies.	
	RoomList/RoomInfoRefld	MR	MR		
	Addresses	O		List of Addresses. Can be empty. Used for offsite venues.	
	Addresses/Address	MR	MR		

Location	O		Text description of venue. Can be used for either onsite or offsite venues. Can be used if neither Room nor AddressList is appropriate or supported by the source system. (E.g. the venue is the oval, which is not represented as a room; the venue is a specific part of the park). If Rooms, AddressList, and Location conflict, the order of priority in interpreting the object is Rooms, then AddressList, then Location.
Type	M	M	The type of activity undertaken
Name	O		This element is required if this is a one-off event, i.e. there is no TimeTableCellRefId provided, in order for excursions to be uniquely identified
Comment	O		Allows free-text information, e.g. for excursions. Comment should not be used to identify the location of the venue, since the contents of Comment are open-ended.
StudentList	O		Students who are scheduled to attend the event. Not required for cyclical events, as this would be expected to be provided from TimeTableCell/TeachingGroup or TeachingGroups/TeachingGroup instead.
StudentList/StudentPersonalRefId	MR	MR	
TeachingGroupList	O		Teaching groups which are scheduled to attend the event. Not required for cyclical events, as this would be expected to be provided from TimeTableCell/TeachingGroup instead.
TeachingGroupList/TeachingGroupRefId	MR	MR	

	YearLevels	O		Year levels which are scheduled to attend the event. Not required for cyclical events, as this would be expected to be provided from TimeTableCell/TeachingGroup or TeachingGroups/TeachingGroup instead.	
	Override	O		This flag should be used to indicate whether or not this ScheduledActivity overrides a previous ScheduledActivity. In any initial provisioning this element should NOT be provided.	Values Yes No
	DateOfOverride	C		The date needs to be provided if Override=Yes	

The following elements in TimeTableCell have no direct equivalents in ScheduledActivity; the table outlines how the ScheduledActivity object provides equivalent values.

TimeTableCell	Mitigation
TimeTableLocalId	Can be looked up via TimeTableRefId
SubjectLocalId	Can be looked up via TimeTableSubjectRefId
TeachingGroupLocalId	Can be looked up via TeachingGroupList/TeachingGroupRefId
RoomNumber	Can be looked up via RoomList/RoomInfoRefId
SchoolLocalId	Can be looked up via SchoolInfoRefId

ScheduledActivity allows multiple teaching groups, RoomList, and TeacherList, where TimeTableCell only allows a single instance of each:

TimeTableCell	ScheduledActivity
TeachingGroupRefId	TeachingGroups/TeachingGroupRefId
RoomInfoRefId	RoomList/RoomInfoRefId
StaffPersonalRefId	TeacherList/TeacherCover/StaffPersonalRefId
StaffLocalId	TeacherList/TeacherCover/StaffPersonalLocalId

TimeTableCell is specific to a teaching group and a room. To avoid confusion (particularly with the mapping of rooms to teaching groups), best practice is to create only one ScheduledActivity instance for each teaching group period and room, as is expected in this choreography.

While TeachingGroup/TeacherList allows for multiple staff associated with a teaching group, neither TeachingGroup/TeachingGroupPeriodList/StaffLocalId nor TimeTableCell/StaffPersonalRefId do so. Therefore ScheduledActivity should not list multiple staff members, if it is intended for use in creating TeachingGroup or TimeTableCell.

3.3 Update Timetable Scenarios

Introduction

NSW DEC have indicated that they wish updates to schedules to be communicated back using the newly proposed ScheduledActivity object. This object has the advantage of covering noncyclical events (e.g. excursions), as well as cyclical events typically involving teaching groups. For cyclical events, ScheduledActivity allows overrides specific to timetabled events for one or more dates, instead of rescheduling the event permanently. The object contains the full range of fields that NSW DEC consider necessary to update their own instances of schedules.

ScheduledActivity is used to update acyclical events, which are created as ScheduledActivity . ScheduledActivity is also used to override instances of cyclical events; the instances of cyclical events have already been provisioned as ScheduledActivity objects. For example, it would be used to indicate that next week, the Wednesdays Period 6 is being rescheduled to Thursday Period 1. TimeTableCell should only be updated if there is a permanent change to the recurring event schedule; e.g. the class is permanently moving from Wednesdays Period 6 to Wednesdays Period 2.

Use of ScheduledActivity for updating either cyclical or acyclical information presupposes that the timetable has already been provisioned and created in the Timetabling application, and is unchanged. If the timetable grid is updated, all dependent objects also need to be updated.

Therefore the following describes the objects used to update timetabling return path information:

Created Object	Updating Object	Dependent Objects
Timetable	Timetable	TeachingGroup, TimeTableCell, ScheduledActivity
TeachingGroup	TeachingGroup	TimeTableCell, ScheduledActivity (TeachingGroup/TeachingGroupPeriodList is dependent on TimeTableCell or ScheduledActivity)
TimeTableCell (cyclical events)	TimeTableCell	TeachingGroup/TeachingGroupPeriodList,

		ScheduledActivity
TimeTableCell, ScheduledActivity (instances of cyclical events)	ScheduledActivity (date-specific override)	
ScheduledActivity (acyclical events)	ScheduledActivity	

Any updates to the initial provisioning objects can in turn cause an update to the timetabling return path information:

Provisioning Object	Updates if updated	Updates if created or deleted
SchoolInfo	None	TimeTable, TimeTableCell, TeachingGroup, ScheduledActivity
StudentPersonal	TeachingGroup	TeachingGroup
StudentSchoolEnrollment	TeachingGroup	TeachingGroup
StaffPersonal	TeachingGroup	TeachingGroup
StaffAssignment	TeachingGroup	TeachingGroup, TimeTableCell, ScheduledActivity
RoomInfo	TeachingGroup, TimeTableCell, ScheduledActivity	TeachingGroup, TimeTableCell, ScheduledActivity
TimeTableTeachingSubject	TeachingGroup, TimeTableCell	TeachingGroup, TimeTableCell, ScheduledActivity

The scenario supports Request/Response but not Event/Subscribe (to be confirmed).

Any of these events;

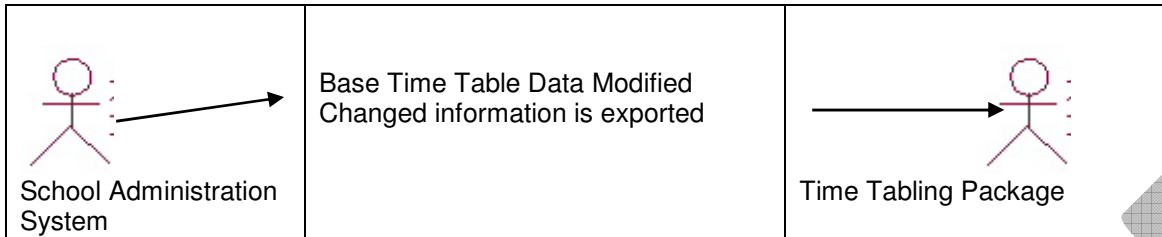
- Change of Teacher/s &/or subjects eligible to teach
- Change of Student/s
- Change in Student's Subject Choice
- Change in Room/Resource Data

Will trigger;

- An export of Modified Data to the Time Tabling Package eg:

Step 1

	Creation of Base Time Table Data	
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Which will lead to changing in Schedule information as in;

Step 2

Above

And

Step 3

As Above

3.3.1 ScheduledActivity

Attribute / Key Identifier	Element / Attribute	Char	Baseline Char	Description	Business Rules
@K	RefId	M	M	The Id (GUID) of the activity	
AK	SchoolInfoRefId	M	M	The Id (GUID) of the school scheduling the activity. Constitutes secondary key.	
	TimeTableCellRefId	O		An optional Id (GUID) for the timetable cell that this activity is scheduled in. Instances of cyclical classroom sessions will have this element, but one-off events such as excursions will not use this element.	
	DayId	O		Day Id of the day in the timetable cycle for which the activity is scheduled. DayId is meaningless without TimeTableRefId.	

PeriodId	O		Period Id of the period in the timetable cycle for which the activity is scheduled. Period is meaningless without TimeTableRefId	PeriodId should be supplied for updates to cyclical events
TimeTableRefId	O		The timetable against which the event is scheduled; provides the interpretation for DayId. Note that TimeTableCellRefId is also expected to be provided for recurring activities.	
Date	O		Date for which the activity is scheduled. If the activity is acyclical, the date should be provided even if the object is used for preplanning excursions: a tentative or notional date and time should be provided if a finalised date is not available. If the activity is cyclical, a date is not expected.	Is used for acyclical events, or for temporary overrides to cyclical events
StartTime	M	M	Starting time for activity. This element is mandatory even if the object is used for preplanning excursions: a tentative or notional date and time should be provided if a finalised date is not available.	
FinishTime	M	M	Finish time for activity. This element is mandatory even if the object is used for preplanning excursions: a tentative or notional date and time should be provided if a finalised date is not available.	
CellType	O		Type of Lesson/Session eg Teaching, Lunch etc. Used if ScheduledActivity is used to create or update TimeTableCell information.	
TimeTableSubjectRefId	O		The GUID of the Subject that this Cell is scheduling. Used if ScheduledActivity is used to create or update TimeTableCell information, for a class.	
TeacherList	O		A listing of the TeacherList assigned to the activity, and the type of supervision they are credited with. If no TeacherList are listed, the activity is assumed to be	ScheduledActivity should not be used to update TeachingGroup/TeacherList; staff rosters should be updated by the

				unsupervised.	TeachingGroup object, which is specific to staff rosters.
TeacherList/TeacherCover	MR	MR		Substructure to allow representing instances where TeacherList only take subsets of an event. Most typically, this occurs with exam supervision, where each teacher gets a 1-period duty. It also happens with schools with e.g. 4 long periods per day: a period of 1hr20mins can be split into 2 halves of 40 minutes each.	
TeacherList/TeacherCover/StaffPersonalRefId	M	M		The Id (GUID) of the StaffPersonal record for the teacher supervising the event or event subset.	
TeacherList/TeacherCover/StaffPersonalLocalId	O			LocalId of the StaffPersonal record for the teacher supervising the event or event subset.	
TeacherList/TeacherCover/StartTime	O			Start time for the subset of the event which the teacher supervises. If not present then we assume this teacher will be on the event for the full duration	
TeacherList/TeacherCover/FinishTime	O			Finish time for the subset of the event which the teacher supervises. If not present then we assume this teacher will be on the event for the full duration. Either both or neither StartTime and FinishTime should be provided.	
TeacherList/TeacherCover/Credit	O			How the activity is credited, from the perspective of the teacher(s) supervising the event. If a teacher is substituting for the normal teacher supervising, the credit indicates how the substituting teacher is credited.	
TeacherList/TeacherCover/Supervision	O			How intensively the teacher supervises the activity .	
TeacherList/TeacherCover/Weighting	O			Weighting of credit assigned to teacher for activity. Assumes default of 1.0 assigned for classroom duty.	
RoomList	O			List of rooms in which the scheduled activity is held. Used for onsite venues which are represented in the source system as rooms. Can include large venues	

				(ovals, library, etc), if they have been represented as rooms; source system practice varies.	
	RoomList/RoomInfoRefId	MR	MR		
	Addresses	O		List of Addresses. Can be empty. Used for offsite venues.	
	Addresses/Address	MR	MR		
	Location	O		Text description of venue. Can be used for either onsite or offsite venues. Can be used if neither Room nor AddressList is appropriate or supported by the source system. (E.g. the venue is the oval, which is not represented as a room; the venue is a specific part of the park). If RoomList, AddressList, and Location conflict, the order of priority in interpreting the object is RoomList, then AddressList, then Location.	
	Type	M	M	The type of activity undertaken	
	Name	O		This element is required if this is a one-off event, i.e. there is no TimeTableCellRefId provided, in order for excursions to be uniquely identified	
	Comment	O		Allows free-text information, e.g. for excursions. Comment should not be used to identify the location of the venue, since the contents of Comment are open-ended.	
	Students	O		Students who are scheduled to attend the event. Not required for cyclical events, as this would be expected to be provided from TimeTableCell/TeachingGroup instead.	ScheduledActivity should not be used to update TeachingGroup/StudentList; student rosters should be updated by the TeachingGroup object, which is specific to student rosters.

	Students/StudentPersonalRefId	MR	MR		
	TeachingGroups	O		Teaching groups which are scheduled to attend the event. Not required for cyclical events, as this would be expected to be provided from TimeTableCell/TeachingGroup instead.	
	TeachingGroups/TeachingGroupRefId	MR	MR		
	YearLevels	O		Year levels which are scheduled to attend the event. Not required for cyclical events, as this would be expected to be provided from TimeTableCell/TeachingGroup instead.	
	Override	O		This flag should be used to indicate whether or not this ScheduledActivity overrides a previous ScheduledActivity. In any initial provisioning this element should NOT be provided.	Values Yes No
	DateOfOverride	C		The date needs to be provided if Override=Yes	

3.4 Daily Variations Scenarios (TBD)