REST API Development Standard

**12.3.5 Information Technology Management**

**2.2 REST API Development Standard**

**Keywords:** API, Development, REST, RESTful, Interoperability

**Description of Standard**

All new development of public APIs in the BCGov MUST be designed and developed according to RESTful architecture principles as described by Roy Thomas Fielding's dissertation "Architectural Styles and the Design of Network-based Software Architectures" (2000) adapted to mandated minimums for the BCGov and design choices in support of Web Interoperability.

The intent is not to prescribe a re-architecture of existing APIs or limit development to the prescribed minimums but to ensure, going forward, that BCGov APIs behave consistently and to balance a truly RESTful API interface with a positive developer experience (DX).

Internal APIs in the BCGov SHOULD be designed and developed according to RESTful architecture principles.

The OCIO REST API Development Guide contains context and examples of the Mandated Minimum Attributes as well as sections for Optional Features and Best Practices.

**Mandated Minimum Attributes:**

1. BC Government public facing API’s Must expose/provide RESTful interfaces.
2. BC Government internal APIs Should expose/provide RESTful interfaces.
3. HTTP verbs, or methods, Must be used in compliance with their definitions under the HTTP/1.1 standard. Only (GET, POST, PUT, PATCH, DELETE, TRACE, OPTIONS) are permitted to operate on the collections and elements.
4. A URL Must only identify a single resource
5. BCGov APIs Should allow multiple output formats.
   5.1. Recommended minimum to include JSON and/or XML outputs
6. Metadata Must be described in a variable in the response.
   6.1. Minimum fields are required in the metadata variable.
6.1.1. The creation date-time of the response in ISO 8601 date-time format with timezone.¹

6.1.2. The licenses(s) relevant to the dataset payload.

7. BCGov APIs **MUST** provide relevant error messaging

8. BCGov APIs **MUST** be released with a version number

**Where to Apply This Standard**
This standard applies when an information system, API or service is being developed by, or on behalf of, the Province of British Columbia.

**Authority and Exemptions**
If there are compelling business reasons why an organization is unable to comply with this architecture or standard, the organization’s CIO may authorize a submission for exemption through the Architecture, Standards and Planning Branch.

**Metrics and Enforcement**
This Standard is in effect from January 2015, subject to the approval of the CIO for the Province of British Columbia.

**Terms and Definitions**
MUST: The term “MUST” is defined as an absolute requirement of the specification.

API: An **API**, in context of this standard, is the application programming interface (**API**) for both the **web** server and **web** browser.

REST: (**REpresentational State Transfer**) is a simple stateless architecture that generally runs over **HTTP**.

**References**
[Designing HTTP Interfaces and RESTful Web Services](https://bookapigee.com/)
[API Facade Pattern](https://bookapigee.com/)
[Web API Design](https://bookapigee.com/)
Fielding's Dissertation on REST

**Additional Information**
OCIO REST API Development Guide:

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¹ This is also in compliance with the BC Government’s date and time standard located [here](https://www.gov.bc.ca/).