# Introduction

This is a working document used to determine the deliverables for a PESC JSON-LD standard.

# Deliverables

## Application Profile

The Application Profile can be either a Microsoft Excel or Google Sheets workbook. (Since if there are no macros, they can be converted to each other.) The purpose of the workbook is to use automation to create other workgroup deliverables or skeletons of deliverables.

The workbook shall contain 3 standard tabs and a named tab for each code set.

### Prefix IRIs Tab

This tab will contain a prefix name and a partial IRI that will replace the prefix.

### Classes (tables) Tab

This tab will contain a list of Classes used in the standard. The classes will be tied to properties in the domain column on the properties tab. The following columns will be created:

* Prefixed class name
* Closed flag to determine if additional properties are allowed.
* English definition of class

### Properties Tab

Properties shall have the following columns:

* Prefixed name
* Domains (prefixed class names as specified on the classes tab)
* English definition
* Type (xsd type, literal, or IRI to a class object)

Optional values:

* Pattern (regular expression)
* Cardinality
* Minimum value range
* Maximum value range

### Code Sets Tabs

Each tab will be named with the prefixed property name of the enumeration. This property name should appear on the tab. To assure that each enumeration has an IRI, the enumeration value will be prefixed by a prefix listed in the Prefix IRI tab. Each enumeration value will have the following columns:

* Prefixed property name
* Prefixed value
* English definition

## Context File

The context file will be generated from the Application Profile Workbook. It will include the prefix definitions and the @id and @type of each class and property in the workbook. This will provide the typing necessary for validating the instance document with SHACL.

## SHACL Specification (Turtle or JSON-LD)

This specification will be generated from the Application Profile Workbook and will be used to validate JSON-LD instance documents.

## JSON-LD Example instance Documents and Test Cases

For testing purposes, instance documents should be supplied that cover all classes and properties. This can be accomplished in multiple documents since some classes and properties may be incompatible with others. All instance documents should contain objects and properties that have minimum cardinality of one or greater. For testing purposes, versions of these documents may be seeded with errors.

## Implementation Guide

Unlike the implementation guide for XML, much of this guide can be generated from the Application Profile Workbook. This will provide an explanation of each class and its properties using the definitions provided in the workbook.

## JSON Schema and JSON-LD Frame (Optional)

A JSON-LD Frame specification can be used to convert a JSON-LD graph to a form that can be consistently validated by JSON-Schema. If needed for web service definitions in plain JSON, the @context of the JSON-LD frame document can be used to remove all prefixes.