REGNO | STANDARD

Styles used within this document

To assist with readability, and for the clear identification of key items and concepts, this document uses the following styles to identify key areas.

> Additional information is shown in this blue shaded region

> Important information is shown in this yellow shaded region

Abstract

The Regno Open Data Standard (hereon known as the **REGNO|**STANDARD) defines the format of a fixed collection of JSON documents that are used to store data and configuration information for any format or source of data.

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Status of this Document

REGNO|SOFTWARE has now officially release version 1.0 of the **REGNO|**STANDARD as the official reference documentation. The ongoing maintenance and development of the **REGNO|**STANDARD will be carried out by

REGNO|SOFTWARE under the oversight of the Regno Open Data Standard Working Group (hereon known as the Working Group).

Standard and Document Ownership

The **REGNO|**STANDARD is owned and maintained by Regno Software Ltd. and governed by the Working Group.

All revisions and modifications to the **REGNO|**STANDARD must be approved by a majority consensus of the Working Group, with the new changes immediately reflected in a revised version of this document.

Standard Overview

The **REGNO|**STANDARD defines the format of a fixed collection of JSON documents that are used to store data and configuration information from any format or source of data.

Whilst conceptually simple, each of the documents that comprise the REGNO|STANDARD has been designed to be as lightweight as possible, containing only a small subset of the complete data set. The documents have also been designed to be fast and simple to index, ready for use in a document database environment.

It is only when all the individual documents are combined and stored in a document database that the true power of the REGNO|STANDARD can be harnessed; lightning fast data query and access supported by on demand compute and storage resource, allowing for the first time a truly single combined pool of data generated from a variety of sources. Once data is stripped back and exists in an always ready pool, engineers and data scientists are free to create cross queries, generate data supersets, data mine, model and augment data and add it back to the data pool ready for analysis and visualisation. This is the REGNO|STANDARD vision.

• Document Overview

Each of the REGNO|STANDARD documents is described in detail below. Each document detail contains an overview summary followed by a detailed specification table.

Each document table contains the following columns:

- Field
- Data Type
- M - Mandatory
- Description

For all tables fields with the "M" column set to a value of "True", the Field name and value must be included in the document with a valid value as defined in the Description.

For some table fields there exists only a fixed set of allowed values. Wherever the Data Type of a Field is set to "Fixed string", the value for that Field must use one of the allowed values as defined in the Description column. For some fields there exists only a single allowed value.

When discussing documents in the context of a single data set instance, the complete set of documents relating to a single data set is called the "**Configuration Document Collection**". For each data set there will be a single **ConfigDoc** document and N number of associated child documents of various types. Each of the child documents will contain a reference to the parent **ConfigDoc** document by populating the field *configDocId* with the *id* value of the parent **ConfigDoc** document.

Naming Convention

To ensure consistency in the naming of documents and document fields, the following naming convention is used by the REGNO|STANDARD.

- Each document name will be a single string without any spacing. The first character will be uppercase with following characters following the Camel case convention. Examples include **ConfigDoc** and **IdentityDoc**.
- Each field name will be a single string without any spacing. The first character will be lowercase with following characters following the Camel case convention. Examples include *axisValuesX* and *configDocId*.
- Each document *type* field will be abbreviated where possible using the following:
  - The word "Configuration" becomes "**Config**"
  - The word "Parameter" becomes "**Param**"
  - The word "Conversion" becomes "**Conv**"
  - The word "Statistic" becomes "**Stat**"
  - The word "Definition" becomes "**Def**"
  - The word "Document" becomes "**Doc**"
  - The word "Frequency" becomes "**Freq**"
- Each document *type* field is post fixed with the string "**Doc**". Examples include Config**Doc** and EventDef**Doc**.
- For all document fields excluding *type*, the following is used:
  - Any field that references another document shall contain the referenced document name as a postfix including the referenced field. An example field includes *paramDefDocId*, which is a field whose value is the *id* field value of a **ParamDefDoc**.
  - Any field that does not reference another document shall not be abbreviated. Examples include *documentInterval* and *linearRegressionSlope*.

Standard Documentation

- ## Configuration Document

The **ConfigDoc** document is a configuration document that sits at the highest document level. Each of the child documents in a Configuration Document Collection reference the **ConfigDoc** document.

The **ConfigDoc** document provides an overview of the type and structure of data contained in the child documents, it also acts as a basic meta data container to describe the data stored by this configuration.

Field	Data Type	M	Description
id	string	Yes	A unique identifier that is referenced by all other documents that are associated with this configuration. The proposed method of generation of this value is described in the section **Unique Id Generation**.
parentConfigDocId	string	No	The unique identifier (*id*) of the parent **ConfigDoc** document. Used to allow child to parent relationships of data.
childConfigDocIds	Array [string]	No	An array of the unique identifier (*id*) of the children **ConfigDoc** documents. Used to allow parent to child relationships of data.
timeSpanDocs	Doc [TimeSpanDoc]	No	An array of documents describing the segmented time spans of a configuration. Each document contains the properties and a data values for an individual time marker instance.
startTime	Long	No	An Unsigned 64-bit Long timestamp specifying start time of the data that this configuration holds. If this configuration holds no data, then the value represents the last modified time of the source document. The timestamp represents the number of nanoseconds since the reference time of midnight, 1st January 1970.
endTime	Long	No	An Unsigned 64-bit Long timestamp specifying end time of the data that this configuration holds. If this configuration holds no data, then the value represents the last modified time of the source document. The timestamp represents the number of nanoseconds since the reference time of midnight, 1st January 1970.
timeOffset	Long	No	An Unsigned 64-bit Long value specifying the time offset in nanoseconds that is applied to all timestamp fields within the collection of child documents in the Configuration Document Collection. This value can be either positive or negative.
description	string	No	A free form string description of the data that this configuration holds
name	string	No	A free form string name for the data that this configuration holds
number	Long	No	A version number of the data held by the configuration
source	string	No	The source file name (including extension) for the data held by the configuration
sourceLocation	string	No	The source folder path (excluding file name) for the data held by the configuration
sourceFile Extension	string	No	The source file name extension for the data held by the configuration
sourceType	Fixed string	No	A fixed type description of the primary data held by this configuration. Valid options are: **Data, Configuration, Audio, Video**
state	string	No	A free form string description of the state of the configuration.
tags	Array [string, string]	No	An array of key/pair free form string values. Used to store meta data related to the data stored by this configuration.
configDefsDocIds	Array [string]	No	An array of the unique identifiers (*id*) of each associated **ConfigDefinitionsDoc** document. Used for informational purposes to enable fast retrieval of all the definitions used in a single Configuration Document Collection.
identityDocIds	Array [string]	No	An array of the unique identifiers (*id*) of each associated **IdentityDoc**.
type	Fixed string	Yes	The fixed value is always set to **ConfigDoc**

licensing

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To discuss commercial use of the **REGNO|**STANDARD please contact **REGNO|**SOFTWARE directly.