CERTIFICATION DATABASE INTERFACE V1.0.1

Gaming Standards Association

S2S Technical Committee

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I About This Document

This document describes the Certification Database Interface. The Certification Database Interface is designed to provide an easy and straightforward method, which is based on HTTP and JSON, for systems to exchange information associated with the submission and approval of gaming equipment and software.

I.I Acknowledgements

The Gaming Standards Association would like to express its appreciation to all members of the S2S committee, past and present, for their contribution and dedication to the creation of this document.

I.II Document Conventions and Organization

I.II.I Indicating Requirements, Recommendations, and Options

Terms and phrases in this document that indicate requirements, recommendations, and options in the CDI Protocol are used as defined in the IETF RFC 2119.

In summary:

Requirements:

To indicate requirements, this document uses "MUST", "MUST NOT", "REQUIRED", "SHALL", or "SHALL NOT".

Recommendations:

To indicate recommendations, this document uses "SHOULD", "SHOULD NOT", "RECOMMENDED".

Options:

To indicate **options**, this document uses "MAY" or "OPTIONAL".

I.II.II Other Formatting Conventions

- Blue text indicates an internal link or external hyperlink to a URL.
- **Bold** (other than in headings) or underlined text is used for emphasis, unless specifically indicated otherwise.
- *Italicized* text (other than in headings) is used for terms being defined, unless within an XML label (typically indicates a type of element appearing in multiple classes, such as `getClassState`) or unless specifically indicated otherwise.
- `Courier New` font is used to indicate XML components and their values, and other types of code or pseudo code.

Chapter 1

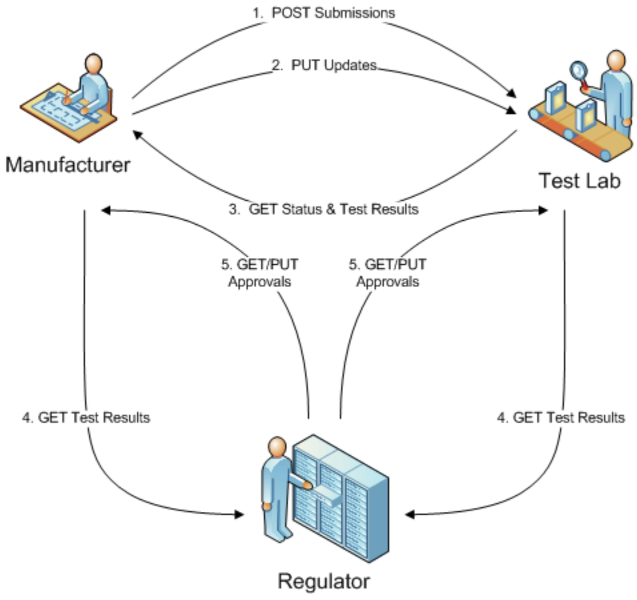
Introduction

1.1 Overview

This document describes the Certification Database Interface (CDI). The Certification Database Interface can be utilized to access the certification databases of testing laboratories, vendors, and regulatory agencies. It is intended to be used by testing laboratories, vendors, and regulators to exchange information related to the testing and approval of gaming products including EGM hardware, EGM software, and iGaming software.

With the Certification Database Interface, a Client System uses the HTTP protocol and HTTP verbs — such as GET, POST, PUT, and DELETE — to access resources on a Host System. The data exchanged between systems is encoded using JSON. The resources available through the Certification Database Interface are described in subsequent chapters of this specification. The following diagram illustrates the intended interactions.

Figure 1.1 System Interactions



The process begins when a vendor submits a product to a test laboratory. The information about the product and the certification request is conveyed to the test laboratory using an HTTP POST operation. Subsequently, additional certification requests can be added to the submission using an HTTP PUT operation. The vendor can request status updates about the submission from the test laboratory using an HTTP GET operation.

Once a submission has been accepted by the test laboratory, the vendor can request information about the testing and certification of the product using an HTTP GET operation. The vendor can request information about a specific product or the vendor can request information about all products that have had status changes during a specific time period.

Similarly, once a submission has been accepted by the test laboratory, the regulator can also request information about the testing and certification of the product using an HTTP GET operation. Like the vendor, the regulator can request information about a specific product or the regulator can request information about all products that have had status changes during a specific time period.

After a product has been approved by the regulator, the vendor or test laboratory can request information about the approval from the regulator using an HTTP GET operation. The approval information can be requested for a specific product or for all products with status changes during a specific time period.

Additionally, the regulator can send updates to the approval information to the vendor or test laboratory using an HTTP PUT operation.

1.2 Terminology

1.2.1 Host & Client Systems

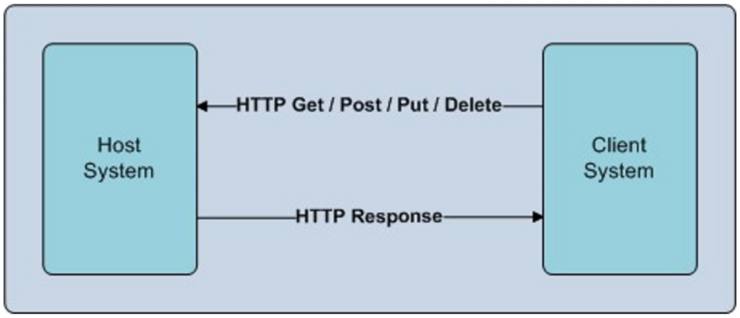
Within this specification, the following definitions are used when referring to various types of systems.

Table 1.1 Terminology

System	Description
Host System	A Host System is a system that provides resources to Client Systems.
Client System	A Client System is a system that accesses the resources of a Host System.

The following diagram illustrates the relationships between the systems.

Figure 1.2 System Relationships



Note that a particular endpoint – such as a testing laboratory, vendor, or regulator – may act as both a Host System and a Client System depending on which resources are being used. For example, a testing laboratory may act as a Host System when a vendor is delivering product submission information and retrieving test results. At the same time, the testing laboratory may act as a Client System when retrieving product approval information from regulators. The descriptions of individual resources identify the appropriate roles for each endpoint when using the resources.

1.2.2 Submissions

Within this specification, the term “submission” refers to the set of information exchanged between a vendor and a test laboratory to initiate the testing of a product. A submission consists of a number of elements: the submission record itself, one or more component records, one or more jurisdiction records for each component, zero or more software signature records for each component (software signatures may not be available for some components), and zero or more document records for each jurisdiction.

- Submission - The submission record (`certificationSub`) provides information about the overall product submission including the vendor's unique identifier for the submission, the unique identifier of the vendor, the unique identifier of the test laboratory, and descriptive information about the submission. The submission record may also include zero or more free-form notes (`note`) about the submission.
- Component - The component record (`componentSub`) describes a discreet unit of hardware or software that requires testing and approval. The record includes the vendor's unique identifier for the

component, the common name of the component, the version number of the component, and other descriptive information about the component. The component record may also include zero or more free-form notes (`note`) about the component. In addition, for components that are games, information about zero or more paytables (`paytable`) may also be included.

- Jurisdiction - The jurisdiction record (`jurisdictionSub`) identifies a specific jurisdiction for which a component requires testing and approval. The record includes the jurisdiction's unique identifier, the submission package identifier for the jurisdiction, and the test laboratory's status for the submission. The status indicates whether the submission was accepted by the test laboratory, rejected, or is still pending. The jurisdiction record may also include zero or more notes (`note`) for the specific jurisdiction.
- Signature - The signature record (`signature`) contains a software signature for a component. The record identifies the algorithm used to generate the signature, any parameters – such as seed and salt values – used with the algorithm, and the software signature itself.
- Document - The document record (`document`) identifies a specific document relevant to the submission for a jurisdiction – for example, product documentation, par sheets, etc. The record includes the unique identifier for the document, a brief description of the document, the language in which the document is written, and a URL pointing to the document.

The following diagram illustrates the relationships between these elements.

Figure 1.3 ~~Submission Record Relationships~~

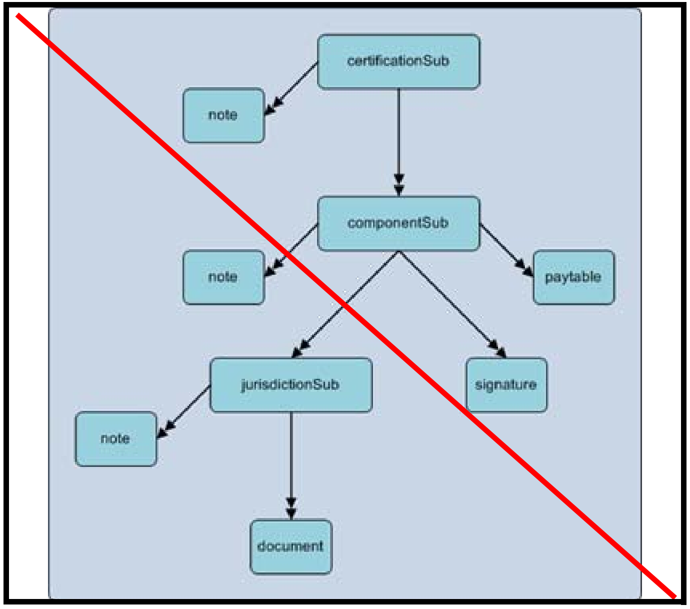
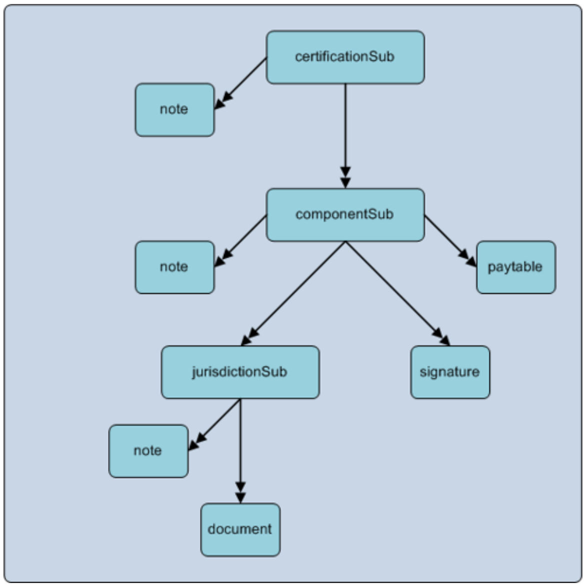


Figure 1.4 Submission Record Relationships



The resources described in Chapter 3 Submission Resources are used to make submissions to test laboratories and, subsequently, to request status information about the submissions from test laboratories.

1.2.3 Certifications

Within this specification, the term “certification” refers to the set of information reported by a test laboratory about the testing of the components within a submission. Only submissions that have been accepted by the test laboratory are visible as certifications. Like a submission, a certification consists of a number of elements: the certification record itself, one or more component records, one or more jurisdiction records for each component, zero or more software signature records for each component, and zero or more document records for each jurisdiction.

- Certification - The certification record (`certification`) is very similar to the submission record described above for submissions but contains a slightly different set of data that is focused on the certification rather than the submission. It provides general information about the submission including the vendor's unique identifier for the submission, the unique identifier of the vendor, the unique identifier of the test laboratory, and descriptive information about the submission. It may also include free-form notes (`note`) about the certification.
- Component - The component record (`component`) for certifications is very similar to the component record described above for submissions but contains a slightly different set of data that is focused on the certification rather than the submission. It describes a discreet unit of hardware or software that requires testing and approval. The record includes the vendor's unique identifier for the component, the common name of the component, the version number of the component, and other descriptive information about the component. It may also include free-form notes (`note`) about the component and, when the component is a game, information about paytables (`paytable`) associated with the component.
- Jurisdiction - The jurisdiction record (`jurisdiction`) for certifications is very similar to the jurisdiction record described above for submissions but contains a slightly different set of data that is focused on the certification rather than the submission. It contains the testing and approval status of a component for a specific jurisdiction. It includes the jurisdiction's unique identifier, the test

laboratory's status for the component, and the regulator's status for the component. The test laboratory's status identifies the state of the component in the testing and approval process from the test laboratory's perspective. The regulator's status identifies the state of the component from the regulator's perspective. The jurisdiction record may also include free-form notes (`note`) for the jurisdiction as well as a list of components revoked by the certified component (`revoked`).

- Signature - The signature record (signature) contains a software signature for a component. The record identifies the algorithm used to generate the signature, any parameters — such as seed and salt values — used with the algorithm, and the software signature itself. The list of signatures may or may not contain the same list of signatures that were included in the submission. The test laboratory may generate its own signatures using special salt or seed values supplied by a regulator. In such cases, the test laboratory may filter the list of signatures, providing one set of signatures to vendors and another set of signatures to regulators.
- Document - The document record (`document`) identifies a specific document associated with the certification for a jurisdiction – for example, product documentation, par sheets, certification reports, etc. The record includes a unique identifier for the document, a brief description of the document, the language in which the document is written, and a URL pointing to the document.

The following diagram illustrates the relationships between these elements.

Figure 1.5 ~~Certification Record Relationships~~

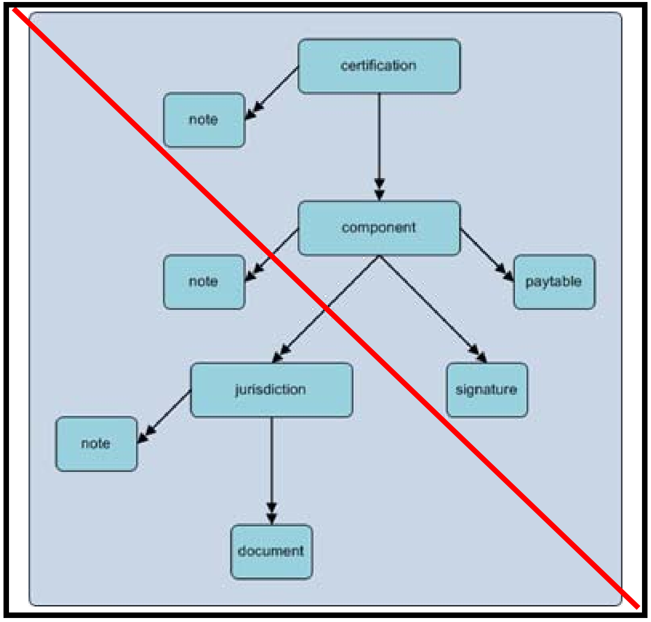
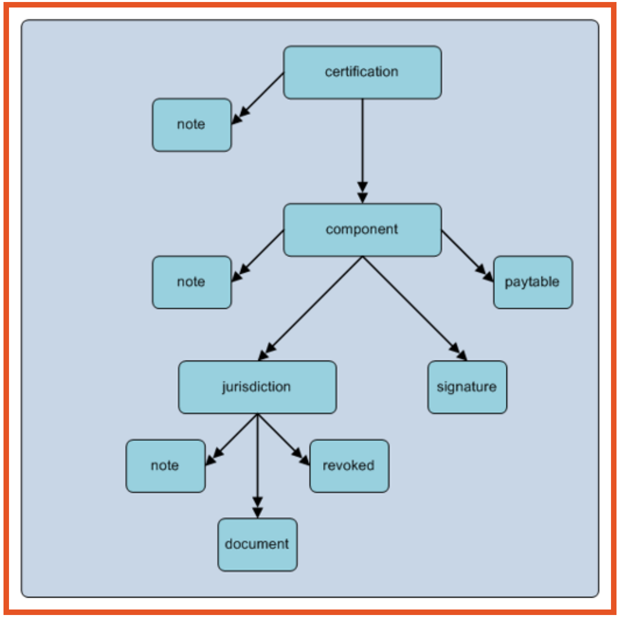


Figure 1.6 Certification Record Relationships



The resources described in Chapter 4 Certification Resources are used to request information from test laboratories and vendors about certifications.

1.2.4 Approvals

Within this specification, the term “approval” refers to the set of information reported by a regulator about the suitability of a component for use within a jurisdiction. Like a submission or certification, an approval consists of a number of elements: the approval record itself, one or more component records, one or more jurisdiction records for each component, zero or more software signature records for each component, and zero or more document records for each jurisdiction.

- Approval - The approval record (`certificationApproval`) is very similar to the submission and certification records described above for certifications but contains a slightly different set of data that is focused on the approval rather than the certification. It provides general information about the submission including the vendor's unique identifier for the submission, the unique identifier of the vendor, and the unique identifier of the test laboratory. It may also include free-form notes (`note`) about the approval.
- Component - The component record (`componentApproval`) is very similar to the component record described above for certifications but contains a slightly different set of data that is focused on the approval rather than the certification. It describes a discreet unit of hardware or software that requires testing and approval. The record includes the vendor's unique identifier for the component, the common name of the component, the version number of the component, and other descriptive information about the component. It may also include free-form notes (`note`) about the component and, when the component is a game, information about paytables (`paytable`) associated with the component.
- Jurisdiction - The jurisdiction record (`jurisdictionApproval`) is very similar to the jurisdiction record described above for certifications but contains a slightly different set of data that is focused on the approval rather than the certification. It contains the approval status of a component for a specific jurisdiction. It includes the jurisdiction's unique identifier and the regulator's status for the component. The regulator's status indicates whether the component has been approved for use with

the jurisdiction. The jurisdiction record may also include free-form notes (`note`) for the jurisdiction as well as a list of components revoked by the certified component (`revoked`).

- Signature - The signature record (`signature`) contains a software signature for a component. The record identifies the algorithm used to generate the signature, any parameters — such as seed and salt values — used with the algorithm, and the software signature itself. The list of signatures may or may not contain the same list of signatures that were included in the submission or certification. The regulator may generate its own signatures using special salt or seed values. In such cases, the regulator may filter the list of signatures, only providing the set of signatures that it has generated. Alternatively, the regulator may report back signatures generated by the vendors or the test lab.
- Document - The document record (`document`) identifies a specific document associated with the approval for a jurisdiction – for example, product documentation, par sheets, certification reports, approval letters, etc. The record includes the unique identifier for the document, a brief description of the document, the language in which the document is written, and a URL pointing to the document.

The following diagram illustrates the relationships between these elements.

Figure 1.7 ~~Approval Record Relationships~~

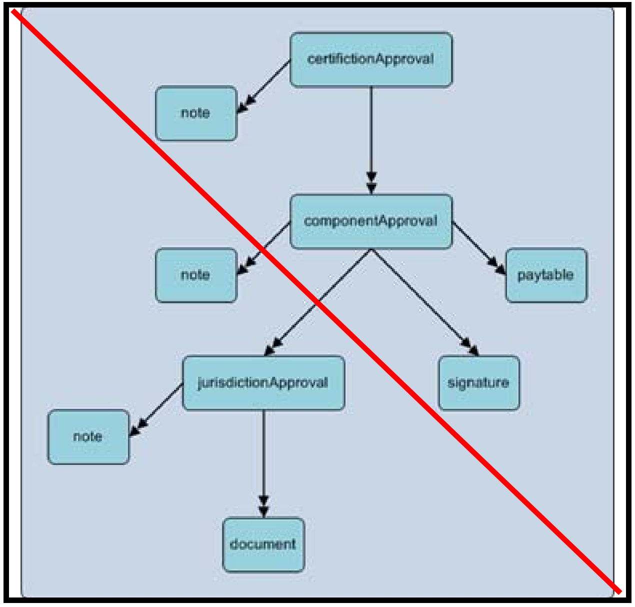
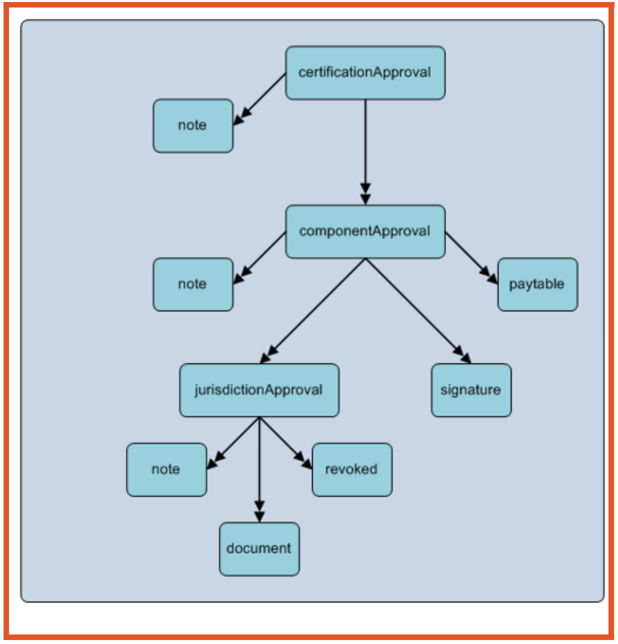


Figure 1.8 Approval Record Relationships



The resources described in Chapter 5 Approval Resources are used to request information from regulators about approvals.

1.3 Relevant Standards

The following standards are relevant to this specification. Host Systems and Client Systems MUST conform to these standards and their supporting standards.

Table 1.2 Relevant Standards

Standard	Description
HTTP	RFC 7230: Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing RFC 7231: Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content RFC 7235: Hypertext Transfer Protocol (HTTP/1.1): Authentication
JSON	RFC 7159: The JavaScript Object Notation (JSON) Data Interchange Format
TLS	RFC 5246: The Transport Layer Security (TLS) Protocol Version 1.2
URI	RFC 3986: Uniform Resource Identifier (URI): Generic Syntax
UUID	ISO/IEC 9834-8:2014: Generation of Universally Unique Identifiers

1.4 Base URI

The Base URI of the Host System is determined by the administrator of the Host System. The mechanism used by the Client System to discover the Base URI is beyond the scope of this specification. The Client System may use an administrative interface, a configuration file, or some other mechanism to determine the Base URI.

Host Systems and Client Systems MUST support the HTTP protocol using secure TLS communications. The “https” token is used to specify secure communications.

The following table contains an example of a fully-formed Base URI for a Host System.

Table 1.3 Base URI Example

Base URI Example
https://www.hostSystem.com:443

1.5 Resource URI

The Base URI is used to construct the Resource URIs of the individual resources offered by the Host System. Resource URIs are constructed by appending the pathname of the resource to the Base URI. The pathnames for individual resources are described later in this document.

The following table contains an example of a Resource URI for a Host System.

Table 1.4 Resource URI Examples

Resource URI Example
https://www.hostSystem.com:443/cdi/1.0/certification

If a Client System attempts to access a resource but the resource is not supported by the Host System, per the HTTP specification, the Host System should respond with HTTP status code 404 "Not Found".

Note that resource pathnames typically include a [ver] segment – for example, /cdi/[ver]/certification. The [ver] segment of the resource pathname MUST be replaced with the version number of the Certification Database Interface being used by the Client System. A dot-delimited format MUST be used for the version number. For example, version "1.0" must be represented as the character string "1.0". Superfluous leading and trailing characters MUST be removed. For example, version "v1.0" must be represented as "1.0".

1.6 HTTP Verbs

Client Systems MUST use the HTTP protocol to access the resources of the Host System. Different HTTP verbs – POST, GET, PUT, or DELETE – may be used to access different resources. The specific HTTP verbs that can be used with an individual resource are included in the description of the resource. The Client System SHOULD only use the HTTP verbs that are specified for a resource to access that resource.

If a Client System attempts to use an HTTP verb to access a resource and that HTTP verb is not supported by the Host System, per the HTTP specification, the Host System should respond with HTTP status code 405 "Method Not Allowed".

1.7 Persistent Connections

Host Systems and Client Systems MUST support HTTP persistent connections. Client Systems SHOULD specify persistent connections when establishing connections to Host systems. Client Systems and Host Systems SHOULD maintain persistent connections for at least five minutes unless the connection is no longer required at the application level.

The intent of this requirement is to avoid frequent use of "close" tokens within HTTP headers. The goal is to keep the HTTP session open between the Client System and the Host System so that TLS and TCP connections do not have to be recreated more often than necessary.

1.8 Minimum Message Size

Host Systems MUST be able to receive and process a 4-megabyte or smaller JSON-encoded message. Client Systems do not have a mandated maximum message size requirement but should be aware that messages, which are larger than 4 megabytes, may not be processed by Host Systems. This requirement is intended to promote interoperability by providing Host Systems and Client Systems with a known minimum limit on the size of messages.

If a Client System attempts to send a message that is too large for the Host System to process, per the HTTP specification, the Host System should respond with HTTP status code 413 "Payload Too Large".

1.9 HTTP Status Codes

Per the HTTP specification, each HTTP response from the Host System must include an HTTP status code. Only HTTP status codes, which are defined within the HTTP specification, should be used.

If the Host System successfully accepts a message, the Host System MUST include an HTTP status code from the 200 series in its response. This indicates that the Host System has successfully received, understood, and accepted the message and that the Client System does not have to report an exception, retry the message, etc.

If the Host System is unable to accept a message, the Host System MUST include an HTTP status code outside of the 200 series in its response. The HTTP status code should indicate as clearly as possible why the message was not processed.

Redirection — that is status codes from the 300 series — MAY be used by the Host System.

If one or more of the parameters of an HTTP GET operation are not supported by the Host System, the Host System MUST NOT simply ignore the parameters that are not supported. Instead, the Host System should respond with HTTP status code 501 "Not Implemented".

1.10 Case Sensitivity

Unless specified differently in an underlying specification, all protocol-defined constructs described within this specification are case-sensitive including object names, property names, enumeration values, code values, identifier values, data values, etc. Uppercase letters MUST NOT be considered equivalent to lowercase letters. For example, "ABC" must not be considered equivalent to "abc".

1.11 Resource Extensions

Implementations MAY extend the objects defined within this specification by adding new syntactically valid properties to the objects. The names of any such properties in an object MUST NOT conflict with the names of properties defined within this specification for that object. Implementations MUST expect to receive such properties within the objects defined within this specification. Implementations MUST NOT reject objects simply because they contain such properties.

1.12 Authentication

Authentication MUST be handled through Basic HTTP Authentication as defined by RFC 7235. In the token containing the username/password pair, the username MUST be in plain text; the password MUST be a SHA-1 hash of the plain-text password. The Authorization header MUST be included with each communication. The username/password pair MUST be hidden and secured within the required TLS connection. Per the HTTP specification, if any messages are received with a username or password that are not recognized a HTTP 401 Not Authorized status should be returned.

It is intended that the username provided by the Client System be used by the Host System to control access to information associated with specific testing laboratories, vendors, and jurisdictions. For example, a testing laboratory might use the username to limit a regulator's access to only product certifications for the regulator's jurisdiction. Similarly, a testing laboratory might use the username to limit a vendor's access to only product submissions from the vendor.

Basic HTTP Authentication MUST be used to access the resources described within this specification as well as the documents identified within document records (`document`) reported by those resources. The URLs specified in document records MUST include the “https” prefix, indicating that secure HTTP must be used to access the documents. The `documentSource` property of the document records indicates which end-point – supplier, test lab, or regulator – hosts the documents. The appropriate username/password pair for the end-point MUST be used when accessing the documents. That username/password pair may be different than the pair used to access the resource that reported the document records.

1.13 Metadata

The metadata resources described in Chapter 2 can be used by a Client System to determine the set of testing laboratories, vendors, and jurisdictions to which the username of the Client System has access. The metadata resources can also be used by the Client System to determine the set of status codes and software authentication algorithms used by the Host system.

Metadata is intended to be unique to a Host System. Thus, different Host Systems may use different identifiers to refer to the same entity within the metadata. For example, two different Host Systems may use two different identifiers to refer to the same testing laboratory. The use of metadata allows the different Host Systems to operate independently of one another, assigning unique identifiers to testing laboratories, vendors, jurisdictions, statuses, and algorithms as needed.

However, it also requires that Client Systems map the identifiers used by Host Systems to their own internal identifiers to provide semantic meaning to the Host System's metadata. For example, a Client System will have to map the identifier that the Host System uses to indicate that a product has been approved to the Client System's own internal identifier for the same status. Operator intervention may be required on an ongoing basis to create these mappings.

To help minimize the difficulty of managing the metadata mappings, Host Systems are required to assign universally unique identifiers (UUIDs) to metadata entities. Client Systems should maintain mappings of individual UUIDs to their own internal identifiers. UUIDs MUST be generated in a manner compliant with ISO/IEC 9834-8:2014 to guarantee uniqueness.

Client Systems SHOULD periodically refresh the metadata to assure that their metadata mappings are up to date and that they only make requests for data to which they have access.

1.14 Record Identifiers

Each object within this specification contains a record identifier. For example, certification objects contain a `certificationId`, jurisdiction objects contain a `submissionId`, and note objects contain a `noteId`. These identifiers are intended to be globally unique allowing any end-entity to create an object and assign a unique identifier without concern for collisions with other end-entities.

Record identifiers MUST be UUIDs generated in a manner compliant with the ISO/IEC 9834-8:2014 standard to guarantee uniqueness. Two records with the same record identifier are considered duplicates. Older instances of a record SHOULD be overwritten when newer instances are received.

When a record is retransmitted from one entity to another, the same record identifier that was received by the sender MUST be retransmitted to the other entity. For example, when submission information is retransmitted by a test laboratory, the same `certificationId` that was received by the test laboratory from the vendor must be retransmitted to other entities. Similarly, when a note is retransmitted by a regulator, the same `noteId` that was received by the regulator must be retransmitted to other entities. New record identifiers should only be assigned when a completely new object is created; not when an end-entity is simply making updates to an existing object.

Chapter 2

Metadata Resources

2.1 jurisdictions Resource

The jurisdictions resource can be used by a Client System to request a list of all available regulatory jurisdictions to which it has access. A regulatory jurisdiction is an entity to which a product is submitted for approval prior to deployment. It is intended that all types of Client Systems – testing laboratories, vendors, and regulators – use this resource and that all types of Host Systems support the resource.

Table 2.1 jurisdictions HTTP Verbs

Resource	HTTP Verbs			
	POST (create)	GET (read)	PUT (update)	DELETE (delete)
/cdi/[ver]/jurisdictions	No	Yes	No	No

2.1.1 GET jurisdictions Resource

The following table contains information about the `jurisdictions` resource when the HTTP GET verb is used. It includes the pathname and content type used to access the resource. When accessing the `jurisdictions` resource using the HTTP GET verb, the specified values MUST be used.

Table 2.2 GET jurisdictions Resource Information

HTTP Method	`GET`
Pathname	`/cdi/[ver]/jurisdictions`
Request Content-Type	`application/json; charset=utf-8`
Request Content	None.
Response Content-Type	`application/json; charset=utf-8`
Response Content	`jurisdictions` Object. See Section 2.1.1.2, jurisdictions Object for details.

2.1.1.1 GET jurisdictions Parameters

The following table identifies the parameters of the `jurisdictions` resource when the HTTP GET verb is used. The parameters are appended to the resource URI in the query component of the HTTP request.

- If the `jurisdictionId` parameter is included, only information regarding the specified `jurisdictionId` is included in the response; otherwise, the `jurisdictionId` parameter is ignored and information about all jurisdictions is included in the response.

If the included parameters result in no jurisdictions being selected, the Host System MUST simply return an empty list of jurisdictions to the Client System.

Table 2.3 GET jurisdictions Parameters

Parameter	Restrictions	Description

`jurisdictionId`	`type: t_jurisdictionId`
	`use: optional`
		UUID representing the jurisdiction.
		Example: CFFFC5A7-38BE-4351-9A7C-D8A27D7C0BF2

2.1.1.2 jurisdictions Object

The following table identifies the properties of the `jurisdictions` object. Additional properties MAY be included in the `jurisdictions` object.

Table 2.4 jurisdictions Properties

Property	Restrictions	Description

`jurisdictionArray`	`type: jurisdiction`
	`use: required`
	`minItems: 0`
	`maxItems: ∞`
		Array of `jurisdiction` objects. See Section 2.1.1.3, jurisdiction Object for details.

2.1.1.3 jurisdiction Object

The following table identifies the properties of the `jurisdiction` object. Additional properties MAY be included in the `jurisdiction` object.

Table 2.5 jurisdiction Properties

Property	Restrictions	Description

`jurisdictionId`	`type: t_jurisdictionId`
	`use: required`
		UUID representing the jurisdiction.
		Example: CFFFC5A7-38BE-4351-9A7C-D8A27D7C0BF2

`jurisdictionName`	`type: t_name`
	`use: required`
		Human-readable name of the jurisdiction.
		Example: Macau

`jurisdictionCode`	`type: t_code`
	`use: optional`
		Host-specific code representing the jurisdiction.
		Example: 158

2.1.1.4 GET jurisdictions Example

The following example demonstrates the construction of a GET jurisdictions request and a response containing a `jurisdictions` object. In practice, additional HTTP headers may be included in the messages.

Request:

```
GET /cdi/1.0/jurisdictions HTTP/1.1
Accept: application/json
Accept-Charset: utf-8
```

Response:

```
HTTP/1.1 200 OK
Content-Length: 251
Content-Type: application/json; charset=utf-8
```

```
{
    "jurisdictionArray": [
        {
            "jurisdictionId": "CFFFC5A7-38BE-4351-9A7C-D8A27D7C0BF2",
            "jurisdictionName": "Macau",
            "jurisdictionCode": "158"
        },
        {
            "jurisdictionId": "E5D7330D-5BD1-4856-9566-6F6279115F1E",
            "jurisdictionName": "Arizona",
            "jurisdictionCode": "22"
        }
    ]
}
```

2.2 testLabs Resource

The `testLabs` resource can be used by a Client System to request a list of all available test laboratories to which it has access. A test laboratory is an entity to which a product is submitted for certification. It is intended that all types of Client Systems – testing laboratories, vendors, and regulators – use this resource and that all types of Host Systems support the resource.

Table 2.6 testLabs HTTP Verbs

Resource	HTTP Verbs			
	POST (create)	GET (read)	PUT (update)	DELETE (delete)
/cdi/[ver]/testLabs	No	Yes	No	No

2.2.1 GET testLabs Resource

The following table contains information about the `testLabs` resource when the HTTP GET verb is used. It includes the pathname and content type used to access the resource. When accessing the `testLabs` resource using the HTTP GET verb, the specified values MUST be used.

Table 2.7 GET testLabs Resource Information

HTTP Method	GET
Pathname	/cdi/[ver]/testLabs
Request Content-Type	application/json; charset=utf-8
Request Content	None.
Response Content-Type	application/json; charset=utf-8
Response Content	`testLabs` Object. See Section 2.2.1.2, testLabs Object for details.

2.2.1.1 GET testLabs Parameters

The following table identifies the parameters of the `testLabs` resource when the HTTP GET verb is used. The parameters are appended to the resource URI in the query component of the HTTP request.

- If the `testLabId` parameter is included, only information regarding the specified `testLabId` is included in the response; otherwise, the `testLabId` parameter is ignored and information about all test laboratories is included in the response.

If the included parameters result in no test laboratories being selected, the Host System MUST simply return an empty list of test laboratories to the Client System.

Table 2.8 GET testLabs Parameters

Parameter	Restrictions	Description

`testLabId`	`type: t_testLabId`
	`use: optional`
		UUID representing the test laboratory.
		Example: 1230987D-8976-4321-CC11-098123457634

2.2.1.2 testLabs Object

The following table identifies the properties of the `testLabs` object. Additional properties MAY be included in the `testLabs` object.

Table 2.9 GET testLabs Parameters

Parameter	Restrictions	Description

`testLabArray`	`type: testLab`
	`use: required`
	`minItems: 0`
	`maxItems: ∞`
		Array of `testLab` objects. See Section 2.2.1.3, testLab Object for details.

2.2.1.3 testLab Object

The following table identifies the properties of the `testLab` object. Additional properties MAY be included in the `testLab` object.

Table 2.10 testLab Properties

Property	Restrictions	Description

`testLabId`	`type:t_testLabId`
	`use: required`
		UUID representing the test laboratory.
		Example: 1230987D-8976-4321-CC11-098123457634

`testLabName`	`type: t_name`
	`use: required`
		The human-readable name of the test laboratory.
		Example: A Better Laboratory

`testLabCode`	`typ: t_code`
	`use: optional`
		Host-specific code representing the test laboratory.
		Example: ABL

2.2.1.4 GET testLabs Example

The following example demonstrates the construction of a GET testLabs request and a response containing a `testLabs` object. In practice, additional HTTP headers may be included in the messages.

Request:

```
GET /cdi/1.0/testLabs HTTP/1.1
Accept: application/json
Accept-Charset: utf-8
```

Response:

```
HTTP/1.1 200 OK
Content-Length: 240
Content-Type: application/json; charset=utf-8


{
   "testLabArray": [
      {
         "testLabId": "456A3411-78FA-3234-B341-0078CA123489",
         "testLabName": "Gaming Standards",
         "testLabCode": "GSA"
      },
        {
            "testLabId": "1230987D-8976-4321-CC11-098123457634",
            "testLabName": "A Better Laboratory",
            "testLabCode": "ABL"
        }
    ]
}
```

2.3 vendors Resource

The vendors resource can be used by a Client System to request a list of all available vendors to which it has access. A vendor is an entity that submits products for certification and approval. It is intended that all types of Client Systems – testing laboratories, vendors, and regulators – use this resource and that all types of Host Systems support the resource.

Table 2.11 vendors HTTP Verbs

Resource	HTTP Verbs			
	POST (create)	GET (read)	PUT (update)	DELETE (delete)
/cdi/[ver]/vendors	No	Yes	No	No

2.3.1 GET vendors Resource

The following table contains information about the `vendors` resource when the HTTP GET verb is used. It includes the pathname and content type used to access the resource. When accessing the `vendors` resource using the HTTP GET verb, the specified values MUST be used.

Table 2.12 GET vendors Resource Information

HTTP Method	GET
Pathname	/cdi/[ver]/vendors
Request Content-Type	application/json; charset=utf-8
Request Content	None.
Response Content-Type	application/json; charset=utf-8
Response Content	`vendors` Object. See Section 2.3.1.2, vendors Object for details.

2.3.1.1 GET vendors Parameters

The following table identifies the parameters of the `vendors` resource when the HTTP GET verb is used. The parameters are appended to the resource URI in the query component of the HTTP request.

- If the `vendorId` parameter is included, only information regarding the specified `vendorId` is included in the response; otherwise, the `vendorId` parameter is ignored and information about all vendors is included in the response.

If the included parameters result in no vendors being selected, the Host System MUST simply return an empty list of vendors to the Client System.

Table 2.13 GET vendors Parameters

Parameter	Restrictions	Description

`vendorId`	`type: t_vendorId`
	`use: optional`
		UUID representing the vendor.
		Example: 456A3411-78FA-3234-B341-0078CA123489

2.3.1.2 vendors Object

The following table identifies the properties of the `vendors` object. Additional properties MAY be included in the `vendors` object.

Table 2.14 vendors Properties

Property	Restrictions	Description

`vendorArray`	`type: vendor`
	`use: required`
	`minItems: 0`
	`maxItems: ∞`
		Array of `vendor` objects. See Section 2.3.1.3, vendor Object for details.

2.3.1.3 vendor Object

The following table identifies the properties of the `vendor` object. Additional properties MAY be included in the `vendor` object.

Table 2.15 vendor Properties

Property	Restrictions	Description

`vendorId`	`type: t_vendorId`
	`use: required`
		UUID representing the vendor.
		Example: 456A3411-78FA-3234-B341-0078CA123489

`vendorName`	`type: t_name`
	`use: required`
		The human-readable name of the vendor.
		Example: A Better Vendor

`vendorCode`	`type: t_code`
	`use: optional`
		Host-specific code representing the vendor.
		Example: ABV

2.3.1.4 GET vendors Example

The following example demonstrates the construction of a GET vendors request and a response containing a `vendors` object. In practice, additional HTTP headers may be included in the messages.

Request:

```
GET /cdi/1.0/vendors HTTP/1.1
Accept: application/json
Accept-Charset: utf-8
```

Response:

```
HTTP/1.1 200 OK
Content-Length: 229
Content-Type: application/json; charset=utf-8


{
   "vendorArray": [
      {
         "vendorId": "2301987D-8976-4321-CC11-098123457634",
         "vendorName": "Gaming Standards",
         "vendorCode": "GSA"
      },
        {
            "vendorId": "456A3411-78FA-3234-B341-0078CA123489",
            "vendorName": "A Better Vendor",
            "vendorCode": "ABV"
        }
    ]
}
```

2.4 algorithms Resource

The algorithms resource can be used by a Client System to request a list of all available algorithms to which it has access. Algorithms are methods for producing software signatures of components submitted for certification and approval. It is intended that all types of Client Systems – testing laboratories, vendors, and regulators – use this resource and that all types of Host Systems support the resource.

Table 2.16 algorithms HTTP Verbs

Resource	HTTP Verbs			
	POST (create)	GET (read)	PUT (update)	DELETE (delete)
/cdi/[ver]/algorithms	No	Yes	No	No

2.4.1 GET algorithms Resource

The following table contains information about the algorithms resource when the HTTP GET verb is used. It includes the pathname and content type used to access the resource. When accessing the algorithms resource using the HTTP GET verb, the specified values MUST be used.

Table 2.17 GET vendors Resource Information

HTTP Method	GET
Pathname	/cdi/[ver]/algorithms
Request Content-Type	application/json; charset=utf-8
Request Content	None.
Response Content-Type	application/json; charset=utf-8
Response Content	`algorithms` Object. See Section 2.4.1.2, algorithms Object for details.

2.4.1.1 GET algorithms Parameters

The following table identifies the parameters of the `algorithms` resource when the HTTP GET verb is used. The parameters are appended to the resource URI in the query component of the HTTP request.

- If the `algorithmId` parameter is included, only information regarding the specified `algorithmId` is included in the response; otherwise, the `algorithmId` parameter is ignored and information about all algorithms is included in the response.

If the included parameters result in no algorithms being selected, the Host System MUST simply return an empty list of algorithms to the Client System.

Table 2.18 GET algorithms Parameters

Parameter	Restrictions	Description

`algorithmId`	`type: t_algorithmId`
	`use: optional`
		UUID Representing the algorithm for producing software signatures.
		Example: 754580E4-2B24-4DF9-A583-469688405F39

2.4.1.2 algorithms Object

The following table identifies the properties of the `algorithms` object. Additional properties MAY be included in the `algorithms` object.

Table 2.19 algorithms Properties

Property	Restrictions	Description

`algorithmArray`	`type: algorithm`
	`use: required`
	`minItems: 0`
	`maxItems: ∞`
		Array of `algorithm` objects. See Section 2.4.1.3, algorithm Object for details.

2.4.1.3 algorithm Object

The following table identifies the properties of the `algorithm` object. Additional properties MAY be included in the `algorithm` object.

Table 2.20 algorithm Properties

Property	Restrictions	Description

`algorithmId`	`type: t_algorithmId`
	`use: required`
		UUID representing the signature algorithm.
		Example: 754580E4-2B24-4DF9-A583-469688405F39

`algorithmType`	`type: t_algorithmTypes`
	`use: required`
		Human-readable name of the algorithm.
		Example: SHA1

`supportsSeed`	`type: boolean`
	`use: required`
		Boolean indicating whether the Host System supports a seed when using the algorithm.
		Example: false

`supportsSalt`	`type: boolean`
	`use: required`
		Boolean indicating whether the Host System supports a salt when using the algorithm.
		Example: true

`supportsHMAC`	`type: boolean`
	`use: required`
		Boolean indicating whether the Host System supports an HMAC key when using the algorithm.
		Example: true

`supportsOffset`	`type: boolean`
	`use: required`
		Boolean indicating whether the Host System supports offsets when using the algorithm.
		Example: true

2.4.1.4 GET algorithms Example

The following example demonstrates the construction of a GET algorithms request and a response containing an `algorithms` object. In practice, additional HTTP headers may be included in the messages.

Request:

```
GET /cdi/1.0/algorithms HTTP/1.1
Accept: application/json
```

```
Accept-Charset: utf-8
```

Response:

```
HTTP/1.1 200 OK
Content-Length: 385
Content-Type: application/json; charset=utf-8


{
    "algorithmArray": [
        {
            "algorithmId": "754580E4-2B24-4DF9-A583-469688405F39",
            "algorithmType": "SHA1",
            "supportsSeed": "false",
            "supportsSalt": "true",
            "supportsHMAC": "true",
            "supportsOffset": "true"
        },
        {
            "algorithmId": "0BEEB53E-45AE-4F53-9ED5-456E1CE8FFB8",
            "algorithmType": "CRC-16",
            "supportsSeed": "true",
            "supportsSalt": " false ",
            "supportsHMAC": "false ",
            "supportsOffset": "false "
        }
    ]
}
```

2.5 statuses Resource

The `statuses` resource can be used by a Client System to request a list of all available status codes to which it has access. The status codes — such as Pending, Approved, Revoked, etc. — are used to indicate the current state of a product submission at a testing laboratory or regulator. It is intended that all types of Client Systems — testing laboratories, vendors, and regulators — use this resource and that all types of Host Systems support the resource.

Table 2.21 statuses HTTP Verbs

Resource	HTTP Verbs			
	POST (create)	GET (read)	PUT (update)	DELETE (delete)
/cdi/[ver]/statuses	No	Yes	No	No

2.5.1 GET statuses Resource

The following table contains information about the `statuses` resource when the HTTP GET verb is used. It includes the pathname and content type used to access the resource. When accessing the `statuses` resource using the HTTP GET verb, the specified values MUST be used.

Table 2.22 GET statuses Resource Information

HTTP Method	GET
Pathname	/cdi/[ver]/statuses
Request Content-Type	application/json; charset=utf-8
Request Content	None.
Response Content-Type	application/json; charset=utf-8
Response Content	`statuses` Object. See Section 2.5.1.2, statuses Object for details.

2.5.1.1 GET statuses Parameters

The following table identifies the parameters of the `statuses` resource when the HTTP GET verb is used. The parameters are appended to the resource URI in the query component of the HTTP request.

- If the `statusId` parameter is included, only information regarding the specified `statusId` is included in the response; otherwise, the `statusId` parameter is ignored and information about all statuses is included in the response.

If the included parameters result in no statuses being selected, the Host System MUST simply return an empty list of statuses to the Client System.

Table 2.23 GET statuses Parameters

Parameter	Restrictions	Description

`statusId`	`type: t_statusId`
	`use: optional`
		UUID Representing the status.
		Example: 450FBA8B-8C2F-43D3-8FEF-66543D04B593

2.5.1.2 statuses Object

The following table identifies the properties of the `statuses` object. Additional properties MAY be included in the `statuses` object.

Table 2.24 statuses Properties

Property	Restrictions	Description

`statusArray`	`type: status`
	`use: required`
	`minItems: 0`
	`maxItems: ∞`
		Array of `status` objects. See Section 2.5.1.3, status Object for details.

2.5.1.3 status Object

The following table identifies the properties of the `status` object. Additional properties MAY be included in the `status` object.

Table 2.25 status Properties

Property	Restrictions	Description

`statusId`	`type: t_statusId`
	`use: required`
		UUID representing the status.
		Example: 450FBA8B-8C2F-43D3-8FEF-66543D04B593

`statusName`	`type: t_name`
	`use: required`
		The human-readable name of the status.
		Example: Approved

`statusCode`	`type: t_code`
	`use: optional`
		Host-specific code representing the status.
		Example: AP

2.5.1.4 GET statuses Example

The following example demonstrates the construction of a GET statuses request and a response containing a `statuses` object. In practice, additional HTTP headers may be included in the messages.

Request:

```
GET /cdi/1.0/statuses HTTP/1.1
Accept: application/json
Accept-Charset: utf-8
```

Response:

```
HTTP/1.1 200 OK
Content-Length: 404
Content-Type: application/json; charset=utf-8


{
   "statusArray": [
      {
         "statusId": "450FBA8B-8C2F-43D3-8FEF-66543D04B593",
         "statusName": "Approved",
         "statusCode": "AP "
      },
      {
         "statusId": "4EC10B07-C562-49DA-A31A-236C745AAE9B",
         "statusName": "Withdrawn",
         "statusCode": "WD"
      },
      {
         "statusId": "A255605E-2313-47B8-9FFF-42455EAFEB18",
         "statusName": "Revoked",
         "statusCode": "RV"
      },
      {
         "statusId": "59F6FDE8-39F8-439D-9CAF-22A64F283305",
         "statusName": "Draft",
         "statusCode": "DR"
      }
   ]
}
```

Chapter 3

Submission Resources

3.1 submissions Resource

The `submissions` resource can be used by a Client System to submit certification requests to a Host System, to add new jurisdictions to a previous certification request, and to retrieve status information about the submission. It is intended that vendors use this resource as Client Systems to submit certification requests to testing laboratories acting as Host Systems. After a submission has been accepted by a test laboratory, vendors should use the `certifications` resource to request status information about the testing and approval of the submitted product.

Table 3.1 submissions HTTP Verbs

Resource	HTTP Verbs			
	POST (create)	GET (read)	PUT (update)	DELETE (delete)
/cdi/[ver]/submissions	Yes	Yes	Yes	No

3.1.1 POST submissions Resource

The following table contains information about the `submissions` resource when the HTTP POST verb is used. It includes the pathname and content type used to access the resource. When accessing the `submissions` resource using the HTTP POST verb, the specified values MUST be used.

This resource is used to submit new certification requests to the Host System. The requests MAY not be accepted immediately. A manual review may be required before the requests are entered into the Host System.

Table 3.2 POST submissions Resource Information

HTTP Method	`POST`
Pathname	`/cdi/[ver]/submissions`
Request Content-Type	`application/json; charset=utf-8`
Request Content	`submissions` Object. See Section 3.1.1.1, submissions Object for details.
Response Content-Type	`application/json; charset=utf-8`
Response Content	None.

3.1.1.1 submissions Object

The following table identifies the properties of the `submissions` object. Additional properties MAY be included in the `submissions` object.

Table 3.3 submissions Properties

Property	Restrictions	Description

`submissionArray`	`type: certificationSub`
	`use: required`
	`minItems: 1`
	`maxItems: ∞`
		Array of `certificationSub` Objects. See Section 3.1.1.2, certificationSub Object for details.

3.1.1.2 certificationSub Object

The following table identifies the properties of the `certificationSub` object. Additional properties MAY be included in the `certificationSub` object.

The `certificationId` MUST be a UUID generated in a manner compliant with the ISO/IEC 9834-8:2014 standard to guarantee uniqueness. It serves as the unique identifier for the `submission` record. Two `submission` records with the same `certificationId` are considered duplicates.

Table 3.4 certificationSub Properties

Property	Restrictions	Description

`certificationId`	`type: t_certificationId`
	`use: required`
		UUID for the product certification request record.
		Example: 96CA8F38-A692-4748-847A-A1DA00D2B95C

`certificationNumber`	`type: t_name`
	`use: required`
		The human-readable identification number for the product certification request.
		Example: ABV_123456

`vendorId`	`type: t_vendorId`
	`use: required`
		UUID representing the vendor.
		Example: 456A3411-78FA-3234-B341-0078CA123489

`testLabId`	`type: t_testLabId`
	`use: required`
		UUID representing the test laboratory.
		Example: 1230987D-8976-4321-CC11-098123457634

`certificationCode1`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the certification request.
		Example: My Code 1

`certificationCode2`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the certification request.
		Example: My Code 2

`noteArray`	`type: note`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `note` objects about the certification request. See Section 3.1.1.6, note Object for details.

`componentSubArray`	`type: componentSub`
	`use: required`
	`minItems: 1`
	`maxItems: ∞`
		Array of `componentSub` objects. See Section 3.1.1.3, componentSub Object for details.

3.1.1.3 componentSub Object

The following table identifies the properties of the `componentSub` object. Additional properties MAY be included in the `componentSub` object.

The `componentId` MUST be a UUID generated in a manner compliant with the ISO/IEC 9834-8:2014 standard to guarantee uniqueness. It serves as the unique identifier for the `componentSub` record. Two `componentSub` records with the same `componentId` are considered duplicates.

Table 3.5 componentSub Properties

Property	Restrictions	Description

`componentId`	`type: t_componentId`
	`use: required`
		UUID for the product component record.
		Example: 96CA8F38-A692-4748-847A-A1DA00D2B95C

`componentNumber`	`type: t_name`
	`use: required`
		The human-readable identification number for the product component.
		Example: ABV_123456

`version`	`type: t_version`
	`Use: optional`
	`default: <empty>`
		Identifies the version of the component.
		Example: 1.2.3

`function`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Identifies the function of the component.
		Example: Game Software

`mediaType`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Identifies the type of media on which the component resides.
		Example: Download

`mediaSize`	`type: numeric`
	`use: optional`
	`multipleOf: 1`
	`default: 0`
		Identifies the size of media on which the component resides.
		Example: 654321

`position`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Identifies the position in which the component is installed; for example, the socket on an EGMs motherboard.
		Example: Socket U2

`componentName`	`type: t_name`
	`use: optional`
	`default: <empty>`
		The human-readable name of the component, such as the name of a game.
		Example: A Better Game

`componentCode1`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the component.
		Example: My Code 1

`componentCode2`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the component.
		Example: My Code 2

`noteArray`	`type: note`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `note` objects about the component See Section 3.1.1.6, note Object for details.

`paytableArray`	`type: paytable`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `paytable` objects associated with the component. See Section 3.1.1.7, paytable Object for details.

Table 3.5 componentSub Properties

Property	Restrictions	Description

`jurisdictionSubArray`	`type: jurisdictionSub`
	`use: required`
	`minItems: 1`
	`maxItems: ∞`
		Array of `jurisdictionSub` objects. See Section 3.1.1.4, jurisdictionSub Object for details.

`signatureArray`	`type: signature`
	`use: required`
	`minItems: 0`
	`maxItems: ∞`
		Array of `signature` objects. See Section 3.1.1.5, signature Object for details.

3.1.1.4 jurisdictionSub Object

The following table identifies the properties of the `jurisdictionSub` object. Additional properties MAY be included in the `jurisdictionSub` object.

The `submissionId` MUST be UUID generated in a manner compliant with the ISO/IEC 9834-8:2014 standard to guarantee uniqueness. It serves as the unique identifier for the `jurisdictionSub` record. Two `jurisdictionSub` records with the same `submissionId` are considered duplicates.

Table 3.6 jurisdictionSub Properties

Property	Restrictions	Description

`submissionId`	`type: t_submissionId`
	`use: required`
		UUID for the jurisdiction submission record.
		Example: 96CA8F38-A692-4748-847AA1DA00D2B95C

`jurisdictionId`	`type: t_jurisdictionId`
	`use: required`
		UUID representing a specific jurisdiction.
		Example: CFFFC5A7-38BE-4351-9A7C-D8A27D7C0BF2

`rush`	`type: boolean`
	`use: optional`
	`default: false`
		Indicates whether the submitter considers the submission a rush.
		Example: true

`requestedDate`	`type: string`
	`format: date`
	`use: optional`
	`default: <empty>`
		Requested date for when the certification will be issued.
		Example: 2015-12-31

`jurisdictionCode1`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the jurisdictional testing and approval.
		Example: My Code 1

`jurisdictionCode2`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the jurisdictional testing and approval.
		Example: My Code 2

`noteArray`	`type: note`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `note` objects for the jurisdiction. See Section 3.1.1.6, note Object for details.

Table 3.6 jurisdictionSub Properties

Property	Restrictions	Description

`documentArray`	`type: document`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `document` objects associated with the submission for the jurisdiction. See Section 3.1.1.8, document Object for details.

3.1.1.5 signature Object

The following table identifies the properties of the `signature` object. Additional properties MAY be included in the `signature` object.

The `signatureId` MUST be a UUID generated in a manner compliant with the ISO/IEC 9834-8: 2014 standard to guarantee uniqueness. It serves as the unique identifier for the `signature` record. Two `signature` records with the same `signatureId` are considered duplicates.

Like other data reported to an end-point, only signatures relevant to a specific end-point should be provided to the end-point. If a specific set of signatures has been generated for a specific jurisdiction, the set of signatures should only be provided to that jurisdiction; the set of signatures should be restricted to that jurisdiction. In such cases, the `signatureRestricted` property SHOULD identify the jurisdiction (or other entity) to which the signatures are restricted. If the `signatureRestricted` property is not <`empty`>, the signature MUST only be provided to the entities identified in the `signatureRestricted` property and the `signatureSource` property.

Table 3.7 signature Properties

Property	Restrictions	Description

`signatureId`	`type: t_signatureId`
	`use: required`
		UUID for the signature record.
		Example: 96CA8F38-A692-4748-847AA1DA00D2B95C

`algorithmId`	`type: t_algorithmId`
	`use: required`
		UUID representing the authentication algorithm.
		Example: 754580E4-2B24-4DF9-A583-469688405F39

`usedSeed`	`type: boolean`
	`use: optional`
	`default: false`
		Indicates whether a seed was used with the algorithm. Certain algorithms, such as checksums (CRC), can use a seed to define the starting value.

`usedSalt`	`type: boolean`
	`use: optional`
	`default: false`
		Indicates whether a salt was used with the algorithm. Certain algorithms, such as SHA1 and MD5, can prepend arbitrary bytes to the component's byte buffer before the hash is generated (and after the offsets are applied).

`usedOffsets`	`type: boolean`
	`use: optional`
	`default: false`
		Indicates whether starting and/or ending offsets were used with the algorithm.

Table 3.7 signature Properties

Property	Restrictions	Description
~~`seed`~~	~~`type: t_seed`~~ ~~`use: optional`~~ ~~`default: false`~~	~~The seed for the algorithm. Certain algorithms, such as checksums (CRC), require a seed to define the starting value.~~ ~~**Example: 12345678**~~
~~`salt`~~	~~`type: t_salt`~~ ~~`use: optional`~~ ~~`default: false`~~	~~Arbitrary bytes that are prefixed to the component's byte buffer before the hash is generated (and after the offsets are applied).~~ ~~**Example: FEDCBA9876543210**~~
~~`startOffset`~~	~~`type: numeric`~~ ~~`use: optional`~~ ~~`multipleOf: 1`~~ ~~`default: 0`~~ ~~`minIncl: 0`~~	~~The starting offset for the verification component.~~ ~~**Example: 4321**~~
~~`endOffset`~~	~~`type: numeric`~~ ~~`use: optional`~~ ~~`multipleOf: 1`~~ ~~`default: -1`~~ ~~`minIncl: -1`~~	~~The ending offset for the verification component.~~ ~~**Example: -1**~~

`verifyResult`	`type: t_verifyResult`
	`use: required`
		The software signature calculated by the Client System.
		Example: 0F1E2D3C4B5A69788796A5B4C3D2E1F0

`signatureSource`	`type: t_UUID`
	`use: required`
		Used to identify the source of the signature — that is, the vendor, test laboratory, or jurisdiction that originated the note.
		Example: 456A3411-78FA-3234-B3410078CA123489

`signatureRestricted`	`type: t_UUID`
	`use: optional`
	`default: <empty>`
		Used to identify the entity to which the signature is restricted — that is, the vendor, test laboratory, or jurisdiction for which the signature was specifically generated.
		Example: 456A3411-78FA-3234-B3410078CA123489

3.1.1.6 note Object

The following table identifies the properties of the `note` object. Additional properties MAY be included in the `note` object.

The `noteType` property should identify the type, category, or subject of the note. The `noteText` property should contain the text for the note.

The `noteId` MUST be a UUID generated in a manner compliant with the ISO/IEC 9834-8:2014 standard to guarantee uniqueness. It serves as the unique identifier for the `note` record. Two `note` records with the same `noteId` are considered duplicates.

Table 3.8 note Properties

Property	Restrictions	Description

`noteId`	`type: t_noteId`
	`use: required`
		UUID for the note record.
		Example: 754580E4-2B24-4DF9-A583-469688405F39

`noteType`	`type: t_name`
	`use: required`
		Identifies the type or category of note – for example, Modification, Special Request, etc.
		Example: Special Request

`noteText`	`type: t_notes`
	`use: required`
		Contains the full text of the note.
		Example: Please handle this request with high priority.

`noteSource`	`type: t_UUID`
	`use: required`
		Used to identify the source of the note — that is, the vendor, test laboratory, or jurisdiction that originated the note.
		Example: 456A3411-78FA-3234-B3410078CA123489

3.1.1.7 paytable Object

The following table identifies the properties of the `paytable` object. Additional properties MAY be included in the `paytable` object.

The `paytableId` MUST be a UUID generated in a manner compliant with the ISO/IEC 9834-8:2014 standard to guarantee uniqueness. It serves as the unique identifier for the `paytable` record. Two `paytable` records with the same `paytableId` are considered duplicates.

Table 3.9 paytable Properties

Property	Restrictions	Description

`paytableId`	`type: t_paytableId`
	`use: required`
		UUID for the paytable record.
		Example: 754580E4-2B24-4DF9-A583-469688405F39

`paytableName`	`type: t_name`
	`use: required`
		The human-readable identifier for the paytable.
		Example: ABV_123456_9600

`paytableMax`	`type: t_percent`
	`use: required`
		Maximum payback percentage for the paytable; expressed in hundredths of a percent; for example, 97.35% is expressed as 9735.
		Example: 9735

`paytableMin`	`type: t_percent`
	`use: required`
		Minimum payback percentage for the paytable; expressed in hundredths of a percent; for example, 96.65% is expressed as 9665.
		Example: 9665

`paytableVI`	`type: t_paytableVI`
	`use: optional`
	`default: <empty>`
		Volatility index for the paytable.
		Example: 16.552

Table 3.9 paytable Properties

Property	Restrictions	Description

`paytableCI`	`type: t_paytableCI`
	`use: optional`
	`default: <empty>`
		Confidence interval for the paytable.
		Example: 90

3.1.1.8 document Object

The following table identifies the properties of the `document` object. Additional properties MAY be included in the `document` object.

The `documentId` MUST be a UUID generated in a manner compliant with the ISO/IEC 9834-8:2014 standard to guarantee uniqueness. It serves as the unique identifier for the `document` record. Two `document` records with the same `documentId` are considered duplicates.

Table 3.10 document Properties

Property	Restrictions	Description

`documentId`	`type: t_documentId`
	`use: required`
		UUID for the document record.
		Example: 754580E4-2B24-4DF9-A583-469688405F39

`documentType`	`type: t_name`
	`use: required`
		Identifies the type or category of the document – for example, Product Documentation, Par Sheet, Certification Report, Approval Letter, etc.
		Example: Product Documentation

`documentName`	`type: t_name`
	`use: required`
		The human-readable identifier for the document.
		Example: ABV_Package_123456

`documentSource`	`type: t_UUID`
	`use: required`
		Used to identify the source of the document — that is, the vendor, test laboratory, or jurisdiction that originated the document.
		Example: 456A3411-78FA-3234-B3410078CA123489

`documentFormat`	`type: t_code`
	`use: required`
		Document format; typically, the file extension for the document; for example, pdf, doc, zip, etc.
		Example: pdf

`documentLanguage`	`type: t_language`
	`use: optional`
	`default: en`
		Language of the document.
		Example: en

`documentDate`	`type: string`
	`format: t_date`
	`use: required`
		Document Date; the date on which the document was last updated.

`documentPath`	`type: string`
	`format: uri`
	`use: required`
		Network URI whence the document can be retrieved.
		Example: https://www.abv.com/subs/ABV_Package_123456.pdf

3.1.1.9 POST submissions Example

The following example demonstrates the construction of a POST submissions request and a response indicating that the submission was accepted. In practice, additional HTTP headers may be included in the messages.

Request:

```
POST /cdi/1.0/submissions HTTP/1.1
Content-Length: 2271
Content-Type: application/json; charset=utf-8

{
   "submissionArray": [
      {
         "certificationId": "96CA8F38-A692-4748-847A-A1DA00D2B95C",
         "certificationNumber": "ABV_Cert_123",
         "vendorId": "456A3411-78FA-3234-B341-0078CA123489",
         "testLabId": "1230987D-8976-4321-CC11-098123457634",
         "certificationCode1": "My Certification Code 1",
         "certificationCode1": "My Certification Code 2",
         "noteArray": [
            {
               "noteId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
               "noteType": "Special Request",
               "noteText": "This submission is a rush.",
               "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
            }
         ],
         "componentSubArray": [
            {
               "componentId": "BA8B450F-8C2F-43D3-8FEF-04B59366543D",
               "componentNumber": "ABV_Comp_1234",
               "version": "1.2a",
               "function": "Game Software",
               "mediaType": "Download",
               "mediaSize": 654321,
               "position": "Socket U2",
               "componentName": "Triple 7s",
               "componentCode1": "My Component Code 1",
               "componentCode2": "My Component Code 2",
               "noteArray": [
                  {
                     "noteId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
                     "noteType": "Note",
                     "noteText": "This game requires skill to achieve max payback.",
                     "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
                  }
               ],
               "paytableArray": [
                  {
                     "paytableId": "3896CA8F-A692-4748-847A-A1DA00D2B95C",
                     "paytableName": "ABV_123456_9600",
                     "paytableMax": "9600",
                     "paytableMin": "9450",
                     "paytableVI": "16.552",
                     "paytableCI": "90"
                  }
               ],
               "jurisdictionSubArray": [
                  {
                     "submissionId": "7FDE945E-24FE-414C-BF6E-E0F3A1DA00E3",
                            "jursidictionId": "E9457FDE-24FE-414C-BF6E-A1DA00E0F3E3",
                            "rush": "true",
                            "requestedDate": "2015-12-31",
                            "noteArray": [
                                {
                                    "noteId": "968F38CA-A692-4748-847A-A1DA00D2B95C",
                                    "noteType": "Special Request",
                                    "noteText": "Field trial requested.",
                                    "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
                                }
                            ],
                            "documentArray": [
                                {
                                    "documentId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
                                    "documentType": "Submission Package",
                                    "documentName": "ABV_Package_123456",
                                    "documentSource": "456A3411-78FA-3234-B341-0078CA123489"
                                    "documentFormat": "zip",
                                    "documentLanguage": "en",
                                    "documentDate": "2015-10-19",
                                    "documentPath": "https://www.abv.com/packages/
                                    ABV_Package_123456"
                                }
                            ]
                        }
                    ],
                    "signatureArray": [
                        {
                            "signatureId": "80E47545-2B24-4DF9-A583-688404695F39",
                            "algorithmId": "754580E4-2B24-4DF9-A583-469688405F39",
                            "verifyResult": "1234567890123456789012345678901234567890"
                        },
                        {
                            "signatureId": "E4758045-2B24-4DF9-A583-884046695F39",
                            "algorithmId": "0BEEB53E-45AE-4F53-9ED5-456E1CE8FFB8",
                            "seedUsed": true~~"0123"~~,
                            "verifyResult": "1234"
                        }
                    ]
                }
            ]
        }
    ]
}
```

Response:

```
HTTP/1.1 200 OK
Content-Length: 0
```

3.1.2 GET submissions Resource

The following table contains information about the `submissions` resource when the HTTP GET verb is used. It includes the pathname and content type used to access the resource. When accessing the `submissions` resource using the HTTP GET verb, the specified values MUST be used.

This resource can be used to retrieve status information about previously submitted certification requests from the Host System.

Table 3.11 GET submissions Resource Information

HTTP Method	`GET`
Pathname	`/cdi/[ver]/submissions`
Request Content-Type	`application/json; charset=utf-8`
Request Content	None.
Response Content-Type	`application/json; charset=utf-8`
Response Content	`submissionStatuses` Object. See Section 3.1.2.2, submissionStatuses Object for details.

3.1.2.1 GET submissions Parameters

The following table identifies the parameters of the `submissions` resource when the HTTP GET verb is used. The parameters are appended to the resource URI in the query component of the HTTP request.

- If the `certificationId` parameter is included, only status information regarding certification requests with the specified `certificationId` are included in the response; otherwise, the `certificationId` parameter is ignored.
- If the `submissionStatus` parameter is included, only status information regarding certification requests with the specified `submissionStatus` are included in the response; otherwise, the `submissionStatus` parameter is ignored.
- If the `submissionStart` parameter is included, only information regarding certification requests with `submissionDateTime` values greater than or equal to the specified `submissionStart` value are included in the response; otherwise, the `submissionStart` parameter is ignored.
- If the `jurisdictionId` parameter is included, only status information regarding certification requests with the specified `jurisdictionId` are included in the response; otherwise, the `jurisdictionId` parameter is ignored.
- If no parameters are included, information regarding all certification requests to which the Client System has access are included in the response.

If the included parameters result in no certification requests being selected, the Host System MUST simply return an empty list of certification requests to the Client System.

Table 3.12 GET submissions Parameters

Parameter	Restrictions	Description

`certificationId`	`type: t_certificationId`
	`use: optional`
		UUID representing a particular certification request record.
		Example: 96CA8F38-A692-4748-847A-A1DA00D2B95C

`jurisdictionId`	`type: t_jurisdictionId`
	`use: optional`
		UUID representing a specific jurisdiction.
		Example: CFFFC5A7-38BE-4351-9A7C-D8A27D7C0BF2

Table 3.12 GET submissions Parameters

Parameter	Restrictions	Description

`submissionStatus`	`type: t_subStatuses`
	`use: optional`
		The status of a submission for a jurisdiction.
		Example: Approved

`submissionStart`	`type: string`
	`format: dateTime`
	`use: optional`
		The earliest date/time for which changes to the submission status are requested.
		Example: 2010-06-03T00:00:00

3.1.2.2 submissionStatuses Object

The following table identifies the properties of the `submissionStatuses` object. Additional properties MAY be included in the `submissionStatuses` object.

Table 3.13 submissionStatuses Properties

Property	Restrictions	Description

`submissionStatusArray`	`type: submissionStatus`
	`use: required`
	`minItems: 0`
	`maxItems: ∞`
		Array of `submissionStatus` Objects. See Section 3.1.2.3, submissionStatus Object for details.

3.1.2.3 submissionStatus Object

The following table identifies the properties of the `submissionStatus` object. Additional properties MAY be included in the `submissionStatus` object.

Table 3.14 submissionStatus Properties

Property	Restrictions	Description

`certificationId`	`type: t_certificationId`
	`use: required`
		UUID for the product certification request record.
		Example: 96CA8F38-A692-4748-847A-A1DA00D2B95C

`certificationNumber`	`type: t_name`
	`use: required`
		The human-readable identification number for the product certification request.
		Example: ABV_123456

`vendorId`	`type: t_vendorId`
	`use: required`
		UUID representing the vendor.
		Example: 456A3411-78FA-3234-B341-0078CA123489

`testLabId`	`type: t_testLabId`
	`use: required`
		UUID representing the test laboratory.
		Example: 1230987D-8976-4321-CC11-098123457634

Table 3.14 submissionStatus Properties

Property	Restrictions	Description

`certificationCode1`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the certification request.
		Example: My Code 1

`certificationCode2`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the certification request.
		Example: My Code 2

`noteArray`	`type: note`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `note` objects about the certification request. See Section 3.1.1.6, note Object for details.

`componentStatusArray`	`type: componentStatus`
	`use: required`
	`minItems: 1`
	`maxItems: ∞`
		Array of `componentStatus` objects. See Section 3.1.2.4, componentStatus Object for details.

3.1.2.4 componentStatus Object

The following table identifies the properties of the `componentStatus` object. Additional properties MAY be included in the `componentStatus` object.

Table 3.15 componentStatus Properties

Property	Restrictions	Description

`componentId`	`type: t_componentId`
	`use: required`
		UUID for the product component record.
		Example: 96CA8F38-A692-4748-847A-A1DA00D2B95C

`componentNumber`	`type: t_name`
	`use: required`
		The human-readable identification number for the product component.
		Example: ABV_123456

`version`	`type: t_version`
	`Use: optional`
	`default: <empty>`
		Identifies the version of the component.
		Example: 1.2.3

`function`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Identifies the function of the component.
		Example: Game Software

`mediaType`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Identifies the type of media on which the component resides.
		Example: Download

`mediaSize`	`type: numeric`
	`use: optional`
	`multipleOf: 1`
	`default: 0`
		Identifies the size of media on which the component resides.
		Example: 654321

Table 3.15 componentStatus Properties

Property	Restrictions	Description

`position`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Identifies the position in which the component is installed; for example, the socket on an EGMs motherboard.
		Example: Socket U2

`componentName`	`type: t_name`
	`use: optional`
	`default: <empty>`
		The human-readable name of the component, such as the name of a game.
		Example: A Better Game

`componentCode1`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the component.
		Example: My Code 1

`componentCode2`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the component.
		Example: My Code 2

`noteArray`	`type: note`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `note` objects about the certification request. See Section 3.1.1.6, note Object for details.

`paytableArray`	`type: paytable`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `paytable` objects associated with the component. See Section 3.1.1.7, paytable Object for details.

`jurisdictionStatusArray`	`type: jurisdictionStatus`
	`use: required`
	`minItems: 1`
	`maxItems: ∞`
		Array of `jurisdictionStatus` objects. See Section 3.1.2.5, jurisdictionStatus Object for details.

`signatureArray`	`type: signature`
	`use: required`
	`minItems: 0`
	`maxItems: ∞`
		Array of `signature` objects. See Section 3.1.1.5, signature Object for details.

3.1.2.5 jurisdictionStatus Object

The following table identifies the properties of the `jurisdictionStatus` object. Additional properties MAY be included in the `jurisdictionStatus` object.

Table 3.16 jurisdictionStatus Properties

Property	Restrictions	Description

`submissionId`	`type: t_submissionId`
	`use: required`
		UUID for the jurisdiction submission record.
		Example: 96CA8F38-A692-4748-847AA1DA00D2B95C

Table 3.16 jurisdictionStatus Properties

Property	Restrictions	Description

`jurisdictionId`	`type: t_jurisdictionId`
	`use: required`
		UUID representing a specific jurisdiction.
		Example: CFFFC5A7-38BE-4351-9A7C-D8A27D7C0BF2

`rush`	`type: boolean`
	`use: optional`
	`default: false`
		Indicates whether the submitter considers the submission a rush.
		Example: true

`requestedDate`	`type: string`
	`format: date`
	`use: optional`
	`default: <empty>`
		Requested date for when the certification will be issued.
		Example: 2015-12-31

`jurisdictionCode1`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the jurisdictional testing and approval.
		Example: My Code 1

`jurisdictionCode2`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the jurisdictional testing and approval.
		Example: My Code 2

`submissionDateTime`	`type: string`
	`format: dateTime`
	`use: required`
		Date/time that the `submissionStatus` property was last updated.
		Example: 2015-12-10T14:42:00

`submissionStatus`	`type: t_subStatuses`
	`use: required`
		Status of the certification request for the jurisdiction.
		Example: Approved

`vendorSubmitted`	`type: string`
	`format: date`
	`use: required`
		Date that the certification request for the jurisdiction was received by the test laboratory.
		Example: 2015-12-10

`noteArray`	`type: note`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `note` objects about the certification request. See Section 3.1.1.6, note Object for details.

`documentArray`	`type: document`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `document` objects associated with the submission for the jurisdiction. See Section 3.1.1.8, document Object for details.

3.1.2.6 GET submissions Example

The following example demonstrates the construction of a GET submissions request and a response containing a `submissionStatus` object. In practice, additional HTTP headers may be included in the messages.

Request:

```
GET /cdi/1.0/submissions?certificationId=96CA8F38-A692-4748-847A-A1DA00D2B95C HTTP/1.1
```

```
Accept: application/json
Accept-Charset: utf-8
```

Response:

```
HTTP/1.1 200 OK
Content-Length: 2390
Content-Type: application/json; charset=utf-8
```

```
{
    "submissionStatusArray": [
        {
            "certificationId": "96CA8F38-A692-4748-847A-A1DA00D2B95C",
            "certificationNumber": "ABV_Cert_123",
            "vendorId": "456A3411-78FA-3234-B341-0078CA123489",
            "testLabId": "1230987D-8976-4321-CC11-098123457634",
            "certificationCode1": "My Certification Code 1",
            "certificationCode1": "My Certification Code 2",
            "noteArray": [
                {
                    "noteId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
                    "noteType": "Special Request",
                    "noteText": "This submission is a rush.",
                    "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
                }
            ],
            "componentStatusArray": [
                {
                    "componentId": "BA8B450F-8C2F-43D3-8FEF-04B59366543D",
                    "componentNumber": "ABV_Comp_1234",
                    "version": "1.2a",
                    "function": "Game Software",
                    "mediaType": "Download",
                    "mediaSize": 654321,
                    "position": "Socket U2",
                    "componentName": "Triple 7s",
                    "componentCode1": "My Component Code 1",
                    "componentCode2": "My Component Code 2",
                    "noteArray": [
                        {
                            "noteId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
                            "noteType": "Note",
                            "noteText": "This game requires skill to achieve max payback.",
                            "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
                        }
                    ],
                    "paytableArray": [
                        {
                            "paytableId": "3896CA8F-A692-4748-847A-A1DA00D2B95C",
                            "paytableName": "ABV_123456_9600",
                            "paytableMax": "9600",
                            "paytableMin": "9450",
                            "paytableVI": "16.552",
                            "paytableCI": "90"
                        }
                    ],
                    "jurisdictionStatusArray": [
                        {
                            "submissionId": "7FDE945E-24FE-414C-BF6E-E0F3A1DA00E3",
                            "jursidictionId": "E9457FDE-24FE-414C-BF6E-A1DA00E0F3E3",
                            "rush": "true",
                            "requestedDate": "2015-12-31",
                            "submissionDateTime": "2015-12-12T14:42:00",
                            "submissionStatus": "Approved",
                            "vendorSubmitted": "2015-12-11",
                            "noteArray": [
                                {
                                    "noteId": "968F38CA-A692-4748-847A-A1DA00D2B95C",
                                    "noteType": "Special Request",
                                    "noteText": "Field trial requested.",
                                    "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
                                }
                            ],
                            "documentArray": [
                                {
                                    "documentId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
                                    "documentType": "Submission Package",
                                    "documentName": "ABV_Package_123456",
                                    "documentSource": "456A3411-78FA-3234-B341-0078CA123489"
                                    "documentFormat": "zip",
                                    "documentLanguage": "en",
                                    "documentDate": "2015-10-19",
                                    "documentPath": "https://www.abv.com/packages/
                                    ABV_Package_123456"
                                }
                            ]
                        }
                    ],
                    "signatureArray": [
                        {
                            "signatureId": "80E47545-2B24-4DF9-A583-688404695F39",
                            "algorithmId": "754580E4-2B24-4DF9-A583-469688405F39",
                            "verifyResult": "1234567890123456789012345678901234567890"
                        },
                        {
                            "signatureId": "E4758045-2B24-4DF9-A583-884046695F39",
                            "algorithmId": "0BEEB53E-45AE-4F53-9ED5-456E1CE8FFB8",
                            "seedUsed": true~~"0123"~~,
                            "verifyResult": "1234"
                        }
                    ]
                }
            ]
        }
    ]
}
```

3.1.3 PUT submissions Resource

The following table contains information about the `submissions` resource when the HTTP PUT verb is used. It includes the pathname and content type used to access the resource. When accessing the `submissions` resource using the HTTP PUT verb, the specified values MUST be used.

This resource is used to add new certification requests for specific jurisdictions onto a previous submission. The requests MAY not be accepted immediately. A manual review may be required before the requests are entered into the Host System.

Table 3.17 PUT submissions Resource Information

HTTP Method	`PUT`
Pathname	`/cdi/[ver]/submissions`
Request Content-Type	`application/json; charset=utf-8`
Request Content	`newJurisdictions` Object. See Section 3.1.3.1, newJurisdictions Object for details.
Response Content-Type	`application/json; charset=utf-8`
Response Content	None.

3.1.3.1 newJurisdictions Object

The following table identifies the properties of the `newJurisdictions` object. Additional properties MAY be included in the `newJurisdictions` object.

Table 3.18 newJurisdictions Properties

Property	Restrictions	Description

`newJurisdictionArray`	`type: newJurisdiction`
	`use: required`
	`mixItems: 1`
	`maxItems: ∞`
		Array of `newJurisdiction` Objects. See Section 3.1.3.2, newJurisdiction Object for details.

3.1.3.2 newJurisdiction Object

The following table identifies the properties of the `newJurisdiction` object. Additional properties MAY be included in the `newJurisdiction` object.

- The `certificationId` and `componentId` MUST match the `certificationId` and `componentId` from a previously submitted certification request.

Table 3.19 newJurisdiction Properties

Property	Restrictions	Description

`certificationId`	`type: t_certificationId`
	`use: required`
		UUID from a previous certification request record.
		Example: 96CA8F38-A692-4748-847A-A1DA00D2B95C

`componentId`	`type: t_componentId`
	`use: required`
		UUID for the product component.
		Example: 96CA8F38-A692-4748-847A-A1DA00D2B95C

`jurisdictionSubArray`	`type: jurisdictionSub`
	`use: required`
	`minItems: 0`
	`maxItems: ∞`
		Array of `jurisdictionSub` objects. See Section 3.1.1.4, jurisdictionSub Object for details.

Table 3.19 newJurisdiction Properties

Property	Restrictions	Description

`signatureArray`	`type: signature`
	`use: required`
	`minItems: 0`
	`maxItems: ∞`
		Array of `signature` objects. See Section 3.1.1.5, signature Object for details.

3.1.3.3 PUT submissions Example

The following example demonstrates the construction of a PUT submissions request and a response indicating that the request was accepted. In practice, additional HTTP headers may be included in the messages.

Request:

```
PUT /cdi/1.0/submissions HTTP/1.1
Content-Length: 1177
Content-Type: application/json; charset=utf-8


{
    "newJurisdictionArray": [
        {
            "certificationId": "96CA8F38-A692-4748-847A-A1DA00D2B95C",
            "componentId": "BA8B450F-8C2F-43D3-8FEF-04B59366543D",
            "jurisdictionSubArray": [
                {
                    "submissionId": "7FDE945E-24FE-414C-BF6E-E0F3A1DA00E3",
                    "jursidictionId": "E9457FDE-24FE-414C-BF6E-A1DA00E0F3E3",
                    "rush": "true",
                    "requestedDate": "2015-12-31",
                    "noteArray": [
                        {
                            "noteId": "968F38CA-A692-4748-847A-A1DA00D2B95C",
                            "noteType": "Special Request",
                            "noteText": "Field trial requested.",
                            "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
                        }
                    ],
                    "documentArray": [
                        {
                            "documentId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
                            "documentType": "Submission Package",
                            "documentName": "ABV_Package_123456",
                            "documentSource": "456A3411-78FA-3234-B341-0078CA123489"
                            "documentFormat": "zip",
                            "documentLanguage": "en",
                            "documentDate": "2015-10-19",
                            "documentPath": "https://www.abv.com/packages/
                            ABV_Package_123456"
                        }
                    ]
                }
            ],
            "signatureArray": [
                {
                    "signatureId": "80E47545-2B24-4DF9-A583-688404695F39",
                    "algorithmId": "754580E4-2B24-4DF9-A583-469688405F39",
                    "verifyResult": "1234567890123456789012345678901234567890"
                },
                {
                    "signatureId": "E4758045-2B24-4DF9-A583-884046695F39",
                    "algorithmId": "0BEEB53E-45AE-4F53-9ED5-456E1CE8FFB8",
                    "seedUsed": true~~"0123"~~,
                    "verifyResult": "1234"
                }
            ]
        }
    ]
}
```

Response:

```
HTTP/1.1 200 OK
Content-Length: 0
```

Chapter 4

Certification Resources

4.1 certifications Resource

The `certifications` resource can be used by a Client System to request a list of product certifications from a Host system. It is intended that regulators and vendors use this resource as Client Systems to retrieve the results of certification requests from testing laboratories acting as Host Systems. Regulators may also use this resource to retrieve the same information from vendors acting as Host Systems.

Table 4.1 certifications HTTP Verbs

Resource	HTTP Verbs			
	POST (create)	GET (read)	PUT (update)	DELETE (delete)
/cdi/[ver]/certifications	No	Yes	No	No

4.1.1 GET certifications Resource

The following table contains information about the `certifications` resource when the HTTP GET verb is used. It includes the pathname and content type used to access the resource. When accessing the `certifications` resource using the HTTP GET verb, the specified values MUST be used.

Table 4.2 GET certifications Resource Information

HTTP Method	`GET`
Pathname	`/cdi/[ver]/certifications`
Request Content-Type	`application/json; charset=utf-8`
Request Content	None.
Response Content-Type	`application/json; charset=utf-8`
Response Content	certifications Object. See Section 4.1.1.2, certifications Object for details.

4.1.1.1 GET certifications Parameters

The following table identifies the parameters of the certifications resource when the HTTP GET verb is used. The parameters are appended to the resource URI in the query component of the HTTP request.

- If the `certificationId` parameter is included, only information regarding certification requests with the specified `certificationId` are included in the response; otherwise, the `certificationId` parameter is ignored.
- If the `certificationNumber` parameter is included, only information regarding certification requests with the specified `certificationNumber` are included in the response; otherwise, the `certificationNumber` parameter is ignored.
- If the `componentId` parameter is included, only information regarding certification requests containing the specified `componentId` are included in the response; otherwise, the `componentId` parameter is ignored.
- If the `componentNumber` parameter is included, only information regarding certification requests containing the specified `componentNumber` are included in the response; otherwise, the `componentNumber` parameter is ignored.

- If the `componentName` parameter is included, only information regarding certification requests containing the specified `componentName` are included in the response; otherwise, the `componentName` parameter is ignored.
- If the `paytableId` parameter is included, only information regarding certification requests containing the specified `paytableId` are included in the response; otherwise, the `paytableId` parameter is ignored.
- If the `paytableName` parameter is included, only information regarding certification requests containing the specified `paytableName` are included in the response; otherwise, the `paytableName` parameter is ignored.
- If the `jurisdictionId` parameter is included, only information regarding certification requests with the specified `jurisdictionId` are included in the response; otherwise, the `jurisdictionId` parameter is ignored.
- If the `testLabStatusId` parameter is included, only information regarding certification requests with the specified `testLabStatusId` are included in the response; otherwise, the `testLabStatusId` parameter is ignored.
- If the `testLabStart` parameter is included, only information regarding certification requests with `testLabDateTime` values greater than or equal to the specified `testLabStart` value are included in the response; otherwise, the `testLabStart` parameter is ignored.
- If the `testLabEnd` parameter is included, only information regarding certification requests with `testLabDateTime` values less than or equal to the specified `testLabEnd` value are included in the response; otherwise, the `testLabEnd` parameter is ignored.
- If the `regulatorStatusId` parameter is included, only information regarding certification requests with the specified `regulatorStatusId` are included in the response; otherwise, the `regulatorStatusId` parameter is ignored.
- If the `regulatorStart` parameter is included, only information regarding certification requests with `regulatorDateTime` values greater than or equal to the specified `regulatorStart` value are included in the response; otherwise, the `regulatorStart` parameter is ignored.
- If the `regulatorEnd` parameter is included, only information regarding certification requests with `regulatorDateTime` values less than or equal to the specified `regulatorEnd` value are included in the response; otherwise, the `regulatorEnd` parameter is ignored.
- If no parameters are included, information regarding all certification requests to which the Client System has access are included in the response.

If the included parameters result in no certifications being selected, the Host System MUST simply return an empty list of certifications to the Client System.

Table 4.3 GET certifications Parameters

Parameter	Restrictions	Description

`certificationId`	`type: t_certificationId`
	`use: optional`
		UUID representing a particular certification record.
		Example: 96CA8F38-A692-4748-847A-A1DA00D2B95C

Table 4.3 GET certifications Parameters

Parameter	Restrictions	Description
`certificationNumber`	type: t_name use: optional	The human-readable identification number for the product certification request. **Example: ABV_123456**
`componentId`	type: t_componentId use: optional	UUID for the product component record. **Example: 96CA8F38-A692-4748-847AA1DA00D2B95C**
`componentNumber`	type: t_name use: optional	The human-readable identification number for the product component. **Example: ABV_123456**
`componentName`	type: t_name use: optional	The human-readable name of the component, such as the name of a game. **Example: A Better Game**
`paytableId`	type: t_paytableId use: optional	UUID for the paytable record. **Example: 754800E4-2B24_4DF9-A583-469688405F39**
`paytableName`	type: t_name use: optional	The human-readable identifier for the paytable. **Example: ABV_123456-9600**
`jurisdictionId`	type: t_jurisdictionId use: optional	UUID representing a particular jurisdiction. **Example: CFFFC5A7-38BE-4351-9A7C-D8A27D7C0BF2**
`testLabStatusId`	type: t_statusId use: optional	UUID representing a particular status for the test laboratory. **Example: 450FBA8B-8C2F-43D3-8FEF-66543D04B593**
`testLabStart`	type: string format: dateTime use: optional	The earliest date/time for which changes to test laboratory status information is requested. **Example: 2010-06-03T00:00:00**
`testLabEnd`	type: string format: dateTime use: optional	The latest date/time for which changes to test laboratory status information is requested. **Example: 2010-06-03T23:59:59**
`regulatorStatusId`	type: t_statusId use: optional	UUID representing a particular status for the regulator. **Example: 450FBA8B-8C2F-43D3-8FEF-66543D04B593**

Table 4.3 GET certifications Parameters

Parameter	Restrictions	Description
`regulatorStart`	type: string format: dateTime use: optional	The earliest date/time for which changes to regulator status information is requested. **Example: 2010-06-03T00:00:00**
`regulatorEnd`	type: string format: dateTime use: optional	The latest date/time for which changes to regulator status information is requested. **Example: 2010-06-03T23:59:59**

4.1.1.2 certifications Object

The following table identifies the properties of the `certifications` object. Additional properties MAY be included in the `certifications` object.

Table 4.4 certifications Properties

Property	Restrictions	Description
`certificationArray`	type: certification use: required minItems: 0 maxItems: ∞	Array of `certification` Objects. See Section 4.1.1.3, certification Object for details.

4.1.1.3 certification Object

The following table identifies the properties of the `certification` object. Additional properties MAY be included in the `certification` object.

The `certificationId` serves as the unique identifier for the certification record. Two certification records with the same `certificationId` are considered duplicates.

Table 4.5 certification Properties

Property	Restrictions	Description
`certificationId`	type: t_certificationId use: required	UUID for the product certification request record. **Example: 96CA8F38-A692-4748-847A-A1DA00D2B95C**
`certificationNumber`	type: t_name use: required	The human-readable identification number for the product certification request. **Example: ABV_123456**
`vendorId`	type: t_vendorId use: required	UUID representing the vendor. **Example: 456A3411-78FA-3234-B341-0078CA123489**
`testLabId`	type: t_testLabId use: required	UUID representing the test laboratory. **Example: 1230987D-8976-4321-CC11-098123457634**

Table 4.5 certification Properties

Property	Restrictions	Description
`certificationCode1`	type: t_name use: optional default: <empty>	Vendor-specific code for tracking the certification request. **Example: My Code 1**
`certificationCode2`	type: t_name use: optional default: <empty>	Vendor-specific code for tracking the certification request. **Example: My Code 2**
`noteArray`	type: note use: optional minItems: 1 maxItems: ∞	Array of `note` objects about the certification request. See Section 3.1.1.6, note Object for details.
`componentArray`	type: component use: required minItems: 1 maxItems: ∞	Array of `component` objects. See Section 4.1.1.4, component Object for details.

4.1.1.4 component Object

The following table identifies the properties of the `component` object. Additional properties MAY be included in the `component` object.

The `componentId` serves as the unique identifier for the `component` record. Two `component` records with the same `componentId` are considered duplicates.

Table 4.6 component Properties

Property	Restrictions	Description
`componentId`	type: t_componentId use: required	UUID for the product component record. **Example: 96CA8F38-A692-4748-847A-A1DA00D2B95C**
`componentNumber`	type: t_name use: required	The human-readable identification number for the product component. **Example: ABV_123456**
`version`	type: t_version Use: optional default: <empty>	Identifies the version of the component. **Example: 1.2.3**
`function`	type: t_name use: optional default: <empty>	Identifies the function of the component. **Example: Game Software**
`mediaType`	type: t_name use: optional default: <empty>	Identifies the type of media on which the component resides. **Example: Download**

Table 4.6 component Properties

Property	Restrictions	Description

`mediaSize`	`type: numeric`
	`use: optional`
	`multipleOf: 1`
	`default: 0`
		Identifies the size of media on which the component resides.
		Example: 654321

`position`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Identifies the position in which the component is installed; for example, the socket on an EGMs motherboard.
		Example: Socket U2

`componentName`	`type: t_name`
	`use: optional`
	`default: <empty>`
		The human-readable name of the component, such as the name of a game.
		Example: A Better Game

`componentCode1`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the component.
		Example: My Code 1

`componentCode2`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the component.
		Example: My Code 2

`noteArray`	`type: note`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `note` objects about the component. See Section 3.1.1.6, note Object for details.

`paytableArray`	`type: paytable`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `paytable` objects associated with the component. See Section 3.1.1.7, paytable Object for details.

`jurisdictionArray`	`type: jurisdiction`
	`use: required`
	`minItems: 1`
	`maxItems: ∞`
		Array of `jurisdiction` objects. See Section 4.1.1.5, jurisdiction Object for details.

`signatureArray`	`type: signature`
	`use: required`
	`minItems: 0`
	`maxItems: ∞`
		Array of `signature` objects. See Section 3.1.1.5, signature Object for details.

4.1.1.5 jurisdiction Object

The following table identifies the properties of the `jurisdiction` object. Additional properties MAY be included in the `jurisdiction` object.

The `submissionId` serves as the unique identifier for the `jurisdiction` record. Two jurisdiction records with the same `submissionId` are considered duplicates.

Table 4.7 jurisdiction Properties

Property	Restrictions	Description

`submissionId`	`type: t_submissionId`
	`use: required`
		UUID for the jurisdiction submission record.
		Example: 96CA8F38-A692-4748-847AA1DA00D2B95C

`jurisdictionId`	`type: t_jurisdictionId`
	`use: required`
		UUID representing a specific jurisdiction.
		Example: CFFFC5A7-38BE-4351-9A7C-D8A27D7C0BF2

`rush`	`type: boolean`
	`use: optional`
	`default: false`
		Indicates whether the submitter considers the submission a rush.
		Example: true

`requestedDate`	`type: string`
	`format: date`
	`use: optional`
	`default: <empty>`
		Requested date for when the certification will be issued.
		Example: 2015-12-31

`jurisdictionCode1`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the jurisdictional testing and approval.
		Example: My Code 1

`jurisdictionCode2`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Vendor-specific code for tracking the jurisdictional testing and approval.
		Example: My Code 2

`vendorSubmitted`	`type: string`
	`format: date`
	`use: required`
		Date that the certification request for the jurisdiction was received by the test laboratory.
		Example: 2015-12-10

`testLabStatusId`	`type: t_statusId`
	`use: required`
		UUID representing the test laboratory's status for the certification request for the jurisdiction.
		Example: 450FBA8B-8C2F-43D3-8FEF-66543D04B593

`testLabDateTime`	`type: string`
	`status: dateTime`
	`use: required`
		Date/time that the information about the certification request for the jurisdiction was last updated; the `testLabDateTime` property SHOULD be updated any time that any property or sub-property of the `jurisdiction` object is updated.
		Example: 2015-12-10T11:01:00

`testLabCertification`	`type: t_testLabCert`
	`use: optional`
	`default: <empty>`
		Contains the test laboratory's identifier for the certified component.
		Example: MO-22-GSA-15-15

Table 4.7 jurisdiction Properties

Property	Restrictions	Description

`testLabCertified`	`type: string`
	`format: date`
	`use: optional`
	`default: <empty>`
		Date the certification request was approved by the test laboratory.
		Example: 2015-12-10

`regulatorStatusId`	`type: t_statusId`
	`use: optional`
	`default: <empty>`
		UUID representing the regulator's status for the certification request for the jurisdiction.
		Example: 2015-12-10

`regulatorDateTime`	`type: string`
	`status: dateTime`
	`use: optional`
	`defult: <empty>`
		Date/time that the information about the regulator approval was last updated; the `regulatorDateTime` property SHOULD be updated any time that any property or sub-property of the `jurisdictionApproval` object is updated.
		Example: 2016-01-02T14:28:00

`regulatorApproved`	`type: string`
	`format: date`
	`use: optional`
	`default: <empty>`
		Date the component was approved by the regulator.
		Example: 2016-01-02

`regulatorRevoked`	`type: string`
	`format: date`
	`use: optional`
	`default: <empty>`
		Date the component approval was revoked by the regulator.
		Example: 2016-02-03

`regulatorReplaceBy`	`type: string`
	`format: date`
	`use: optional`
	`default: <empty>`
		Date the component must be removed from the field.
		Example: 2016-10-04

`regulatorReplaceId`	`type: t_componentId`
	`use: optional`
	`default: <empty>`
		UUID of the component that replaces the revoked component.
		Example: 96CA8F38-A692-4748-847AA1DA00D2B95C

`noteArray`	`type: note`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `note` objects for the jurisdiction. See Section 3.1.1.6, note Object for details.

`documentArray`	`type: document`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `document` objects associated with the submission for the jurisdiction. See Section 3.1.1.8, document Object for details.

`revokedArray`	`type: revoked`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `revoked component` objects for the jurisdiction. See Section 4.1.1.6, revoked Object for details.

4.1.1.6 revoked Object

The following table identifies the properties of the `revoked` object. Additional properties MAY be included in the `revoked` object.

Table 4.8 revoked Properties

Property	Restrictions	Description

`componentId`	`type: t_componentId`
	`use: required`
		UUID for the component that was revoked.
		Example: 96CA8F38-F692-4748-847AA1DA00D2B95C

4.1.1.7 GET certifications Example

The following example demonstrates the construction of a GET certifications request and a response containing a `certifications` object. In practice, additional HTTP headers may be included in the messages.

Request:

```
GET /cdi/1.0/certifications?certificationId=96CA8F38-A692-4748-847A-A1DA00D2B95C HTTP/1.1
Accept: application/json
Accept-Charset: utf-8
```

Response:

```
HTTP/1.1 200 OK
Content-Length: 2944
Content-Type: application/json; charset=utf-8


{
    "certificationArray": [
        {
            "certificationId": "96CA8F38-A692-4748-847A-A1DA00D2B95C",
            "certificationNumber": "ABV_Cert_123",
            "vendorId": "456A3411-78FA-3234-B341-0078CA123489",
            "testLabId": "1230987D-8976-4321-CC11-098123457634",
            "certificationCode1": "My Certification Code 1",
            "certificationCode1": "My Certification Code 2",
            "noteArray": [
                {
                    "noteId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
                    "noteType": "Special Request",
                    "noteText": "This submission is a rush.",
                    "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
                }
            ],
            "componentArray": [
                {
                    "componentId": "BA8B450F-8C2F-43D3-8FEF-04B59366543D",
                    "componentNumber": "ABV_Comp_1234",
                    "version": "1.2a",
                    "function": "Game Software",
                    "mediaType": "Download",
                    "mediaSize": 654321,
                    "position": "Socket U2",
                    "componentName": "Triple 7s",
                    "componentCode1": "My Component Code 1",
                    "componentCode2": "My Component Code 2",
                    "noteArray": [
    {
        "noteId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
        "noteType": "Note",
        "noteText": "This game requires skill to achieve max payback.",
        "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
    }
],
"paytableArray": [
    {
        "paytableId": "3896CA8F-A692-4748-847A-A1DA00D2B95C",
        "paytableName": "ABV_123456_9600",
        "paytableMax": "9600",
        "paytableMin": "9450",
        "paytableVI": "16.552",
        "paytableCI": "90"
    }
],
"jurisdictionArray": [
    {
        "submissionId": "7FDE945E-24FE-414C-BF6E-E0F3A1DA00E3",
        "jurisdictionId": "E9457FDE-24FE-414C-BF6E-A1DA00E0F3E3",
        "rush": "true",
        "requestedDate": "2015-12-31",
        "vendorSubmitted": "2015-12-11",
        "testLabStatusId": "450FBA8B-8C2F-43D3-8FEF-66543D04B593",
        "testLabDateTime": "2015-12-14T08:53:00",
        "testLabCertification": "MO-22-GSA-15-15",
        "testLabCertified": "2015-12-14",
        "regulatorStatusId": "450FBA8B-8C2F-43D3-8FEF-66543D04B593",
        "regulatorDateTime": "2015-12-15T09:08:00",
        "regulatorApproved": "2015-12-15",
        "regulatorRevoked": "",
        "regulatorReplaceBy": "",
        "regulatorReplaceId": "",
        "noteArray": [
            {
                "noteId": "968F38CA-A692-4748-847A-A1DA00D2B95C",
                "noteType": "Special Request",
                "noteText": "Field trial requested.",
                "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
            }
        ],
        "documentArray": [
            {
                "documentId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
                "documentType": "Submission Package",
                "documentName": "ABV_Package_123456",
                "documentSource": "456A3411-78FA-3234-B341-0078CA123489"
                "documentFormat": "zip",
                "documentLanguage": "en",
                "documentDate": "2015-10-19",
                "documentPath": "https://www.abv.com/packages/
                ABV_Package_123456"
            },
            {
                "documentId": "38968FCA-A692-4748-847A-A1DA00D2B95C",
                "documentType": "Test Lab Report",
                "documentName": "ABL_ABV_Comp_1234_Report1",
                "documentSource": "1230987D-8976-4321-CC11-098123457634"
                "documentFormat": "zip",
                "documentLanguage": "en",
                "documentDate": "2015-10-30",
                                    "documentPath": "https://www.abl.com/
                                    ABL_ABV_Comp_1234_Report1"
                                }
                            ],
                            "revokedArray": [
                                {
                                    "componentId": "96CAA1DA-A692-4748-847A-8F3800D2B95C"
                                }
                            ]
                        }
                    ],
                    "signatureArray": [
                        {
                            "signatureId": "80E47545-2B24-4DF9-A583-688404695F39",
                            "algorithmId": "754580E4-2B24-4DF9-A583-469688405F39",
                            "verifyResult": "1234567890123456789012345678901234567890"
                        },
                        {
                            "signatureId": "E4758045-2B24-4DF9-A583-884046695F39",
                            "algorithmId": "0BEEB53E-45AE-4F53-9ED5-456E1CE8FFB8",
                            "seedUsed": true~~"0123"~~,
                            "verifyResult": "1234"
                        }
                    ]
                }
            ]
        }
    ]
}
```

Chapter 5

Approval Resources

5.1 approvals Resource

The approvals resource can be used by a Client System to request a list of product approvals from a Host system. It is intended that vendors and test laboratories use this resource as Client Systems to retrieve the product approval information from regulators acting as Host Systems.

The approvals resource can also be used by a Client System to send product approval information to a host system. In this case, it is intended that regulators use this resource as Client Systems to send product approval information to vendors and test laboratories acting as Host systems.

Table 5.1 approvals HTTP Verbs

Resource	HTTP Verbs			
	POST (create)	GET (read)	PUT (update)	DELETE (delete)
/cdi/[ver]/approvals	No	Yes	Yes	No

5.1.1 GET approvals Resource

The following table contains information about the `approvals` resource when the HTTP GET verb is used. It includes the pathname and content type used to access the resource. When accessing the `approvals` resource using the HTTP GET verb, the specified values MUST be used.

Table 5.2 GET approvals Resource Information

HTTP Method	`GET`
Pathname	`/cdi/[ver]/approvals`
Request Content-Type	`application/json; charset=utf-8`
Request Content	None.
Response Content-Type	`application/json; charset=utf-8`
Response Content	`approvals` Object. See Section 5.1.1.2, approvals Object for details.

5.1.1.1 GET approvals Parameters

The following table identifies the parameters of the `approvals` resource when the HTTP GET verb is used. The parameters are appended to the resource URI in the query component of the HTTP request.

- If the `certificationId` parameter is included, only information regarding approvals with the specified `certificationId` are included in the response; otherwise, the `certificationId` parameter is ignored.
- If the `vendorId` parameter is included, only information regarding approvals with the specified `vendorId` are included in the response; otherwise, the `vendorId` parameter is ignored.
- If the `testLabId` parameter is included, only information regarding approvals with the specified `testLabId` are included in the response; otherwise, the `testLabId` parameter is ignored.

- If the `regulatorStatusId` parameter is included, only information regarding approvals with the specified `regulatorStatusId` are included in the response; otherwise, the `regulatorStatusId` parameter is ignored.
- If the `regulatorStart` parameter is included, only information regarding approvals with `regulatorDateTime` values greater than or equal to the specified `regulatorStart` value are included in the response; otherwise, the `regulatorStart` parameter is ignored.
- If no parameters are included, information regarding all certification requests to which the Client System has access are included in the response.

If the included parameters result in no certifications being selected, the Host System MUST simply return an empty list of approvals to the Client System.

Table 5.3 GET approvals Parameters

Parameter	Restrictions	Description

`certificationId`	`type: t_certificationId`
	`use: optional`
		UUID representing a particular certification record.
		Example: 96CA8F38-A692-4748-847A-A1DA00D2B95C

`vendorId`	`type: t_vendorId`
	`use: optional`
		UUID representing a particular vendor.
		Example: 456A3411-78FA-3234-B341-0078CA123489

`testLabId`	`type: t_testLabId`
	`use: optional`
		UUID representing a particular test laboratory.
		Example: 1230987D-8976-4321-CC11-098123457634

`regulatorStatusId`	`type: t_statusId`
	`use: optional`
		UUID representing a particular status for the regulator.
		Example: 450FBA8B-8C2F-43D3-8FEF-66543D04B593

`regulatorStart`	`type: string`
	`format: date`
	`use: optional`
		The earliest date/time for which regulator approval updates are requested.
		Example: 2010-06-03T00:00:00

5.1.1.2 approvals Object

The following table identifies the properties of the `approvals` object. Additional properties MAY be included in the `approvals` object.

Table 5.4 approvals Properties

Property	Restrictions	Description

`approvalArray`	`type: certificationApproval`
	`use: required`
	`minItems: 0`
	`maxItems: ∞`
		Array of `certificationApproval` Objects. See Section 5.1.1.3, certificationApproval Object for details.

5.1.1.3 certificationApproval Object

The following table identifies the properties of the `certificationApproval` object. Additional properties MAY be included in the `certificationApproval` object.

The `certificationId` serves as the unique identifier for the `certificationApproval` record. Two `certificationApproval` records with the same `certificationId` are considered duplicates.

Table 5.5 certificationApproval Properties

Property	Restrictions	Description

`certificationId`	`type: t_certificationId`
	`use: required`
		UUID for the product certification request record.
		Example: 96CA8F38-A692-4748-847A-A1DA00D2B95C

`certificationNumber`	`type: t_name`
	`use: required`
		The human-readable identification number for the product certification request.
		Example: ABV_123456

`vendorId`	`type: t_vendorId`
	`use: required`
		UUID representing the vendor.
		Example: 456A3411-78FA-3234-B341-0078CA123489

`testLabId`	`type: t_testLabId`
	`use: required`
		UUID representing the test laboratory.
		Example: 1230987D-8976-4321-CC11-098123457634

`noteArray`	`type: note`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `note` objects about the certification request. See Section 3.1.1.6, note Object for details.

`componentApprovalArray`	`type: componentApproval`
	`use: required`
	`minItems: 1`
	`maxItems: ∞`
		Array of `componentApproval` objects. See Section 5.1.1.4, componentApproval Object for details

5.1.1.4 componentApproval Object

The following table identifies the properties of the `componentApproval` object. Additional properties MAY be included in the `componentApproval` object.

The `componentId` serves as the unique identifier for the `componentApproval` record. Two `componentApproval` records with the same `componentId` are considered duplicates.

Table 5.6 componentApproval Properties

Property	Restrictions	Description

`componentId`	`type: t_componentId`
	`use: required`
		UUID for the product component record.
		Example: 96CA8F38-A692-4748-847A-A1DA00D2B95C

Table 5.6 componentApproval Properties

Property	Restrictions	Description

`componentNumber`	`type: t_name`
	`use: required`
		The human-readable identification number for the product component.
		Example: ABV_123456

`version`	`Type: t_version`
	`Use: optional`
	`default: <empty>`
		Identifies the version of the component.
		Example: 1.2.3

`function`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Identifies the function of the component.
		Example: Game Software

`mediaType`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Identifies the type of media on which the component resides.
		Example: Download

`mediaSize`	`type: numeric`
	`use: optional`
	`multipleOf: 1`
	`default: 0`
		Identifies the size of media on which the component resides.
		Example: 654321

`position`	`type: t_name`
	`use: optional`
	`default: <empty>`
		Identifies the position in which the component is installed; for example, the socket on an EGMs motherboard.
		Example: Socket U2

`componentName`	`type: t_name`
	`use: optional`
	`default: <empty>`
		The human-readable name of the component, such as the name of a game.
		Example: A Better Game

`noteArray`	`type: note`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `note` objects about the component. See Section 3.1.1.6, note Object for details.

`paytableArray`	`type: paytable`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `paytable` objects associated with the component. See Section 3.1.1.7, paytable Object for details.

`jurisdictionApprovalArray`	`type: jurisdictionApproval`
	`use: required`
	`minItems: 1`
	`maxItems: ∞`
		Array of `jurisdictionApproval` objects. See Section 5.1.1.5, jurisdictionApproval Object for details.

`signatureArray`	`type: signature`
	`use: required`
	`minItems: 0`
	`maxItems: ∞`
		Array of `signature` objects. See Section 3.1.1.5, signature Object for details.

5.1.1.5 jurisdictionApproval Object

The following table identifies the properties of the `jurisdictionApproval` object. Additional properties MAY be included in the `jurisdictionApproval` object.

The `submissionId` serves as the unique identifier for the `jurisdictionApproval` record. Two `jurisdictionApproval` records with the same `submissionId` are considered duplicates.

Table 5.7 jurisdictionApproval Properties

Property	Restrictions	Description

`submissionId`	`type: t_submissionId`
	`use: required`
		UUID for the jurisdiction submission record.
		Example: 96CA8F38-A692-4748-847AA1DA00D2B95C

`jurisdictionId`	`type: t_jurisdictionId`
	`use: required`
		UUID representing a specific jurisdiction.
		Example: CFFFC5A7-38BE-4351-9A7C-D8A27D7C0BF2

`regulatorStatusId`	`type: t_statusId`
	`use: optional`
	`default: <empty>`
		UUID representing the regulator's status for the certification request.
		Example: 450FBA8B-8C2F-43D3-8FEF-66543D04B593

`regulatorDateTime`	`type: string`
	`status: dateTime`
	`use: optional`
	`defult: <empty>`
		Date/time that the information about the regulator approval was last updated; the `regulatorDateTime` property SHOULD be updated any time that any property or sub-property of the `jurisdictionApproval` object is updated.
		Example: 2016-01-02T14:28:00

`regulatorApproved`	`type: string`
	`format: date`
	`use: optional`
	`default: <empty>`
		Date the component was approved by the regulator.
		Example: 2016-01-02

`regulatorRevoked`	`type: string`
	`format: date`
	`use: optional`
	`default: <empty>`
		Date the component approval was revoked by the regulator.
		Example: 2016-02-03

`regulatorReplaceBy`	`type: string`
	`format: date`
	`use: optional`
	`default: <empty>`
		Date the component must be removed from the field.
		Example: 2016-10-04

`regulatorReplaceId`	`type: t_componentId`
	`use: optional`
	`default: <empty>`
		UUID of the component that replaces the revoked component.
		Example: 96CA8F38-A692-4748-847AA1DA00D2B95C

`noteArray`	`type: note`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `note` objects for the jurisdiction. See Section 3.1.1.6, note Object for details.

Table 5.7 jurisdictionApproval Properties

Property	**Restrictions**	**Description**

`documentArray`	`type: document`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `document` objects associated with the submission for the jurisdiction. See Section 3.1.1.8, document Object for details.

`revokedArray`	`type: revoked`
	`use: optional`
	`minItems: 1`
	`maxItems: ∞`
		Array of `revoked component` objects for the jurisdiction. See Section 4.1.1.6, revoked Object for details.

5.1.1.6 GET approvals Example

The following example demonstrates the construction of a GET approvals request and a response containing an `approvals` object. In practice, additional HTTP headers may be included in the messages.

Request:

```
GET /cdi/1.0/approvals?certificationId=96CA8F38-A692-4748-847A-A1DA00D2B95C HTTP/1.1
Accept: application/json
Accept-Charset: utf-8
```

Response:

```
HTTP/1.1 200 OK
Content-Length: 2628
Content-Type: application/json; charset=utf-8


{
    "approvalArray": [
        {
            "certificationId": "96CA8F38-A692-4748-847A-A1DA00D2B95C",
            "certificationNumber": "ABV_Cert_123",
            "vendorId": "456A3411-78FA-3234-B341-0078CA123489",
            "testLabId": "1230987D-8976-4321-CC11-098123457634",
            "noteArray": [
                {
                    "noteId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
                    "noteType": "Special Request",
                    "noteText": "This submission is a rush.",
                    "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
                }
            ],
            "componentApprovalArray": [
                {
                    "componentId": "BA8B450F-8C2F-43D3-8FEF-04B59366543D",
                    "componentNumber": "ABV_Comp_1234",
                    "version": "1.2a",
                    "function": "Game Software",
                    "mediaType": "Download",
                    "mediaSize": 654321,
                    "position": "Socket U2",
                    "componentName": "Triple 7s",
                    "componentCode1": "My Component Code 1",
                    "componentCode2": "My Component Code 2",
                    "noteArray": [
                        {
```

```
        "noteId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
        "noteType": "Note",
        "noteText": "This game requires skill to achieve max payback.",
        "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
    }
],
"paytableArray": [
    {
        "paytableId": "3896CA8F-A692-4748-847A-A1DA00D2B95C",
        "paytableName": "ABV_123456_9600",
        "paytableMax": "9600",
        "paytableMin": "9450",
        "paytableVI": "16.552",
        "paytableCI": "90"
    }
],
"jurisdictionApprovalArray": [
    {
        "submissionId": "7FDE945E-24FE-414C-BF6E-E0F3A1DA00E3",
        "jursidictionId": "E9457FDE-24FE-414C-BF6E-A1DA00E0F3E3",
        "regulatorStatusId": "450FBA8B-8C2F-43D3-8FEF-66543D04B593",
        "regulatorDateTime": "2015-12-15T09:08:00",
        "regulatorApproved": "2015-12-15",
        "regulatorRevoked": "",
        "regulatorReplaceBy": "",
        "regulatorReplaceId": "",
        "noteArray": [
            {
                "noteId": "968F38CA-A692-4748-847A-A1DA00D2B95C",
                "noteType": "Special Request",
                "noteText": "Field trial requested.",
                "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
            }
        ],
        "documentArray": [
            {
                "documentId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
                "documentType": "Submission Package",
                "documentName": "ABV_Package_123456",
                "documentSource": "456A3411-78FA-3234-B341-0078CA123489"
                "documentFormat": "zip",
                "documentLanguage": "en",
                "documentDate"" "2015-10-19",
                "documentPath": "https://www.abv.com/packages/
                ABV_Package_123456"
            },
            {
                "documentId": "38968FCA-A692-4748-847A-A1DA00D2B95C",
                "documentType": "Test Lab Report",
                "documentName": "ABL_ABV_Comp_1234_Report1",
                "documentSource": "1230987D-8976-4321-CC11-098123457634"
                "documentFormat": "zip",
                "documentLanguage": "en",
                "documentDate": "2015-10-30",
                "documentPath": "https://www.abl.com/
                ABL_ABV_Comp_1234_Report1"
            }
        ],
        "revokedArray": [
            {
                "componentId": "96CAA1DA-A692-4748-847A-8F3800D2B95C"
            }
```

```
                            ]
                        }
                    ],
                    "signatureArray": [
                        {
                            "signatureId": "80E47545-2B24-4DF9-A583-688404695F39",
                            "algorithmId": "754580E4-2B24-4DF9-A583-469688405F39",
                            "verifyResult": "1234567890123456789012345678901234567890"
                        },
                        {
                            "signatureId": "E4758045-2B24-4DF9-A583-884046695F39",
                            "algorithmId": "0BEEB53E-45AE-4F53-9ED5-456E1CE8FFB8",
                            "seedUsed": true~~"0123"~~,
                            "verifyResult": "1234"
                        }
                    ]
                }
            ]
        }
    ]
}
```

5.1.2 PUT approvals Resource

The following table contains information about the `approvals` resource when the HTTP PUT verb is used. It includes the pathname and content type used to access the resource. When accessing the `approvals` resource using the HTTP PUT verb, the specified values MUST be used.

This resource is used by regulators to send product approval information to vendors and test laboratories. Alternatively, the GET approvals resource can be used by vendors and test laboratories to collect product approval information from regulators.

Table 5.8 PUT approvals Resource Information

HTTP Method	`PUT`
Pathname	`/cdi/[ver]/approvals`
Request Content-Type	`application/json; charset=utf-8`
Request Content	approvals Object. See Section 5.1.1.2, approvals Object for details.
Response Content-Type	`application/json; charset=utf-8`
Response Content	None.

5.1.2.1 PUT approvals Example

The following example demonstrates the construction of a PUT approvals request and HTTP response. In practice, additional HTTP headers may be included in the messages.

Request:

```
PUT /cdi/1.0/approvals HTTP/1.1
Content-Length: 2631
Content-Type: application/json; charset=utf-8

{
    "approvalArray": [
        {
            "certificationId": "96CA8F38-A692-4748-847A-A1DA00D2B95C",
            "certificationNumber": "ABV_Cert_123",
            "vendorId": "456A3411-78FA-3234-B341-0078CA123489",
            "testLabId": "1230987D-8976-4321-CC11-098123457634",
            "noteArray": [
                {
                    "noteId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
                    "noteType": "Special Request",
                    "noteText": "This submission is a rush.",
                    "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
                }
            ],
            "componentApprovalArray": [
                {
                    "componentId": "BA8B450F-8C2F-43D3-8FEF-04B59366543D",
                    "componentNumber": "ABV_Comp_1234",
                    "version": "1.2a",
                    "function": "Game Software",
                    "mediaType": "Download",
                    "mediaSize": 654321,
                    "position": "Socket U2",
                    "componentName": "Triple 7s",
                    "componentCode1": "My Component Code 1",
                    "componentCode2": "My Component Code 2",
                    "noteArray": [
                        {
                            "noteId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
                            "noteType": "Note",
                            "noteText": "This game requires skill to achieve max payback.",
                            "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
                        }
                    ],
                    "paytableArray": [
                        {
                            "paytableId": "3896CA8F-A692-4748-847A-A1DA00D2B95C",
                            "paytableName": "ABV_123456_9600",
                            "paytableMax": "9600",
                            "paytableMin": "9450",
                            "paytableVI": "16.552",
                            "paytableCI": "90"
                        }
                    ],
                    "jurisdictionApprovalArray": [
                        {
                            "submissionId": "7FDE945E-24FE-414C-BF6E-E0F3A1DA00E3",
                            "jurisdictionId": "E9457FDE-24FE-414C-BF6E-A1DA00E0F3E3",
                            "regulatorStatusId": "450FBA8B-8C2F-43D3-8FEF-66543D04B593",
                            "regulatorDateTime": "2015-12-15T09:08:00",
                            "regulatorApproved": "2015-12-15",
                            "regulatorRevoked": "",
                            "regulatorReplaceBy": "",
                            "regulatorReplaceId": "",
                            "noteArray": [
                                {
                                    "noteId": "968F38CA-A692-4748-847A-A1DA00D2B95C",
                                    "noteType": "Special Request",
                                    "noteText": "Field trial requested.",
                                    "noteSource": "456A3411-78FA-3234-B341-0078CA123489"
                                }
                            ],
                            "documentArray": [
                                {
                                    "documentId": "8F3896CA-A692-4748-847A-A1DA00D2B95C",
                                    "documentType": "Submission Package",
                                    "documentName": "ABV_Package_123456",
                                    "documentSource": "456A3411-78FA-3234-B341-0078CA123489"
                                    "documentFormat": "zip",
                                    "documentLanguage": "en",
                                    "documentDate": "2015-10-19",
                                    "documentPath": "https://www.abv.com/packages/
                                    ABV_Package_123456"
                                },
                                {
                                    "documentId": "38968FCA-A692-4748-847A-A1DA00D2B95C",
                                    "documentType": "Test Lab Report",
                                    "documentName": "ABL_ABV_Comp_1234_Report1",
                                    "documentSource": "1230987D-8976-4321-CC11-098123457634"
                                    "documentFormat": "zip",
                                    "documentLanguage": "en",
                                    "documentDate": "2015-10-30",
                                    "documentPath": "https://www.abl.com/
                                    ABL_ABV_Comp_1234_Report1"
                                }
                            ],
                            "revokedArray": [
                                {
                                    "componentId": "96CAA1DA-A692-4748-847A-8F3800D2B95C"
                                }
                            ]
                        }
                    ],
                    "signatureArray": [
                        {
                            "signatureId": "80E47545-2B24-4DF9-A583-688404695F39",
                            "algorithmId": "754580E4-2B24-4DF9-A583-469688405F39",
                            "verifyResult": "1234567890123456789012345678901234567890"
                        },
                        {
                            "signatureId": "E4758045-2B24-4DF9-A583-884046695F39",
                            "algorithmId": "0BEEB53E-45AE-4F53-9ED5-456E1CE8FFB8",
                            "seedUsed": true~~"0123"~~,
                            "verifyResult": "1234"
                        }
                    ]
                }
            ]
        }
    ]
}
```

Response:

```
HTTP/1.1 200 OK
Content-Length: 0
```

Chapter 6

Calculation Resources

6.1 calculations Resource

The `calculations` resource can be used by a Client System to submit requests for software signature calculations to a Host System and to retrieve status information and the resulting signature from the Host. It is intended that regulators use this resource as Client Systems to submit calculation requests to testing laboratories and vendors acting as Host Systems. After a calculation request has been accepted by a test laboratory or vendor, regulators should use the `calculations` resource to request status information about the request and to retrieve the requested signatures.

Table 6.1 calculations HTTP Verbs

Resource	HTTP Verbs			
	POST (create)	GET (read)	PUT (update)	DELETE (delete)
`/cdi/[ver]/submissions`	Yes	Yes	No	No

6.1.1 POST calculations Resource

The following table contains information about the `calculations` resource when the HTTP POST verb is used. It includes the pathname and content type used to access the resource. When accessing the `calculations` resource using the HTTP POST verb, the specified values MUST be used.

This resource is used to submit new calculation requests to the Host System. The requests MAY not be accepted immediately. A manual review may be required before the requests are entered into the Host System.

Table 6.2 POST calculations Resource Information

HTTP Method	`POST`
Pathname	`/cdi/[ver]/calculations`
Request Content-Type	`application/json; charset=utf-8`
Request Content	`calculationRequest` Object. See Section 6.1.1.1, calculationRequest Object for details.
Response Content-Type	`application/json; charset=utf-8`
Response Content	None.

6.1.1.1 calculationRequest Object

The following table identifies the properties of the `calculationRequest` object. Additional properties MAY be included in the `calculationRequest` object.

The `calculationId` MUST be a UUID generated in a manner compliant with the ISO/IEC 9834-8:2014 standard to guarantee uniqueness. It serves as the unique identifier for the `calculationRequest` record. Two `calculationRequest` records with the same `calculationId` are considered duplicates.

Table 6.3 calculationRequest Properties

Property	Restrictions	Description

`calculationId`	`type: t_calculationId`
	`use: required`
		UUID for the calculation request record.
		Example: 96CA8F38-A692-4748-847AA1DA00D2B95C

`jurisdictionId`	`type: t_jurisdictionId`
	`use: required`
		UUID representing a specific jurisdiction.
		Example: CFFFC5A7-38BE-4351-9A7CD8A27D7C0BF2

`componentCalcArray`	`type: componentCalc`
	`use: required`
	`minItems: 1`
	`maxItems: ∞`
		Array of `componentCalc` Objects. See Section 6.1.1.2, componentCalc Object for details.

6.1.1.2 componentCalc Object

The following table identifies the properties of the `componentCalc` object. Additional properties MAY be included in the `componentCalc` object.

Table 6.4 componentCalc Properties

Property	Restrictions	Description

`componentId`	`type: t_componentId`
	`use: optional`
	`default: <empty>`
		UUID for the product component record. If <empty>, signatures MUST be calculated for all components approved for the jurisdiction that support the specified algorithm.
		Example: 96CA8F38-A692-4748-847AA1DA00D2B95C

`algorithmId`	`type: t_algorithmId`
	`use: required`
		UUID representing the authentication algorithm.
		Example: 754580E4-2B24-4DF9-A583-469688405F39

`seed`	`type: t_seed`
	`use: optional`
	`default: <empty>`
		The seed for the algorithm. Certain algorithms, such as checksums (CRC), require a seed to define the starting value.
		Example: 12345678

`salt`	`type: t_salt`
	`use: optional`
	`default: <empty>`
		The salt for the algorithm. Arbitrary bytes that are prefixed to the component's byte buffer before the hash is generated (and after the offsets are applied).
		Example: FEDCBA9876543210

`startOffset`	`type: numeric`
	`use: optional`
	`multipleOf: 1`
	`default: 0`
	`minIncl: 0`
		The starting offset for the calculation.
		Example: 4321

Table 6.4 componentCalc Properties

Property	Restrictions	Description

`endOffset`	`type: numeric`
	`use: optional`
	`multipleOf: 1`
	`default: -1`
	`minIncl: -1`
		The ending offset for the calculation.
		Example: -1

6.1.1.3 POST calculations Example

The following example demonstrates the construction of a POST calculations request and HTTP response. In practice, additional HTTP headers may be included in the messages.

Request:

```
POST /cdi/1.0/calculations HTTP/1.1
Content-Length: 237
Content-Type: application/json; charset=utf-8

{
    "calculationId": "96CA8F38-A692-4748-847A-A1DA00D2B95C",
    "jurisdictionId": "E9457FDE-24FE-414C-BF6E-A1DA00E0F3E3",
    "componentCalcArray": [
        {
            "componentId": "",
            "algorithmId": "754580E4-2B24-4DF9-A583-469688405F39",
            "salt": "MYNEWSALTVALUE"
        }
    ]
}
```

Response:

```
HTTP/1.1 200 OK
Content-Length: 0
```

6.1.2 GET calculations Resource

The following table contains information about the `calculations` resource when the HTTP GET verb is used. It includes the pathname and content type used to access the resource. When accessing the `calculations` resource using the HTTP GET verb, the specified values MUST be used.

This resource is used to retrieve the status of calculation requests previously submitted to the Host System.

Table 6.5 GET calculations Resource Information

HTTP Method	`GET`
Pathname	`/cdi/[ver]/calculations`
Request Content-Type	`application/json; charset=utf-8`
Request Content	None.
Response Content-Type	`application/json; charset=utf-8`

Table 6.5 GET calculations Resource Information

Response Content	`calculationStatus` Object. See Section 6.1.2.2, calculationStatus Object for details.

6.1.2.1 GET calculations Parameters

The following table identifies the parameters of the `calculations` resource when the HTTP GET verb is used. The parameters are appended to the resource URI in the query component of the HTTP request.

Table 6.6 GET calculations Parameters

Parameter	Restrictions	Description

`calculationId`	`type: t_calculationId`
	`use: required`
		UUID for the calculation request record.
		Example: 96CA8F38-A692-4748-847AA1DA00D2B95C

6.1.2.2 calculationStatus Object

The following table identifies the properties of the `calculationStatus` object. Additional properties MAY be included in the `calculationStatus` object.

The `componentStatusArray` MAY be empty until the calculation request has been accepted — that is, the `requestStatus` property is set to `Accepted`.

Table 6.7 calculationStatus Properties

Property	Restrictions	Description

`calculationId`	`type: t_calculationId`
	`use: required`
		UUID for the calculation request record.
		Example: 96CA8F38-A692-4748-847AA1DA00D2B95C

`jurisdictionId`	`type: t_jurisdictionId`
	`use: required`
		UUID representing a specific jurisdiction.
		Example: CFFFC5A7-38BE-4351-9A7CD8A27D7C0BF2

`requestStatus`	`type: t_subStatuses`
	`use: required`
		The status of the calculation request.
		Example: Accepted

`componentStatusArray`	`type: componentStatus`
	`use: required`
	`minItems: 0`
	`maxItems: ∞`
		Array of `componentStatus` Objects. See Section 6.1.2.3, componentStatus Object for details.

6.1.2.3 componentStatus Object

The following table identifies the properties of the `componentStatus` object. Additional properties MAY be included in the `componentStatus` object.

When a calculation request has been made for all components — that is, `componentId` set to <`empty`> — the fully expanded list of qualifying components MUST be returned in the status response even if the calculations for some of the components have not been completed.

Table 6.8 componentStatus Properties

Property	Restrictions	Description

`componentId`	`type: t_componentId`
	`use: required`
		UUID for the product component record.
		Example: 96CA8F38-A692-4748-847AA1DA00D2B95C

`algorithmId`	`type: t_algorithmId`
	`use: required`
		UUID representing the authentication algorithm.
		Example: 754580E4-2B24-4DF9-A583-469688405F39

`calculationStatus`	`type: t_calcStatuses`
	`use: required`
		The status of the calculation for the component.
		Example: Completed

`usedSeed`	`type: boolean`
	`use: optional`
	`default: false`
		Indicates whether a seed was used with the algorithm. Certain algorithms, such as checksums (CRC), can use a seed to define the starting value.

`usedSalt`	`type: boolean`
	`use: optional`
	`default: false`
		Indicates whether a salt was used with the algorithm. Certain algorithms, such as SHA1 and MD5, can prepend arbitrary bytes to the component's byte buffer before the hash is generated (and after the offsets are applied).

`usedOffsets`	`type: boolean`
	`use: optional`
	`default: false`
		Indicates whether starting and/or ending offsets were used with the algorithm.

`signatureId`	`type: t_signatureId`
	`use: required`
		UUID for the signature record.
		Example: 96CA8F38-A692-4748-847AA1DA00D2B95C

`verifyResult`	`type: t_verifyResult`
	`use: required`
		The software signature calculated by the Client System.
		Example: 0F1E2D3C4B5A69788796A5B4C3D2E1F0

`signatureSource`	`type: t_UUID`
	`use: required`
		Used to identify the source of the signature — that is, the vendor, test laboratory, or jurisdiction that originated the note.
		Example: 456A3411-78FA-3234-B3410078CA123489

`signatureRestricted`	`type: t_UUID`
	`use: optional`
	`default: <empty>`
		Used to identify the entity to which the signature is restricted — that is, the vendor, test laboratory, or jurisdiction for which the signature was specifically generated.
		Example: 456A3411-78FA-3234-B3410078CA123489

6.1.2.4 GET calculations Example

The following example demonstrates the construction of a GET calculations request and a response containing a `calculationStatus` object. In practice, additional HTTP headers may be included in the messages.

Request:

```
GET /cdi/1.0/calculations?calculationId=96CA8F38-A692-4748-847A-A1DA00D2B95C HTTP/1.1
Accept: application/json
Accept-Charset: utf-8
```

Response:

```
HTTP/1.1 200 OK
Content-Length: 562
Content-Type: application/json; charset=utf-8

{
    "calculationId": "96CA8F38-A692-4748-847A-A1DA00D2B95C",
    "jurisdictionId": "E9457FDE-24FE-414C-BF6E-A1DA00E0F3E3",
    "requestStatus": "Accepted",
    "componentStatusArray": [
        {
            "componentId": "BA8B450F-8C2F-43D3-8FEF-04B59366543D",
            "algorithmId": "754580E4-2B24-4DF9-A583-469688405F39",
            "calculationStatus": "Completed",
            "usedSalt": true,
            "signatureId": "80E47545-2B24-4DF9-A583-688404695F39",
            "verifyResult": "1234567890123456789012345678901234567890",
            "signatureSource": "1230987D-8976-4321-CC11-098123457634",
            "signatureRestricted": "E9457FDE-24FE-414C-BF6E-A1DA00E0F3E3"
        }
    ]
}
```

Chapter 7

Data Types

7.1 Defined Data Types

The following table describes the data types defined within this specification.

Table 7.1 Defined Data Types

Data Type	Restrictions	Description
`t_algorithmId`	`type: t_UUID`	Algorithm identifier.
`t_algorithmTypes`	`type: t_code`	Algorithm types.
`t_calculationId`	`type: t_UUID`	Calculation request identifier.

`t_calcStatuses`	`type: t_code`
	`enumerations:`
	`Pending`
	`Completed`
	`Failed`
		Calculation Statuses.

`t_certificationId`	`type: t_UUID`	Certification request identifier.

`t_code`	`type: string`
	`maxLength: 32`
		Human-readable code or identifier.

`t_componentId`	`type: t_UUID`	Component identifier.
`t_documentId`	`type: t_UUID`	Document identifier.
`t_jurisdictionId`	`type: t_UUID`	Jurisdiction identifier.
`t_language`	`type: t_code`	Language code. ISO 639-1 2-character alphabetic codes.

`t_name`	`type: string`
	`maxLength: 32`
		Human-readable name or description.

`t_noteId`	`type: t_UUID`	Note identifier.

`t_notes`	`type: string`
	`maxLength: 1024`
		Human-readable notes.

`t_paytableCI`	`type: string`
	`maxLength: 32`
		Confidence index.

`t_paytableId`	`type: t_UUID`	Paytable identifier.

`t_paytableVI`	`type: string`
	`maxLength: 32`
		Volatility index.

`t_percent`	`type: numeric`
	`minimum: 0`
	`multipleOf: 1`
		Percentage; expressed in hundredths of a percent; for example, 98.75% is expressed as 9875.

`t_salt`	`type: string`
	`maxLength: 1024`
		Salt value.

`t_seed`	`type: string`
	`maxLength: 256`
		Seed value.

`t_signatureId`	`type: t_UUID`	Signature identifier.

Table 7.1 Defined Data Types

Data Type	Restrictions	Description
`t_statusId`	`type: t_UUID`	Status identifier.
`t_submissionId`	`type: t_UUID`	Jurisdiction submission identifier.

`t_subStatuses`	`type: t_code`
	`enumerations:`
	`Pending`
	`Accepted`
	`Rejected`
		Submission Statuses.

`t_testLabCert`	`type: t_name`	Test laboratory certification number.
`t_testLabId`	`type: t_UUID`	Test laboratory identifier.

`t_UUID`	`type: string`
	`maxLength: 36`
		A UUID generated in a manner compliant with ISO/IEC 9834-8:2014 to guarantee uniqueness.

`t_vendorId`	`type: t_UUID`	Vendor identifier.

`t_verifyResult`	`type: string`
	`maxLength: 256`
		Software signature.

`t_version`	`type: t_name`	Version number.

7.2 JSON Data Types

The following table identifies the JSON data types referenced in this specification. End-entities MUST comply with the requirements contained in the JSON specification for these data types. See the JSON Specification for more details about these data types. Accompanying each data type, there is a list of restrictions used within this specification as well as the requirements associated with the restrictions. End-entities MUST comply with the requirements specified for these restrictions.

Table 7.2 JSON Data Types

JSON Data Type	Restrictions	Requirements
`numeric`	`type: required`	Indicates that the property MUST be included in the object.
	`type: optional`	Indicates that the property MAY be omitted from the object.
	`default: value`	If the property is omitted, the recipient MUST use the value specified as the value for the property.
	`minimum: value`	The value of the property MUST NOT be less than the specified value.
	`maximum: value`	The value of the property MUST NOT be greater than the specified value.
	`multipleOf: value`	The value of the property MUST be a multiple of the specified value.
`string`*	`type: required`	Indicates that the property MUST be included in the object.
	`type: optional`	Indicates that the property MAY be omitted from the object.
	`default: value`	If the property is omitted, the recipient MUST use the value specified as the value for the property.
	`format: uri`	The value of the property MUST comply with the format for Universal Resource Identifiers as specified in RFC 3986.
	`format: date`	The value of the property MUST comply with the full-date format specified in RFC 3339.
	`format: date-time`	The value of the property MUST comply with the date-time format specified in RFC 3339.
	`maxLength: value`	The number of characters contained in the property MUST NOT be greater than the specified value.
	`enumerations: values`	The value of the property SHOULD be one of the specified values; to avoid interoperability issues, other values SHOULD NOT be used.

Table 7.2 JSON Data Types

JSON Data Type	Restrictions	Requirements
`array`	`type: required`	Indicates that the array MUST be included in the object.
	`type: optional`	Indicates that the array MAY be omitted from the object.
	`minItems: value`	The number of entries in the array MUST NOT be less than the specified value.
	`maxItems: value`	The number of entries in the array MUST NOT be greater than the specified value.
`boolean`	`type: required`	Indicates that the property MUST be included in the object.
	`type: optional`	Indicates that the property MAY be omitted from the object.
	`default:` *`value`*	If the property is omitted, the recipient MUST use the *`value`* specified as the value for the property.

* Note: Reserved JSON characters, which appear in strings, must be escaped. See the JSON specification for more detail.

END OF DOCUMENT

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