



UBL 2.1 JSON Alternative Representation Version 1.0

Committee Note Draft 01 / Public Review Draft 01

11 January 2017

Specification URIs

This version:

<http://docs.oasis-open.org/ubl/UBL-2.1-JSON/v1.0/cnprd01/UBL-2.1-JSON-v1.0-cnprd01.html>
<http://docs.oasis-open.org/ubl/UBL-2.1-JSON/v1.0/cnprd01/UBL-2.1-JSON-v1.0-cnprd01.pdf>
<http://docs.oasis-open.org/ubl/UBL-2.1-JSON/v1.0/cnprd01/UBL-2.1-JSON-v1.0-cnprd01.xml> (Authoritative)

Previous version:

N/A

Latest version:

<http://docs.oasis-open.org/ubl/UBL-2.1-JSON/v1.0/UBL-2.1-JSON-v1.0.html>
<http://docs.oasis-open.org/ubl/UBL-2.1-JSON/v1.0/UBL-2.1-JSON-v1.0.pdf>

Technical Committee:

OASIS Universal Business Language TC

Chair:

G. Ken Holman (gkholman@CraneSoftwrights.com), Crane Softwrights Ltd.

Editors:

Kenneth Bengtsson (kenneth@alfa1lab.com), Individual
Erlend Klakegg Bergheim (erlend.klakegg.bergheim@difi.no), Difi-Agency for Public Management and eGovernment
G. Ken Holman (gkholman@CraneSoftwrights.com), Crane Softwrights Ltd.

Additional artefacts:

This prose specification is one component of a Work Product that also includes:

- JSON examples:
 - <http://docs.oasis-open.org/ubl/UBL-2.1-JSON/v1.0/cnprd01/json/>
- JSON schemas:
 - <http://docs.oasis-open.org/ubl/UBL-2.1-JSON/v1.0/cnprd01/json-schema/>
- Default validation test environment:

This is a Non-Standards Track Work Product. The patent provisions of the OASIS IPR Policy do not apply.

- <http://docs.oasis-open.org/ubl/UBL-2.1-JSON/v1.0/cnprd01/val/>

The ZIP containing the complete files of this release is found in the directory:

- <http://docs.oasis-open.org/ubl/UBL-2.1-JSON/v1.0/cnprd01/UBL-2.1-JSON-v1.0.zip>

Related work:

This note is related to:

Universal Business Language Version 2.1. 04 November 2013. OASIS Standard. <http://docs.oasis-open.org/ubl/os-UBL-2.1/UBL-2.1.html>.

This note is an implementation of the rules for JSON specified in:

Business Document Naming and Design Rules Version 1.1. Edited by Kenneth Bengtsson, Erlend Klakegg Bergheim and G. Ken Holman. 11 January 2017. OASIS Committee Specification Draft 01 / Public Review Draft 01. <http://docs.oasis-open.org/ubl/Business-Document-NDR/v1.1/csprd01/Business-Document-NDR-v1.1-csprd01.html>. Latest version: <http://docs.oasis-open.org/ubl/Business-Document-NDR/v1.1/Business-Document-NDR-v1.1.html>.

Abstract:

This committee note supplements the OASIS Universal Business Language version 2.1 release with an alternative expression of the UBL sample XML documents in JSON syntax, and a JSON schema expression of all 65 XSD schemas in conformance to the OASIS Business Document Naming and Design Rules Version 1.1.

Status:

This document was last revised or approved by the OASIS Universal Business Language TC on the above date. The level of approval is also listed above. Check the “Latest version” location noted above for possible later revisions of this document. Any other numbered Versions and other technical work produced by the Technical Committee (TC) are listed at https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=ubl#technical.

TC members should send comments on this note to the TC’s email list. Others should send comments to the TC’s public comment list, after subscribing to it by following the instructions at the “Send A Comment” button on the TC’s web page at <https://www.oasis-open.org/committees/ubl/>.

For information on whether any patents have been disclosed that may be essential to implementing this note, and any offers of patent licensing terms, please refer to the Intellectual Property Rights section of the Technical Committee web page at <https://www.oasis-open.org/committees/ubl/ipr.php>.

Note that any machine-readable content (aka Computer Language Definitions) declared Normative for this Work Product is provided in separate plain text files. In the event of a discrepancy between any such plain text file and display content in the Work Product’s prose narrative document(s), the content in the separate plain text file prevails.

See [Appendix A, Release Notes](#) for more information regarding this release package.

Citation format:

When referencing this note the following citation format should be used:

[UBL-2.1-JSON] *UBL 2.1 JSON Alternative Representation Version 1.0*. Edited by Kenneth Bengtsson, Erlend Klakegg Bergheim and G. Ken Holman. 11 January 2017. OASIS Committee Note Draft 01 / Public Review Draft 01. <http://docs.oasis-open.org/ubl/UBL-2.1-JSON/v1.0/cnprd01/UBL-2.1-JSON-v1.0.html>. Latest version: <http://docs.oasis-open.org/ubl/UBL-2.1-JSON/v1.0/UBL-2.1-JSON-v1.0.html>.

Notices

Copyright © OASIS Open 2017. All Rights Reserved.

All capitalized terms in the following text have the meanings assigned to them in the OASIS Intellectual Property Rights Policy (the “OASIS IPR Policy”). The full [Policy](#) may be found at the OASIS website.

This document and translations of it may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published, and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this section are included on all such copies and derivative works. However, this document itself may not be modified in any way, including by removing the copyright notice or references to OASIS, except as needed for the purpose of developing any document or deliverable produced by an OASIS Technical Committee (in which case the rules applicable to copyrights, as set forth in the OASIS IPR Policy, must be followed) or as required to translate it into languages other than English.

The limited permissions granted above are perpetual and will not be revoked by OASIS or its successors or assigns.

This document and the information contained herein is provided on an “AS IS” basis and OASIS DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY OWNERSHIP RIGHTS AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

OASIS requests that any OASIS Party or any other party that believes it has patent claims that would necessarily be infringed by implementations of this OASIS Committee Note or OASIS Standard notify OASIS TC Administrator and provide an indication of its willingness to grant patent licenses to such patent claims in a manner consistent with the IPR Mode of the OASIS Technical Committee that produced this note.

OASIS invites any party to contact the OASIS TC Administrator if it is aware of a claim of ownership of any patent claims that would necessarily be infringed by implementations of this note by a patent holder that is not willing to provide a license to such patent claims in a manner consistent with the IPR Mode of the OASIS Technical Committee that produced this note. OASIS may include such claims on its website, but disclaims any obligation to do so.

OASIS takes no position regarding the validity or scope of any intellectual property or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; neither does it represent that it has made any effort to identify any such rights. Information on OASIS’ procedures with respect to rights in any document or deliverable produced by an OASIS Technical Committee can be found on the OASIS website. Copies of claims of rights made available for publication and any assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementers or users of this OASIS Committee Note or OASIS Standard, can be obtained from the OASIS TC Administrator. OASIS makes no representation that any information or list of intellectual property rights will at any time be complete, or that any claims in such list are, in fact, Essential Claims.

The name “OASIS” is a trademark of [OASIS](#), the owner and developer of this note, and should be used only to refer to the organization and its official outputs. OASIS welcomes reference to, and implementation and use of, notes, while reserving the right to enforce its marks against misleading uses. Please see <http://www.oasis-open.org/policies-guidelines/trademark.php> for guidance.

Table of Contents

1 Introduction	5
1.1 Overview	5
1.2 Terminology	6
1.2.1 Terms and Definitions	6
1.2.2 Symbols and Abbreviations	6
1.3 References	6
2 CCTS and JSON	7
2.1 CCTS component review	7
2.2 Marshalling CCTS to JSON	8
2.2.1 Business Information Entity (BIE) names	8
2.2.2 Document ABIE expression	8
2.2.3 ASBIE expression	9
2.2.4 BBIE expression	9
2.2.5 Extension expression	12
2.3 Unmarshalling JSON to CCTS	12
2.3.1 Overview of unmarshalling	12
2.3.2 JavaScript syntax	12
2.3.3 Python syntax	13
3 Example UBL JSON documents	15
3.1 Examples overview	15
3.2 UBL-Invoice-2.1-Example-Trivial.json	15
3.3 Modified invoice example	15
3.4 UBL-Order-2.1-Example.json	16
4 JSON schema and document demonstration environment	24

Appendixes

A Release Notes	26
A.1 Availability	26
A.2 Status of this release	26
A.3 Package Structure	26
A.4 Support	26
B Revision History	27
C (informative) Acknowledgements	28
D Temporary Annex - Change Log (Non-Normative)	29

1 Introduction

1.1 Overview

The OASIS Universal Business Language (UBL) defines a generic XML interchange format for business documents that can be restricted or extended to meet the requirements of particular industries. UBL includes a suite of [XML Schemas](#) with which one can validate the structural content of an XML document against the constraints of the vocabulary.

For users of JSON syntax, this note publishes a suite of [JSON schemas](#) with which one can validate the structural content of a JSON document against the constraints of the UBL 2.1 vocabulary. Also included is a transliteration of all of the UBL 2.1 example documents in JSON syntax with which one can test a number of the JSON schemas.

The structural patterns exhibited by JSON schemas that conform to the OASIS Business Document Naming and Design Rules Version 1.1 [[BDNDR](#)] are distinctive as document interchange structures. As such, their intent is only to convey in syntax the information content reflecting the same abstract model of the UN/CEFACT Core Component Technical Specification 2.01 [[CCTS](#)] with which the document model was designed. Accordingly, and in parallel to an application's use of XML syntax, the JSON syntax used is generic in nature and is neither streamlined nor optimized for any particular application's objectives.

As one would undertake the unmarshalling of XML syntax into internal application data structures suitable for processing, one must also undertake the unmarshalling of JSON interchange syntax into whatever internal application data structures (or other JSON representations) of the content that are suitable for the task at hand. Of note, it has been observed that there are commercial JSON database tools unable to ingest this JSON interchange syntax directly without an application massaging the content first to suit the database schema necessary to enable a particular arbitrary use. Nevertheless, the JSON syntax used does conform to the published standard [[ISO 21778 - ECMA JSON](#)] and has been successfully demonstrated to be ingested by Python and Node.js applications and so is not a barrier to use for application developers.

The UBL Technical Committee makes no assumptions regarding how the XML syntax of UBL documents is to be managed by applications, and so similarly makes no assumptions regarding how any application's use of the JSON syntax is to be managed. With the only objective being the lossless interchange of document content, the structures in both XML and JSON syntax are designed with forward and backward compatibility in mind for applications that ingest the content. Certain constraints in future versions of UBL may be lessened in a backward compatible fashion, such as in regard to cardinality, and so applications can successfully ingest the arrays of objects used in this regard to implement cardinality. Moreover, transliteration can be accomplished without semantic interpretation of any contents that would require specialized treatment of any given construct.

The section [Section A.3, "Package Structure"](#) outlines the top-level content of the ZIP file associated with this Committee Note. The directories are named such that the directories in this package can be overlaid on top of the directories of the UBL distribution without overwriting any pre-existing UBL file. In another environment, one would copy the entire `json-schema/` subdirectory contents and then users would access the individual document schemas in the `json-schema/maindoc/` subdirectory. These schemas make relative references to shared fragments found in the `json-schema/common/` subdirectory and as such those shared fragments are not referenced directly by users as they are not well-formed schemas in their own right (there is no "\$schema" property).

The UBL document schemas make provision for constraining UBL extension metadata but not for constraining extension content. The user wishing to validate extension content is expected to replace the `common/UBL-ExtensionContentDataType-2.1.json` fragment with one's own specification of extension constraints. No other schema fragment is expected to be touched by users.

1.2 Terminology

1.2.1 Terms and Definitions

Document

A set of information components that are exchanged as part of a business transaction; for example, in placing an order.

JSON schema

A JSON document [ISO 21778 - ECMA JSON] definition conforming to the JSON schema language [JSON Schema].

XSD schema

An XML document [XML] definition conforming to the W3C XML Schema language [XSD1][XSD2].

The keywords MUST, MUST NOT, REQUIRED, SHALL, SHALL NOT, SHOULD, SHOULD NOT, RECOMMENDED, MAY and OPTIONAL, when they appear in this document, are to be interpreted as described in [RFC2119].

1.2.2 Symbols and Abbreviations

JSON

Java Script Object Notation [ISO 21778 - ECMA JSON]

XML

Extensible Markup Language [XML]

XSD

W3C XML Schema Language [XSD1][XSD2]

1.3 References

[BDNDR] *Business Document Naming and Design Rules Version 1.1*. Edited by Kenneth Bengtsson, Erlend Klakegg Bergheim and G. Ken Holman. 11 January 2017. OASIS Committee Specification Draft 01 / Public Review Draft 01. <http://docs.oasis-open.org/ubl/Business-Document-NDR/v1.1/csprd01/Business-Document-NDR-v1.1-csprd01.html>. Latest version: <http://docs.oasis-open.org/ubl/Business-Document-NDR/v1.1/Business-Document-NDR-v1.1.html>.

[CCTS] *UN/CEFACT Core Component Technical Specification - Part 8 of the ebXML Framework*) 15 November 2003 Version 2.01 http://www.unece.org/fileadmin/DAM/cefact/codesfortrade/CCTS/CCTS_V2-01_Final.pdf

[ISO 21778 - ECMA JSON] *ISO/IEC 21778 Information technology — The JSON data interchange format* <http://standards.iso.org/ittf/PubliclyAvailableStandards/>, *ECMA 404 The JSON data interchange format* <https://www.ecma-international.org/publications/standards/Ecma-404.htm>

[JSON Schema] *JSON Schema Validation: A Vocabulary for Structural Validation of JSON*, A. Wright, G. Luff, Editors, <http://json-schema.org/latest/json-schema-validation.html>

[RFC2119] *Key words for use in RFCs to Indicate Requirement Levels*

[XML] *Extensible Markup Language (XML) 1.0 (Second Edition)*, W3C Recommendation 6 October 2000

[XSD1] *XML Schema Part 1: Structures. Second Edition. W3C Recommendation 28 October 2004*

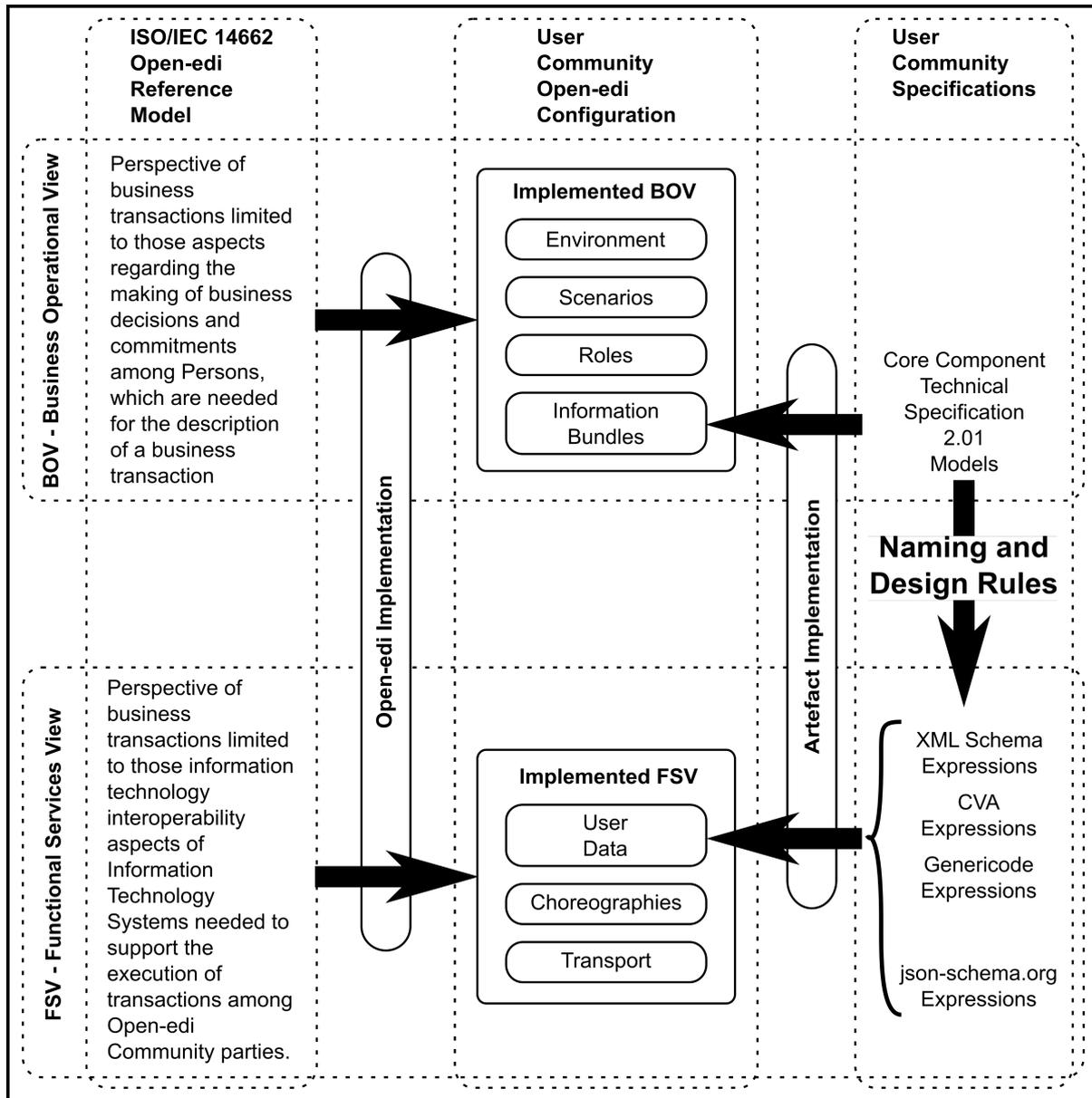
[XSD2] *XML Schema Part 2: Datatypes. Second Edition. W3C Recommendation 28 October 2004*

2 CCTS and JSON

2.1 CCTS component review

The UBL Technical Committee uses the UN/CEFACT Core Components Technical Specification (CCTS) 2.01 [CCTS] to create the semantic models of business documents. These abstract models are then used to generate concrete syntax models and the validation artefacts with which to constrain instances of that syntax. There is nothing in the model itself that is specific to any syntax. Naming and design rules [BDNDR] for building the models (as information bundles) and for generating the syntax validation artefacts for documents (as user data) are used by the committee to create the deliverables for users. This is depicted in Figure 1, "Naming and Design Rules in an Open-edi Application".

Figure 1. Naming and Design Rules in an Open-edi Application



When modeling, CCTS governs how to define a class of business documents by specifying the available components as information bundles to be deployed to users as user data. An ABIE (aggregate) component specifies a collection of constituent components of ASBIE components (associations to ABIEs found in

a common library) and BBIE components (basic indivisible portions of content that may have metadata). The Document ABIE is simply an ABIE that is not defined in the common library. A Document ABIE specifies the components at the apex of a business document. A Library ABIE specifies the components comprising an ASBIE at the branches of the business document tree form. BBIE components are the leaves of the business document where content is found in the context of the branches.

From an abstract information bundle perspective, a given business document is comprised of its Document ABIE with its indivisible BBIEs and with its (divisible) ASBIEs that each have their own BBIEs and ASBIEs.

Each BBIE is defined by its data type. The available Core Component Types are summarized in Chapter 8 of the CCTS 2.01 specification [CCTS]. Each type has a mandatory content component and a number of optional metadata supplementary components. The interpretation of the content is informed by the values of its given supplementary components. The data type content and supplementary component values are, ostensibly, either numbers, strings or Boolean values. Interpreting the strings to be abstract concepts such as date and time is up to the program.

2.2 Marshalling CCTS to JSON

2.2.1 Business Information Entity (BIE) names

There are four groups of names made from: the names of the Document ABIEs, the names of BBIEs, the names of both Library ABIEs and the ASBIEs that point to them, and the names of extension scaffolding and metadata items. In fact there are many groups of Document ABIEs as each Document ABIE is in a group of one of only itself.

Names in XML documents are qualified with namespace URI strings. These UBL JSON schemas provide for preserving the four uses of XML namespaces in a source XML document that might have been transliterated to JSON syntax. This allows the JSON document to be “round-tripped” back to XML syntax should it be necessary. Accommodating extension content is up to extension designers.

2.2.2 Document ABIE expression

Each JSON serialization begins as an apex object containing up to five properties in any order.

The following four properties are for documentary or transliteration purposes, and for completeness should be present:

- name “_D” with the string value of the Document ABIE namespace URI;
- name “_S” with the string value of the ASBIE namespace URI (that is, the Library ABIE namespace URI);
- name “_B” with the string value of the BBIE namespace URI; and
- name “_E” with the string value of the extension namespace URI (when extensions are being used).

That apex object always contains a property with the name of the Document ABIE and the value being an array containing a single Document ABIE object.

The Document ABIE object contains properties, in any order, of all of the ASBIE and BBIE members in actual use of those available as specified by the Document ABIE. Each property is defined as an array.

The Document ABIE object may contain a single property representing the apex of the scaffolding of foreign extension content. This name is defined in UBL to be “UBLExtensions”.

A UBL example of a serialized Document ABIE with some content elided by the ellipsis for brevity, leaving two BBIEs followed by an ASBIE that itself has two BBIEs is as follows:

```
{ "_D": "urn:oasis:names:specification:ubl:schema:xsd:Invoice-2",  
  "_S":  
    "urn:oasis:names:specification:ubl:schema:xsd:CommonAggregateComponents-2",  
  "_B":  
    "urn:oasis:names:specification:ubl:schema:xsd:CommonBasicComponents-2",  
  "Invoice": [ {  
    "ID": [ { "IdentifierContent": "123" } ],  
    "IssueDate": [ { "DateTimeContent": "2011-09-22" } ],  
    "InvoicePeriod": [ {  
      "StartDate": [ { "DateTimeContent": "2011-08-01" } ],  
      "EndDate": [ { "DateTimeContent": "2011-08-31" } ]  
    } ],  
    ...  
  } ] ] }
```

2.2.3 ASBIE expression

Each sequence of one or more consecutive ASBIE components of the same name in an information bundle are serialized in user data as a single array property of its parent ASBIE or Document ABIE object.

The one name for that property is the name of the ASBIE. The one value for that property is an array of one or more objects, each object representing, in array order, the sequence order of the consecutive ASBIEs. If there are no ASBIEs of a given name, the property is absent.

Each object in the ASBIE array contains as its properties all of the ASBIE and BBIE members in actual use of those available as specified by the Library ABIE that defines the ASBIE.

This serialization for one "Party" ASBIE has one ASBIE child named "PartyName":

```
"Party": [ {  
  "PartyName": [ {  
    "Name": [ { "TextContent": "Custom Cotter Pins" } ]  
  } ]  
} ]
```

This serialization for two "InvoiceLine" ASBIEs has as children two BBIEs and an ASBIE, where that ASBIE has one BBIE child:

```
"InvoiceLine": [ {  
  "ID": [ { "IdentifierContent": "1" } ],  
  "LineExtensionAmount": [ { "AmountContent": 100.00,  
    "AmountCurrencyIdentifier": "CAD" } ],  
  "Item": [ {  
    "Description": [ { "TextContent": "Cotter pin, MIL-SPEC" } ]  
  } ],  
  {  
    "ID": [ { "IdentifierContent": "2" } ],  
    "LineExtensionAmount": [ { "AmountContent": 200.00,  
      "AmountCurrencyIdentifier": "CAD" } ],  
    "Item": [ {  
      "Description": [ { "TextContent": "Axel" } ]  
    } ]  
  } ]  
} ]
```

2.2.4 BBIE expression

Each sequence of one or more consecutive BBIE components of the same name in an information bundle are serialized in user data as a single property of its parent ASBIE or Document ABIE object.

The one name for that property is the name of the BBIE. The one value for that property is a array of one or more objects, each object representing, in array order, the sequence order of the consecutive BBIEs. If there are no BBIEs of a given name, the property is absent.

Each BBIE has a required property whose name is the Core Component Type content component appropriate to the primary or secondary representation term being used, and whose value is the value of the business object in the information bundle.

Each BBIE may have as many additional properties with the names and values of optional or required metadata supplementary components of the given instance of the Core Component Type. Such is defined by UBL's unqualified data types. Provision is made in the model for qualifying the data types, and such are enumerated in UBL's qualified data types. UBL provides no qualifications in the JSON model and so it is up to the application to impose qualifications as needed.

The property names are derived from the approved CCTS 2.01 core component type content and supplementary component names by removing all periods and spaces. The list of available property names is summarized as follows, with required properties shown in bold face:

Table 1. CCTS 2.01 approved core component type content and supplementary components for permissible representation terms

Permissible primary and secondary representation terms	Approved content and supplementary components (required components in bold face)
Amount	AmountContent AmountCurrencyIdentifier AmountCurrencyCodeListVersionIdentifier
BinaryObject Graphic Picture Sound Video	BinaryObjectContent BinaryObjectMimeType BinaryObjectFormatText BinaryObjectEncodingCode BinaryObjectCharacterSetCode BinaryObjectUniformResourceIdentifier BinaryObjectFilenameText
Code	CodeContent CodeListIdentifier CodeListAgencyIdentifier CodeListAgencyNameText CodeListNameText CodeListVersionIdentifier CodeNameText LanguageIdentifier CodeListUniformResourceIdentifier CodeListSchemeUniformResourceIdentifier
DateTime	DateTimeContent
Date	DateContent
Time	TimeContent
Identifier	IdentifierContent IdentificationSchemeIdentifier IdentificationSchemeNameText IdentificationSchemeAgencyIdentifier IdentificationSchemeAgencyNameText IdentificationSchemeVersionIdentifier IdentificationSchemeDataUniformResourceIdentifier IdentificationSchemeUniformResourceIdentifier
Indicator	IndicatorContent
Measure	MeasureContent MeasureUnitCode MeasureUnitCodeListVersionIdentifier
Numeric Value Rate Percent	NumericContent NumericFormatText
Quantity	QuantityContent QuantityUnitCode QuantityUnitCodeListIdentifier QuantityUnitCodeListAgencyIdentifier QuantityUnitCodeListAgencyNameText
Text Name	TextContent LanguageIdentifier LanguageLocaleIdentifier

Some examples of serialized BBIEs ... an identifier, a date and two notes:

- ```
"ID": [{ "IdentifierContent": "123" }]
```
- ```
"IssueDate": [ { "DateContent": "2011-09-22" } ]
```
- ```
"Note": [{ "TextContent": "Test",
 "LanguageIdentifier": "en" },
 { "TextContent": "Tester",
 "LanguageIdentifier": "fr" }]
```

## 2.2.5 Extension expression

When a business document contains foreign content not defined by the business vocabulary, this content is placed under a single apex containing all of the scaffolding of all foreign extension content. The name of this apex is defined in UBL to be “UBLExtensions”, declared as an array of one member. The apex name is used as the name of the property of the Document ABIE object.

That one member of the array is an object named “UBLExtension”, declared to be an array of one or more members, each member being a single extension (of which there may be many). Each member is an object that may have any number of properties of extension metadata, whose names are defined by the vocabulary. Each object has a property with the name “ExtensionContent”) as an array of one object. That one object defines the foreign extension content.

The definition of foreign content is out of scope of this document. Trading partners must agree on the significance or insignificance of any foreign content.

The example `UBL-Invoice-2.0-Enveloped.json` has three foreign extensions, one of which is a transliteration of the UBL extension for digital signatures. As a transliteration, it no longer functions as a correctly-formed digital signature. At this time there is no specification for the use of digital signatures in JSON documents for UBL.

## 2.3 Unmarshalling JSON to CCTS

### 2.3.1 Overview of unmarshalling

A JSON stream loaded into an application’s variable will create in that variable the objects and arrays representing the CCTS constructs of UBL.

The examples in this section are copied from the interactive interfaces of the Node.js interpreter and the Python interpreter.

### 2.3.2 JavaScript syntax

This JSON representation support for CCTS objects fully supports the dot notation defined in JavaScript.

The JSON stream creates an object with the optional properties of the namespaces and the mandatory property of Document ABIE. The name of that property is the name of the Document ABIE. The value of that property is the array of one object defining the contents of the Document ABIE comprised of BBIEs and ASBIEs.

The Document ABIE and each BBIE and ASBIE must be addressed as a list that is guaranteed to have at the least a single member addressed with “[ 0 ]”.

## Note

Future versions of UBL may raise the cardinality of any given object and so this approach is future-proof to revisions. This approach is also consistent and is used without thought of cardinality and so should be easier for the programmer (if a little verbose). Although a change in cardinality does not apply to the Document ABIE, the array notation is used for consistency with ASBIE expressions using arrays.

The content of a BBIE is addressed as the object property with the name ending in "...Content". Supplementary components of a BBIE are addressed by their name (compressed removing periods and spaces). For a complete list, see [Table 1, "CTS 2.01 approved core component type content and supplementary components for permissible representation terms"](#).

Some examples of dot notation syntax:

```
> obj.Invoice[0].Note[0]
{ TextContent: 'Test', LanguageIdentifier: 'en' }
> obj.Invoice[0].Note[1]
{ TextContent: 'Tester', LanguageIdentifier: 'fr' }
> obj.Invoice[0].Note[1].TextContent
'Tester'
> obj.Invoice[0].InvoiceLine[1].LineExtensionAmount[0].
... AmountContent
-3.96
> obj.Invoice[0].InvoiceLine[1].LineExtensionAmount[0].
... AmountCurrencyIdentifier
'EUR'
>
```

This approach also supports the object notation defined in JavaScript. The same examples using list and object notation syntax:

```
> obj["Invoice"][0]["Note"][0]
{ TextContent: 'Test', LanguageIdentifier: 'en' }
> obj["Invoice"][0]["Note"][1]
{ TextContent: 'Tester', LanguageIdentifier: 'fr' }
> obj["Invoice"][0]["Note"][1]["TextContent"]
'Tester'
> obj["Invoice"][0]["InvoiceLine"][1]["LineExtensionAmount"][0][
... "AmountContent"]
-3.96
> obj["Invoice"][0]["InvoiceLine"][1]["LineExtensionAmount"][0][
... "AmountCurrencyIdentifier"]
'EUR'
>
```

### 2.3.3 Python syntax

This approach fully supports the list and dictionary notation defined in Python.

The JSON stream creates a dictionary with a single array of one property. The name of that property is the name of the Document ABIE. The value of that property is the object defining the contents of the Document ABIE comprised of BBIEs and ASBIEs.

Each BBIE and ASBIE must be addressed as a list that is guaranteed to have at the least a single member addressed with "[0]".

## Note

Future versions of UBL may raise the cardinality of any given object and so this approach is future-proof to revisions. This approach is also consistent and is used without thought of cardinality and so should be easier for the programmer (if a little verbose). Although a change in cardinality does not apply to the Document ABIE, the array notation is used for consistency with ASBIE expressions using arrays.

The content of a BBIE is addressed as the dictionary property with the name ending in "Content". Supplementary components of a BBIE are addressed by their name (compressed removing periods and spaces). For a complete list, see [Table 1, "CTS 2.01 approved core component type content and supplementary components for permissible representation terms"](#).

Some examples using list and dictionary syntax:

```
>>> obj["Invoice"][0]["Note"][0]
{'LanguageIdentifier': u'en', u'TextContent': u'Test'}
>>> obj["Invoice"][0]["Note"][1]
{'LanguageIdentifier': u'fr', u'TextContent': u'Tester'}
>>> obj["Invoice"][0]["Note"][1]["TextContent"]
u'Tester'
>>> obj["Invoice"][0]["InvoiceLine"][1]["LineExtensionAmount"][0][
... "AmountContent"]
-3.96
>>> obj["Invoice"][0]["InvoiceLine"][1]["LineExtensionAmount"][0][
... "AmountCurrencyIdentifier"]
u'EUR'
>>>
```

## Note

Observe how the Python list and dictionary syntax is identical to the JavaScript list and object syntax.

## 3 Example UBL JSON documents

### 3.1 Examples overview

The examples in the `json/` subdirectory are transliterated from the sample XML instances found in the UBL 2.1 distribution at <http://docs.oasis-open.org/ubl/os-UBL-2.1/xml/>.

For legibility the examples are indented. Indentation is insignificant white space and optionally can be eliminated from the file.

### 3.2 UBL-Invoice-2.1-Example-Trivial.json

```
{ "_D": "urn:oasis:names:specification:ubl:schema:xsd:Invoice-2",
 "_S":
 "urn:oasis:names:specification:ubl:schema:xsd:CommonAggregateComponents-2",
 "_B":
 "urn:oasis:names:specification:ubl:schema:xsd:CommonBasicComponents-2",
 "Invoice": [{
 "ID": [{ "IdentifierContent": "123" }],
 "IssueDate": [{ "DateContent": "2011-09-22" }],
 "InvoicePeriod": [{
 "StartDate": [{ "DateContent": "2011-08-01" }],
 "EndDate": [{ "DateContent": "2011-08-31" }]
 }],
 "AccountingSupplierParty": [{
 "Party": [{
 "PartyName": [{
 "Name": [{ "TextContent": "Custom Cotter Pins" }]
 }]
 }]
 }],
 "AccountingCustomerParty": [{
 "Party": [{
 "PartyName": [{
 "Name": [{ "TextContent": "North American Veeblefetzer" }]
 }]
 }]
 }],
 "LegalMonetaryTotal": [{
 "PayableAmount": [{ "AmountContent": 100.00,
 "AmountCurrencyIdentifier": "CAD" }]
 }],
 "InvoiceLine": [{
 "ID": [{ "IdentifierContent": "1" }],
 "LineExtensionAmount": [{ "AmountContent": 100.00,
 "AmountCurrencyIdentifier": "CAD" }],
 "Item": [{
 "Description": [{ "TextContent": "Cotter pin, MIL-SPEC" }]
 }]
 }]
 }] }
```

### 3.3 Modified invoice example

This example has multiple BBIEs for “Note” and multiple ABIEs for “InvoiceLine”:

```
{ "_D": "urn:oasis:names:specification:ubl:schema:xsd:Invoice-2",
 "_S":
"urn:oasis:names:specification:ubl:schema:xsd:CommonAggregateComponents-2",
 "_B":
"urn:oasis:names:specification:ubl:schema:xsd:CommonBasicComponents-2",
 "Invoice": [{
 "ID": [{ "IdentifierContent": "123" }],
 "IssueDate": [{ "DateTimeContent": "2011-09-22" }],
 "Note": [{ "TextContent": "Test",
 "LanguageIdentifier": "en" },
 { "TextContent": "Tester",
 "LanguageIdentifier": "fr" }],
 "InvoicePeriod": [{
 "StartDate": [{ "DateTimeContent": "2011-08-01" }],
 "EndDate": [{ "DateTimeContent": "2011-08-31" }]
 }],
 "AccountingSupplierParty": [{
 "Party": [{
 "PartyName": [{
 "Name": [{ "TextContent": "Custom Cotter Pins" }]
 }]
 }]
 }],
 "AccountingCustomerParty": [{
 "Party": [{
 "PartyName": [{
 "Name": [{ "TextContent": "North American Veeblefetzer" }]
 }]
 }]
 }],
 "LegalMonetaryTotal": [{
 "PayableAmount": [{ "AmountContent": 100.00,
 "AmountCurrencyIdentifier": "CAD" }]
 }],
 "InvoiceLine": [{
 "ID": [{ "IdentifierContent": "1" }],
 "LineExtensionAmount": [{ "AmountContent": 100.00,
 "AmountCurrencyIdentifier": "CAD" }],
 "Item": [{
 "Description": [{ "TextContent": "Cotter pin, MIL-SPEC" }]
 }]
 }, {
 "ID": [{ "IdentifierContent": "2" }],
 "LineExtensionAmount": [{ "AmountContent": 200.00,
 "AmountCurrencyIdentifier": "CAD" }],
 "Item": [{
 "Description": [{ "TextContent": "Axel" }]
 }]
 }]
 }] }
```

### 3.4 UBL-Order-2.1-Example.json

```
{ "_D": "urn:oasis:names:specification:ubl:schema:xsd:Order-2",
 "_S":
"urn:oasis:names:specification:ubl:schema:xsd:CommonAggregateComponents-2",
 "_B":
```



```
}, {
 "ID": [{ "IdentifierContent": "PartyID123" }]
}],
"PartyName": [{
 "Name": [{ "TextContent": "Johnssons byggvaror" }]
}],
"PostalAddress": [{
 "ID": [{ "IdentifierContent": "1234567890123",
 "IdentificationSchemeAgencyIdentifier": "9",
 "IdentificationSchemeIdentifier": "GLN" }],
 "Postbox": [{ "TextContent": "PoBox123" }],
 "StreetName": [{ "TextContent": "Rådhusgatan" }],
 "AdditionalStreetName": [{ "TextContent": "2nd floor" }],
 "BuildingNumber": [{ "TextContent": "5" }],
 "Department": [{ "TextContent": "Purchasing department" }],
 "CityName": [{ "TextContent": "Stockholm" }],
 "PostalZone": [{ "TextContent": "11000" }],
 "CountrySubentity": [{ "TextContent": "RegionX" }],
 "Country": [{
 "IdentificationCode": [{ "CodeContent": "SE" }]
 }]
}],
"PartyTaxScheme": [{
 "RegistrationName": [{ "TextContent": "Herra Johnssons byggvaror AS" }],
 "CompanyID": [{ "IdentifierContent": "SE1234567801" }],
 "RegistrationAddress": [{
 "CityName": [{ "TextContent": "Stockholm" }],
 "Country": [{
 "IdentificationCode": [{ "CodeContent": "SE" }]
 }]
 }]
}],
"TaxScheme": [{
 "ID": [{ "IdentifierContent": "VAT",
 "IdentificationSchemeIdentifier": "UN/ECE 5153",
 "IdentificationSchemeAgencyIdentifier": "6" }]
}],
"PartyLegalEntity": [{
 "RegistrationName": [{ "TextContent": "Johnssons Byggvaror AB" }],
 "CompanyID": [{ "IdentifierContent": "5532331183",
 "IdentificationSchemeIdentifier": "SE:ORGNR" }],
 "RegistrationAddress": [{
 "CityName": [{ "TextContent": "Stockholm" }],
 "CountrySubentity": [{ "TextContent": "RegionX" }],
 "Country": [{
 "IdentificationCode": [{ "CodeContent": "SE" }]
 }]
 }]
}],
"Contact": [{
 "Telephone": [{ "TextContent": "123456" }],
 "Telefax": [{ "TextContent": "123456" }],
 "ElectronicMail": [{ "TextContent": "pelle@johnsson.se" }]
}],
"Person": [{
 "FirstName": [{ "TextContent": "Pelle" }],
 "FamilyName": [{ "TextContent": "Svensson" }],
 "MiddleName": [{ "TextContent": "X" }],
```

```
"JobTitle":[{"TextContent":"Boss"}]
}]
}],
"DeliveryContact":[{"
 "Name":[{"TextContent":"Eva Johnsson"}],
 "Telephone":[{"TextContent":"1234356"}],
 "Telefax":[{"TextContent":"123455"}],
 "ElectronicMail":[{"TextContent":"eva@johnsson.se"}]
}]
}],
"SellerSupplierParty":[{"
 "Party":[{"
 "EndpointID":[{"IdentifierContent":"7302347231111",
 "IdentificationSchemeAgencyIdentifier":"9",
 "IdentificationSchemeIdentifier":"GLN"}],
 "PartyIdentification":[{"
 "ID":[{"IdentifierContent":"SellerPartyID123"}]
 }],
 "PartyName":[{"
 "Name":[{"TextContent":"Moderna Produkter AB"}]
 }],
 "PostalAddress":[{"
 "ID":[{"IdentifierContent":"0987654321123",
 "IdentificationSchemeAgencyIdentifier":"9",
 "IdentificationSchemeIdentifier":"GLN"}],
 "Postbox":[{"TextContent":"321"}],
 "StreetName":[{"TextContent":"Kungsgatan"}],
 "AdditionalStreetName":[{"TextContent":"suite12"}],
 "BuildingNumber":[{"TextContent":"22"}],
 "Department":[{"TextContent":"Sales department"}],
 "CityName":[{"TextContent":"Stockholm"}],
 "PostalZone":[{"TextContent":"11000"}],
 "CountrySubentity":[{"TextContent":"RegionX"}],
 "Country":[{"
 "IdentificationCode":[{"CodeContent":"SE"}]
 }]
 }],
 }],
 "PartyLegalEntity":[{"
 "RegistrationName":[{"TextContent":"Moderna Produkter AB"}],
 "CompanyID":[{"IdentifierContent":"5532332283",
 "IdentificationSchemeIdentifier":"SE:ORGNR"}],
 "RegistrationAddress":[{"
 "CityName":[{"TextContent":"Stockholm"}],
 "CountrySubentity":[{"TextContent":"RegionX"}],
 "Country":[{"
 "IdentificationCode":[{"CodeContent":"SE"}]
 }]
 }],
 }],
 "Contact":[{"
 "Telephone":[{"TextContent":"34557"}],
 "Telefax":[{"TextContent":"3456767"}],
 "ElectronicMail":[{"TextContent":"lars@moderna.se"}]
 }],
 "Person":[{"
 "FirstName":[{"TextContent":"Lars"}],
 "FamilyName":[{"TextContent":"Petersen"}],
 "MiddleName":[{"TextContent":"M"}],
```

```
"JobTitle":[{"TextContent":"Sales manager"}]
}]
}]
}],
"OriginatorCustomerParty":[{
 "Party":[{"
 "PartyIdentification":[{"
 "ID":[{"IdentifierContent":"0987678321123",
 "IdentificationSchemeAgencyIdentifier":"9",
 "IdentificationSchemeIdentifier":"GLN"}]
 }],
 "PartyName":[{"
 "Name":[{"TextContent":"Moderna Produkter AB"}]
 }],
 "Contact":[{"
 "Telephone":[{"TextContent":"346788"}],
 "Telefax":[{"TextContent":"8567443"}],
 "ElectronicMail":[{"TextContent":"sven@moderna.se"}]
 }],
 "Person":[{"
 "FirstName":[{"TextContent":"Sven"}],
 "FamilyName":[{"TextContent":"Pereson"}],
 "MiddleName":[{"TextContent":"N"}],
 "JobTitle":[{"TextContent":"Stuffuser"}]
 }]
 }],
 "Delivery":[{"
 "DeliveryLocation":[{"
 "Address":[{"
 "ID":[{"IdentifierContent":"1234567890123",
 "IdentificationSchemeAgencyIdentifier":"9",
 "IdentificationSchemeIdentifier":"GLN"}],
 "Postbox":[{"TextContent":"123"}],
 "StreetName":[{"TextContent":"Rådhusgatan"}],
 "AdditionalStreetName":[{"TextContent":"2nd floor"}],
 "BuildingNumber":[{"TextContent":"5"}],
 "Department":[{"TextContent":"Purchasing department"}],
 "CityName":[{"TextContent":"Stockholm"}],
 "PostalZone":[{"TextContent":"11000"}],
 "CountrySubentity":[{"TextContent":"RegionX"}],
 "Country":[{"
 "IdentificationCode":[{"CodeContent":"SE"}]
 }]
 }],
 }],
 "RequestedDeliveryPeriod":[{"
 "StartDate":[{"DateContent":"2010-02-10"}],
 "EndDate":[{"DateContent":"2010-02-25"}]
 }],
 "DeliveryParty":[{"
 "PartyIdentification":[{"
 "ID":[{"IdentifierContent":"67654328394567",
 "IdentificationSchemeAgencyIdentifier":"9",
 "IdentificationSchemeIdentifier":"GLN"}]
 }],
 "PartyName":[{"
 "Name":[{"TextContent":"Swedish trucking"}]
 }]
 }],
 }],
}
```

```
 }],
 "Contact": [{
 "Name": [{ "TextContent": "Per" }],
 "Telephone": [{ "TextContent": "987098709" }],
 "Telefax": [{ "TextContent": "34673435" }],
 "ElectronicMail": [{ "TextContent": "bill@svetruck.se" }]
 }]
 }]
}],
"DeliveryTerms": [{
 "ID": [{ "IdentifierContent": "FOT",
 "IdentificationSchemeAgencyIdentifier": "6",
 "IdentificationSchemeIdentifier": "IMCOTERM" }],
 "SpecialTerms": [{ "TextContent": "CAD" }],
 "DeliveryLocation": [{
 "ID": [{ "IdentifierContent": "STO" }]
 }]
}],
}],
"AllowanceCharge": [{
 "ChargeIndicator": [{ "IndicatorContent": true }],
 "AllowanceChargeReason": [{ "TextContent": "Transport documents" }],
 "Amount": [{ "AmountContent": 100,
 "AmountCurrencyIdentifier": "SEK" }]
}, {
 "ChargeIndicator": [{ "IndicatorContent": false }],
 "AllowanceChargeReason": [{ "TextContent": "Total order value discount" }],
 "Amount": [{ "AmountContent": 100,
 "AmountCurrencyIdentifier": "SEK" }]
}],
}],
"TaxTotal": [{
 "TaxAmount": [{ "AmountContent": 100,
 "AmountCurrencyIdentifier": "SEK" }]
}],
}],
"AnticipatedMonetaryTotal": [{
 "LineExtensionAmount": [{ "AmountContent": 6225,
 "AmountCurrencyIdentifier": "SEK" }],
 "AllowanceTotalAmount": [{ "AmountContent": 100,
 "AmountCurrencyIdentifier": "SEK" }],
 "ChargeTotalAmount": [{ "AmountContent": 100,
 "AmountCurrencyIdentifier": "SEK" }],
 "PayableAmount": [{ "AmountContent": 6225,
 "AmountCurrencyIdentifier": "SEK" }]
}],
}],
"OrderLine": [{
 "Note": [{ "TextContent": "Freetext note on line 1" }],
 "LineItem": [{
 "ID": [{ "IdentifierContent": "1" }],
 "Quantity": [{ "QuantityContent": 120,
 "QuantityUnitCode": "LTR" }],
 "LineExtensionAmount": [{ "AmountContent": 6000,
 "AmountCurrencyIdentifier": "SEK" }],
 "TotalTaxAmount": [{ "AmountContent": 10,
 "AmountCurrencyIdentifier": "SEK" }],
 "PartialDeliveryIndicator": [{ "IndicatorContent": false }],
 "AccountingCostCode": [{ "CodeContent": "ProjectID123" }],
 "Delivery": [{
 "RequestedDeliveryPeriod": [{
 "StartDate": [{ "DateContent": "2010-02-10" }],

```

```
"EndDate":[{"DateContent":"2010-02-25"}]
}]
}],
"OriginatorParty":[{
 "PartyIdentification":[{
 "ID":[{"IdentifierContent":"EmployeeXXX",
 "IdentificationSchemeAgencyIdentifier":"ZZZ",
 "IdentificationSchemeIdentifier":"ZZZ"}]
 }],
 "PartyName":[{
 "Name":[{"TextContent":"Josef K."}]
 }],
}],
"Price":[{
 "PriceAmount":[{"AmountContent":50,
 "AmountCurrencyIdentifier":"SEK"}],
 "BaseQuantity":[{"QuantityContent":1,
 "QuantityUnitCode":"LTR"}]
}],
"Item":[{
 "Description":[{"TextContent":"Red paint"}],
 "Name":[{"TextContent":"Falu Rödfärg"}],
 "SellersItemIdentification":[{
 "ID":[{"IdentifierContent":"SItemNo001"}]
 }],
 "StandardItemIdentification":[{
 "ID":[{"IdentifierContent":"1234567890123",
 "IdentificationSchemeAgencyIdentifier":"6",
 "IdentificationSchemeIdentifier":"GTIN"}]
 }],
 "AdditionalItemProperty":[{
 "Name":[{"TextContent":"Paint type"}],
 "Value":[{"TextContent":"Acrylic"}]
 },{
 "Name":[{"TextContent":"Solvent"}],
 "Value":[{"TextContent":"Water"}]
 }
],
}],
}],
}],
},{
"Note":[{"TextContent":"Freetext note on line 2"}],
"LineItem":[{
 "ID":[{"IdentifierContent":"2"}],
 "Quantity":[{"QuantityContent":15,
 "QuantityUnitCode":"C62"}],
 "LineExtensionAmount":[{"AmountContent":225,
 "AmountCurrencyIdentifier":"SEK"}],
 "TotalTaxAmount":[{"AmountContent":10,
 "AmountCurrencyIdentifier":"SEK"}],
 "PartialDeliveryIndicator":[{"IndicatorContent":false}],
 "AccountingCostCode":[{"CodeContent":"ProjectID123"}],
 "Delivery":[{
 "RequestedDeliveryPeriod":[{
 "StartDate":[{"DateContent":"2010-02-10"}],
 "EndDate":[{"DateContent":"2010-02-25"}]
 }
]
}],
}],
"OriginatorParty":[{
```

```
"PartyIdentification":[{
 "ID":[{ "IdentifierContent": "EmployeeXXX",
 "IdentificationSchemeAgencyIdentifier": "ZZZ",
 "IdentificationSchemeIdentifier": "ZZZ" }]
}],
"PartyName":[{
 "Name":[{ "TextContent": "Josef K." }]
}],
}],
"Price":[{
 "PriceAmount":[{ "AmountContent": 15,
 "AmountCurrencyIdentifier": "SEK" }],
 "BaseQuantity":[{ "QuantityContent": 1,
 "QuantityUnitCode": "C62" }]
}],
"Item":[{
 "Description":[{ "TextContent": "Very good pencils for red paint." }],
 "Name":[{ "TextContent": "Pensel 20 mm" }],
 "SellersItemIdentification":[{
 "ID":[{ "IdentifierContent": "SItemNo011" }]
 }],
 "StandardItemIdentification":[{
 "ID":[{ "IdentifierContent": "123452340123",
 "IdentificationSchemeAgencyIdentifier": "6",
 "IdentificationSchemeIdentifier": "GTIN" }]
 }],
 "AdditionalItemProperty":[{
 "Name":[{ "TextContent": "Hair color" }],
 "Value":[{ "TextContent": "Black" }]
 }, {
 "Name":[{ "TextContent": "Width" }],
 "Value":[{ "TextContent": "20mm" }]
 }
]
}]]
}]]
}]]
}]]
```

## 4 JSON schema and document demonstration environment

In the `val/` subdirectory of the ZIP file are the following files:

### `jsonvalidate.py`

A Python application to invoke the `jsonschema` library documented at <https://python-jsonschema.readthedocs.io/en/latest/>.

### Note

At the time of writing, it is observed that the `jsonschema` library is not functioning correctly under Windows. The particular issue is documented at <https://github.com/Julian/jsonschema/issues/313>. The Windows invocations are included in this Committee Note distribution in anticipation of a future release of the library working successfully.

### `testjsonsamples.bat` and `testjsonsamples.sh`

Invoking the validate scripts once for each of the sample files in the `json/` subdirectory.

### `validatejson.bat` and `validatejson.sh`

Invoking the Python application once with the arguments of a JSON schema and a JSON document.

To demonstrate the successful validation of all of the sample JSON documents with the corresponding JSON schema, one would invoke the tests in a Unix-based environment as follows:

```
~/t/mytest $ ls
json json-schema val
~/t/mytest $ cd val
~/t/mytest/val $ ls
jsonvalidate.py testjsonsamples.sh validatejson.sh
testjsonsamples.bat validatejson.bat
~/t/mytest/val $ sh testjsonsamples.sh

#####
Validating ../json/MyTransportationStatus.json
#####
No schema validation errors.

#####
Validating ../json/UBL-CreditNote-2.0-Example.json
#####
No schema validation errors.

#####
Validating ../json/UBL-CreditNote-2.1-Example.json
#####
No schema validation errors.

----- (50 results elided for brevity) -----

#####
Validating ../json/UBL-TransportationStatus-2.1-Example.json
#####
No schema validation errors.
```

```

Validating ../json/UBL-TransportationStatusRequest-2.1-Example.json

No schema validation errors.

Validating ../json/UBL-Waybill-2.0-Example-International.json

No schema validation errors.
~/t/mytest/val $
```

## Appendix A Release Notes

### A.1 Availability

Online and downloadable versions of this release are available from the locations specified at the top of this document.

### A.2 Status of this release

Release of this package initiates the process to develop Committee Note 01 of version 1.0.

### A.3 Package Structure

This OASIS Committee Note is published as a zip archive in the <http://docs.oasis-open.org/ubl/UBL-2.1-JSON/v1.0-cnprd01/> directory. Unzipping this archive creates a directory tree containing a master DocBook XML file (UBL-2.1-JSON-v1.0-cnprd01.xml), a generated hypertext version of this file (UBL-2.1-JSON-v1.0-cnprd01.html), a generated PDF version of this file (UBL-2.1-JSON-v1.0-cnprd01.pdf), and a number of subdirectories. The files in these subdirectories contain the various components of this release. A description of each subdirectory is given below. Note that while the UBL-2.1-JSON-v1.0-cnprd01.xml file is the “original” of this specification, it may not be viewable in all currently available web browsers.

- art**  
Diagrams used in this note
- db**  
DocBook documentation support files
- json**  
JSON UBL 2.1 example documents
- json-schema**  
JSON UBL 2.1 schemas
- val**  
Validation demonstration environment in Python

### A.4 Support

UBL is a volunteer project of the international business community. Inquiries regarding UBL may be posted to the public ubl-dev list, archives for which are located at

<http://lists.oasis-open.org/archives/ubl-dev/>

Subscriptions to ubl-dev can be made through the OASIS list manager at

<http://www.oasis-open.org/mlmanage/index.php>

OASIS provides an official community gathering place and information resource for UBL at

<http://ubl.xml.org/>

General information regarding UBL can be found at the Wikipedia article:

[http://www.wikipedia.org/wiki/Universal\\_Business\\_Language](http://www.wikipedia.org/wiki/Universal_Business_Language)

## Appendix B Revision History

This is the first release of these JSON artefacts.

## Appendix C (informative) Acknowledgements

The following individuals have participated in the creation of this specification and are gratefully acknowledged:

Todd Albers, Federal Reserve Bank of Minneapolis  
Oriol Bausa Peris, Individual  
Kenneth Bengtsson, Individual  
Erlend Klakegg Bergheim, Difi-Agency for Public Management and eGovernment  
Kees Duvekot, RFS Holland Holding B.V.  
G. Ken Holman, Crane Softwrights Ltd.  
Ole Madsen, Danish Agency for Digitisation, Ministry of Finance  
Enric Staromiejski Torregrosa, everis, S.L.U.

Appreciation is expressed to Crane Softwrights Ltd. for the use of the freely-available “gc2obdndr” tool with which the JSON schemas were created from the CCTS expression in genericcode of UBL 2.1.

## Appendix D Temporary Annex - Change Log (Non-Normative)

### Note

This temporary appendix will be removed in the final version of the committee note.

| Revision  | Date               | Edit-<br>or | Changes made                            |
|-----------|--------------------|-------------|-----------------------------------------|
| cnprd01   | 19 January<br>2017 | GKH         | Cover page changes required by TC Admin |
| cnprd01   | 11 January<br>2017 | GKH         | Cover page changes for public review    |
| cnd01wd01 | 06 January<br>2017 | GKH         | Initial version of 1.0                  |