

Draft for review and comment by software vendors

ONLINE APPLICATION TRACKING – DATA INTERCHANGE SPECIFICATION (FOR DEVELOPMENT APPLICATIONS ONLY)

NOTE TO VENDORS

Two levels of data item groups for online DA application tracking are proposed in the enclosed specification.

Level 1 groups contain core data items, some of which are mandatory and others optional. Level 2 groups contain best practice data items and all Level 2 groups are optional.

Please note the Department is seeking the cooperation of application tracking software vendors to implement the **Level 1 mandatory items** only for online DA tracking. Future inclusion of a number of optional Level 1 data items and Level 2 data items will depend on resolution of legal questions related to copyright and privacy in the context of new planning legislation that is still in draft form and not yet in force.

Data items required for **Level 1 Mandatory** compliance for DA tracking are:

INFORMATION:		
M/O	Field	Notes
M	dat_id	An id that uniquely identifies the application within this feed
M	last_modified_date	The date of the last change to this record
M	description	A short, human readable description of the application
M	authority	Name of the Authority
M	lodgement_date	Date the application was lodged with the Authority
M	determination_date	Date that the application was determined at the Authority
M	status	Current status of the application with the Authority
O	notification_start_date	Start date for notification period of application
O	notification_end_date	End date for notification period of application
O	officer	Name of responsible officer from the Authority
O	estimated_cost	Estimated cost of the work described by the application
REFERENCE:		
M/O	Field	Notes
M	more_info_url	Web address for more information about this application
O	comments_url	Web address for commenting on this application
LOCATION:		
M/O	Field	Notes
M	address	Human readable street address for the application
M	land_title_ref	Composite record containing Land Title Office references
M	lot	Lot number
M	section	Section number, or "none"
M	dpsp_id	DP/SP identifier
O	geometry	Composite record containing geographic coordinates (GeoJSON format)
DOCUMENTS:		
M/O	Field	Notes
M	documents	Composite record containing a list of documents for the application
M	ref	Internal reference of document for this application
M	title	Short, human readable title of the document
M	document_url	URL to location of document for download
EVENTS:		
M/O	Field	Notes
M	events	Composite record containing a list of events for the application
M	id	Internal id of event raised against application
M	date	Date the event occurred
M	description	Short, human readable description of the event
O	event_type	Authority-specific event type
O	status	Authority-specific event status code

Please see section 4 (page 18) for complete details.



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The Department may consider introducing data interchange specifications for online tracking of complying development, DA modifications (s96) and other types of application in the future as separate projects.

Thank you

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ATDIS-1.0.7 Application Tracking

Data Interchange Specification

Version	1.0 (36)
Status	Published
Printed	13/09/2013 1:05 PM
Reference	ATDIS-1.0.7 Application Tracking Data Interchange Specification (v1.0).doc
Prepared by	Carpadium Pty Ltd www.carpadium.com

Introduction

The NSW Department of Planning and Infrastructure (Department) has released the [White Paper: A New Planning System for NSW](#). Chapter 4: Community Participation, informs the community of the direction for ePlanning in NSW. One of the ePlanning deliverables under the White Paper is making Application Tracking universally available to the community online.

The main objective of the Application Tracking project is to help every Council in NSW work with a software vendor of their choice to implement an electronic application tracking tool that can extract application information from their electronic management systems in a machine readable format for people across NSW to access online. Making this information universally and easily available online requires a common standard for recording and extracting application tracking information from council electronic management systems.

The purpose of this document is to provide vendors of application tracking software with a draft Application Tracking Data Interchange Specification for their review and comment and invite them to participate in the Application Tracking project.

Specific goals for this project are:

1. Agree a common machine-readable standard for data produced by application tracking tools.
2. Agree a minimum set of fields that a vendor's product must be able to produce.
3. Agree a best-practice set of fields that a Council should be aiming for, along with legal advice from the Department as to the right to display these.
4. Provide financial incentives to Councils to acquire or update an application tracking tool that meets (1) and (2).
5. Make it easy for other parties (such as planningalerts.org.au) to consume the data produced by the tools deployed under (4).

Please note the Department is *explicitly not* trying to:

- **Commission the build of new application tracking software.**
- **Compete with existing vendors in the marketplace.**
- **Dictate to Councils which vendor they should choose for their needs.**
- **Dictate to vendors how they should build their systems or limit the features their products contain.**

However, the Department is seeking vendor cooperation to adopt common State-wide standards for Application Tracking Software to enable universal community access to an agreed set of application tracking information on line.

Once the Department has established an agreed specification through consultation with vendors and other stakeholders, it will commission development of a test harness for vendors to use (at no cost to vendors) to test and confirm their application tracking software complies with the agreed specification.

The Department also intends to offer funding support to Local Government and start to release grants this financial year to help them pay for modification work on their electronic workflow management systems necessary to support application tracking. For those vendors who will need to make significant modifications to their software so that it meets the agreed final specification for the minimum set of fields and eventually the full best practice set of fields, the Department is willing to discuss and explore options for how they might do this.

For more information regarding this invitation, please contact the ePlanning Project Team at ecode@planning.nsw.gov.au quoting Application Tracking in the email heading and providing contact details for the person in your organisation who should be contacted.

The Department looks forward to working with all vendors collaboratively on this project.

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1 Context

1.1 Revisions

20130913:v1.0 Matthew Sinclair – Final refinements based on feedback after production of test harness

20130812:v1.0 Matthew Sinclair – Final updates for final draft to add events and documents blocks to Level 1

20130611:v1.0 eCode Team – Invitation to vendors update plus clarification edits to sub-sections 2.1 and 2.2

20130605:v0.9 Matthew Sinclair – Update to fix some errors in JSON formatting

20130531:v0.8 Matthew Sinclair – Update to fix contradiction in date usage note in 4.3.1

20130524:v0.7 Matthew Sinclair – Further updates based on feedback from Open Australia Foundation

20130524:v0.6 Matthew Sinclair – Updates based on feedback from Open Australia Foundation

20130517:v0.5 Matthew Sinclair – Updates following vendor feedback, pre-publication

20130505:v0.4 Matthew Sinclair – Changed name to ATDIS, edits after feedback from DPI

20130501:v0.3 Matthew Sinclair – Wrapping up draft for distribution to Vendors

20130422:v0.2 Matthew Sinclair – Updates after initial workshop

20130420:v0.1 Matthew Sinclair – Initial version

1.2 Definitions

- Department: [NSW Department of Planning and Infrastructure](#)
- AT: application tracking
- DIS: data interchange specification
- Specification: this document
- Specifying Authority: the Department of Planning and Infrastructure acting to create and manage the ATDIS-1.0.7 data interchange specification.
- Complying Authority: the Local Government Area or Municipal Council that processes development applications and makes them available in compliance with the ATDIS-1.0.7 data interchange specification.
- LGA: Local Government Area

When describing a component for compliance, the Specification will make use of one or more of the following key words: "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL". The key words are to be interpreted as described in [RFC 2119](#).

1.3 About this document

The first part of this document presents a narrative explanation of the Specification and the process the Department is using to collaboratively develop it with software vendors and Councils. The second part of the document describes the specification in detail using formal language suitable for use in compliance verification.

1.4 Specification process

1.4.1 Steps

1. Prepare straw man Specification (this document)
2. Workshop straw man Specification with vendors and Department of Planning & Infrastructure
3. Refine straw man Specification post-workshop [Carpadium]
4. Distribute post-workshop straw man Specification to all parties for review [Carpadium]

5. Provide feedback on straw man specification [Vendors]
6. Arrange a 1-1 meeting with Carpadium to discuss Specification requirements and any confidential feedback topics [Vendors, Carpadium]
7. Collate and integrate feedback into Draft Specification [Carpadium]
8. Publish Beta Specification for final comments [Carpadium]
9. Collate and integrate feedback into Final Specification for publication
10. Publish finalised documents as ATDIS-1.0.7 Specification

1.4.2 Feedback

Please address all feedback on this version of the Specification to info@carpadium.com with the subject "ATDIS-1.0.7 Data Interchange Specification [version: 1.0, revision: 36]".

2 About the specification

2.1 Introduction

This document presents the **final draft** version of the ATDIS-1.0.7 Specification for State-wide application tracking for the NSW Department of Planning & Infrastructure.

In preparing this Specification, the Department is striving to give the residents of NSW the ability to track the status of development applications online in a consistent, timely and complete manner, with a view to enabling a bird's eye view of development applications across the State of NSW.

This specification is concerned with providing online access to publically available application tracking *data* in accordance with this specification. It is not a specification for application software nor is it an attempt by the Department to prescribe or proscribe any application functionality or seek in any way to control or specify the *software functionality* of application tracking systems offered by Vendors.

This version of the Specification [1.0, revision 36] has now been a review cycle within the Department and with Vendors, and is ready for publication as the **final draft**.

2.2 Examples

The following examples describe some of the simplest and most common interactions that the specification hopes to foster. In each case, the important details relate to the *business scenario* triggering the event, and the *data* captured and interchanged in that process.

The examples assume familiarity with local government development planning tracking processes, as well as standard Internet protocols.

2.2.1 Scenario 1: Get a list of all active development applications from a local government area

The simplest scenario that the specification seeks to guide is the process of obtaining a list of currently active development applications from a specific local government area (LGA).

To satisfy this business scenario, a Resident visits the public website of the LGA and clicks on a link to present the development tracking list. Within the LGA's software system a query executes to generate a list of currently active development applications, which the vendor's software system formats for display in the Resident's browser.

It is important to stress that the ATDIS-1.0.7 Specification does not seek to control *how* the Vendor's software stores or processes development planning information, the business work flows used to create it, or even how the information is visually styled and displayed on the screen. However what the Specification does concern itself with is the *data items* that make up the information displayed.

For example, the following¹ presents an indication of the types of data items and their naming conventions for a single development application:

```
{
  "response": [
    {
      "application": {
        "info": {
          "dat_id": "DA2013-0381",
          "last_modified_date": "2013-04-20T02:01:07Z",
          "description": "New pool plus deck",
          "authority": "Example Council Shire Council",
          "lodgement_date": "2013-04-20T02:01:07Z",
```

¹ Note: Responses must be pagination-aware, please see 6.5 for more details.

```

    "determination_date": "2013-06-20T02:01:07Z",
    "notification_start_date": "2013-04-20T02:01:07Z",
    "notification_end_date": "2013-05-20T02:01:07Z",
    "status": "OPEN"
  },
  "reference": {
    "more_info_url": "http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications/PA2013-0381"
  },
  "location": {
    "address": "123 Fourfivesix Street Neutral Bay NSW 2089",
    "land_title_ref": {
      "lot": "10",
      "section": "ABC",
      "dpsp_id": "DP2013-0381"
    }
  }
},
{
  "application": {
    ...
  }
}
],
"count": 2,
"pagination": {
  "previous": null,
  "next": null,
  "current": 1,
  "per_page": 25,
  "count": 100,
  "pages": 1
}
}

```

The way in which this data is rendered in a browser from the LGA's web site is entirely up to the LGA and their software vendor, but the hope is that an ATDIS-1.0.7-compliant system would be able to provide the above data items as a minimum set.

Importantly, the Specification seeks to influence vendors of LGA systems to provide *programmatic* access to this kind of data for consumption by other systems, residents and applicants, as well as the Department and content aggregators.

The preferred mode of system-to-system integration is via standard, open web protocols. For example, an HTTP request for a URL of the following form could yield the above application data:

```

REQ: GET http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications.json
RES: 200 OK

```

The exact structure of the URL is defined later in the specification, but the important point to note here is that the URL represents an address to which a remote system can make a standard HTTP(s) GET request, with the expectation that a list of development applications will be returned in a machine readable format (in this case JSON, but XML would be equally appropriate). The basic interaction described here is the same for all use cases indicated within the Specification.

In summary, a remote system makes a request using standard HTTP protocols to an address in a known format, and the system returns a machine-readable data set for consumption by the remote system.

2.2.2 Scenario 2: Get a list of active development applications within a specific postcode

A simple refinement of Scenario 1 is to qualify the request so that the LGA system returns a subset of the available data. For example, a Resident might wish to know about all development applications within a specific postcode:

```
REQ: GET http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications.json?postcodes=2089
RES: 200 OK
```

The above request contains a *query string* ("postcodes=2089") that informs the LGAs system that instead of returning all development applications, that it should only return applications for the postcode 2089. The format of the returned data would be identical to that in Scenario #1, with the expectation that only those applications in the specified postcode would be returned.

A client system could also make a request for multiple postcodes, for example:

```
REQ: GET http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications.json?postcodes=2089,2090
RES: 200 OK
```

This is useful for when a local government area occupies multiple postcodes, or for when a resident might be interested in applications at the boundary of more than one postcode.

2.2.3 Scenario 3: Register for an email alert on status change of an active development application

Although this version of the specification does not include alerts as part of the mandatory sections, this scenario is an example of the kind of future development possibilities for the specification. For example, a Vendor or aggregator may wish to add alert subscription capability for residents that can be used for notification when the status of an application changes.

The following presents an indicative example of how one might add an email alert for changes in state for a development application:

```
REQ: POST http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications/DA2013-0381/notifications
{
  "notification": [
    {
      "email": "resident@example.com.au"
    }
  ]
}
RES: 201 Created
```

Note: this example has intentionally left out considerations such as authentication or other issues associated with remotely posting data into an LGA system. Definition of those protocols is beyond the scope of the ATDIS-1.0.7 Specification.

2.3 Goals and objectives

In creating the Specification, the Department seeks to:

1. Create an interchange format for the data associated with development applications that allows publicly available information to be published in a consistent fashion to foster integration and aggregation
2. Give the residents of NSW confidence that their Councils are collecting and publishing relevant application tracking data in a consistent, timely and complete manner
3. Facilitate creation of a bird's eye view of development applications across NSW

2.3.1 What the ATDIS interchange specification is

- It is a specification that codifies the types of data that Council has to capture and make available for residents
- It is a specification for a data interchange format for application tracking
- It is designed to make publishing application tracking data simple and easy for system-to-system integration

2.3.2 What the ATDIS interchange specification is *not*

- It is not a specification for a software application
- It is not a specification for application functionality
- It is not a solicitation for provision of software or services

2.4 Approach

The Department is seeking to collaboratively develop the Specification with interested parties including councils and vendors of software systems that offer tracking capabilities.

Specifically, the Department hopes to:

1. Collaboratively create a new data interchange standard for the online publication of data associated with development applications
2. Work with vendors of municipal software systems to deliver application tracking tools for Councils that are interoperable according to Department of Planning & Infrastructure standards

2.5 Success criteria

To be successful, this specification must:

1. Achieve industry wide consensus from all stakeholders on the Specification, including:
 - Schema: the format for publicly available mandatory, optional and extended data items published by application tracking systems
 - Use Cases: an agreed minimum set of expected uses for published application tracking data
 - Channels: an agreed minimum set of channels and data syntax models over which application tracking data can be published
2. Achieve sign-off of version 1.0 of the Specification from the Department

2.6 Complying with the specification

In order to comply with the Specification, Complying Authorities must work with ATDIS Vendors and their own IT infrastructures to publish information about development applications so that Applicants and other Residents within NSW can access that information online through browser or mobile devices.

Implementations of systems seeking compliance with the Specification can do so at one of three levels of compatibility:

- Level 1. Mandatory
- Level 2. Optional
- Level 3. Extended

The Department acknowledges from the outset that there are different levels of technical capability within councils and varying degrees of maturity of the software systems employed to manage application tracking. For this reason, the Specification defines *three* levels of compliance to allow flexibility for both Councils and software vendors.

Level 1 Mandatory captures the basic set of data items necessary for any kind of meaningful display of application tracking data. The ATDIS-1.0.7 specification sets out to capture the baseline set of data items that all Councils with application tracking software should be able to meet, and defines an interchange format that is both simple and easy for Residents and Applicants to consume, and suitable for Aggregators to work with.

Level 2 Optional captures what the Department believes is *best practice* for the management of online application tracking data. The Department realises that not all Vendors or Councils are equipped to provide data interchange to Level 2, and so the Level 2 components of the specification exist to provide a stretch target for Councils and Vendors.

Level 3 Extended provides an opportunity for Vendors and Councils to innovate on top of the baseline ATDIS-1.0.7 specification. This version intentionally leaves Level 3 attributes unspecified, but recognises that some Vendors and Councils will have items suitable for publication as extended data that can be used to differentiate the software Vendor and/or their implementing Councils.

To comply with the *Level 1 Mandatory* components of the Specification, a Complying Authority's application tracking system must be able to:

1. Provide an online *feed* of development applications processed by the Complying Authority that:
2. Contains each of the *mandatory* data items,
3. Supports consumption according to the *mandatory* use cases, and
4. Presents data across each of the *mandatory* distribution channels,

as defined in the ATDIS-1.0.7 version of the Specification.

To achieve *Level 2 Optional* compliance, a Complying Authority's application tracking system must be able to:

1. Provide an online *feed* of development applications processed by the Complying Authority that:
2. Contains each of the *optional* data items,
3. Supports consumption according to the *optional* use cases, and
4. Presents data across each of the *optional* distribution channels,

as defined in the ATDIS-1.0.7 version of the Specification.

And to achieve *Level 3 Extended* compliance, Complying Authority's application tracking system must be able to:

1. Provide an online *feed* of development applications processed by the Complying Authority that:
2. Contains each of the *extended* data items,
3. Supports consumption according to the *extended* use cases, and
4. Presents data across each of the *extended* distribution channels,

as defined in the ATDIS-1.0.7 version of the Specification.

In the context of compliance, a *feed* is a public data set that is available for consumption by a person using a desktop or mobile browser and Internet protocols such as IP and HTTP(s), or by a system capable of interacting with the feed using the same Internet protocols.

2.7 Considerations

Based on feedback from stakeholders, the following list of considerations is relevant for Vendors and Councils wishing to develop compliant systems:

1. *Authentication*: The Specification introduces no authentication requirements and makes the assumption that compliant data is available via a public, unauthenticated link.
2. *Throttling*: Vendors and councils are free to implement throttling against a *reasonable use* policy. The definition of *fair use* is beyond the scope of the specification.

3 Conceptual architecture

Figure 1 presents the conceptual architecture for the Specification:

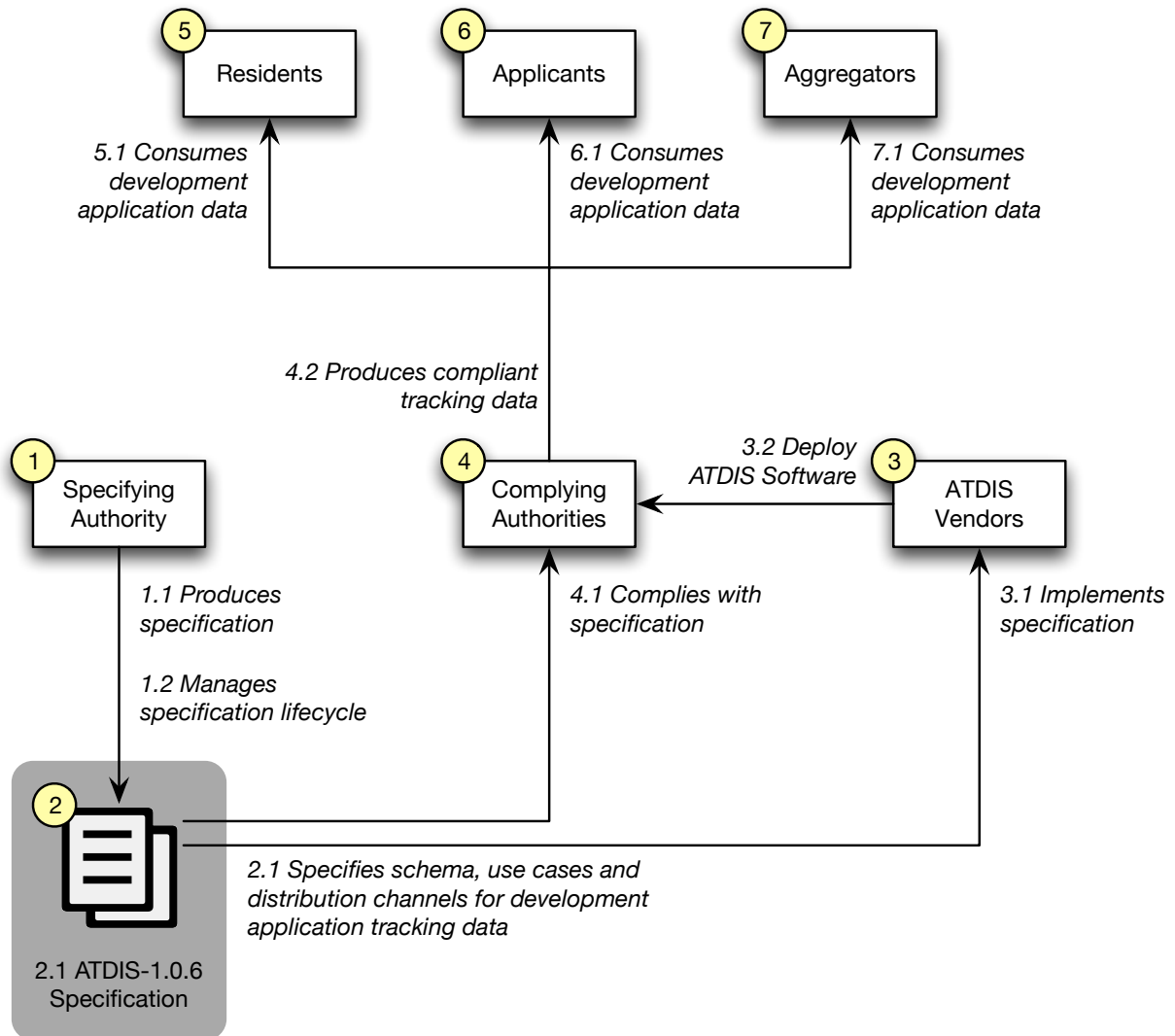


Figure 1: Conceptual architecture

The conceptual architecture defines the high-level entities and processes that cooperate within the specification. This Specification document is principally concerned with defining the *schema*, *use cases* and *distribution channels* for the ATDIS-1.0.7 data interchange format.

Entities and activities are captured in the conceptual architecture to provide context.

3.1 Roles and responsibilities

This specification attempts to coordinate the *publicly available data* captured and produced by application tracking systems, and in doing so, necessitates defining responsibilities for a number of roles within the ecosystem

The Specification defines the following *roles*:

- **Specifying Authorities:** The NSW Department of Planning & Infrastructure acts to create the Specification for application tracking data, and manage the lifecycle of change to the specification over time.
- **Complying Authorities:** Councils work to comply with the publication standard codified in the Specification and use ATDIS Vendor software to produce compliant tracking data.
- **ATDIS Vendors:** implement the specification in their municipal systems and deploy to NSW Councils.
- **Residents:** consume application tracking data for other applicants via online and/or mobile channels.
- **Applicants:** consume application tracking data for their own applications and the applications of other residents via online and/or mobile channels.
- **Aggregators:** consume application tracking data and aggregate according to market requirements.

The Specification captures a number of *responsibilities* that indicate how each role participates in the inputs and outputs of the ATDIS-1.0.7 process:

1. Specifying Authority
 - a. Produces specification
 - b. Manages specification lifecycle
2. ATDIS-1.0.7 Specification
 - a. Specifies schema, use cases and distribution channels for application tracking data
3. ATDIS Vendor
 - a. Implements Specification
4. Complying Authority
 - a. Complies with Specification
5. Resident
 - a. Consumes application tracking data
6. Applicant
 - a. Consumes application tracking data
7. Aggregator
 - a. Consumes application tracking data

Note: It is well understood that participants in this ecosystem have other roles and perform a variety of other responsibilities that are beyond the scope of this Specification. These roles and responsibilities are described for clarity within this Specification, and are not meant to constrain the operation of those entities in activities beyond the scope of the Data Interchange Specification.

4 ATDIS-1.0.7 Application Tracking Data Interchange Specification

4.1 Components of the specification

Figure 2 presents the four high-level components of the Specification:

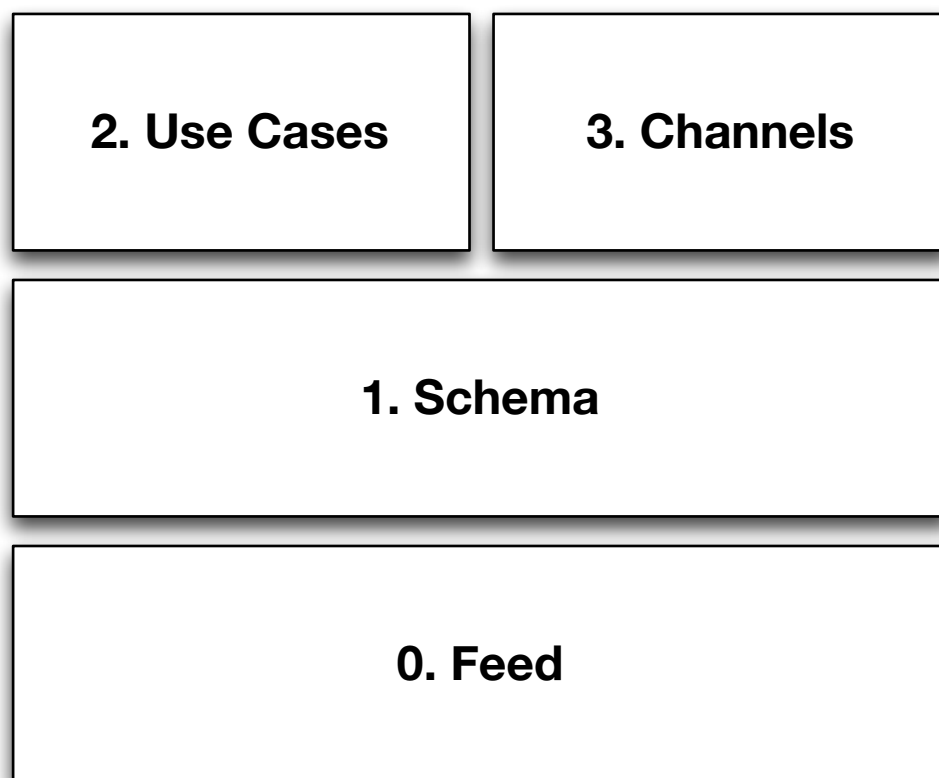


Figure 2: Components of the specification

- **Feed:** defines a publicly available source of application tracking data. For example, each complying Council would provide a single feed for application tracking data.
- **Schema:** defines the data elements that make up individual application tracking records. Examples include "date", "location" and "reference".
- **Use cases:** defines the agreed use cases for which ATDIS data can participate. Examples include "enquiries" and "subscriptions".
- **Channels:** defines the channels over which ATDIS data can be delivered. Examples include RSS, REST/[JSON, XML] and Browser.

4.2 Feed

Any compliant source of application tracking data is referred to as a *feed*. A feed is defined by a standard web address of the form:

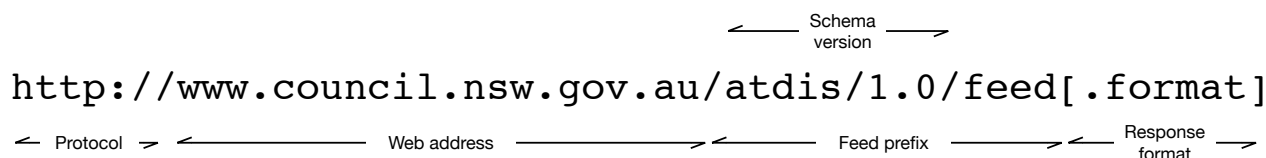


Figure 3: Feed web address format

Where

- Protocol: assume HTTP, but HTTPS can be used by a Council if required
- Web address: the fully qualified web host name for the Complying Authority. By convention, this should be the same as the URL used to access the Council's publicly available web site.
- Feed prefix: component of the URI that indicates a complying feed.
- Schema version: component of the feed prefix that indicates the version of the schema offered by the feed.

Notes

- There are some options for how the schema version number might be encoded into the feed URL. The above format (where the version is encoded into the URI) is the simplest mechanism, but it is also possible to encode version number with an HTTP header variable, with a query string parameter, or by using content negotiation. There is a vibrant and passionate debate about the best way to version URLs for access to resources that shows no prospect of being settled soon. Therefore, for the purposes of ATDIS-1.0.7, a simple URI-encoded version string is proposed. If content negotiation becomes the preferred standard, then this it is relatively easy to change the prefix in a future release.
- Given a version of the specification of the form *MAJOR.minor.patch*, it is assumed that all *patch* versions of the same major/minor version remain semantically and syntactically compatible with each other. Minor may introduce new items but will not remove any existing items. Major versions may make changes to the schema that are not backwards compatible.

4.3 Schema

The *schema* defines the specific data elements that are published in a compliant ATDIS-1.0.7 *feed*. The schema has a defined structure, broken down into one or more *application* records, which are further decomposed into *blocks* and *fields*.

To comply with the Specification at any level, a feed must support the basic conceptual structure of a **list** of application records. Then the feed will provide blocks and fields for each application record, depending on the level of compliance.

If a feed chooses to include a record type then it must include all mandatory fields for that record type. A feed can choose whether or not to include any optional fields within a block.

Figure 4 describes the conceptual structure of a complying feed:

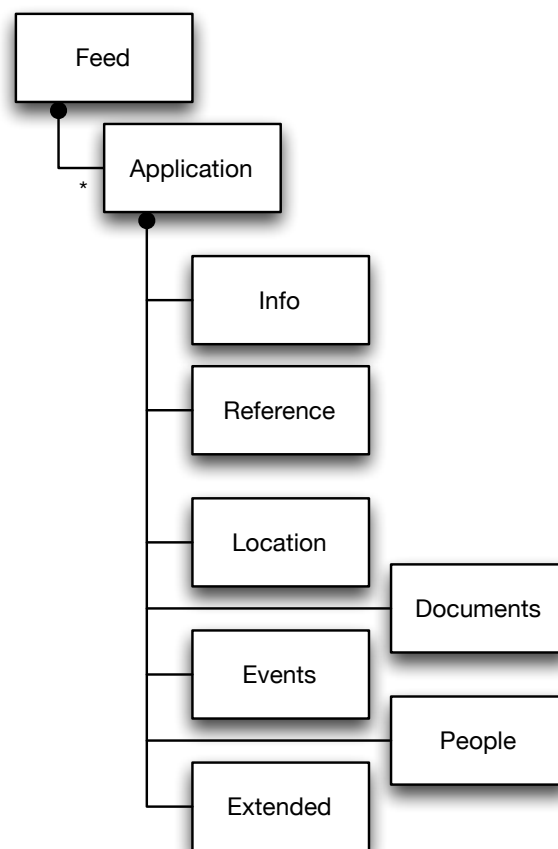


Figure 4: Feed structure

There are *seven* record types defined by the Specification:

1. Info
2. Reference
3. Location
4. Events
5. Documents
6. People
7. Extended

The following sections describe the semantics of each of the seven record types that make up the Specification. For each record type, the Specification indicates in which compliance level (L1, L2 or L3) the record belongs.

4.3.1 Info [L1]

The *info* record is the top-level block that contains unique identifying information about a single development application. In conjunction with the *reference* block, this represents the minimum *Level 1 Mandatory* requirements for a feed compliant with the ATDIS-1.0.7 specification.

The info record must contain the following fields:

M/O	Field	Notes
M	<code>dat_id</code>	An id that uniquely identifies the application within this authority
M	<code>last_modified_date</code>	The date of the last change to this record
M	<code>description</code>	A short, human readable description of the application
M	<code>authority</code>	Name of the Authority
M	<code>lodgement_date</code>	Date the application was lodged with the Authority
M	<code>determination_date</code>	Date that the application was determined at the Authority
M	<code>status</code>	Current status of the application with the Authority
O	<code>notification_start_date</code>	Start date for notification period of application
O	<code>notification_end_date</code>	End date for notification period of application
O	<code>officer</code>	Name of responsible officer from the Authority
O	<code>estimated_cost</code>	Estimated cost of the work described by the application

Notes

- The field `last_modified_date` captures the date at which the authority last modified the record. This allows consuming systems to know if an application changes over time.
- Dates can be specified with or without time information. For example, the following are both valid date values (see also 4.3.8):
`"determination_date": "2013-06-20T02:01:07Z"`
`"determination_date": "2013-06-20"`
- If the application does not have a determination date (yet, or at all), the value "none" should be specified for the `determination_date` field.
- If the application does not have a notification period at all, the value "none" should be specified for the `notification_start_date` and `notification_end_date` fields.
- The contents of `estimated_cost` and should be a formatted currency string in Australian Dollars, of the form "\$300,000".

4.3.2 Reference [L1]

The *reference* record contains links to the original source material for the application at the Complying Authority. It can optionally contain a link for where Residents can comment on the application at the Complying Authority. In conjunction with the *info* block, this represents the minimum *Level 1 Mandatory* requirements for a feed compliant with the ATDIS-1.0.7 specification.

In both cases, the links to URLs captured in the *reference* block would take the user to another location on the Complying Authority's web site.

The content behind the `more_info_url` and `comments_url` values must link to an endpoint that directly shows the information for the specific development application. The underlying content must be directly accessible without authentication, cookies or other limiting requirements for the consuming system. The data and behaviour of the pages at these links is beyond the scope of the ATDIS-1.0.7 Specification.

The *reference* record must contain the following fields:

M/O	Field	Notes
M	more_info_url	web address for more information about this application
O	comments_url	web address for commenting on this application

4.3.3 Location [L1]

The *location* record is designed to provide consumers with information about the geographic location of the development application. Because not all Authorities have access to geographic information for their development applications, parts of this record are optional. If a feed includes the location record at all, it must include the address and land_title_ref attributes within the record.

It is mandatory that feeds provide the location record with the address and land_title_ref fields, and it is anticipated that future versions of the Specification will promote the coordinates field into mandatory compliance.

M/O	Field	Notes
M	address	Human readable street address for the application
M	land_title_ref	Composite record containing Land Title Office references
M	lot	Lot number
M	section	Section number, or "none"
M	dpsp_id	DP/SP identifier
O	geometry	Composite record containing geographic coordinates (GeoJSON format)

Notes

- In each case the values for lot, section and dpsp_id should all be captured as strings.
- When used, GPS coordinates must make use of the WGS84 datum as per "Earth Gravitational Model 2008 (EGM2008)". See: <http://earth-info.nga.mil/GandG/wgs84/gravitymod/egm2008/index.html> for details.
- The format for geographic coordinates must use the GeoJSON specification as per: <http://geojson.org/geojson-spec.html#geojson-objects>
- The simplest compliant version of a geometry instance would be a *Point* of the form:

```
{ "type": "Point", "coordinates": [100.0, 0.0] }
```

Point coordinates are in x, y order (easting, northing for projected coordinates, longitude, latitude for geographic coordinates). For more advanced geometric types, please refer to the GeoJSON specification.

- As geometry is optional for the Location block in ATDIS-1.0.7, there is no requirement to specify the kinds of geometric data for an application. However, if a feed is supplying geometric data, then it must be formatted according to the GeoJSON specification.
- In general, the dpsp_id will start with either the letters SP or DP, and be followed by a number.
- If the section value in land_title_ref is not available, then it should be populated with the value "none".

4.3.4 Events [L1]

The *events* record contains a list of events that have occurred against the application since lodgement. In this version of the specification, the *events* block has been promoted to *Level 1 Mandatory*. The *events* record must include a list of events, where each event has an *id*, *date* and *description*. Inclusion of an *event_type* and *status* is optional.

M/O	Field	Notes
M	events	Composite record containing a list of events for the application
M	id	Internal id of event raised against application
M	date	Date the event occurred
M	description	Short, human readable description of the event
O	event_type	Authority-specific event type
O	status	Authority-specific event status code

Notes

- This version of the specification does not define a list of valid *event_types*, so the contents of this field can be Vendor or Council specific.
- The value for *id* should be a string. The value should be unique from the perspective of the authority such that it can be used as a reference for the underlying event.

4.3.5 Documents [L1]

The *documents* record contains a list of references (as links) to documents that relate to the application. In this version of the Specification, the *documents* block has been promoted to *Level 1 Mandatory*. The *documents* record must include a list of documents, where each document has a *ref*, *title* and a *link* (in the form of a URL) to the location where the document can be downloaded.

M/O	Field	Notes
M	documents	Composite record containing a list of documents for the application
M	ref	Internal reference of document for this application
M	title	Short, human readable title of the document
M	document_url	URL to location of document for download

4.3.6 People [L2]

The *people* record contains a list of people that relate to the application. As an extended data item, this record is only required for *Level 2 Optional* compliance. However, if it the *people* record is included at all, then it is assumed to include a list of people, where each person has a *name* and a *role* indicating their responsibility with the application. Optionally, the *person* record can include contact information.

M/O	Field	Notes
M	people	Composite record containing a list of people related to the app
M	name	Name of person related to the application
M	role	Authority-specific role type for the person with respect to the app
O	contact	Authority-specific contact information for the related person

4.3.7 Extended [L3]

The *extended* record is specifically designed to allow ATDIS-1.0.7 compliant feeds to include any additional information that might be relevant to an application. The contents of the extended record is not specified, and left up to the ATDIS Vendor and Complying Authority to populate as they see fit. There are no mandatory or optional fields for the extended record. Consuming systems should expect its existence, but are not required to do anything with data contained within it.

M/O	Field	Notes
---	-----	-----
	Not specified	

4.3.8 Date Formats [L1]

Any field within the schema of the form *_date should be treated as an ISO-8601 date format. See: <http://www.w3.org/TR/NOTE-datetime> for details.

4.4 Other Technical Considerations

4.4.1 Encoding

All data in ATDIS requests should be encoded using UTF-8, and all data returned by ATDIS-compatible systems should be returned in UTF-8 encoding. See <http://en.wikipedia.org/wiki/UTF-8> for details.

5 Use Cases

The specification defines a number of use cases to assist with scoping. The pre-draft version considers two kinds of use cases:

- Operational use cases
- Specification use cases

Operational use cases describe the scope of use of systems that *comply with* the specification.

Specification use cases describe of the specification process itself. It is likely that the specification use cases will be deprecated and removed before release of the *final* version of the ATDIS-1.0.7 specification.

5.1 Operational Use Cases

Figure 5 presents the top-level *operational* use cases for ATDIS-1.0.7:

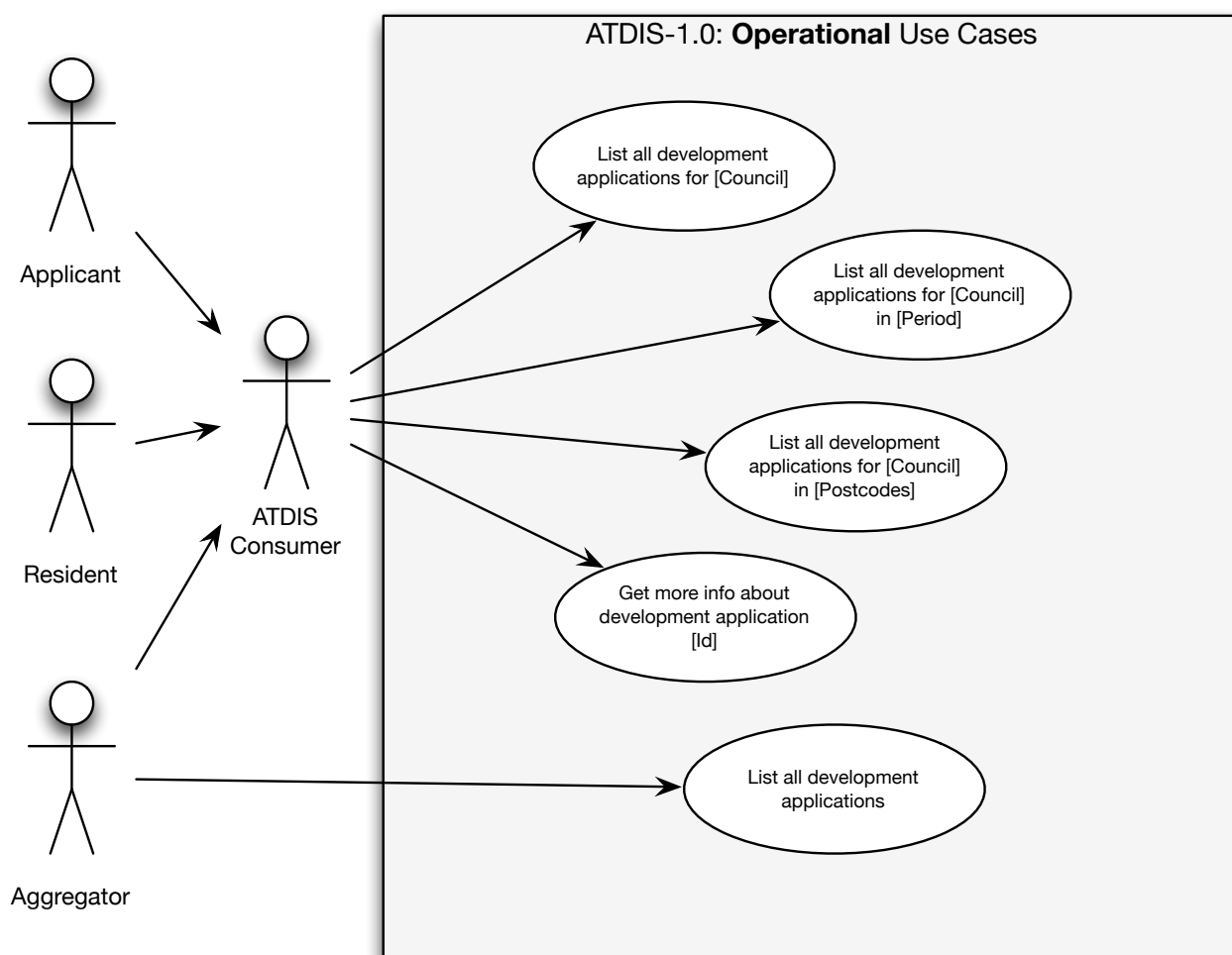


Figure 5: Operational use cases

5.1.1 List all development applications for [Council]

Allows an ATDIS consumer to return all active development applications for the specified Council. In this context, the specified Council would be the LGA that is hosting Vendor software capable of exposing application tracking data. For example:

```
REQ: GET http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications.json
RES: 200 OK
```

In this case, [Council] is specified by virtue of accessing the feed published by the Council at their web address (www.examplecouncil.nsw.gov.au).

5.1.2 List all development applications for [Council] for [Period]

This is a refinement of 5.1.1 that allows for specification of a period in which to select development applications. The results returned should only be for development applications within the period.

By default, the feed must support querying of the `lodgement_date` field (see 4.3.1). For example:

```
REQ: GET
http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications.json?lodgement_date_start=YYYY-MM-DD&lodgement_date_end=YYYY-MM-DD
RES: 200 OK
```

The feed must also support querying by `last_modified_date` field (see 4.3.1). For example:

```
REQ: GET
http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications.json?last_modified_date_start=YYYY-MM-DD&last_modified_date_end=YYYY-MM-DD
RES: 200 OK
```

If the `*_date_end` field is not specified in the query string, the feed should assume that the request is for the single date specified in the `last_modified_date_start` or `lodgement_date_start` fields.

5.1.3 List all development applications for [Council] in [Postcodes]

This is a refinement of 5.1.1 that allows for a query to filter out only those development applications that occur within a specified list of postcodes. For example:

```
REQ: GET http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications.json?postcode=2059
RES: 200 OK
```

To query across a number of postcodes, the consumer should separate multiple postcode values with a “,”:

```
REQ: GET http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications.json?postcode=2059,2060
RES: 200 OK
```

5.1.4 Get more information about development application [Id]

Given information about a specific development application, the consuming system should be able to *drill into* a link to find more information. For example, if a Resident is accessing a Council’s web site via a browser, clicking a *more info* link would provide detailed information about the specific development application.

5.1.5 List all development applications

This is a use case for *future* consideration. The intent here is to allow a consumer to access *aggregated* application tracking data, which might come from a variety of LGAs across the state.

5.1.6 Notes on paging

If a requester specifies a page number to a request, then the feed must return just that page of data, as opposed to the entire set of items for the basic request. Requests should be parameterised using the “page=n” qualifier in the query string. For example:

```
REQ: GET http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications.json?page=2
RES: 200 OK
```

In this case the feed should return the *second* page of data.

If the requester wishes to control the page size in items, it can be specified via the “count=k” qualifier in the query string. For example:

```
REQ: GET http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications.json?page=2&count=20
RES: 200 OK
```

It is valid to specify both page number and the number of items per page in the same query string.

5.2 Specification Use Cases

Figure 6 describes the specification use cases for ATDIS-1.0.7:

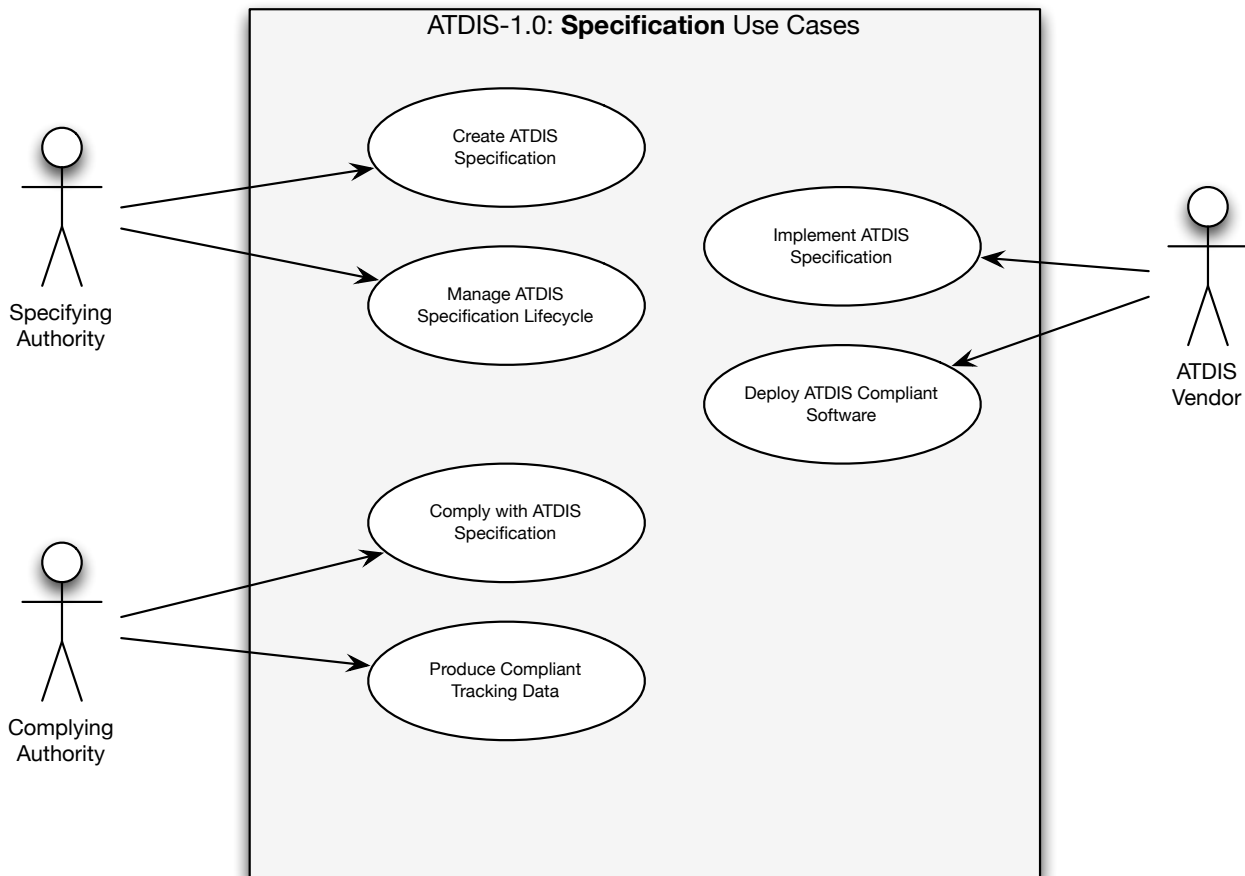


Figure 6: Specification use cases

5.2.1 Create ATDIS specification

This is the process by which the Specifying authority creates the specification. As of the pre-draft version of the document, the specification is a collaborative effort between the Department and Vendors of application tracking software.

5.2.2 Manage ATDIS specification lifecycle

The Department will manage publication of the specification and changes to it over time.

5.2.3 Comply with ATDIS specification

Complying Authorities (LGAs) collect application tracking data according to their preferred business processes and publish it using Vendor software according to the ATDIS-1.0.7 specification.

5.2.4 Produce compliant tracking data

LGAs produce tracking data by virtue of their daily activities operating as local Councils.

5.2.5 Implement ATDIS specification

Vendors use this specification to produce compliant software.



5.2.6 Deploy ATDIS-compliant software

Vendors work with LGAs to deploy compliant software into their Council's IT infrastructure.

6 Distribution Channels

6.1 REST/JSON [L1]

It is mandatory for Level 1 compliance to produce a REST/JSON style feed of application tracking data.

6.2 REST/XML [L1]

Vendors can *optionally* produce an XML formatted version of their feed to achieve L1 compliance.

Transformation between REST/JSON and REST/XML is technically trivial.

6.3 Browser [L1]

This version of the ATDIS-1.0.7 specification concentrates on the data interchange format for application tracking feeds. However, it is mandatory for Level 1 compliance to have any feed data available via the REST/JSON interface also available for a browser-based interface accessible by a Resident using standards-compliant desktop and mobile operating system browsers.

6.3.1 Web Standards and Accessibility

All browser-distributed feed data must be compatible with W3C standards for HTML5 and CSS3.

It is also a mandatory requirement for compliance with ATDIS-1.0.7 that systems conform to the Australian Government's **Web Content Accessibility Guidelines (WCAG) version 2.0** (WCAG2.0). Full details of these accessibility guidelines can be found here:

<http://webguide.gov.au/accessibility-usability/accessibility/>

6.3.2 Desktop and mobile browser support







Data for consumption by browser clients must support the following desktop and mobile browsers:

Legend

- ✓ Must support
- C Can support
- – Not applicable

6.3.2.1 Desktop browser + operating system support

Support for the following desktop browser/OS combinations is mandatory for L1 compliance:





		Windows 			Mac OS X 		
		XP	Vista	7, 8	10.6.x	10.7.x	10.8.x
IE 	8.x	C	C	C	–	–	–
	9.x	C	✓	✓	–	–	–
	10.x	C	✓	✓	–	–	–
Firefox 	4.x	✓	✓	✓	✓	✓	✓
	Release Channel	✓	✓	✓	✓	✓	✓
Chrome 	Stable Channel	✓	✓	✓	✓	✓	✓
Safari 	5.x	C	C	C	✓	✓	✓
	6.x	C	✓	✓	✓	✓	✓

Note: Because vendors constantly upgrade browser and operating system versions it is necessary to update this table from time to time to keep it in line with the most recent software. Additionally, both Firefox and Chrome now use a *channel*-based² approach to upgrades that sees the browser automatically updated in-situ without need for user intervention.

² Firefox calls this “release channel” and Chrome calls this “stable channel”.

6.3.2.2 Mobile browser + operating system support

Support for the following mobile browser/OS combinations is mandatory for L1 compliance:

	Android 		iOS 		
Browser	3.x	4.x	4.x	5.x	6.x
Chrome 	✓	✓	C	C	C
Mobile Safari 	–	–	✓	✓	✓

Note: Because vendors constantly upgrade browser and operating system versions it is necessary to update this table from time to time to keep it in line with the most recent software.

6.4 RSS [L3]

Although RSS is widely used across the web, it is better suited to *syndication* scenarios than it is data interchange of the form required by the ATDIS-1.0.7 specification.

For this reason, this version of the specification suggests that provision of an RSS feed of application tracking data is only necessary for Level 3 Extended compliance with the Specification.

6.5 Paging [L2]

In some circumstances, the data for a particular ATDIS query might be larger than is sensible to return in a single response. In this case, the feed can use *paging* to indicate to the client that the server has more data available. For example, a paged response to a request for all items within a postcode might look like this:

```
{
  "response": [
    {
      "application": {
        "info": {
          "dat_id": "DA2013-0381",
          "last_modified_date": "2013-04-20T02:01:07Z",
          "description": "New pool plus deck",
          "authority": "Example Council Shire Council",
          "lodgement_date": "2013-04-20T02:01:07Z",
          "determination_date": "2013-06-20T02:01:07Z",
          "notification_start_date": "2013-04-20T02:01:07Z",
          "notification_end_date": "2013-05-20T02:01:07Z",
          "status": "OPEN"
        },
        "reference": {
          "more_info_url": "http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications/DA2013-0381"
        },
        "location": {
          "address": "123 Fourfivesix Street Neutral Bay NSW 2089",
          "land_title_ref": {
            "lot": "10",
            "section": "ABC",
            "dpsp_id": "DP2013-0381"
          }
        }
      }
    },
    {
      "application": {
        ...
      }
    }
  ],
  "count": 2,
  "pagination": {
    "previous": null,
    "next": null,
    "current": 1,
    "per_page": 25,
    "count": 100,
    "pages": 1
  }
}
```

In this format, the returned data is split up into three sections:

- **response:** contains the raw data of the response, paged according to the pagination block
- **count:** the number of items returned in this response
- **pagination:** information about how the returned data was paged relative to the full set of data available for that query. Within the pagination block, the following items indicate *how* the data was paged:
 - **previous:** the page number of the immediately preceding page, or null if this is the first page
 - **next:** the page number of the immediately following page, or null if this is the last page
 - **current:** the page number of the current page
 - **per_page:** the number of paged items returned per page

- count: the total number of items available from the underlying data, unpaged
- pages: the total number of pages available from the underlying data

Notes

- Paged data is at the discretion of the feed producer.
- In all cases, the response block must be provided by the feed producer, regardless of whether or not the feed is producing paged data.
- In a feed cannot handle pagination, then it can leave out the count and pagination blocks

Because back-end systems page data in a variety of different ways, specification of paging has been set at L2 for the ATDIS-1.0.7 version of the specification. However, Vendors should be aware that the paging specification would be promoted to L1 for the next point release, and that all responses should include the response block when returning data to the consuming system.

7 Compliance

7.1 Compliance requirements

The following items represent the canonical set of requirements for ATDIS-1.0.7 compliant feed of application tracking data. These requirements will be used during testing as the high-level criteria for compliance.

In this context “The System” refers to a Vendor application tracking system installed at a Complying Authority such as a Council.

7.1.1 General

1. The System must provide an Internet-accessible *feed* to application tracking data
2. The feed must be openly available to residents of NSW using standard Internet protocols such as HTTP or HTTPS.
3. The feed must be available in a browser-rendered format.
4. The feed must be available in machine-readable format.

7.1.2 Schema

5. The feed must provide a list of application tracking records.
6. The feed must support the data interchange schema as defined in section 4.3.
7. For L1 compliance, the feed must be capable of supporting the following record types:
 - a. Info
 - b. Reference
 - c. Location
 - d. Events
 - e. Documents
 - f. People
 - g. Extended
8. For L1 compliance, the System must be capable of populating the *mandatory* fields for the following record types:
 - a. 4.3.1 Info
 - b. 4.3.2 Reference
 - c. 4.3.3 Location
 - d. 4.3.4 Events
 - e. 4.3.5 Documents
9. For L1 compliance, the System should be capable of populating the *optional* fields for the following record types:
 - a. 4.3.1 Info
 - b. 4.3.2 Reference
 - c. 4.3.3 Location
 - d. 4.3.4 Events
 - e. 4.3.5 Documents
10. For L2 compliance, the System must be capable of populating the *mandatory* record types for the following record types:
 - a. 4.3.6 People
11. For L2 compliance, the System should be capable of populating the *optional* record types for the following record types:
 - a. 4.3.6 People
12. For L3 compliance, the System may be capable of populating the *optional* record types for the following record types:
 - a. 4.3.7 Extended

7.1.3 Use cases

13. The System must support the following operational use cases:
 - a. 5.1.1 List all development applications for [Council]
 - b. 5.1.2 List all development applications for [Council] in [Period]
 - c. 5.1.3 List all development applications for [Council] in [Postcode]
 - d. 5.1.4 Get more info about development application [Id]
14. The System may support the following operational use cases:
 - a. 5.1.5 List all development applications
15. The System must support the following specification use cases:
 - a. 5.2.3 Comply with ATDIS specification
 - b. 5.2.4 Produce compliant tracking data
 - c. 5.2.5 Implement ATDIS specification
 - d. 5.2.6 Deploy ATDIS-compliant software

Note, the following specification use cases are included in the requirements, but Vendors are not required to implement them in the System:

- e. 5.2.1 Create ATDIS specification
- f. 5.2.2 Manage ATDIS specification lifecycle

7.1.4 Distribution channels

16. The System must provide a machine-readable feed in REST/JSON format.
17. The System may provide a machine-readable feed in REST/XML format.
18. The System must provide a feed available to Internet browser connections for all desktop and mobile browser and operating system combinations specified in section 6.3.
19. The browser feed must conform to the NSW Government's Web Content Accessibility Guidelines (WCAG) version 2.0.
20. The System may provide an RSS-style feed. If the System provides an RSS feed, then data must be provided according to the ATDIS schema.
21. The system should allow clients to consume data in *pages*. If a system offers paging, it must indicate paged data by populating the count and pagination properties of the response.

7.2 Compliance and certification process

In conjunction with this Specification, the Department will define test harness platform suitable for verifying that a particular application tracking system complies with the Specification. The line items in section 7.1 describe the individual requirement items that the test harness will verify.

At a mutually agreeable time between the Department, LGA and Vendor, an execution run will be organised for the implementation. The goal of the certification process is to validate that the vendor system produces a feed that complies with the mandatory requirements of the Specification, and if the vendor system is capable of providing the optional/best practice data, that it is also correctly provided.

This test execution run will involve:

1. A test script will be run against the vendor system running at the LGA
2. The script will access the feed via a URL specified by the Complying Authority
3. The script will attempt to query data from the feed according to the use cases specified in 5.1
4. For each use case, the script will:
 - a. Validate that all *mandatory* fields defined in 4.3 are present for each compliance level
 - b. Validate that when any *optional* field is provided that it complies with the field formats defined in 4.3

Additionally, a manual inspection test will be performed that will:

1. Validate by manual review that the LGA's implementation system provides data to supported browsers as per 6.3 and according to the data items defined in 4.3

7.3 Obtaining certification

The Department is interested in ensuring that LGA implementations of application tracking systems comply with this Specification. Optionally, Vendors may wish to obtain Vendor certification of a test or staging installation of their system using sample data.

7.4 Using "ATDIS-1.0.7 Data Interchange Specification Compliant" in Vendor software marketing

Vendors may make use of the certification process in their marketing following successful completion of a compliance test execution.

The Department will notify the LGA in writing upon meeting the requirements of the Specification.

8 Lifecycle

8.1 Version history

This is: **ATDIS-1.0.7 Data Interchange Specification [version: 1.0, revision: 36]**

8.2 Changed in this version

8.2.1 Data items

- 4.3.4 Events – promoted from *Level 2 Optional* to *Level 1 Mandatory*
- 4.3.5 Documents – promoted from *Level 2 Optional* to *Level 1 Mandatory*

8.2.2 Use cases

- None identified

8.2.3 Distribution channels

- None identified

8.3 Deprecated in this version

8.3.1 Data items

- None identified

8.3.2 Use cases

- None identified

8.3.3 Distribution channels

- None identified

8.4 Planned for deprecation in the next version

8.4.1 Data items

- None identified

8.4.2 Use cases

- Specification use cases (all)

8.4.3 Distribution channels

- RSS

8.5 Planned for addition in the next release

8.5.1 Data items

- None identified



8.5.2 Use cases

- None identified

8.5.3 Distribution channels

- Pagination, including use of count and pagination blocks for paging information will be promoted to L1 mandatory in the next *major* release.

9 Appendix 1: Future possibilities

Although this section does not form part of the compliance process, it is worth presaging possible future ideas for uses of the data items and feeds imagined by the ATDIS-1.0.7 specification.

9.1 Subscription and publication of ATDIS events

The ability to *subscribe* for alerts on changes in state of development applications would make it very easy for Residents to be informed about applications taking place in their local areas.

9.2 Extended/enhanced attribute publication

Vendors of application tracking software have different capabilities that will make it easier to comply with the mandatory L1 capabilities of the specification. This presents an opportunity to provide extensions to the basic L1 and L2 capabilities by adding innovative functionality.

The Department, in stewarding this process, hopes to influence vendors to add more and more capability over time into the core of the specification by pushing what it believes to be *best practice*. This will mean that what is extended or optional in one release is likely to be promoted to a mandatory part of the specification in a subsequent release.

10 Appendix 2: Examples of compliant ATDIS-1.0.7 requests and responses

10.1 Obtain a list of all applications

Request

```
REQ: GET http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications.json
RES: 200 OK
```

Response

```
{
  "response": [
    {
      "application": {
        "info": {
          "dat_id": "DA2013-0381",
          "last_modified_date": "2013-04-20T02:01:07Z",
          "description": "New pool plus deck",
          "authority": "Example Council Shire Council",
          "lodgement_date": "2013-04-20T02:01:07Z",
          "determination_date": "2013-06-20T02:01:07Z",
          "notification_start_date": "2013-04-20T02:01:07Z",
          "notification_end_date": "2013-05-20T02:01:07Z",
          "status": "OPEN"
        },
        "reference": {
          "more_info_url": "http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications/DA2013-0381"
        },
        "location": {
          "address": "123 Fourfivesix Street Neutral Bay NSW 2089",
          "land_title_ref": {
            "lot": "10",
            "section": "ABC",
            "dpsp_id": "DP2013-0381"
          }
        }
      }
    },
    {
      "application": {
        ...
      }
    }
  ],
  "count": 2,
  "pagination": {
    "previous": null,
    "next": null,
    "current": 1,
    "per_page": 25,
    "count": 100,
    "pages": 1
  }
}
```

10.2 Obtain a list of all applications for a set of postcodes

Request

```
REQ: GET http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications.json?postcode=2089,2090
RES: 200 OK
```

Response

```
{
  "response": [
    {
      "application": {
        "info": {
          "dat_id": "DA2013-0381",
          "last_modified_date": "2013-04-20T02:01:07Z",
          "description": "New pool plus deck",
          "authority": "Example Council Shire Council",
          "lodgement_date": "2013-04-20T02:01:07Z",
          "determination_date": "2013-06-20T02:01:07Z",
          "notification_start_date": "2013-04-20T02:01:07Z",
          "notification_end_date": "2013-05-20T02:01:07Z",
          "status": "OPEN"
        },
        "reference": {
          "more_info_url": "http://www.examplecouncil.nsw.gov.au/atdis/1.0/applications/DA2013-0381"
        },
        "location": {
          "address": "123 Fourfivesix Street Neutral Bay NSW 2089",
          "land_title_ref": {
            "lot": "10",
            "section": "ABC",
            "dpsp_id": "DP2013-0381"
          }
        }
      }
    },
    {
      "application": {
        ...
      }
    }
  ],
  "count": 2,
  "pagination": {
    "previous": null,
    "next": null,
    "current": 1,
    "per_page": 25,
    "count": 100,
    "pages": 1
  }
}
```

11 Appendix 3: Carpadium Pty Ltd

11.1 About Carpadium

[Carpadium](#) is a boutique Sydney-based consulting firm specialising in technology strategy, enterprise architecture and program management. Our Consulting Directors have significant experience delivering complex programs in financial services for online and mobile, as well as unique product development experience building enterprise-class software-as-a-service offerings in security, electronic presentment and payments.

- [Matthew Sinclair](#), *Director* – Matthew is a technology strategy specialist with 18 years experience in software engineering, consulting and product development. Matthew has delivered highly complex technology systems in the telecommunications, financial services and payments sectors. Matthew has been involved in the delivery of projects ranging from network analysers, to flight simulators and more recently high-performance mission-critical EFT payments transaction switching and Tier-1 online/mobile banking. [@matthewsinclair](#)
- [Andrew McDonald](#), *Director* – Andrew has more than 18 years of senior program delivery experience in the banking and financial services sector. In the last 5 years, Andrew has focused on a number of large scale programs across Australia's banking community, including AML, process redesign, online banking and identity / security management. Working at the heart of Australia's tier-1 retail online banking environment, Andrew understands and has experienced the issues in delivering business critical programs in a competitive and increasingly frugal project environment.

11.2 Carpadium's role in the specification process

The NSW Department of Planning & Infrastructure engaged Carpadium to coordinate drafting of the ATDIS-1.0.7 specification.

As an independent organisation with no interest in the commercial software market for application tracking software, Carpadium's role is to prepare the technical components of the specification, and to work with interested vendors to incorporate their requirements and feedback into the final specification.

We understand the commercial sensitivities given the competitive landscape and as such, we can act as an independent third party. Unless specifically instructed by the vendor or the Department, all communications with Carpadium will be in the strictest confidence.