

Guidelines for exchanging job vacancy metadata: the Ag-Job Application Profile



Table of Contents

| | |
|--|---|
| 1. Introduction | 2 |
| 1.1 Goals and Scope | 2 |
| 1.2 Existing standards | 2 |
| 2. Job Vacancy Metadata Set | 2 |
| 3.1 Title | 3 |
| 3.2 Description | 3 |
| 3.3 URL or Link | 3 |
| 3.4 dateEnd | 3 |
| 3.5 locationCity | 4 |
| 3.6 locationCountry | 4 |
| 4. Notes | 4 |
| Annexe A: Definitions, XML and web feeds | 5 |
| A.1 Definitions | 5 |
| A.2 Sharing using XML | 5 |
| A.3 Sharing using web feeds | 6 |
| Annex B: Template Job Vacancy..... | 7 |
| Annex C: Sample XML file | 8 |

1. Introduction

Agricultural sciences and technology boasts a large number of organizations, both in the developing and developed countries, mainly because agriculture is the primary industry in nearly all the countries. Knowledge of this organization has become important in the sharing and exchange of agricultural related information as they provide contacts to individual institutional activities, information on planned and current development programs and projects of major funding and implementing to mention a few. This application profile looks at job vacancies information provided by these organizations.

As any information type, exchanging information about the current job vacancies has its limitations especially due to the lack of standards for the description and exchange. The goal of this project is to define a standard exchange format for “basic” metadata about job vacancies within an organization. Although the scope of implementation will be agriculture, the standard can be used and implemented in other domains as well.

1.1 Goals and Scope

The goal of this project is to provide a simple set of elements to describe a job vacancy. The project does not aim to be all inclusive and comprehensive standard for describing the full details of the job vacancy (such as the expected skills, salary level) but limits itself to describing the vacancy and providing link to more detailed information.

1.2 Existing standards

As a first step, research was carried out to find existing standards for exchanging job vacancy information. No existing standard was found. However, existing standards such as Dublin Core and the Agricultural Metadata Element Set were used to pick elements for the final schema instead of creating new ones. The namespaces from which the elements are taken are defined in brackets. More information about the elements are found at:

- AGS: <http://www.fao.org/aims/>
- RSS: <http://purl.org/net/rss1.1>

For further information please also see [Annex A](#).

2. Job Vacancy Metadata Set

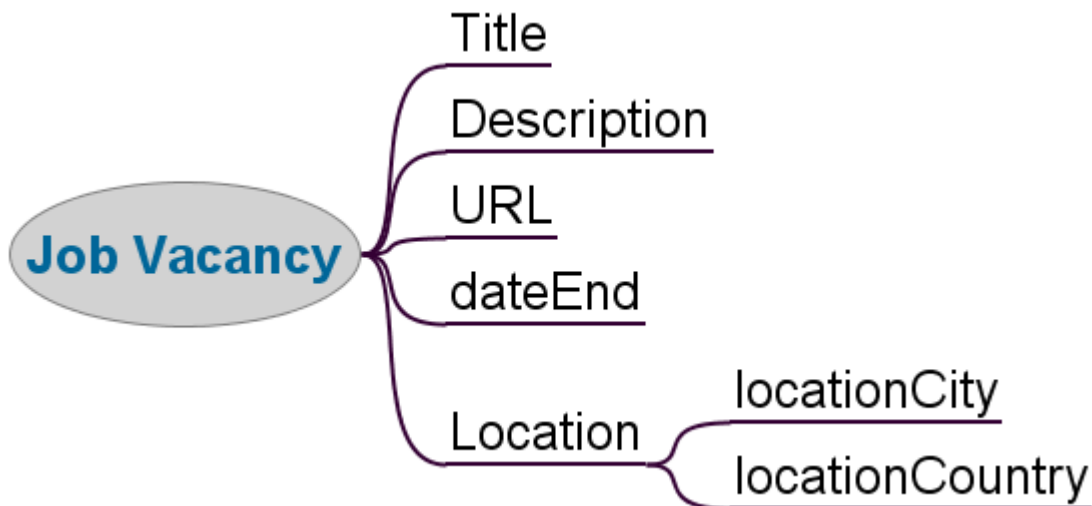
This section outlines the specific information that must be provided as part of the description of a ‘job vacancy’ item.

For general guidelines on creating RSS or Atom feeds please see:

- RSS 1.0: <http://purl.org/net/rss1.1>
- RSS 2.0: <http://cyber.law.harvard.edu/rss/rss.html>
- Atom: <http://tools.ietf.org/html/rfc4287>

The elements/refinements in an item describing job vacancy are:

- (RSS) Title
- (RSS) Link
- (RSS) Description
- (AGS) End Date
- (AGS) Location City
- (AGS) Location Country



3.1 Title

The title of the job vacancy.

Examples:

```
<title> Rural Infrastructure Officer </title>
```

This field is mandatory.

3.2 Description

The description of the job vacancy.

Examples:

```
<description xml:lang="eng">
  Under the overall supervision of the Director, AGS, and the direct supervision of a Senior Officer, will participate in the development and implementation of programme activities relating to rural infrastructure development. In particular, the incumbent will: Analyze strategies and opportunities to correct the rural infrastructure gaps that threaten the achievement of agricultural and rural development goals, and to ensure sustainable provision of high quality infrastructure services; assist FAO Members through provision of advice and assistance on agriculture related rural infrastructure development strategies and policies; ...
</description>
```

This field is optional.

3.3 URL or Link

The URL of the job vacancy.

Example:

```
<link> http://www.fao.org/VA/PROF/2157ags\_en.htm </link>
```

This field is mandatory.

This field is repeatable for multiple identifiers in multiple languages.

3.4 dateEnd

Date on which the job vacancy will expire.

Example:

Job Vacancy Application Profile

```
<ags:dateEnd xsi:type="dcterms:W3CDTF">2009-05-27</ags:dateEnd>
```

This field is mandatory.

3.5 *locationCity*

Name of the City in which the job vacancy is located.

Example:

```
<ags:location>  
  <ags:locationCity>Rome</ags:locationCity>  
</ags:location>
```

This field is mandatory if available

3.6 *locationCountry*

ISO Code of the Country in which the job vacancy is located. This information is always expressed using three letter ISO codes. The codes are available from: http://en.wikipedia.org/wiki/ISO_3166-1_alpha-3

Example:

```
<ags:location>  
  <ags:locationCity>Rome</ags:locationCity>  
  <ags:locationCountry scheme="dcterms:ISO3166">ITA</ags:locationCountry>  
</ags:location>
```

This field is mandatory.

4. Notes

1. An Institution should only submit its own data to avoid duplication.

Annex A: Definitions, XML and web feeds

A.1 Definitions

| Term | Definition |
|---------------------|---|
| Element | An element is described as a unit of data or metadata. The element allows us to give more information about the described resource. |
| Element Refinement | An element qualifier makes the meaning of an element either narrower or more specific. Additionally, element refinement shares the meaning of the unqualified element, but with a more restricted scope. When a client does not understand the element refinement, it can be ignored and the value is used as content of the unqualified element. |
| Encoding Scheme | An encoding scheme aids in the interpretation of the value of an element. Encoding schemes may either be controlled vocabularies or formal notations. A value drawn from an encoding scheme can be taken from a controlled list of vocabulary (e.g. a term from a classification such as ASC (AGRIS Subject Categories) or a term from a thesaurus such as AGROVOC). Formal notations are used to format a value of an element (e.g., date expressed using the W3CDTF format of "YYYY-MM-DD"). When a client does not understand the encoding scheme, it can be still useful for human readers. |
| Namespace | An XML namespace is a collection of names, identified by a URI reference which are used in XML documents as element types and attribute names. XML namespaces differ from the "namespaces" conventionally used in computing disciplines in that the XML version has an internal structure and is not, mathematically speaking, a set. |
| Application Profile | An application profile is a type of metadata schema which consists of data elements drawn from one or more namespaces, combined together by implementors, and optimised for a particular local application. |

A.2 Sharing using XML

XML, the eXtensible Markup Language, is the universal format for structured documents and data on the Web. It is designed to improve the functionality of the Web by providing more flexible and adaptable information identification. It is called extensible because it is not a fixed format like HTML (a single, predefined markup language). Instead, XML is actually a 'metalanguage' -- a language for describing other languages -- which lets you design your own customized markup languages for limitless different types of documents. All these features make it an attractive standard for exchanging data.

An XML document is a collection of data. In many ways, this makes it no different from any other file. As a "database" format, XML has some advantages. For example, it is self-describing (the markup describes the structure and type names of the data, although not the semantics), it is portable (Unicode), and it can describe data as tree or graph structures.

XML is a content mark-up meta-language designed to store and display documents on the World Wide Web. By separating content from presentation, XML enables us to create information that can be more easily integrated with other Web resources.

Job Vacancy Application Profile

The purpose of a DTD, or document type definition, is to define the legal building blocks of an XML document. It defines the document structure with a list of legal elements. The advantages of the DTD are many, viz. each of your XML files can carry a description of its own format with it; independent groups of people can agree to use a common DTD for interchanging data; your application can use a standard DTD to verify that the data you receive from the outside world is valid; and you can also use a DTD to verify your own data.

It is essential that the structure of the XML output documents exactly match the structure expected by the DTD. Mapping the database schema to an XML DTD schema is the most important exercise that is undertaken in this context. Within the DTD, cardinality of the elements is indicated with the following *cardinality operators*.

| | | |
|----------------|----------------------|--------------------|
| (no indicator) | Required | One and only one |
| + | Required, repeatable | One or more |
| ? | Optional | None or one |
| * | Optional, repeatable | None, one, or more |

XML predefines the five entity references as shown below. These predefined entity references are used in XML documents in place of specific characters that would otherwise be interpreted as part of mark-up language.

| Character | Entity References |
|-----------|-------------------|
| & | & |
| < | < |
| > | > |
| “ | " |
| ’ | ' |

A.3 *Sharing using web feeds*

Web feeds (RSS and Atom) are XML-based formats, where the site's information is described in a format that is simplified to a few key elements. RSS is sometimes called “Rich Site Summary”, “RDF Site Summary”, or “Really Simple Syndication”. RSS is the name given to a XML format used to syndicate headlines. Atom is also an XML-based document format and HTTP-based protocol designed for the syndication of Web content.

Web feeds are gathered by what are known as ‘Aggregators’, such as Agrifeeds and GFIS¹, which collect information. The aggregators then render the information, using for example XSLT, as a monthly calendars, browseable lists by topic or location so that the user can have a one-stop access. Normally, aggregator will add no new information and is viewed as a ‘gatherer’.

This document is designed to help create valid web-feeds for job vacancies.

¹ Agrifeeds: <http://www.agrifeeds.org/> ; GFIS: <http://www.gfis.net/>

Annex B: Template Job Vacancy

```
<?xml version="1.0" encoding="UTF-8"?>
<rss version="2.0" xmlns:dc="http://purl.org/dc/elements/1.1/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:dcterms="http://purl.org/dc/terms/"
  xmlns:ags="http://purl.org/agmes/1.1/">
  <channel>
    <title>The title of the channel</title>
    <link>The URL of the organization</link>
    <description>The description of the channel</description>
    <item>
      <title>The title of the job vacancy</title>
      <link>The URL of the job vacancy</link>
      <description>The description of the job vacancy</description>
      <pubDate>Tue, 13 Jun 2006 16:00:01 +0200</pubDate>
      <ags:dateEnd xsi:type="dcterms:W3CDTF">YYYY-MM-DD</ags:dateEnd>
      <ags:location>
        <ags:locationCity>
          Location city
        </ags:locationCity>
        <ags:locationCountry xsi:type="dcterms:ISO3166">
          Location country
          (A three-letter (ISO 3166-1 alpha-3 compliant) country code is required)
        </ags:locationCountry>
      </ags:location>
    </item>
  </channel>
</rss>
```

Annex C: Sample XML file

```
<?xml version="1.0" encoding="UTF-8"?>
<rss version="2.0" xmlns:dc="http://purl.org/dc/elements/1.1/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:dcterms="http://purl.org/dc/terms/"
  xmlns:ags="http://purl.org/agmes/1.1/">
  <channel>
    <title>FAO Jobs -- TEST TEST</title>
    <link>http://www.fao.org/</link>
    <description>These are test jobs created for AgriFeeds!</description>
    <item>
      <title>AGRICULTURAL OFFICER (IPPC Implementation)</title>
      <link>http://www.fao.org/VA/PROF/2174agp_en.htm</link>
      <guid>http://www.fao.org/VA/PROF/2174agp_en.htm</guid>
      <description>
        Under the overall supervision of the Director, Plant Production and Protection Division, the direct
        supervision of the Secretary, International Plant Protection Convention (IPPC), and the
        technical guidance of the Agricultural Officer (Plant Quarantine), the incumbent will:
        identify country priorities for International Standards for Phytosanitary Measures (ISPM)
        implementation through available evaluation tools; determine a set of core ISPMs initially,
        that respond to country or regional priorities and that support safe imports and exports of
        agricultural commodities, improved production and protection of plant resources; ...
      </description>
      <pubDate>Tue, 10 Mar 2009 16:00:01 +0200</pubDate>
      <ags:dateEnd xsi:type="dcterms:W3CDTF">2009-06-21</ags:dateEnd>
      <ags:location>
        <ags:locationCity>
          Rome
        </ags:locationCity>
        <ags:locationCountry xsi:type="dcterms:ISO3166">
          ITA
        </ags:locationCountry>
      </ags:location>
    </item>
  </channel>
</rss>
```