Digital Receipt V1 API specification

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Preface

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3 Specialized CORBA

IDL/Language Mapping Specifications

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4 UML, MOF, CWM, XMI

5 UML Profile

Modernization Specifications

Platform Independent Model (PIM), Platform Specific Model (PSM), Interface Specifications

6 CORBAServices

7 CORBAFacilities

OMG Domain Specifications

CORBA Embedded Intelligence Specifications

CORBA Security Specifications

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The type styles shown below are used in this document to distinguish programming statements from ordinary English. However, these conventions are not used in tables or section headings where no distinction is necessary.

Times/Times New Roman - 10 pt.: Standard body text

NOTE: Terms that appear in italics are defined in the glossary. Italic text also represents the name of a document, specification, or other publication.

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1. Scope

1.1 Objective

This document is a specification document on the standard Digital Receipt API, which has been formulated as a standard specification by the Digital Receipt Subcommittee of the .NET Retail System Council Japan as part of a contract project of the Ministry of Economy, Trade and Industry of Japan.

This specification can connect POS terminals for various business types of business of various vendors by standardizing APIs related to transmission and reception of digital receipt data between digital receipt server and POS terminal, and between digital receipt server and smartphone. The purpose is to reduce development costs and system integration costs. Another object is to make it easier to use digital receipt data by making it easier to create a smartphone application that uses digital receipt data.

1.2 Team mission

The team's mission is to create a standard API for digital receipts in today's retail environment, where transactions at the point of sale need to be completely paperless, and to facilitate the adoption of digital receipts by enabling them to be applied to modern technology environments using JSON and REST.

2. Conformance

3. References

3.1 Normative References

[Digital Receipt Ontology Files]

- Retail Industry Ontology (RIO) Mapping for Digital Receipt_06162023.docx
- Digital Receipt Data Items Reference List for Japanese Market.xlsx

[Digital Receipt Format and API Specification Files]

- Digital Receipt Format Specification (JSON Ver for Japanese Market)_08262023.docx
- Digital Receipt V1_API_Specification_08262023.docx

3.2 Non-normative References

[Machine Consumable]

Open API (YAML Oriented) Files

- DigitalReceiptServiceAPISpecification_V1.0.0_08262023.yaml
- Digital Receipt nodejs-server-08262023.zip
- Digital Receipt html-client-08262023.zip

Digital Receipt JSON and XML Schema Files

- DigitalReceiptV3.1.0.JSON_Schema_08262023.json
- DigitalReceiptV3.1.0_08262023.xsd

[Ancillary]

Explanation & Inventory Files

- Digital Receipt API Inventory File_08262023.doc

- Digital Receipt API V1 Explanation_08262023.pptx

[Ancillary Reference from ARTS]

Digital Receipt Related Current ARTS Files

- ARTS_Standard_XML_Digital_Receipt_Technical_Specification_V3.1.0.pdf
- ARTS Standard Digital Receipt Domain Model V3.1.0.pdf
- Best Practices for Service implementation Using ARTS Std.pdf

4. Terms and Definitions

5. Symbols

6. Additional Information

6.1 Acknowledgements

- The following company submitted this specification:

  Toshiba GCS
- The following organization contributed this specification Leader
- NET Retail System Council

  "Digital receipt subcommittee"
- Cooperating organization

  General Federated Open Food Service Systems Consortium

  "Digital receipt subcommittee"

  General Association Fintech Association

  "Digital receipt subcommittee"

  General Association XBRL Japan

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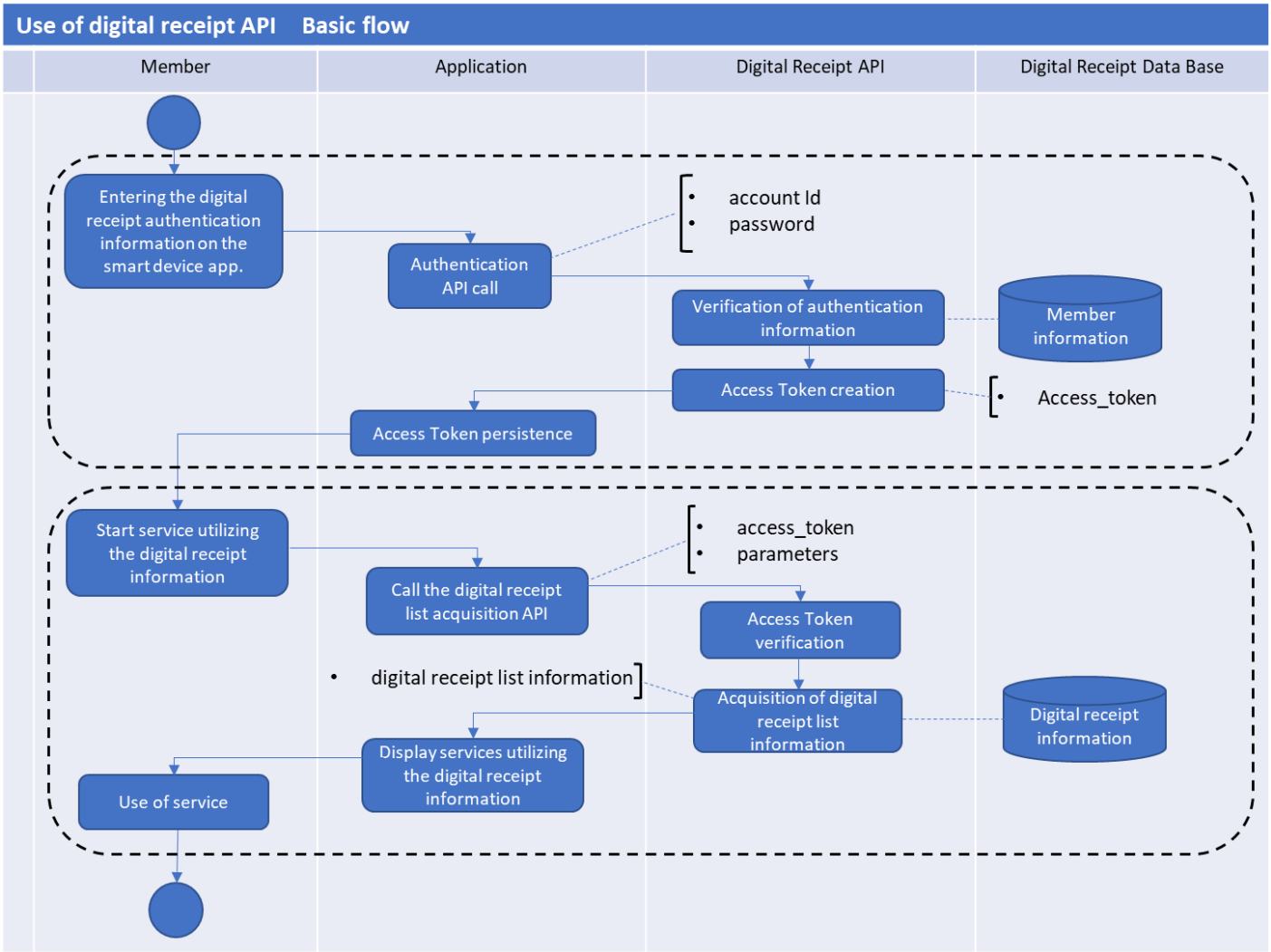
7. Use of Digital Receipt API

7.1 Basic Flow

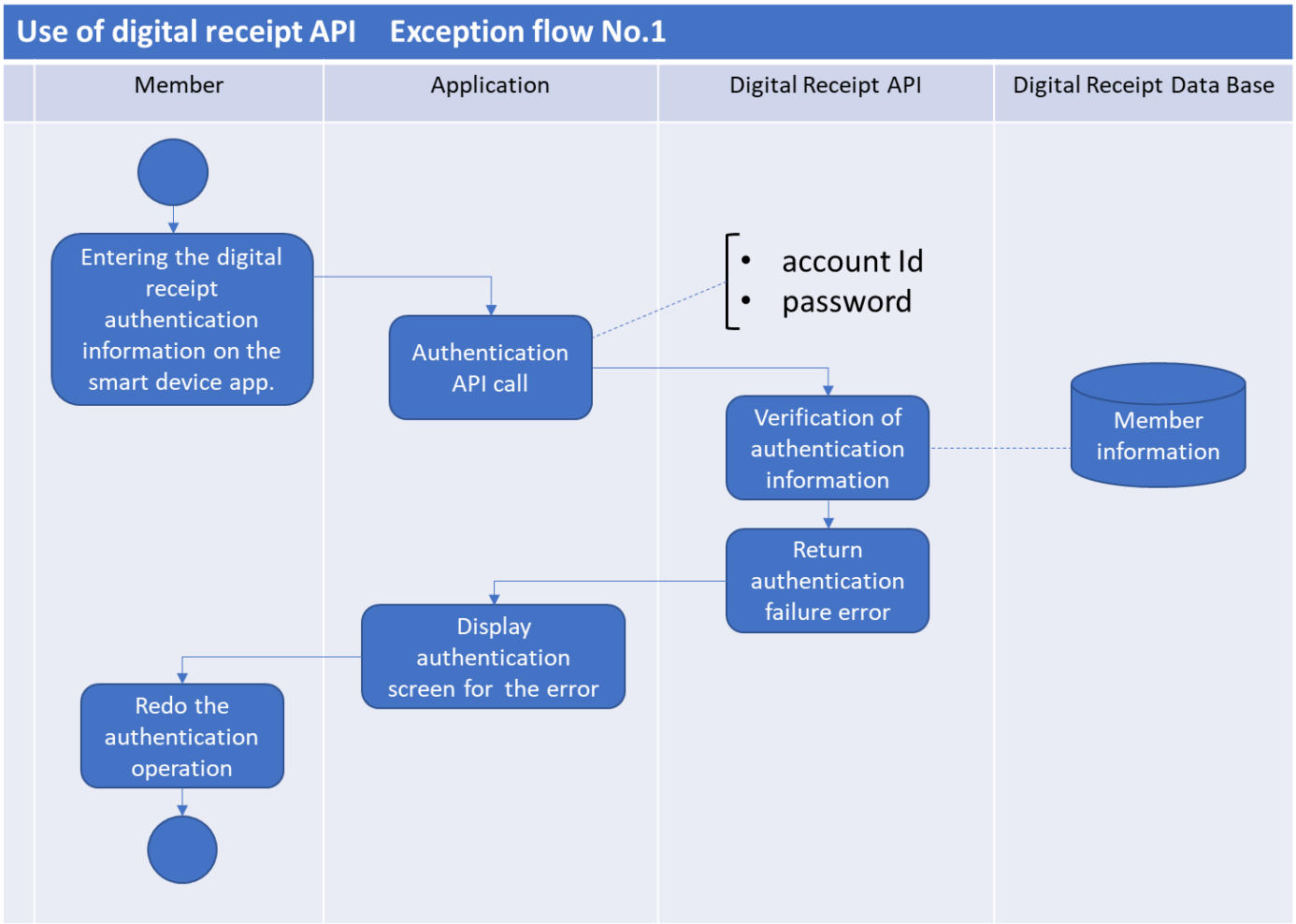
The basic flow is shown in the figure below about DigitalReceiptAPI. At the beginning of the basic flow, there is a flow that DigitalReceiptMember(Consumers) use the AuthenticationAPI through the applications to obtain Access Token. Next, there is a flow to get the Digital Receipt using the Access Token.



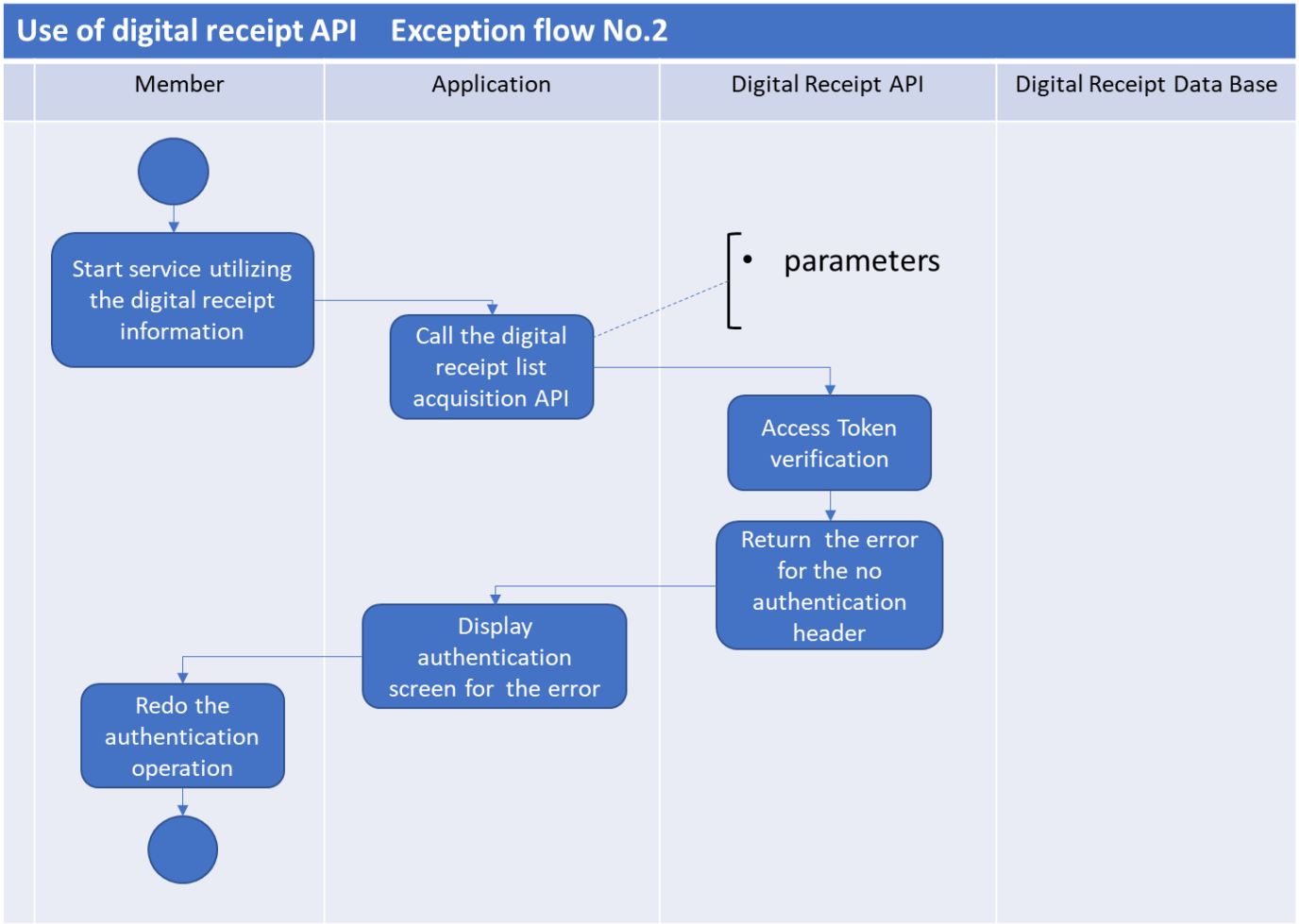
7.2 Exception flow

Two examples are shown below as an exception flow about Digital Receipt API.

- As a first example , the flow when authentication fails with Authentication API is shown in the figure below.



- As a second example , the flow when no Access Token is set with Get Receipt List API is shown in the figure below.



8. Apply for the use of application

In order to ensure security, provide a mechanism for applications(Bookkeeping software, accounting software, health management software, etc.) to apply for Digital Receipt API usage in advance.

8.1 Authority of the Application

Applications authority are two types as below.

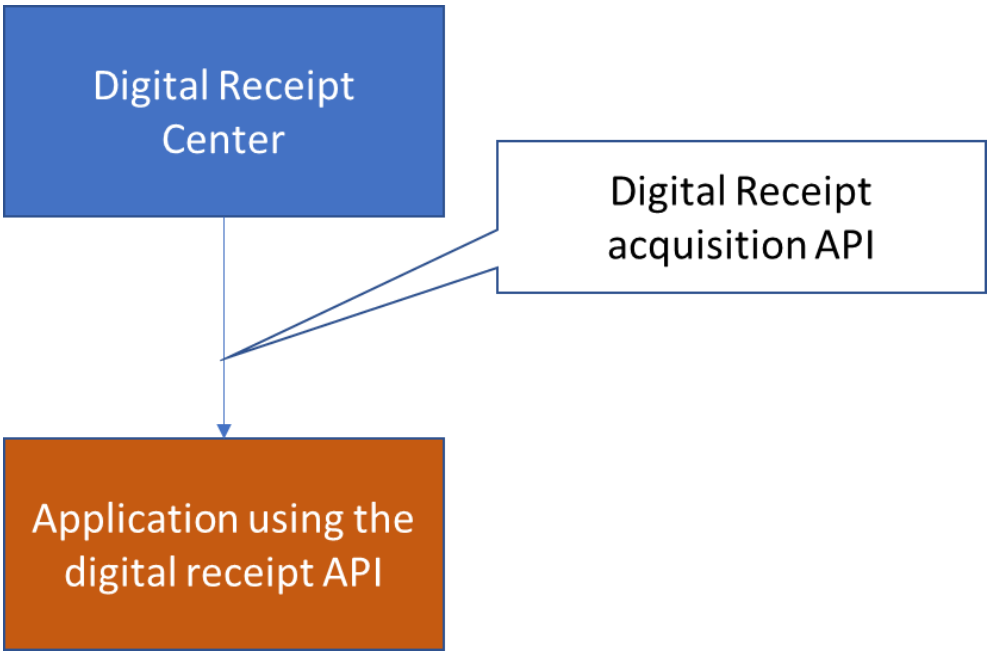
- Membership authority: access permission as applications of the consumer.
- Company authority: access permission as applications of the retailers etc.

8.2 Use cases

- A general use case for the Membership authority and Company authority will be introduced.

8.2.1 Get a receipt in a membership application

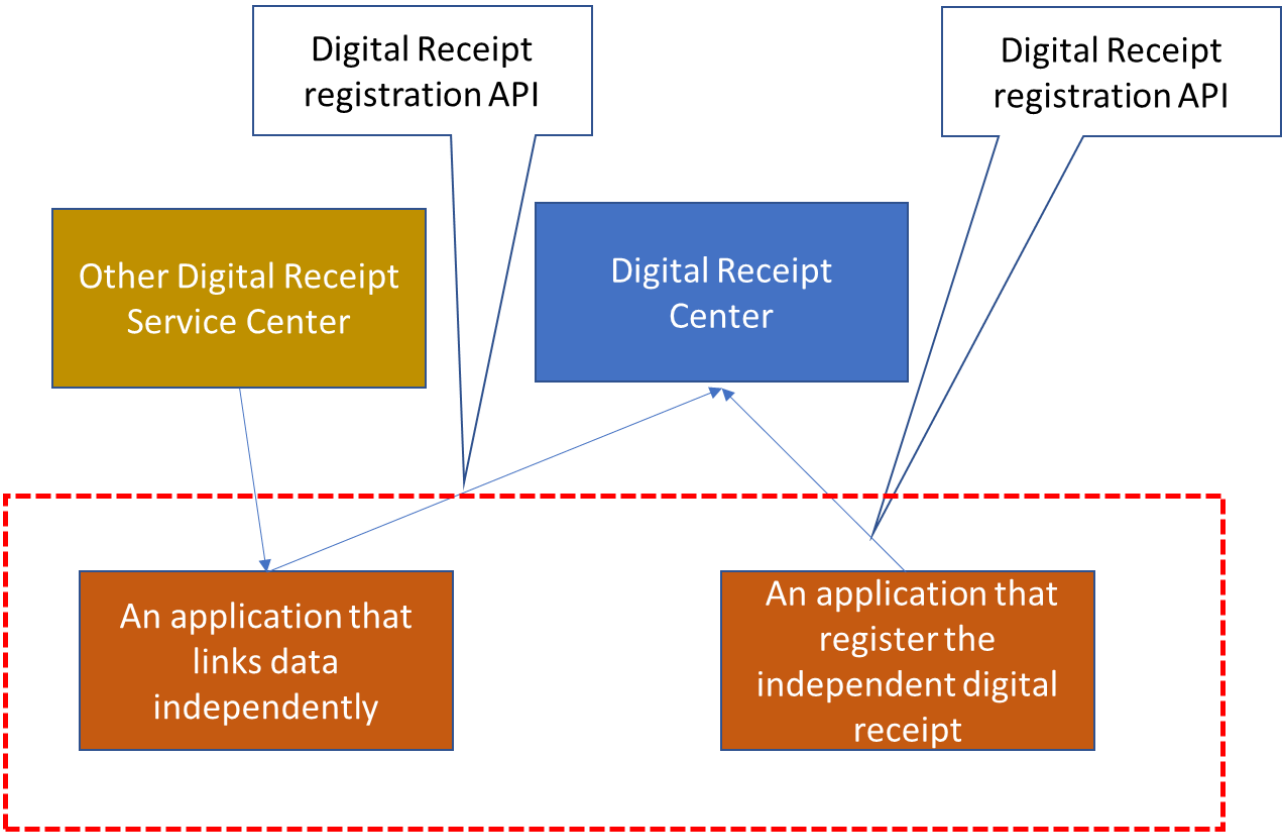
- Membership authority can obtain Digital Receipt.
- Both the Digital Receipts registered with the membership authority and the company authority can be obtained (pictured below).
- However, when using the Receipt Image acquisition API , only Digital Receipts registered with Company authority can be obtained.



- As the receipt Image file, html, jpg, pdf, bmp, tif and gif type files are selectable.

8.2.2 Register Digital Receipt by Membership authority

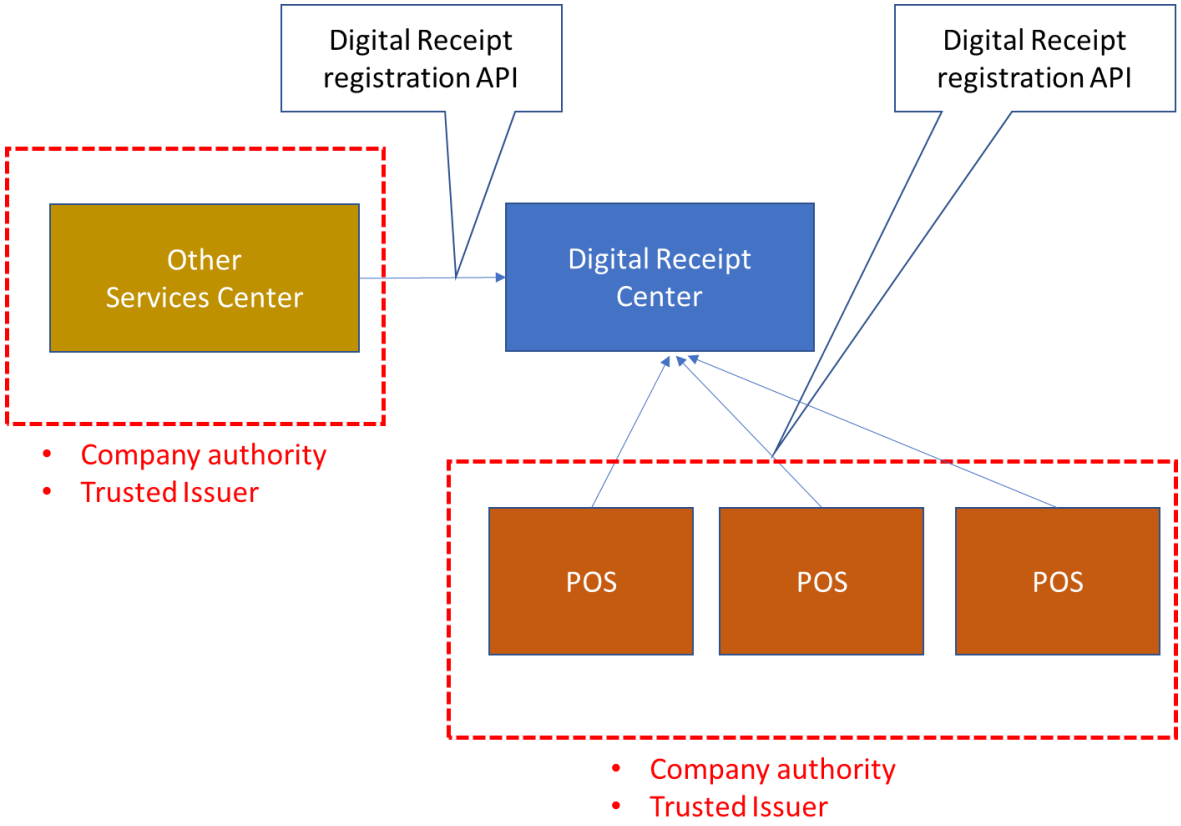
- Membership authority can register Digital Receipts.
- Digital Receipt registered from Membership authority will be recorded as receipts with unknown issuer sources in the Digital Receipt Center. Because it does not have the Company authority of the receipt issuing company.
- As a use case for registering Digital Receipt with Membership authority, Registration from other services not cooperating with the Digital Receipt Center, registration of the receipt independently created by the household account book software, etc. (below)



- Membership authority
- Issuer is confidential

8.2.3 Register receipt of application with company authority

- Company authority applications can only register receipts.
- The receipt will be registered as a receipt of the trusted publisher with the Digital Receipt Center.
- As a use case to use company authority, register receipt information with the Digital Receipt Center from other services or POS described as below.
- In addition, company authority application is not allowed to obtain receipts.
- When both of "Membership Authority" and "Company Authority" application register the receipt that have a same ID, the receipt of the "Company Authority" is valid.
- In addition, when register the receipt multiple times with the same ID and same authority, the last receipt is valid.



8.3 Membership authority application overview

- The application of the membership authority is able to obtain the receipt of the authorized member and issue the receipt of unknown publisher.
- The receipt registered in the application of the membership authority cannot be used as public documents as the receipt Image file with time stamp.
- As the receipt Image file, html, jpg, pdf, bmp, tif and gif type files can be selected.

8.3.1 Application information obtaining

- In order to ensure security, provide ID (application ID) and application authentication function.
- Use Application ID to identify application uniquely.
- Application authentication function uses secret strings to identify the application.

8.3.2 Access token obtaining

- When membership authority application use API, need to retrieve access token using authentication API of membership authority then use API with the access token.

8.3.3 Request example

- Authentication API example is shown below.

Method	POST			
URI	/members/auth			
Headers	Content-Type: application/json			
Body				
Property Name	**Type**	**Size**	**Required**	**Remarks**
applicationId	String	20	✔	Uniquely identify an application ID.
applicationSecret	String	40	✔	A secret string to identify the application.
accountId	String	1-256	✔	The phone number or email address to log in to the Digital Receipt system.
password	String	1-256	✔	The password used to log in to the Digital Receipt system.
Body Example				

```
{
  "applicationId": {APPLICATION_ID},
  "applicationSecret": {APPLICATION_SECRET},
  "accountId": "name@example.jp",
  "password": "password"
}
```

Need to set application ID and application secret that is published / managed by System Management Company to "APPLICATION_ID" and "APPLICATION_SECRET".

8.4 Company authority application overview

- A company authority application can register a receipt for an authorized company.
- The receipt registered in the application of the company authority can be used as public documents as the receipt Image file with time stamp.
- As the receipt Image file, html, jpg, pdf, bmp, tif and gif type files can be selected.

8.4.1 Application information obtaining

- Application ID is used for uniquely identifies the application. You cannot change the ID once it is registered.
- The application secret is a secret string that you use to identify your application.

8.4.2 Access token obtaining

- When company authority application use API, need to retrieve access token using authentication API of company authority then use API with the access token.

8.4.3 Request example

- Authentication API an example is shown below.

Method	POST			
URI	/companies/auth			
Headers	Content-Type: application/json			
Body				
Property Name	**Type**	**Size**	**Required**	**Remarks**
applicationId	String	20	✔	Uniquely identify an application ID.
applicationSecret	String	40	✔	A secret string to identify the application.
companyCode	String	13	✔	Company code.
password	String	1-256	✔	The password that is issued by the Digital Receipt system.
Body Example				

```
{
  "applicationId": {APPLICATION_ID},
  "applicationSecret": {APPLICATION_SECRET},
  "companyCode": "0000000000001",
  "password": "password"
}
```

Need to set application ID and application secret that is published / managed by System Management Company to "APPLICATION_ID" and "APPLICATION_SECRET"

9 API list

9.1 Digital Receipt API list

- A list of Digital Receipt APIs is shown below.

API Name	URI	Method	Overview
Membership Authentication API *1	/members/auth	POST	It authenticates the member and issues an authentication token.
Company Authentication API *1	/companies/auth	POST	It authenticates the company and issues an authentication token.
Get Receipt List API *1	/receipts	GET	Get the receipt list information for the authenticated member. Support the Pagination functions.
Get Receipt Detail API *1	/receipts/{receiptId}	GET	Get the receipt detail information for the authorized member's specified receiptId.
Get Receipt Print String API *1	/receipts/{receiptId}/digitalReceiptPrintData	GET	Get the receipt print string for the authorized member's specified receiptId.
Get Receipt image API *1	/receipts/{receiptId}/image	GET	Get the receipt of image file for the authorized member's specified receiptId
Receipt Registration API *2	/receipts	POST	Register receipt information.

*1 URI example: https://exp-openapi.sampledomain.jp/v1 Write it so as to follow after.
*2 URI example: https://exp-public-receiver.sampledomain.jp/srr Write it so as to follow after.

Special Notes
None

10 Membership API

- It is an API on the premise that it is used by consumer used Digital Receipt application.

10.1 Authentication API

- Digital Receipt member certification.
- If the authentication succeeds, issue the access token of the receipt API.
- Arbitrary Token technology is available for access token..

10.1.1 Request

Method	POST			
URI	/members/auth			
Headers	Content-Type: application/json			
Body				
Property Name	**Type**	**Size**	**Required**	**Remarks**
applicationId	String	20	✔	The ID that uniquely identifies the application.
applicationSecret	String	40	✔	A secret string to identify the application.
accountId	String	1-256	✔	This is the phone number or e-mail address you use to log in to the Digital Receipt system.
password	String	1-256	✔	This is the password used to log in to the Digital Receipt system.
Body Example				

```
{
  "applicationId": {APPLICATION_ID},
  "applicationSecret": {APPLICATION_SECRET},
  "accountId": "name@example.jp",
  "password": "password"
}
```

10.1.2 Response

Success

Status Code	200			
Headers	Content-Type: application/json			
Body				
Property Name	**Type**	**Size**	**Required**	**Remarks**
access_token	String	Undefined	✔	This is token.
Body Example				


```
{
  "access_token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJzdWIiOiIxMjM0NTY
    3ODkwIiwibmFtZSI6IkpvaG4gRG9lIiwiYWRtaW4iOnRydWV9.TJVA95OrM7E2c
    Bab30RMHrHDcEfxjoYZgeFONFh7HgQ"
}
```


Error

Status Code	4xx			
Headers	Content-Type: application/json			
Body				
Property Name	**Type**	**Size**	**Required**	**Remarks**
error	Object	Undefined	✔	Error object.
message	String	Undefined	✔	Error message.
type	String	Undefined	✔	Error type.
Body Example				


```
{
  "error": {
    "message": "Error message.",
    "type": "ErrorType"
  }
}
```

Error content

Status Code	Type	Message	Remarks
400	ApiVersionError	Application is not supported for this API version.	Incorrect API version
401	MemberAuthError	Account ID or password is incorrect.	Error in member authentication information.
403	AccountLockOutError	Account is locked out.	Account lockout due to continuous failure of membership authentication.
401	ApplicationAuthError	Application ID or application secret is incorrect.	Error in application authentication information.

Special Notes
None

11. Company API

- It is an API based on the assumption that it is used by company applications (POS etc.).

11.1 Authentication API

- The company authenticates.
- If the authentication succeeds, issue an authentication token of the receipt API. Arbitrary Token technology is available for access token.

11.1.1 Request

Method	POST			
URI	/companies/auth			
Headers	Content-Type: application/json			
Body				
Property Name	**Type**	**Size**	**Required**	**Remarks**
applicationId	String	20	✔	Uniquely identify an application ID.
applicationSecret	String	40	✔	A secret string to identify the application.
companyCode	String	13	✔	The company codes.
password	String	1-256	✔	The password that is issued by the Digital Receipt system.
Body Example				

```
{
  "applicationId": {APPLICATION_ID},
  "applicationSecret": {APPLICATION_SECRET},
  "companyCode": "0000000000001",
  "password": "password"
}
```

11.1.2 Response

Success

Status Code	200			
Headers	Content-Type: application/json			
Body				
Property Name	**Type**	**Size**	**Required**	**Remarks**
access_token	String	Undefined	✔	This is token.
Body Example				


```
{
  "access_token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJzdWIiOiIxMjM0NTY
    3ODkwIiwibmFtZSI6IkpvaG4gRG9lIiwiYWRtaW4iOnRydWV9.TJVA95OrM7E2c
    Bab30RMHrHDcEfxjoYZgeFONFh7HgQ"
}
```


Error

Status Code	4xx			
Headers	Content-Type: application/json			
Body				
Property Name	**Type**	**Size**	**Required**	**Remarks**
error	Object	Undefined	✔	Error object.
message	String	Undefined	✔	Error message.
type	String	Undefined	✔	Error type.
Body Example				


```
{
  "error": {
    "message": "Error message.",
    "type": "ErrorType"
  }
}
```

Error content

Status Code	Type	Message	Remarks
400	ApiVersionError	Application is not supported for this API version.	Incorrect API version
401	CompanyAuthError	Company code or password is incorrect.	Error in company authentication information
401	ApplicationAuthError	Application ID or application secret is incorrect.	Error in application authentication information

12 Receipt API

- It is the API concerning acquisition of Digital Receipt information.

12.1 API to get receipt list

- We will get Digital receipt list information of members who have been authenticated by Token.
- Query parameters can be used as a narrowing condition of list information.
- Pagination is supported.
- When using the pagination function, the Link header provides link information to the first page, the previous page, the next page, and the last page.

12.1.1 Request

Method	GET			
URI	/receipts			
Headers	Authorization: Bearer {Token}			
Query Parameters				
Parameter name	**Type**	**Size**	**Required**	**Remarks**
dateTimeFrom	DateTime	Indefinite	N/A	Specify the transaction date and time after the specified date and time. Corresponds to "ReceiptDateTime" in standard DigitalReceipt format and it is ISO8601 formatted datetime value.
dateTimeTo	DateTime	Indefinite	N/A	Specify the transaction date and time before the specified date and time Corresponds to "ReceiptDateTime" in standard Digital Receipt format and it is ISO8601 formatted datetime value.
offset	Integer	Undefined	N/A	Specify the offset number of the list of receipts (the list of receipts specified by the dateTimeFrom and dateTimeTo parameters) to be retrieved. Generally, offset=0 is specified for the first time.

				If omitted, the pagination function is not supported.
limit	Integer	Undefined	N/A	Specifies the number of receipts recorded ~~t~~transaction after the offset parameter.
storeNumber	String	Indefinite	N/A	Specified the storeNumber parameter as "BusinessUnits" of ""UnitID":"#Value"".
companyCode	String	13	N/A	Specified the companyCode parameter as "OrganizationHierarchies" of "ID".
customerId	String	Indefinite	N/A	Specified the customer parameter as "CustomerID".

Note: companyCode and storeNumber are strongly recommend assigning and available as the digital receipt mandatory data.

Query Parameters Example

/receipts?dateTimeFrom=2018-02-01T00:00:00+09:00&dateTimeTo=2018-02-28T23:59:59+09:00&offset=0&limit=10&companyCode=0000000000001&storeNumber=34567745778&customerId=9900000000010001

12.1.2 Response

Success

Status Code	200

Body

It is an object with an array of receipt information in standard format. For the items, see the example below and the ARTS Digital Receipt Specification v3.1.0.

Body Example

```
{
 "DigitalReceiptIndex": [
  {
   "DigitalReceipt": {
    "MajorVersion": 3,
    "MinorVersion": 1,
    "FixVersion": 0,
    "ReceiptID": { "#value": "20180101100000000000010000010000000000010001"
 },
```

```
      "Transactions": [
       {
        "TypeCode": "SaleTransaction",
#       storeNumber information is “BusinessUnits“ of “”UnitID”: ”#value””
        "BusinessUnits": [{
                "UnitID": {
                        "#value": "1234567890123",
          }
         }
        ],
#       companyCode information is “OrganizationHierarchies” of  “ID”
        "OrganizationHierarchies": [{
                 "ID": "1234567890123",
            }
        ],
        "WorkstationID": { "#value": "0001" },
        "ReceiptDateTime": { "#value": "2018-01-01T10:00:00+09:00" },
        "ReceiptNumber": { "#value": "1234" },
        "RetailTransactions": [
         {
          "Totals": [
           {
            "#value": 1000,
            "TotalType": "TransactionGrandAmount"
           },
           {
            "#value": 80,
            "TotalType": "TransactionTaxAmount"
           }
          ]
         ],
        "Customers": [
         {
          "CustomerID": "9900000000010001"
         }
        ]
    }
   }
  ]
}
```

Error

Status Code	4xx
Headers	Content-Type: application/json

Body				
Property Name	**Type**	**Size**	**Required**	**Remarks**
error	Object	Undefined	✔	Error object.
message	String	Undefined	✔	Error message.
type	String	Undefined	✔	Error type.

Body Example

```
{
  "error": {
    "message": "Error message.",
    "type": "ErrorType"
  }
}
```

Error content

Status Code	**Type**	**Message**	**Remarks**
400	ApiVersionError	Application is not supported for this API version.	Incorrect API version
400	RequestParametersInvalidError	Request parameters are invalid or missing.	Invalid request parameter
400	LimitIncorrectError	The specified limit value is incorrect.	The specified limit value is too large or is specified below 0. The upper limit is implementation dependent.
401	TokenMissingError	Token is required.	There is no Authorization header or Bearer scheme.
401	TokenIncorrectError	Token is incorrect.	Token is illegal.
401	TokenExpiredError	Token is expired.	Token Expired.
404	OffsetOutOfRangeError	The specified offset value is out of range.	No data exists at the position specified by the offset value.

Special Notes

None

12.2 Receipt Detail Acquisition API

- This allows the application to get receipt details specified by "receiptId" which is certified by Token.
- The "receiptId" means "DigitalReceipt.ReceiptID" of Receipt list acquisition API. This ID can identify a receipt. It should be issued by the system automatically. Receipt details include company information, store information, cashier number, receipt number, transaction date and time, purchase information, store logo image, and promotional bitmap image.

12.2.1 Request

Method	GET
Sites	/receipts/{receiptId}
Headers	Authorization: Bearer {Token}

12.2.2 Response

Normal

Status Code	200
Headers	Content-Type: application/json
Body	
Receipt information as a standard format. For items, refer to the following examples and ARTS Digital Receipt Specification v3.1.0.	
Body Example	


```
{
 "DigitalReceipt": {
  "MajorVersion": 3,
  "MinorVersion": 1,
  "FixVersion": 0,
  "Transactions": [
   {
    "TypeCode": "SaleTransaction",
    "BusinessUnits": [
     {
      "UnitID": {
       "Name": "Branch Name",
       "#value": "1234567890123",
       "TypeCode": "RetailStore"
      }
     }
    ],
    "OrganizationHierarchies": [
     {
      "Level": "OperatingCompany",
      "ID": "1234567890123",
      "#value": "Company Name"
     }
    ],
    "Logo": {
     "LogoFormat": "JPG",
     "FileName": "https://example.jp/logo.jpg"
    },
    "WorkstationID": { "#value": "0001" },
    "ReceiptDateTime": { "#value": "2018-01-01T10:00:00+09:00" },
    "ReceiptNumber": { "#value": "1234" },
    "RetailTransactions": [
     {
      "LineItems": [
       {
```

```
        "Sale": {
         "ItemIDs": [
          {
           "Name": "Product Name",
           "#value": "4900000000010"
          }
         ],
         "MerchandiseHierarchies": [
          {
           "ID": "J1",
           "Level": "Category"
          }
         ],
         "ActualSalesUnitPrice":{"#value": 1000},
         "Quantities": [ { "#value": 1 } ]
        },
        "SequenceNumbers": [ 1 ]
       },
       {
        "Discount": {
         "SequenceNumber": 1,
         "Amount": {
          "Action": "Subtract",
          "#value": 100
         }
        },
        "SequenceNumbers": [ 2 ]
       }
      ],
      "Totals": [
       {
        "TotalType": "TransactionGrandAmount",
        "#value": 900
       },
       {
        "TotalType": "TransactionTaxAmount",
        "#value": 72
       }
      ],
      "Customers": [
       {
        "CustomerID": "9900000000010001"
       }
      ]
     }
    ]
   }
```

```
    ]
  }
}
```

Error

Status Code	4xx			
Headers	Content-Type: application/json			
Body				
Property name	**Type**	**Size**	**Required**	**Remarks**
error	Object	Undefined	✔	Error object.
message	String	Undefined	✔	Error message.
type	String	Undefined	✔	Error type.

Body Example

```
{
  "error": {
    "message": "Error message.",
    "type": "ErrorType"
  }
}
```

Error content

Status Code	**Type**	**Message**	**Remarks**
400	ApiVersionError	Application is not supported for this API version.	Incorrect API version
401	TokenMissingError	Token is required.	Authorization header does not exist. Bearer scheme does not exist.
401	TokenIncorrectError	Token is incorrect.	Token is illegal
401	TokenExpiredError	Token is expired.	Token Expired
404	ReceiptNotExistError	Receipt does not exist.	The specified receipt does not exist.

Special Notes
None

12.3 Receipt print character acquisition API

- This API get the printing character string of the Digital Receipt, which is specified by the ”receiptId” of the members, authenticated by Token.
  The “receiptId” indicates DigitalReceipt.ReceiptID, which is included in the response of receipt list acquisition API.
- This ID is an ID to specify the receipt uniquely, and it is assumed to be issued automatically by the system. It does not include a standard print command which is sent to the printer from a standard POS (for example, Code which is called Escape sequence etc.).

12.3.1 Request

Method	GET
URI	/receipts/{receiptId}/digitalReceiptPrintData
Headers	Authorization: Bearer {Token}

12.3.2 Response

Success

Status Code	200
Headers	Content-Type: application/json

Body

Receipt printing character string, store logo, promotional images.

Please refer ARTS Digital Receipt Specification v3.1.0 and the example below for more information.

Body Example


```
{
 "DigitalReceipt": {
  "MajorVersion": 3,
  "MinorVersion": 1,
  "FixVersion": 0,
  "Transactions": [
   {
    "ReceiptImages": [
     {
      "ReceiptLines": [
       "{receipt text}",
       "{receipt text}",
       "{receipt text}",
       "{receipt text}",
       "{receipt text}",
       "{receipt text}",
       "{receipt text}",
       "{receipt text}"
      ]
     }
    ],
    "Logo": {
     "LogoFormat": "JPG",
     "FileName": "https://example.jp/logo.jpg"
    },
    "Advertising": {
     "AdvertisingID": "1",
     "ImageURIs": [ "https://example.jp/image2.jpg" ]
    }
   }
  ]
 }
}
```

Error

Status Code	4xx			
Headers	Content-Type: application/json			
Body				
Property Name	**Type**	**Size**	**Required**	**Remarks**
error	Object	Undefined	✔	Error object.
message	String	Undefined	✔	Error message.
type	String	Undefined	✔	Error type.
Body Example				

```
{
  "error": {
    "message": "Error message.",
    "type": "ErrorType"
  }
}
```

Error content

Status Code	**Type**	**Message**	**Remarks**
400	ApiVersionError	Application is not supported for this API version.	Incorrect API version
401	TokenMissingError	Token is required.	Authorization Header does not exist. Bearer scheme does not exist.
401	TokenIncorrectError	Token is incorrect.	Token is illegal.
401	TokenExpiredError	Token is expired.	Token Expired.
404	ReceiptNotExistError	Receipt does not exist.	The specified receipt does not exist

Special Notes
None

12.4 Receipt Image acquisition API

- This API gets the time stamp and the Image file with e-signature of the Digital Receipt, which is specified by the receiptId of the members, authenticated by Token.

- The "receiptId" indicates "DigitalReceipt.ReceiptID" which is included in the response of Receipt list acquisition API. This ID is an ID to specify the receipt uniquely, and it is assumed to be issued automatically by the system.

12.4.1 Request

Method	GET			
URI	/receipts/{receiptId}/image			
Headers	Authorization: Bearer			
Query Parameters				
Parameter name	**Type**	**Size**	**Required**	**Remarks**
type	String	Indefinite	Yes	As the image file query parameter, html, jpg, pdf, bmp, tif and gif files are selectable.
Query Parameter Example				
/receipts/20180101100000000000010000010000000010001/image?type=pdf				

12.4.2 Response

Success

Status Code	200
Headers	Content-Type: application/image
Body	
PDF file will be downloaded.	

Error

Status Code	4xx			
Headers	Content-Type: application/json			
Body				
Property Name	**Type**	**Size**	**Required**	**Remarks**
error	Object	Undefined	✔	Error object.
message	String	Undefined	✔	Error message.
type	String	Undefined	✔	Error type.

Body Example

```
{
  "error": {
    "message": "Error message.",
    "type": "ErrorType"
  }
}
```

Error content

Status Code	Type	Message	Remarks
400	ApiVersionError	Application is not supported for this API version.	Incorrect API version
401	TokenMissingError	Token is required.	No Authorization header Bearer scheme does not exist.
401	TokenIncorrectError	Token is incorrect.	Token is illegal
401	TokenExpiredError	Token is expired.	Token Expired
404	ReceiptNotExistError	Receipt does not exist.	The specified receipt does not exist.
404	ReceiptUnauthenticationError	Receipt is not trusted.	The publisher of the specified receipt is unknown.

Special Notes
None

12.5 Receipt registration API

- Register the Digital Receipt.

12.5.1 Request

Method	POST
URI	/receipts
Headers	Content-Type: application/json Authorization: Bearer {Token}
Body	
Standard Digital Receipt format in JSON.	
Body Example	


```
{
 "DigitalReceipt": {
  "MajorVersion": 3,
  "MinorVersion": 1,
  "FixVersion": 0,
  "Transactions": [
   {
    "TypeCode": "SaleTransaction",
    "BusinessUnits": [
     {
      "UnitID": {
       "Name": "Store Name",
       "TypeCode": "RetailStore",
       "#value": "0000000000001"
      }
     }
    ],
    "OrganizationHierarchies": [
     {
      "#value": "Company Name",
      "Id": "0000000000001",
      "Level": "OperatingCompany"
     }
    ],
    "Logo": {
     "LogoFormat": "BMP",
     "FileName": "logo.bmp"
    },
    "WorkstationID": { "#value": "0001" },
    "ReceiptDateTime": { "#value": "2018-02-16T10:20:30+09:00" },
    "ReceiptImages": [
     {
      "ReceiptLines": [
       "{receipt text}",
       "{receipt text}",
```

```
        "{receipt text}",
        "{receipt text}",
        "{receipt text}",
        "{receipt text}",
        "{receipt text}",
        "{receipt text}"
       ]
      }
     ],
     "ReceiptNumber": { "#value": "0001" },
     "RetailTransactions": [
      {
       "LineItems": [
        {
         "Sale": {
          "ItemIDs": [
           {
            "Name": "Product Name1",
            "#value": "4900000000001"
           }
          ],
          "MerchandiseHierarchies": [
           {
            "ID": "J01",
            "Level": "Class",
            "Name": "Category name",
            "Type": "Retailer"
           }
          ],
          "ActualSalesUnitPrice": { "#value": 1000 },
          "ExtendedAmount": { "#value": 2000 },
          "Quantities": [ { "#value": 2 } ]
         },
         "SequenceNumbers": [ 1 ]
        },
        {
         "Sale": {
          "ItemIDs": [
           {
            "Name": "Product Name2",
            "#value": "4900000000002"
           }
          ],
          "MerchandiseHierarchies": [
           {
            "ID": "J02",
            "Level": "Class",
```

```
                "Name": "Category name",
                "Type": "Retailer"
              }
             ],
             "ActualSalesUnitPrice": { "#value": 100 },
             "ExtendedAmount": { "#value": 100 },
             "Quantities": [ { "#value": 1 } ]
            },
            "SequenceNumbers": [ 2 ]
           }
          ],
          "Totals": [
           {
            "TotalType": "TransactionGrossAmount",
            "#value": 2100
           },
           {
            "TotalType": "TransactionTaxAmount",
            "#value": 168
           }
          ]
         }
        ],
        "Customers": [
         {
          "CustomerID": "1"
         }
        ]
       }
     ]
   }
}
```

12.5.2 Response

Success

Status Code	200
Headers	Content-Type: text/plain

Error

Status Code	400 / 401			
Headers	Content-Type: application/json			
Body				
Property Name	**Type**	**Size**	**Required**	**Remarks**
error	Object	Undefined	✔	Error object.
message	String	Undefined	✔	Error message.
type	String	Undefined	✔	Error type.
Body Example				

```
{
  "error": {
    "message": "Error message.",
    "type": "ErrorType"
  }
}
```

Error content

Status Code	Type	Message	Remarks
400	ApiVersionError	Application is not supported for this API version.	Incorrect API version
400	ReceiptDataError	Digital Receipt is invalid data.	The data in the Digital Receipt is incorrect.
401	TokenMissingError	Token is required.	Authorization header not included. Bearer scheme not included.
401	TokenIncorrectError	Token is incorrect.	Token is incorrect.
401	TokenExpiredError	Token is expired.	Token is Expired.
401	MemberAuthError	Account ID or password is incorrect.	Incorrect membership credentials
401	CompanyAuthError	Company code or password is incorrect.	Incorrect company credentials

Special Notes
None

13 Reference

ARTS Digital Receipt Specification v3.1.0
https://www.omg.org/cgi-bin/doc?retail/2018-04-01

Best Practices for Services Implementation Using ARTS Standards
https://www.omg.org/cgi-bin/doc?retail/2019-02-05

Digital Receipt Data Items Reference List for Japanese Market

Digital Receipt Data Format Specification JSON Version for Japanese Market

Digital Receipt RFP
https://wwww

RFC 7519 - JSON Web Token (JWT)
https://tools.ietf.org/html/rfc7519

RFC 6750 - The OAuth 2.0 Authorization Framework: Bearer Token Usage
https://tools.ietf.org/html/rfc6750

RFC 7235 - Hypertext Transfer Protocol (HTTP/1.1): Authentication
https://tools.ietf.org/html/rfc7235

14 Unresolved issues

15 Relationship between Digital Receipt API Related Documents

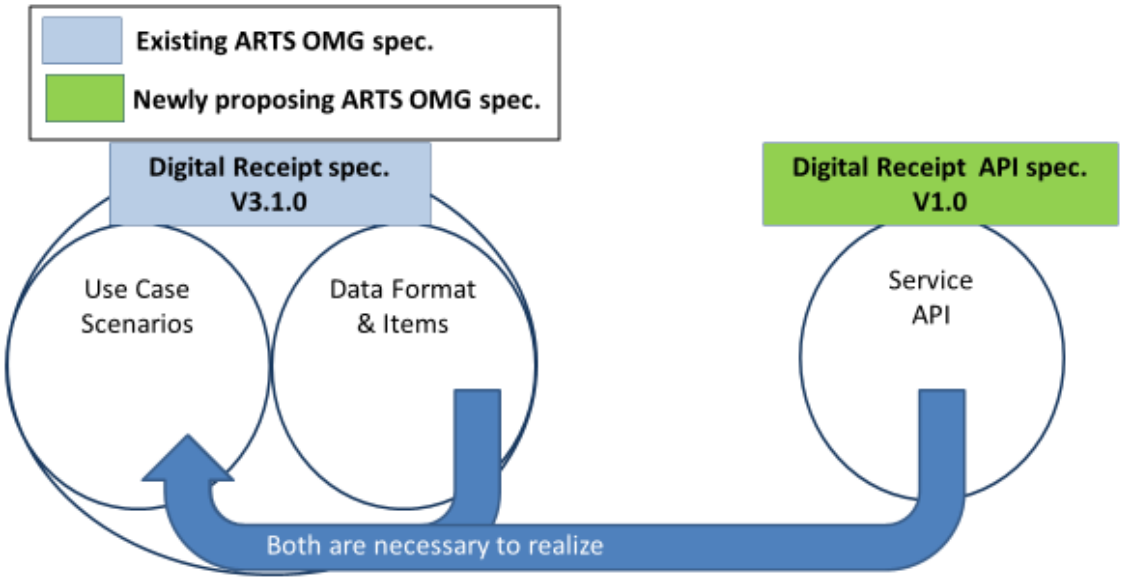
OMG has two existing standards related to digital receipts.
The first set international standards for digital receipts "ARTS Digital Receipt Specification v 3.1.0".
The other specifies the method of XML-JSON conversion using the ARTS standard "Best Practices for Services Implementation Using ARTS Standard".

This specification adds the following three documents.

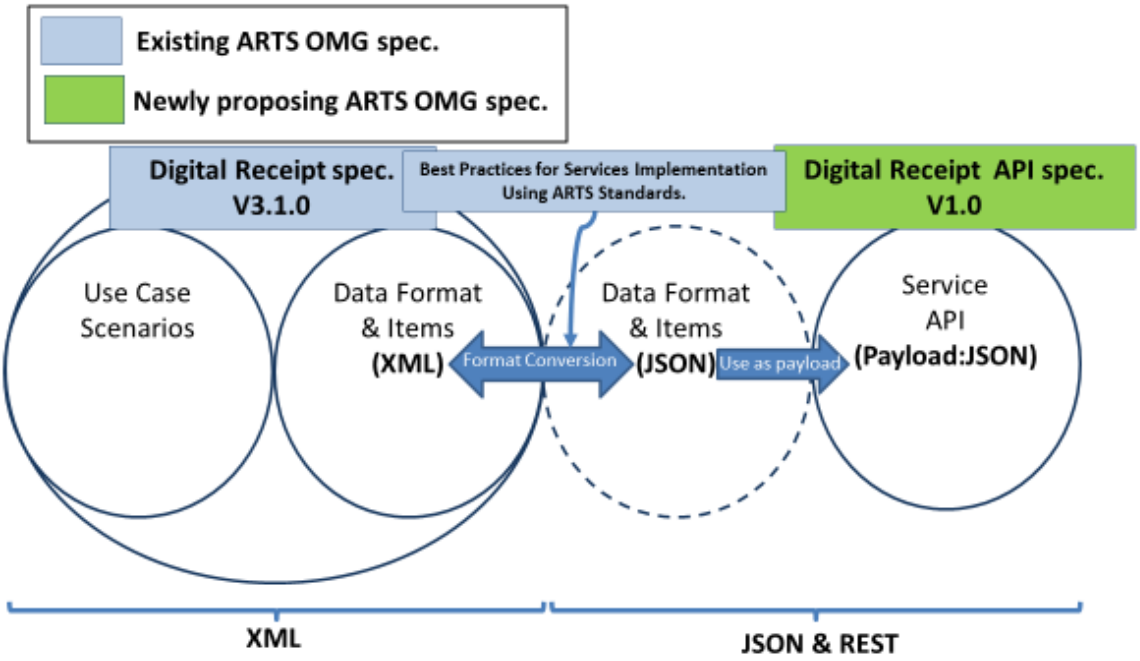
*Digital Receipt API specification V 1.0 (this book)
*Digital Receipt Data Items Reference List for Japanese Market (References)
*Digital Receipt Data Format Specification JSON Version for Japanese Market (References)

The existing "ARTS Digital Receipt Specification v 3.1.0" defines a set of use case scenarios that use digital receipts, and defines the data format of digital receipts as XML schemas. However, the service APIs for realizing the use case scenario are undefined.

This specification proposes APIs for the digital receipt service to implement the use case scenario defined in "ARTS Digital Receipt Specification v 3.1.0" and complements it.



Although XML is used as the data format in "ARTS Digital Receipt Specification v 3.1.0", as mentioned in "Digital Receipt API v 1.0 Request For Proposal", the RESTful interface and JSON data format have recently become de facto standards for communication interfaces and data formats between cloud services and clients (Smartphone), so this specification proposes APIs using the RESTful interface and JSON data format.

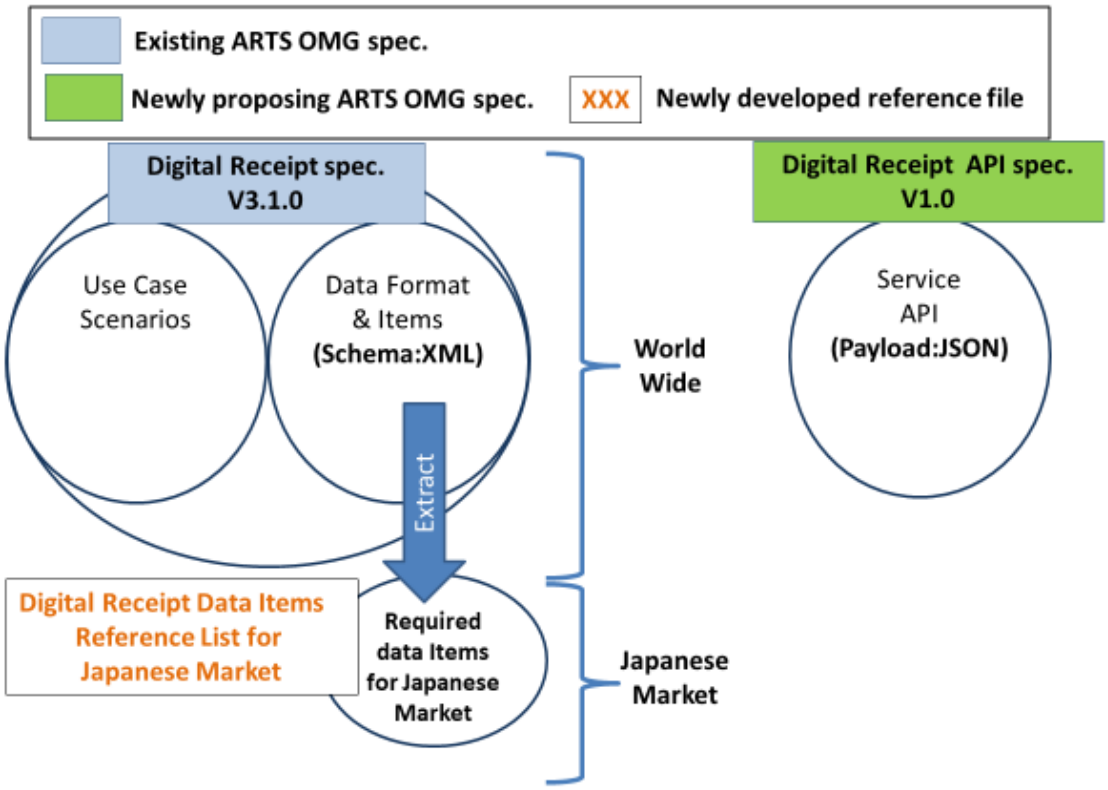


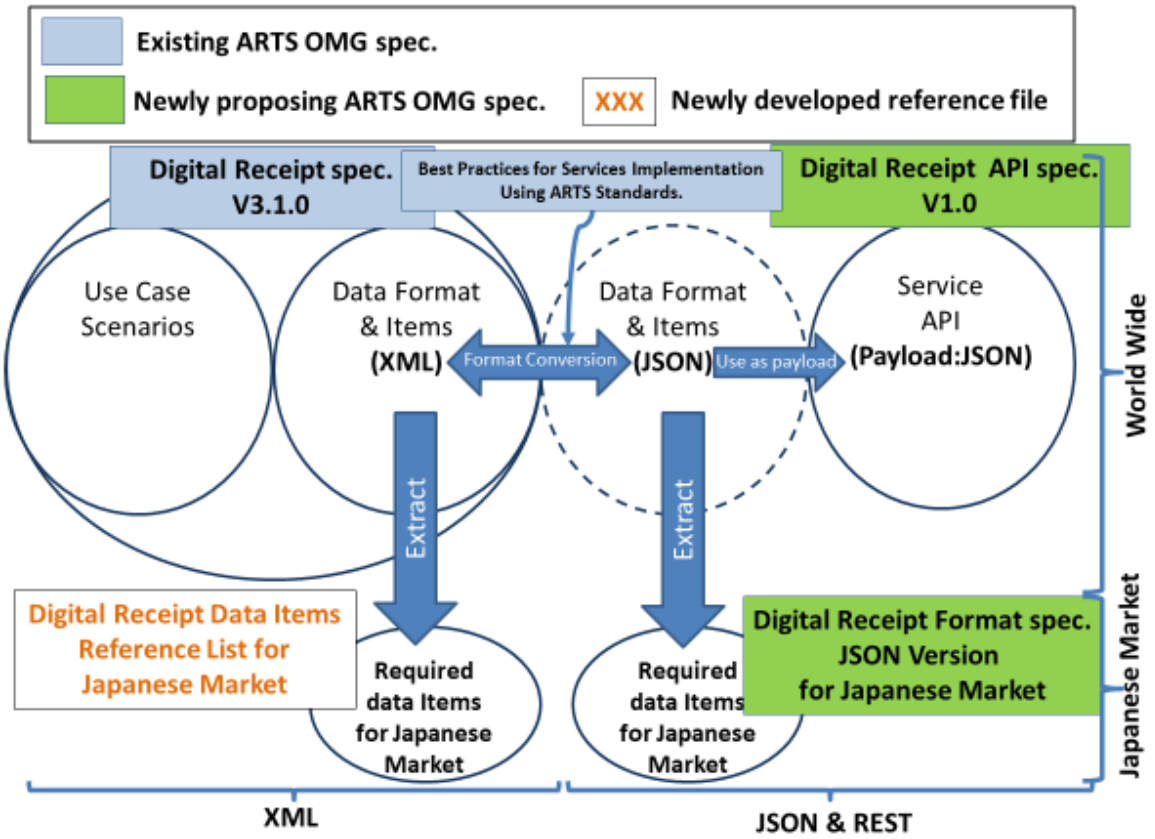
The JSON data format used by the APIs proposed in this specification and the XML data format defined in "ARTS Digital Receipt Specification v 3.1.0" are best interconverted by "Best Practices for Services Implementation Using ARTS Standard".

The "ARTS Digital Receipt Specification v 3.1.0" data format covers international data items. The reference file "Digital Receipt Data Items Reference List for Japanese Market" is the material which extracted the required items in the Japanese market.

Similarly, "Digital Receipt Format Specification JSON Version for Japanese Market" is a document that converts the "ARTS Digital Receipt Specification v 3.1.0" data format into JSON using the "Best Practices for Services Implementation Using ARTS Standard" method, and extracts required items for the Japanese market.

The overall relationship is shown below.





For reference, the data flow of digital receipts in the Japanese market is shown below.