

SMART Profiles Training Manual

SMART 6



Version u 2019-01-10



...An enormous thank you to all of the individuals that have taken time from their own work to contribute to the creation of these materials...

SMART Profiles is a plug-in designed to allow the secure storage, management, and analysis of information that is not typical of core SMART. It contains a suite of functionality to broaden the use of SMART itself: it was built to track individual entities in time and space, and to capture the relationships between entities.

SMART Profiles uses a variation of the object model to tag and link 'objects' within the database, namely entities, records, and relationships. It incorporates both structured and unstructured data, with the ability to search through narrative text. This provides the user a powerful ability to interrogate the database and makes Profiles a flexible tool that can be customised for different scenarios.

SMART Profiles supports a wide variety of information management scenarios, as it can be customised to capture information about a range of real world things. This guide is not an instruction manual for how to build databases or collect information, and does not extend to covering best practices in the use of SMART Profiles or analyses with third party software; instead it explains the basic functionality of the plug-in.

SMART Profiles provides a powerful structure for coalescing information related to a specific entity or entities in the real world, whether physical or conceptual, and their interrelationships. This can be applied to any number of scenarios; from recording sightings and developing a profile of individual animals, to tracking the traffic patterns through park entry points, to recording the details of outreach projects in neighbouring communities, to maintaining records of staff participation in training events, to managing the maintenance schedules for equipment and infrastructure, to tracking incidences of human-wildlife conflict around protected areas. SMART Profiles allows for the management of information on entities and their interrelationships in fluid circumstances, where reality, and our understanding of it evolve.

This guide is not intended for widespread general release and a team intending to deploy SMART Profiles to a site should give careful consideration to the structures that must be in place to support the use of the plug-in.

Lastly, we would like you to be aware that SMART Profiles is a work in progress. The functionality in contained in SMART 6 is an evolution of the original release in SMART 5.0.3. It is derived from extensive field trialling in a small number of pilot sites, but we are aware that improvements can and should be made. Your feedback will be important in helping refine this for analysts worldwide.

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Cover Image © Ryan Scott/Panthera

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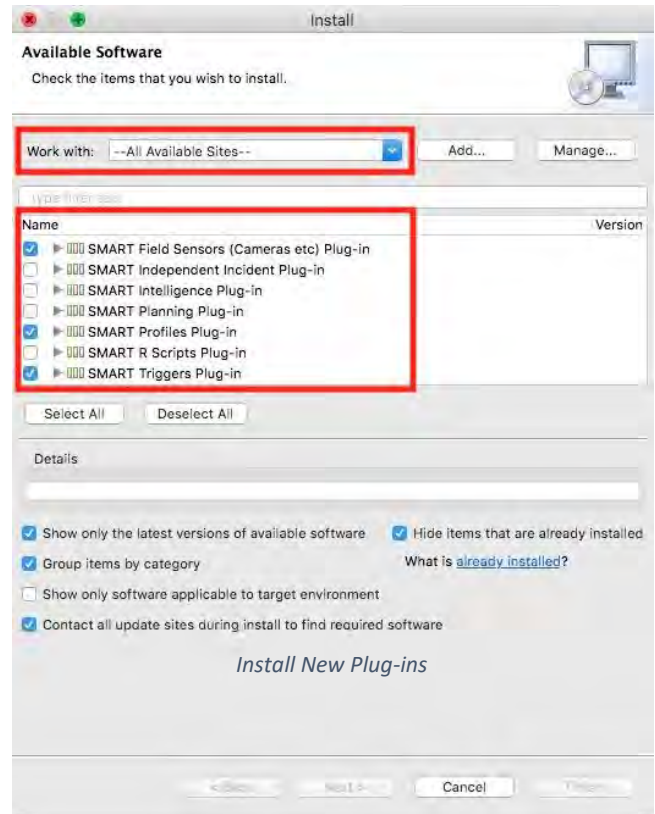
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Module 1 OVERVIEW

Installing the required plug-ins

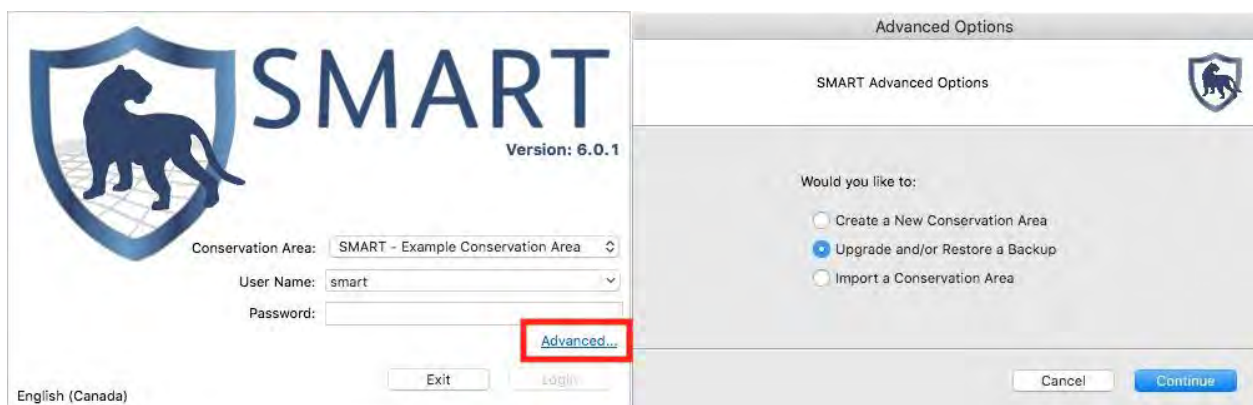
For the purposes of this guide, and associated training material, it is necessary to install the SMART Field Sensors, Profiles, and Triggers plug-ins. To install these plug-ins:

- Create a new installation of SMART.
- If you are updating an existing installation, ensure you create a backup of the SMART database **File → Backup System**.
- Open the installation of SMART.
- Navigate to the 'Available Software' window from the menu bar **File → Install New Plugins...**
 - Select 'All Available Sites' from the "Work with" drop-down menu



Note: if you receive an error message about a local folder asking if you wish to 'edit the location', select No.

- Tick the box for the SMART Field Sensors, Profiles, and Triggers plug-ins; leave all the other options on the screen as they are.
- Keep clicking 'Next', accept the agreement, and then click 'Finish'. You will need to log back in again.
- In the SMART login screen, restore the tutorial backup through the 'Advanced' menu. Select the backup file "SMART_Profiles_Tutorial_v6_mod4.bak.zip" from your local machine and follow the prompts. On logging in, you should find the SMART Profiles plug-in installed and available.

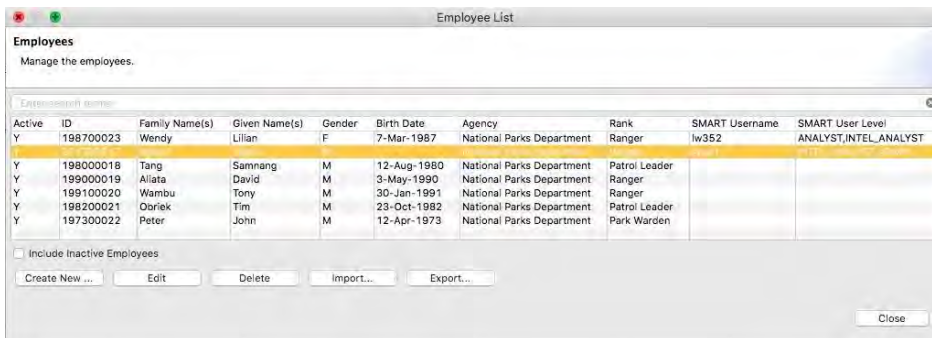


Restoring a backup

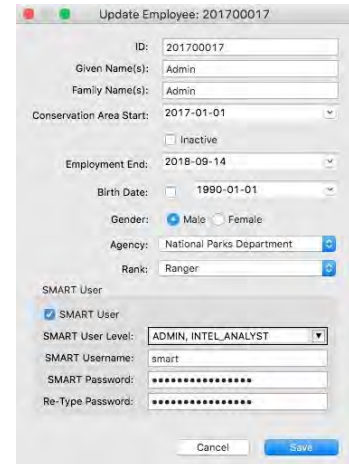
User levels and accessibility

Profiles employs SMART User Levels to control access to information and functionality within the plug-in. The permissions for each user are tied to their SMART User Level. Administrative users can assign permissions for SMART Profiles to individual SMART accounts.

From the menu bar, select **Conservation Area → Employee List** to see a list of site personnel.



Viewing Employees



Viewing User Levels

By double clicking on an individual it is possible to see if they are a SMART user, and what their 'SMART User Level' is.

The following table indicates the information access and permissions for each user level.

User Level	Access	Content Permissions	System Permissions
ADMIN	View Entity and Record Types	Create, Edit, and Delete Triggers	Create Database Back-up Create, Edit, and Delete Employees, SMART Accounts and Permissions
ANALYST	View Entity and Record Types	Create, Edit, and Delete Triggers	Create Database Back-up Create and Edit Employee Files
DATAENTRY	View Entity and Record Types	No Permissions for Profiles Content	Create Database Back-up
INTEL_ANALYST	View all Unprocessed, In Progress and Completed Records View all Entities, Locations, Observations, and Relationships View all Saved Queries View all Working Sets Select a Working Set	Create, Edit, and Delete Working Sets Create, Edit, and Delete Entities Create, Edit, and Delete Records Create, Edit, and Delete Relationships Add and Delete Attachments Review and Update Record Status	Create Database Back-up Basic Search for Entities and Records Spatial Search for Entities Create, Edit, Delete, and Run Saved Queries Print Entities and Records (pdf, ppt, doc, etc.) Import/Export Entities, Records and Model Elements Add, Edit, and Delete Intelligence Attributes Add, Edit, and Delete Entity Types Add, Edit, and Delete Record Types Add, Edit, and Delete Relationship Types and Groups Edit BIRT Templates
INTEL_ENTITY_CREATE	View Entities when Created	Create Entities	Create Database Back-Up Print Entities when Created (pdf, ppt, doc, etc.)
INTEL_ENTITY_DELETE	View all Entities, Locations, Observations, and Relationships	Delete Entities	Create Database Back-Up Basic Search for Entities Spatial Search for Entities Export Entities Print Entities (pdf, ppt, doc, etc.)
INTEL_ENTITY_EDIT	View all Entities, Locations, Observations, and Relationships	Edit Entities Add and Delete Attachments Create, Edit, and Delete Relationships	Create Database Back-Up Basic Search for Entities Spatial Search for Entities Export Entities Print Entities (pdf, ppt, doc, etc.)
INTEL_ENTITY_VIEW	View all Entities, Locations, Observations, and Relationships	No Permissions for Profiles Content	Create Database Back-Up Basic Search for Entities Spatial Search for Entities Export Entities Print Entities (pdf, ppt, doc, etc.)
INTEL_QUERY_ALL	View all Saved Queries View all Query Results	No Permissions for Profiles Content	Create Database Back-Up Create, Edit, Delete, and Run Saved Queries Export Entities and Records
INTEL_READ_ONLY	View all Unprocessed, In Progress and Completed Records View all Entities, Locations, Observations, and Relationships View all Saved Queries View all Working Sets Select a Working Set	No Permissions for Profiles Content	Create Database Back-Up Basic Search for Entities and Records Spatial Search for Entities Run Saved Queries Export Entities and Records Print Entities and Records (pdf, ppt, doc, etc.)

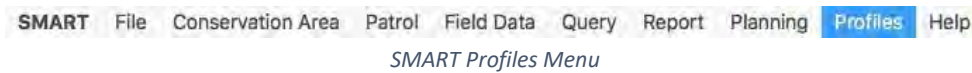
INTEL_RECORD_CREATE	View Records when Created	Create Records Add and Delete Attachments* Add, Edit, and Delete Locations* Add, Edit, and Delete Observations*	Print Records (pdf, ppt, doc, etc.) Create Database Back-Up
INTEL_RECORD_DELETE	View all Unprocessed, In Progress and Completed Records	Delete Records	Basic Search for Records Print Records (pdf, ppt, doc, etc.) Create Database Back-Up
INTEL_RECORD_EDIT	View all Unprocessed, In Progress and Completed Records	Create Records Add and Delete Attachments Add, Edit, and Delete Locations Add, Edit, and Delete Observations	Basic Search for Records Print Records (pdf, ppt, doc, etc.) Create Database Back-Up
INTEL_RECORD_EDIT_WITH_STATUS	View all Unprocessed, In Progress and Completed Records	Edit Records Add and Delete Attachments Add, Edit, and Delete Locations Add, Edit, and Delete Observations	Basic Search for Records Print Records (pdf, ppt, doc, etc.) Create Database Back-Up
INTEL_RECORD_VIEW	View all Unprocessed, In Progress and Completed Records	No Permissions for Profiles Content	Basic Search for Records Print Records (pdf, ppt, doc, etc.) Create Database Back-Up
MANAGER	View Entity and Record Types	Delete Triggers	Create Database Back-up Create and Edit Employees

*Within the record that is being created

SMART User Levels should only be assigned or modified at an appropriate managerial level.

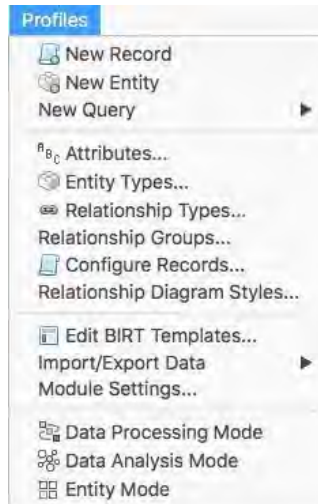
Accessing SMART Profiles

For those with permissions, SMART Profiles is accessed through the menu bar in SMART.



The Profiles menu provides the following options:

- New Record
- New Entity
- New Query
- Attributes
- Entity Types
- Relationship Types
- Relationship Groups
- Configure Records
- Relationship Diagram Styles
- Edit BIRT Templates
- Import/Export Data
- Module Settings
- Data Processing Mode
- Data Analysis Mode
- Entity Mode



Profiles menu bar

Note: Not all of these options fall within the scope of this basic user guide and associated tutorials.

SMART Profiles modes, panes, and tab layouts

The visualization of data, and access to the functionality of SMART Profiles is distributed across a number of tabs, which are displayed in panes. Panes are areas of the larger SMART window that can be arranged to suit the needs or preferences of an individual user. Tabs can be assigned to their own individual pane, or can be stacked with other tabs in a pane.

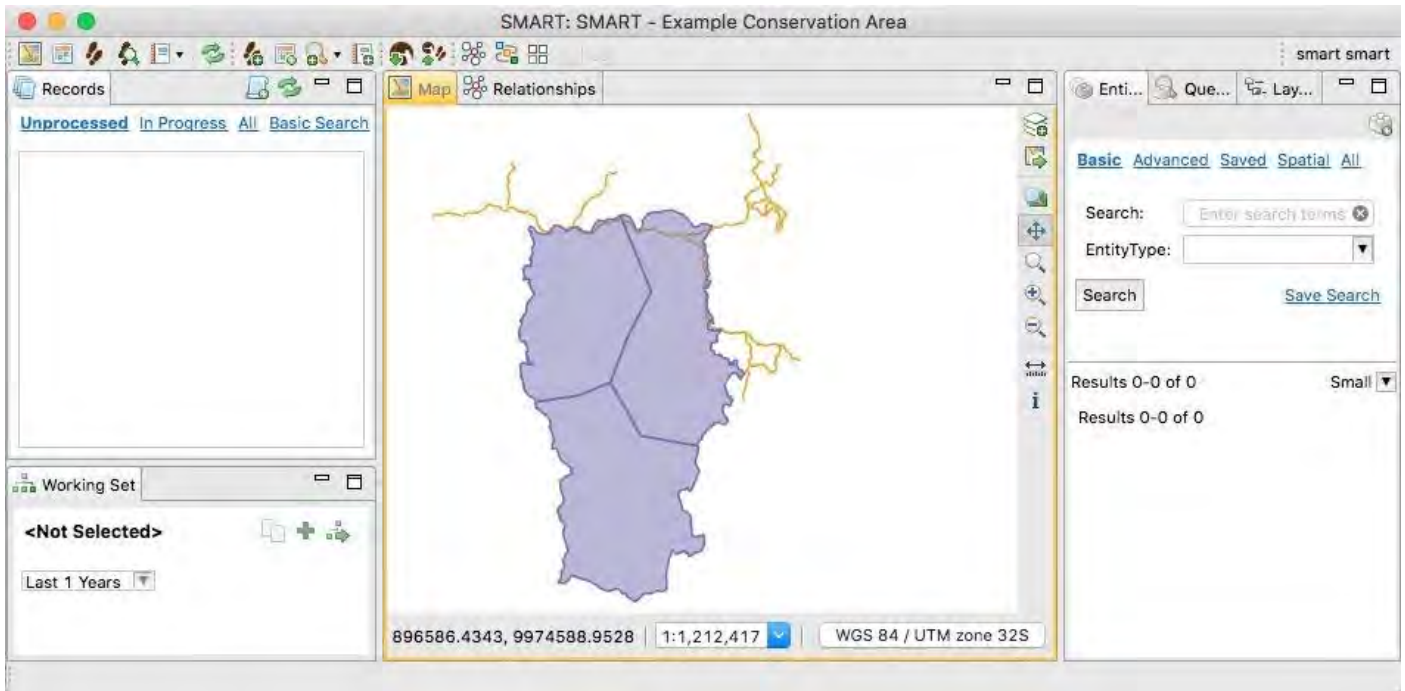
An exception to this is the main pane, which will always contain the Map and Relationships tabs, along with any open entities, records, or queries. The size of the main pane will depend on the number of other panes that are open at the time.

The following additional tabs can be arranged in multiple panes or stacked in a single pane to suit the needs or preferences of the user:

Entities
Layers

Queries
Records

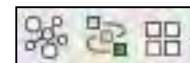
Working Set



Potential arrangement of panes and tabs

Modes provide a pre-set arrangement of tabs and panes. During a session, a user can customize the arrangement of tabs and panes for each mode, however this will re-set to the default arrangement when a user logs out. There are currently three modes available for SMART Profiles, accessed either through the menu bar or the corresponding buttons under the menu bar. These include:

- Data Analysis Mode
- Data Processing Mode
- Entity Mode



Data Analysis Mode, Data Processing Mode, Entity Mode (left to right)

	Functionality	Data Analysis Mode	Data Processing Mode	Entity Mode
Tabs	Entities	X	X	X
	Layers	X	X	X
	Queries	X		
	Records	X	X	X
	Working Set	X	X	X
	Working Set (separate)	X	X	

Data Analysis Mode provides the most complete initial set of tabs with the inclusion of the Queries tab, although the Queries tab will appear whenever a new query is opened regardless of the current mode.

To reset to the default layout of tabs and panes for the current mode at any time, click the 'reset the window layout' button under the menu bar.



Reset the window layout

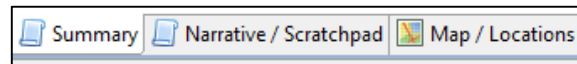
Module 2 RECORDS

Records in SMART Profiles are similar to Intelligence Records in the core SMART platform. In SMART Profiles records serve as the source report, containing details that justify the creation or modification of entities and relationships, which would not otherwise be captured in core SMART. Records also provide the ability to link locations and observations to an entity.

The record types available will depend on your site's records configuration (see Configuring records, below). Record types should reflect the information requirements of a site or organization. In the most general case, all information could be entered using a single record type. Multiple record types are created when custom attributes are required to capture the relevant details of an information source, activity, or threat.

To create a new record, select **Profiles** → **New Record** in the menu bar.

Note that a new record opens by default in the Summary tab, seen on the bottom of the screen.



A record's tabs

Record actions

In the top right of the record screen, several record actions are available:



Record actions

- Save
 - Saves the record
- Print to ...
 - Prints / exports the record to any one of: PDF, PPT, POSTSCRIPT, DOC, HTML, ODP, ODT, XLS, DOCX, ODS
- Refresh record
 - Refreshes the record with any changes made
- Delete record
 - Permanently deletes the record (requires user to enter their password)
- Add to current working set
 - For more on working sets, see page 18.
- Enable or disable editing of record
 - Toggles the record between read-only and write.

Non record-specific attributes

Several attributes in record input are not specific to the record type. These include:

Title – The record's Title should be in accordance with your site's URN (Uniform Resource Number) conventions, e.g. 20170224_MNP_01_Illegal Cattle Herding

Record Date – Every record will have an associated date. What the date indicates will depend on the procedures in place at your site or for a specific record type. For example, with an article, the date would capture the publishing date, while for a patrol record it would refer to the date of the activity.

Additional date attributes can be added to a record to capture multiple dates (ie a start and end date) if required.

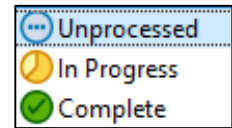


Date

Any date attribute can be populated by using the calendar (accessed from the down arrow button), or by typing the date in the appropriate space (date is formatted as yyyy-mm-dd).

Status – The Status of a record can be “Unprocessed”, “In Progress”, or “Complete”. This status is typically determined by a variety of factors, including:

- Access / User Level of the individual inputting the record
- Review / evaluation of the record by an appropriate party, e.g. analyst
- Additional / follow-up actions required, e.g. clarification on report details
- Site workflows



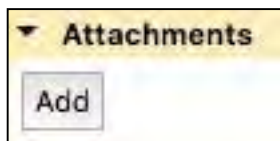
Status

For example, a ranger with limited permissions might create a record, which would be “Unprocessed”. After review and evaluation by an analyst it might be changed to “Complete”. Alternatively, if the record needed additional information the analyst might keep it at “In Progress”. Typically, a record would move from “Unprocessed” to “Complete” quite quickly.

Source – The “Source” of the record is mis-named, and actually refers to the record type. This is a holdover from an earlier architecture where all records were tied to a specific type of information source (ie patrols, cameras, media). When you select a value, additional attributes specific to the individual record type are available to populate

Entities – See the section on Entities, on page 11.

Attachments – This pane allows you to upload relevant files to the record. These might range from entire documents (e.g. a news report saved as a PDF file, or a patrol report), to simple picture files.



After clicking on ‘Add’ an upload window will appear, with which to navigate to the relevant file(s).

Add attachment

Observations – Any observations that have been linked to the record through the Map / Locations tab will appear at the bottom of the record with their associated attributes.

Narrative / Scratchpad tab

The *Narrative / Scratchpad* tab at the bottom of the record gives access to the *Narrative* and *Scratchpad* text boxes.

Narrative – The *Narrative* text box should be populated with the full narrative text of the report as well as a header that describes the source, date, and subject of the information that it precedes.

For example, the details of an activity (patrol, checkpoint, investigation, etc.), how it was conducted, and any relevant observations or insights of the participants about the environment or incidents that may have occurred should be copied and pasted into the *Narrative* box in its entirety. Similarly, an entire news article would be pasted into the *Narrative* box with the date, publisher/author, and subject.

Scratchpad – The *Scratchpad* text box provides a space for the analyst to include their thoughts (notes, inferences, assessments, etc.) independent of the content in the Narrative. For example, having pasted an *Information Report* with a tagged animal sighting into the *Narrative* box, an analyst might use the *Scratchpad* to comment, “Based on the location and behaviour this is likely Animal XYZ, however identification features in the photo are inconclusive; RT, 15 Oct 17”

Note: it is best practice to include the author’s initials and a date with a *Scratchpad* note

Map / Locations tab

There are two ways to add locations to a record; the first is with a position attribute. The second is through the *Map / Locations* tab, which provides additional functionality, and is recommended when adding detailed geo data to a record.

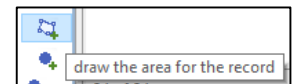
The mapping that displays in this tab will depend on your configuration in **Conservation Area → Define Area Boundaries** (in the menu bar). Similarly, the **Layers** pane provides several display options. The selected Map Projection may also affect the mapping display.

To add a new point to the map, click the 'adds a point location' button, and then select the relevant location on the map.



Note: you can import multiple locations in bulk using the 'import locations from file or GPS device button, or from the right click menu in the locations pane (see below)

Similarly, you can manually draw a polygon / area on the map using the 'draw the area for the record' button. You can edit the coordinates of a point or area by right clicking its row in the locations pane and selecting 'Edit Geometry' (see below).



Draw an area

Once a location has been added to the map, it will be listed in the pane at the bottom of the screen. From here, you can edit various attributes of the location:

- ID (double click to edit)
- Date (double click to edit)
- Time (double click to edit)
- Comment (double click to edit)
- Observation (see below)
- Entities (see below)

Right clicking on the location's row provides more options:

- Add Entity Link
 - Used if the record has had an entity associated with it and it would be logical to associate that entity with this location (e.g. a place where a tagged animal has been re-sighted).
- Delete Location
- Edit Observations
 - Used to assign an observation type to this location, depending on your site's SMART Core Data Model. Including an observation here would allow subsequent querying for specific events or incidents that are included in the Data Model.
- Edit Geometry
 - Adjust the coordinates of the geometry (whether point or shape)
- Import Locations

ID	Date	Time	Comment
Location 1	27-Apr-2017	11:49:04	

- Add Entity Link >
- Drop Entity Link >
- Delete Location
- Edit Observations...
- Edit Geometry...
- Import Locations... >

Location row options

Records pane and searching records

The records pane, which opens by default on the left of the screen in Data Analysis Mode, or as a stacked tab in the other modes, lists records by Unprocessed, In Progress, and All. It also provides Basic Search functionality for records.

Basic Search

- Select *Source* to specify the record type

Note: to list all records of a certain type, simply select the record type in *Source* and hit *Search*

- Enter search terms in *Narrative* to search against record Narrative content

Note: *Records Basic Search* supports searching for word fragments in the narrative; It is also possible to use wildcards in your search terms to broaden the results and return instances where alternative spellings occur (“%” replaces multiple characters, “_” replaces a single character).

- Enter search terms in *Title* to search against record title content
- With ‘Export’, it is possible to save the search results to a CSV file



Records basic search

Configuring records

To configure record types (ie. change the structure of the data model), select **Profiles → Configure Records** from the menu bar.

Warning: Only authorized individuals should make changes to the data model as this will affect any existing records, information workflows, procedures, as well as queries and analysis based on those records.

From this screen record types can be created, modified, and deleted. Similarly, pre-existing attributes can be added to / removed from records, and new attributes / entity types can be assigned to records.

Module 3 ENTITIES, EVENTS, RELATIONSHIPS, ATTRIBUTES

Overview

SMART Profiles allows you to capture information on **entities**, **events**, **relationships**, and build up situational awareness over time. This approach enables the identification, development, and granular analysis of key information in the system – individuals, activities, places, trends, etc.

An **entity** is defined as a real-world phenomenon that cannot be subdivided into phenomenon of the same kind, and exists independent of observation. Examples of entities include people, animals, locations, organisations, and vehicles.



Entity

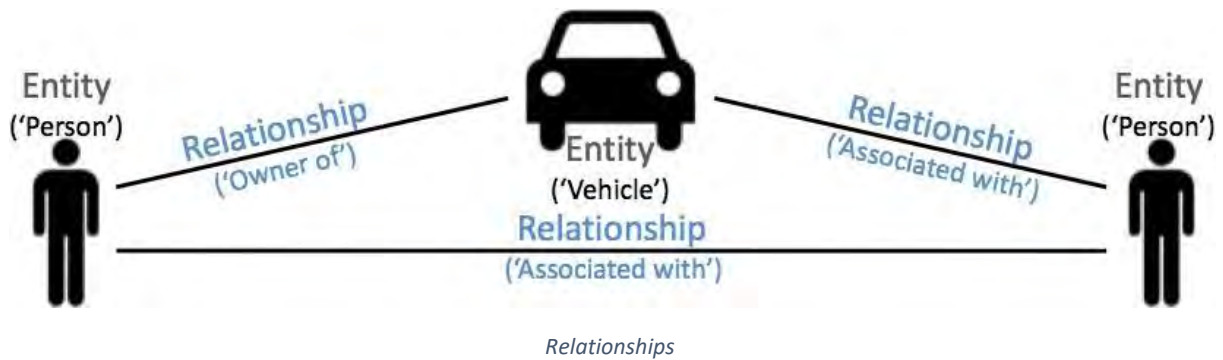
An **event** comprises the unique conditions that occur at a particular time and location (e.g. a poaching event). Events potentially recur in space, in time, or with some other characteristic, but each recurrence is considered a unique event

Note: events may be captured as an observation or an entity depending on the data model used.



Event

A **relationship** describes the way that two entities are associated (linked, related, etc.) to one another and captures specific information about that association. Creating relationships between entities is a precondition for carrying out network analysis (also called link analysis) with the database. For example, a Person **entity** may have a 'Family Member Of' relationship with another Person **entity**.



Entities, events, and relationships have **attributes** – properties, which are relevant to their ‘owner’ (e.g. *age* for a **Person entity**, *GPS Location* for a poaching **event**, *type of association* for a **relationship**).

The **entities, events** (observations), **relationships**, and **attributes** available to you will depend on your site’s data modelling and SOPs. These can be edited by selecting:

- **Profiles → Entity Types**
- **Conservation Area → Data Model**
- **Profiles → Relationship Types**
- **Profiles → Attributes**

Warning: Only authorized individuals should make changes to the data model as this will affect any existing database objects, information workflows, procedures, as well as queries and analysis based on those objects.

The use of entities, events, and relationships

Identifying and extracting information on **entities, events** (observations), and **relationships (E/E/R)** from records enables:

- Developing knowledge of **an entity** over time.
- Link analysis of relationships between **entities**.
- Attribution of entities to specific **events**.
- Analysis of temporal and geographical patterns and trends.

A report may provide information about multiple entities, for example an elephant that has been fitted with a radio collar ‘M0345-2017’. After a report is logged in SMART Profiles as a record, an **entity** can be created, with the attribute ‘ID: M0345-2017’. Over time, more information on M0345-2017 may feed into SMART Profiles in different records, adding to understanding its movements and activities. As a result, all information related to M0345-2017 will be captured on a single **entity** in SMART Profiles – rather than having to read across multiple reports.

Similarly, it will be possible to see at a glance everything that is known about M0345-2017 in terms of its connections to other **entities**, and **events** (observations). This allows for a predictive analysis of its future activities, investigation of migration and movement patterns, or the establishment of lineage.

As such, it is crucial that records created in SMART Profiles are diligently reviewed for meaningful data on **E/E/R**. The subject matter expert (SME) for a particular area / work-stream will be best placed to identify meaningful information from reports & records that might contribute to **E/E/R**. Similarly, while it is critical to exploit records for important data on **E/E/R**, a balance must be achieved between what is meaningful, and attempting to convert every possible piece of information in a record into **E/E/R**. This requires informed judgement by an SME.

Tracking entities

All data may not require the creation of new **E/E/R**, but may instead be new information relevant to pre-existing **E/E/R**. In cases where a new report refers to existing **events** (observations), it is critical that the observation is not duplicated, as this could artificially inflate the number of events captured in the database.

The current configuration of SMART Profiles does not allow for the association of records to other records. In instances where information about a single event may be contained in many different reports it may be necessary to create a tracking entity.

By linking reports from all available sources (captured as records) to a single tracking entity, it is possible to accumulate all of the available information about the event and its outcome in a single location.

Tracking entities should generally be reserved for events where there is a reasonable expectation of multiple follow up reports.

Adding an entity to a record

If applicable, it is possible for a record to be linked to one or more entities. For example, if a record refers to an individual of interest, that person should exist as an **entity** in Smart Profiles, and their entity should be associated with that record. As a result, when viewing that **entity** it would be possible to see a comprehensive list of all records in which they are mentioned.

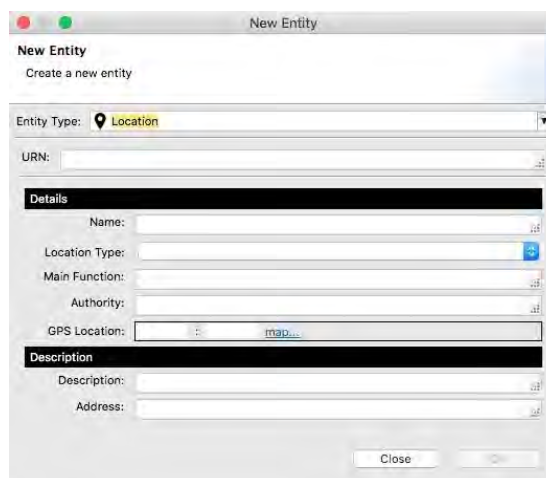
To associate an **entity** with a record, click 'Add'  in the Entities pane of that record.

Select the entity from the available list. Alternatively click on 'All Entities', to drill down by entity type, or 'New Entity', to create a new **entity**.

Creating an entity

To create a new entity, select **Profiles** → **New Entity** (from the menu bar).

Note: when editing a record, it is also possible to create a new entity from the Entities pane, by Selecting Add / New Entity



The 'New Entity' screen

In *Entity Type* select the type of entity required (e.g. Person, Organisation, etc).

Note: the available entity types will depend on your site's data modelling and SOPs. Entity types can be created, deleted, or modified, but this should only be done in accordance with site data modelling.

Populate the new entity's fields, as appropriate. This information will come from a record(s). It is important to link an **entity** to any record that provides information on that **entity**, in order to track data sources.

Each entity type has an 'ID attribute'. This must be a unique identifier, and should be populated in accordance with your site's URN / naming conventions, e.g. *SNOW_Jon_SNP/0041*.

Viewing & editing an entity

After clicking 'Ok' to complete the entity creation, the entity view screen opens. This is the same view that opens if double-clicking on the entity in other locations, e.g. Entity Search, or from within the Entities pane of a record. It is made up of two sections: an upper (showing either Attributes / Files / Scratchpad), a lower (showing either Map / Records / Relationships / Relationships View).

An overview of the information held on an entity is visible at the top of the entity view screen, broken down into attributes groups (e.g. Details, Identification, Description, etc). Click on a group to see information on those attributes.

Entity Actions

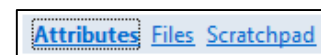
In the top right of the entity view screen, several actions are available:



Entity actions

- Save
 - Saves the entity
- Export entity and relationships to CSV file
- Print to ...
 - Prints / exports the entity to any one of: PDF, PPT, POSTSCRIPT, DOC, HTML, ODP, ODT, XLS, DOCX, ODS
- Refresh record
 - Refreshes the entity with any changes made
- Delete entity
 - Permanently deletes the entity
- Add to current working set
 - For more on working sets, see page 18
- Enable or disable editing of record
 - Toggles the entity between read-only and write.

Attributes, Files, Scratchpad



The upper entity view screen opens by default showing 'Attributes'.

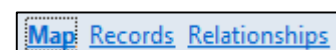
Select 'Files' to upload files relevant to the **entity**. Any images of an **entity** – e.g. a photograph of a person – should be uploaded; right click on an uploaded image and select 'Set as Primary Image' to use the image as a profile picture.

'Scratchpad' can be used to record analyst comments independent of record data, e.g. "*This may be the same individual as was observed last week. RT, 12 Oct 14*"

Note: *it is best practice to include the author's initials and a date with a Scratchpad note*

Map

The lower entity view screen opens by default showing the 'Map'.



This map shows locations that have been saved to a record to which the **entity** is linked, *and* in which the 'Add Entity Link' option has been used.

Right clicking on a location's row provides the option to 'Open Record' that the location is linked from.

Records

Select 'Records' to view a list of all records to which this **entity** is linked, including the date received (created), and the most recent date modified.

Relationships

To view a list of all relationships between this **entity** and other entities (including **events**), select 'Relationships'.

To create a new **relationship** between this **entity** and another, select 'New Relationship'.

- From the dropdown list, select the target **entity**, and then double-click the relationship type.
- With relationship types, it is possible to set attributes that capture additional relevant information, e.g. the 'Associated with' relationship has an attribute Relationship Details, to capture more granular information about the relationship between entities. This will depend on your site's data modelling.

Relationships View

SMART 6 introduces the Relationships View functionality for entities, and on the main pane of SMART Profiles. It provides an additional method of visualizing relationships between entities using a basic interactive link analysis.

Entities are represented as a box (the node), containing their primary image and labelled with their Attribute ID. Relationships are represented as an arrow (the edge) linking related entities, with a label detailing the relationship type. The user can click and drag to manually arrange nodes and edges.

User Controls

Note: when any of the following options are changed (or the entity is closed), the nodes and edges will revert back to their default arrangement. Any manual arrangement by the user will be lost.

Depth – The 'Depth' controls the degrees of separation that are represented on the graph. For example, a depth of '1' shows entities directly related to the current entity, whereas a depth of '2' shows entities that are directly related to the current entity and entities that are directly related to those entities, and so on. A depth of '1' through '4' may be selected.

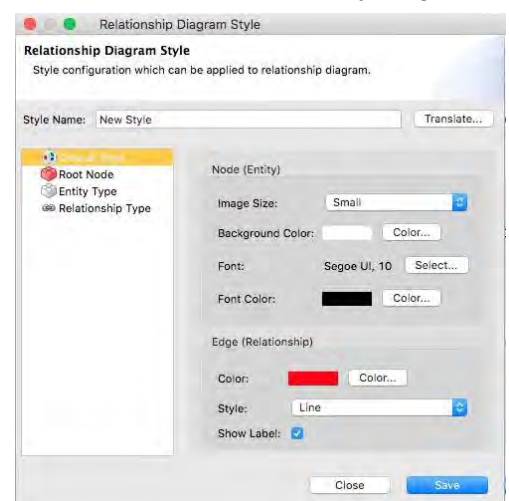
Entity Types – Individual entity types can be selected or deselected to control how the link analysis graph is visualized.

Relationship Types – Individual relationship types can be selected or deselected to control how the link analysis graph is visualized.

Style – Users can select from the available styles to control how the nodes and edges are visualized.

Boxes, arrows, and labels can all be styled to meet user requirements. Variables for image size, background colour, foreground colour, arrow colour, and label visibility are all controlled by a diagram style, which can be created, customized, and saved by selecting;

Profiles → Relationship Diagram Styles.



Relationship diagram style

The link analysis graph can be visualized with a default style, or individual entity types and relationships types can be given unique styles by overriding the default settings.

Entity search

To search for saved entities, use one of the available **Entity Search** tools (Basic, Advanced, and Spatial)
Basic search – In a basic search, enter the search term and specify an entity type (if applicable) or leave the search terms blank to list all entities of a particular type.

The basic search uses a ‘fuzzy search’ algorithm to search all of an entity’s attributes (not including the Scratchpad) for words that are similar to the search terms.

Warning: fuzzy search results are variable and should be used with caution. A null result on means the algorithm didn’t find a match, not that a match doesn’t exist in the database. This functionality is ideal for quickly finding entities you already know exist in the database.



Basic search

Advanced search – Advanced search allows the use of filters to create complex queries based on the values contained in specific entity attributes. Use the ‘Add Filter’ button to construct the query.


If an attribute is shared between different entity types (ie ‘Description’), users will receive matches from all entity types when an attribute value matches the search terms unless they also specify the entity type in the query. This is unnecessary when an attribute is unique to one entity type.

It is possible to save both basic and advanced searches. Having configured a specific search once, it can simply be loaded and run again on future occasions.

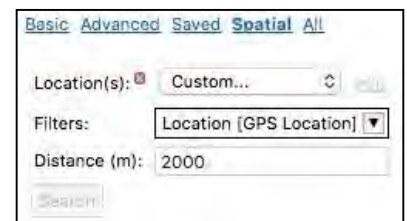


Entity Advanced search

Spatial search – Spatial search is only available for entities that have a position attribute (this will not search all of the locations captured on an entity’s Map tab).

Under Locations(s) select a pre-existing point. To create a new point, select *Custom* to open the Select Point window. Use the button  to click on the map and add a new point.

Searches are conducted for any entities with a position attribute that has coordinates within a specific distance of the selected point.



Entity Spatial search

Grid view – Advanced search results can be presented in the grid view (essentially a spreadsheet showing all of the entity’s attribute values in columns) by selecting ‘All’ in the entity search.

Importing and exporting entities between databases

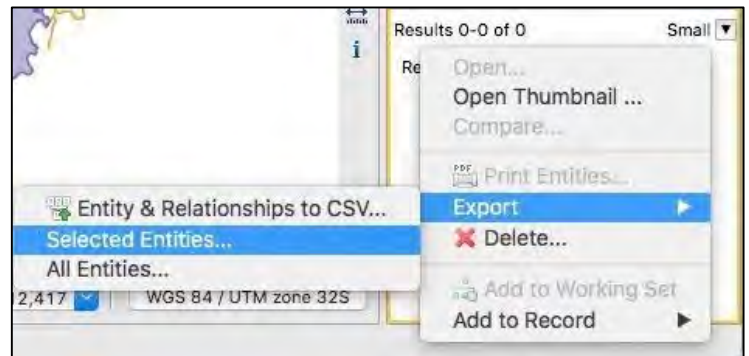
This feature allows an analyst working on a database at one site to share one or more entities with an analyst at a different site.

Note: both databases must have the same entity types configured; however, an attribute-mapping tool enables you to overcome any difference at the attribute level.

Exporting entities for import

Entities and records can be exported in either XML or CSV format. In the XML format, the entity profile preserves any associated media files in addition to relationships to other entities. The XML format will save this as a zipped package.

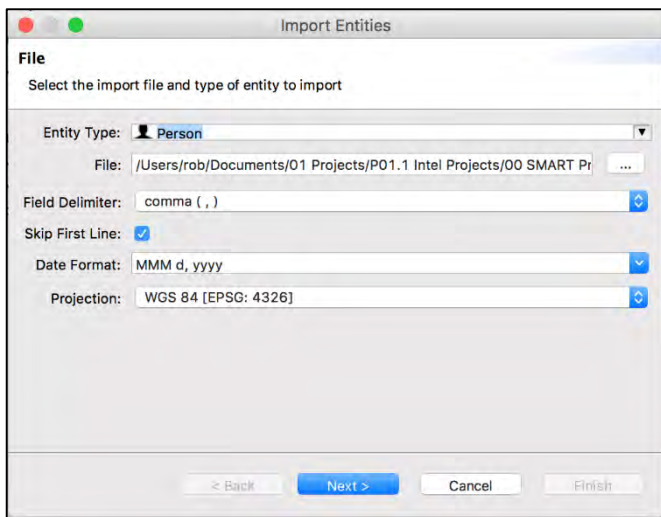
To export an entity, right click on the entity and select export. You will see a number of options for the export format. After clicking on Selected Entities, choose between XML or CSV format.



Exporting an entity

Importing entities

To import Entities, go to **Profiles** → **Import/Export Data**. You then have the option to either import entities from CSV or XML.

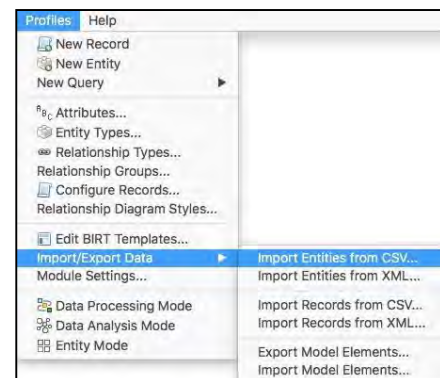


Configuring entity import

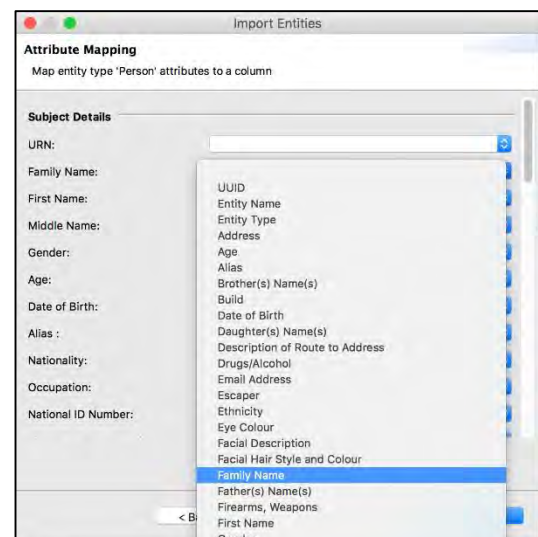
If you import from CSV, you'll need to first specify the entity type, date format and map projection used.

Once imported, you can map the attributes in the CSV column headers to the intelligence attributes in your database.

Although somewhat time-consuming, it allows you to batch-import multiple entities in a single import. In each case, by clicking in the cell and then typing the first letter of the corresponding attribute, you can speed up the process.



Importing entities



Mapping attributes

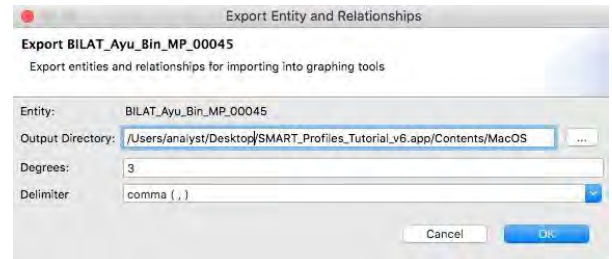
Exporting entities and relationships for link analysis

In cases where it is necessary to use more advanced link analysis tools, it is possible to export one or more entities in a CSV for analysis in separate platforms (e.g. Cytoscape, Gephi, etc).

Exporting entities for network analysis

Select the Entity & Relationships option from the target entity's Export menu, as above, and configure export options.

This export will produce two CSV files. One will contain information held on the target entity and its linked entities. The other will contain information on the target entity's relationships to its linked entities, structured in a format conducive to direct import into networking tools Cytoscape, Gephi, etc.



Exporting to CSV

Exporting an entity profile as a document

Smart Profiles has the ability to export information held on an entity in a report-like format, in a variety of file types: PDF, PPT, POSTSCRIPT, DOC, HTML, ODP, ODT.

Right click on the entity, and then select Print Entities. Configure the export options (format, location, date range) and hit Ok.

Note: wait for 30-60 seconds to ensure the export has completed before opening the file.

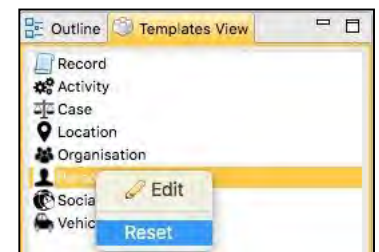
The Print Entities export includes image files, and detailed information on attributes, relationships, records, and locations.

Resetting entity and record types after record configuration

After altering the configuration of an entity or record (e.g. adding a new attribute), it will be necessary to reset its template before exporting a Print Entities report.

Select **Profiles** → **Edit BIRT Templates** from the menu bar.

In the Templates View, right click on the object type and select Reset.



Resetting a template

Working sets

Smart Profiles provides a **Working Set** tool – a dynamic folder to which can be added various entities, records, and queries of interest.

The Working Set tool helps in organising and tracking data thematically. For example, if an analyst was investigating a pirate gang, they might create a *working set* named 'One Piece pirate gang investigation', to which they could add all the entities potentially linked to that gang – people, vehicles, locations, etc.

The Working Set tool can be used to conduct geographical analysis. Selecting / deselecting items in the working set adds or removes them from the map view, providing a view of all locations with which an entity / record is associated.

In the top right of the Working Set pane, several actions are available:

- Copy existing working set into a new working set
- Create a new working set
- Select working set



Working Set actions

When creating or managing a working set it is preferable to be in Data Analysis Mode so that the Working Set tab is displayed in a separate pane from the Entities, Records, or Queries tabs.

This allows you to easily drag and drop entities, records, and queries from their respective tabs into the current working set.