# Data Standards Body

## Technical Working Group

## Decision Proposal 264 – Billing Invoice Data Payloads

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## Context

This proposal describes the payloads for telecommunications billing invoice data arrangements as described in sections of the [telecommunications sector designation instrument](#).

This proposal has incorporated feedback obtained in response to the following consultation activities:

- **Decision Proposal 256 – Telco Endpoints**
  This consultation proposed a series of URIs for the whole telecommunications sector. Feedback provided in response to this consultation can be found at:
  [https://github.com/ConsumerDataStandardsAustralia/standards/issues/256](https://github.com/ConsumerDataStandardsAustralia/standards/issues/256)

- **First telecommunications API Workshop**
  This workshop was conducted online and the outcomes of the workshop can be found at:
  [https://github.com/ConsumerDataStandardsAustralia/standards/wiki/Consumer-Data-Right-%7C-telecommunications-API-Workshop-%7C-Online---Outcomes](https://github.com/ConsumerDataStandardsAustralia/standards/wiki/Consumer-Data-Right-%7C-telecommunications-API-Workshop-%7C-Online---Outcomes)

It should be noted that, until the rules being developed by the Treasury are finalised, any decision made in response to this consultation is only indicative.  The Data Standards Chair is required to make standards only in accordance with the Rules and the designation instrument.

## Decision To Be Made

Define the preliminary end point URIs and payloads for Billing Invoice data.

# Identified Options

When consulting on payloads each field potentially has multiple options. For this reason, this proposal only presents a single option for consultation with the expectation that all parts of the proposal are subject to change in response to community feedback.

This section therefore includes a series of descriptions of the underlying assumptions and rationale that have led to the specific proposal included in the recommendation section.

## Alignment To CDR Standards

The field naming conventions and structures proposed are based on existing standards for the Telco sector but the field names, end point naming conventions and data structures have been modified to align with existing CDR standards.  These standards are referenced below:

- **CDR Payload Structure:**
  https://consumerdatastandardsaustralia.github.io/standards/#payload-conventions
  These standards describe the overall payload structure for all CDR APIs.
  This includes:
    o a description of the use of the generic "data" object and standard error payload;
    o a section on field naming conventions that outline how individual fields are named in the CDR standards; and
    o a definition for the use of mandatory vs optional statements in CDR payloads.

- **CDR Common Field Types:**
  https://consumerdatastandardsaustralia.github.io/standards/#common-field-types
  These standards describe common field types referred to in payload definitions.

## Cross Sector Alignment

The proposed payloads have also been aligned with the model for presenting invoice data established in the banking and energy sectors. Specifically, it has been previously assumed that invoice data would not be presented from a single API set aligned to the designated organisation but that each entity that the customer has a relationship with (i.e. master brand) would present APIs independently.

This approach ensures the defined end points are adaptable in the event of a change to the data holder designation in the future. It also means the data presented can be more easily aligned with the tailored arrangement data that is designated to be provided by telecommunications retailers as the data holder.

It is also worth noting that some data holders span the energy and telecommunications sectors. For these data holders this level of alignment will likely have a material, positive, impact on their implementations. For instance for invoices covering multiple sectors such as telco and energy they could be presented with same invoiceId. Where the retailer could provide invoices with both energy and telco data in them.

## Designation Scope

This section outlines the scope of the end points documented in this proposal.  This scope has been determined by a review of the designation for the telecommunications sector.

### Public Mobile Telecommunication Services
These include mobile services - both pre and post-paid. As defined as in section 32 of the Telecommunication Act

### Fixed Internet Services
These include fixed internet services including NBN, ADSL, VDSL and fixed wireless.

### Data Sets

These include information about a bill issued in relation to an account (invoice).
- Account number
- Billing period
- Date of issue
- Amount payable
- Usage

The account billing invoice interface requires customer consent including authentication and authorisation based on the CDR information security profile.

# Current Recommendation

The recommended URIs and Payloads for invoice data is presented in the following sections.

## Invoice End Points Summary

A summary of the available account invoice end points:
- GET     /telco/accounts/invoices
- POST    /telco/accounts/invoices
- GET     /telco/accounts/{accountId}/invoices

## Invoice List Data

### High Level Information

| Title | **Obtain information on a list of invoices for a customer account** |
|---|---|
| **HTTP Method** | GET |
| **URI** | /telco/accounts/invoices |
| **Authorisation Scope** | telco:billing:read |
| **Pagination** | Supported |
| **Path Parameters** | None |
| **Query Parameters** | **newest-date**<br>Constrain the request to records with issue date at or before this date. If absent defaults to current date. Format is aligned to DateString common type<br><br>**oldest-date**<br>Constrain the request to records with issue date at or after this date. If absent defaults to newest-date minus- 24 months. Format is aligned to DateString common type<br><br>**page**<br>Page of results to request (standard pagination)<br><br>**page-size**<br>Page size to request.  Default is 25 (standard pagination) |

### Request Payload
Not applicable

## Response Payloads

| Field | Type | Mandatory | Description |
|---|---|---|---|
| data | Object | Mandatory | |
| { | | | |
|   invoices | Array of Objects | Mandatory | |
|   [{ | | | |
|     invoice | Object | Optional | |
|     { | | | |
|       accountId | ASCIIString | Mandatory | The ID of the account for which the invoice was issued. accountId must comply in accordance with CDR ID permanence |
|       invoiceNumber | String | Mandatory | The number assigned to this invoice by the telco Retailer |
|       issueDate | DateString | Mandatory | The date that the invoice was actually issued (as opposed to generated or calculated) |
|       dueDate | DateString | Optional | The date that the invoice is due to be paid |
|       period | Object | Optional | Object containing the start and end date for the period covered by the invoice. |
|       { | | | |
|         startDate | DateString | Mandatory | The start date of the period covered by this invoice |
|         endDate | DateString | Mandatory | The end date of the period covered by this invoice |
|       } | | | |
|       invoiceAmount | AmountString | Optional | The net amount due for this invoice regardless of previous balance |
|       gstAmount | AmountString | Optional | The total GST amount for this invoice. If absent zero is assumed |
|       payOnTimeDiscount | Object | Optional | A discount for on time payment |
|       { | | | |
|         discountAmount | AmountString | Mandatory | The amount that will be discounted if the invoice is paid by the specified date |
|         gstAmount | DateString | Optional | The GST amount that will be discounted if the invoice is paid by the specified date. If absent, then zero is assumed |

| Field | Type | Mandatory | Description |
|---|---|---|---|
| date | DateString | Mandatory | The date by which the invoice must be paid to receive the pay on time discount |
| } | | | |
| balanceAtIssue | AmountString | Mandatory | The account balance at the time the invoice was issued |
| services | Array of Strings | Mandatory | Array of service IDs to which this invoice applies. |
| paymentStatus | Enum | Mandatory | Indicator of the payment status for the invoice. One of the following values:<br><br>• PAID<br>• PARTIALLY_PAID<br>• UNPAID |
| accountCharges | Object | Mandatory | Object containing charges and credits related to telco account usage charges |
| { | | | |
| totalUsageCharges | AmountString | Mandatory | The aggregate total of usage charges for the period covered by the invoice (exclusive of GST) |
| totalOnceOffCharges | AmountString | Mandatory | The aggregate total of any once off charges arising from usage for the period covered by the invoice (exclusive of GST) |
| totalOnceOffDiscount | AmountString | Mandatory | The aggregate total of any once off discounts or credits arising from usage for the period covered by the invoice (exclusive of GST) |
| otherCharges | Array of Objects | Optional | Optional array of charges that may be part of the invoice (for example services fees) (exclusive of GST) |
| {[ | | | |
| type | Enum | Optional | Type of charge. Type of charge assumed to be OTHER if absent. Values include:<br><br>• SERVICE<br>• EQUIPMENT<br>• NETWORK<br>• OTHER<br>• … |
| amount | AmountString | Mandatory | The aggregate total of charges for this item (exclusive of GST) |
| description | String | Mandatory | A free text description of the charge |
| ]} | | | |
| totalGst | AmountString | Optional | The total GST for usage charges. If absent, then zero is assumed |

| Field | Type | Mandatory | Description |
| --- | --- | --- | --- |
| usage | Object | Mandatory | Usage summary for the invoice |
| { | | | |
| data | Object | Mandatory | Summary of invoice data usage |
| { | | | |
| upload | Number | Mandatory | Amount data uploaded in megabytes (MB) |
| download | Number | Mandatory | Amount data downloaded in megabytes (MB) |
| sessions | Number | Optional | Number of data sessions |
| amount | AmountString | Mandatory | Cost amount of data usage |
| } | | | |
| roaming | Object | Mandatory | Roaming data usage |
| { | | | |
| download | Number | Conditional | Amount of data used overseas in megabytes (MB). |
| amount | AmountString | Conditional | Amount value of data roaming charges |
| } | | | |
| voice | Object | Conditional | Summary of voice calls. Required if voice calls are included in product plan |
| { | | | |
| national | Object | Mandatory | National voice calls |
| { | | | |
| duration | TimeString | Mandatory | Total duration (hours, minutes, and seconds) of national voice calls |
| number | Number | Mandatory | Number of national voice calls |
| amount | AmountString | Mandatory | Cost amount of national calls |
| } | | | |
| international | Object | Mandatory | International and roaming calls |
| { | | | |
| duration | TimeString | Mandatory | Total duration (hours, minutes, and seconds) of international and roaming voice calls |
| number | Number | Mandatory | Number of international and roaming voice calls |

| Field | Type | Mandatory | Description |
|---|---|---|---|
| amount | AmountString | Mandatory | Cost amount of international and roaming voice calls |
| } | | | |
| } | | | |
| messaging | Object | Conditional | Summary of messaging. Required if messaging services included in product plan |
| { | | | |
| sms | Object | Mandatory | Summary of SMS usage for the invoice |
| { | | | |
| national | Number | Mandatory | Number of national SMS messages sent. Including premium SMS services |
| international | Number | Mandatory | Number of international and roaming SMS messages sent. Including premium SMS services |
| amount | AmountString | Mandatory | Cost amount of SMS messages. Including premium SMS services |
| } | | | |
| mms | Object | Mandatory | Summary of MMS usage for the invoice |
| { | | | |
| national | Number | Mandatory | Number of national MMS messages sent |
| international | Number | Mandatory | Number of international and roaming MMS messages sent |
| amount | AmountString | Mandatory | Cost amount of MMS messages |
| } | | | |
| } | | | |
| } | | | |
| } | | | |
| } | | | |
| }] | | | |
| } | | | |
| links | Object | Mandatory | |
| { | | | |

| Field | Type | Mandatory | Description |
|---|---|---|---|
| self | URIString | Mandatory | Fully qualified link to this API call |
| first | URI | Conditional | URI to the first page of this set.  Mandatory if this response is not the first page |
| prev | URI | Conditional | URI to the previous page of this set.  Mandatory if this response is not the first page |
| next | URI | Conditional | URI to the next page of this set.  Mandatory if this response is not the last page |
| last | URI | Conditional | URI to the last page of this set.  Mandatory if this response is not the last page |
| } | | | |
| meta | Object | Mandatory | |
| { | | | |
| totalRecords | PositiveInteger | Mandatory | The total number of records in the full set |
| totalPages | PositiveInteger | Mandatory | The total number of pages in the full set |
| } | | | |

# Invoice data for specific accounts

## High Level Information

| Title | Obtain information on a list of invoices for specific accounts |
|---|---|
| HTTP Method | POST |
| URI | /telco/accounts/invoices |
| Authorisation Scope | telco:billing:read |
| Pagination | Supported |
| Path Parameters | None |
| Query Parameters | **accountIds**<br>Array of specific accountIds to obtain account data for<br><br>**newest-date**<br>Constrain the request to records with issue date at or before this date. If absent defaults to current date. Format is aligned to DateString common type<br><br>**oldest-date**<br>Constrain the request to records with issue date at or after this date. If absent defaults to newest-date minus- 24 months. Format is aligned to DateString common type<br><br>**page**<br>Page of results to request (standard pagination)<br><br>**page-size**<br>Page size to request.  Default is 25 (standard pagination) |

## Request Payload
Not applicable

## Response Payloads
### HTTP Response Code: 200 OK

| Field | Type | Mandatory | Description |
|---|---|---|---|
| data | Object | Mandatory | |
| { | | | |
|   invoices | Array of Objects | Mandatory | |
|   [{ | | | |
|     invoice | Object | Optional | |
|     { | | | |

| Field | Type | Mandatory | Description |
|---|---|---|---|
| accountId | ASCIIString | Mandatory | The ID of the account for which the invoice was issued. accountId must comply in accordance with CDR ID permanence |
| invoiceNumber | String | Mandatory | The number assigned to this invoice by the telco Retailer |
| issueDate | DateString | Mandatory | The date that the invoice was actually issued (as opposed to generated or calculated) |
| dueDate | DateString | Optional | The date that the invoice is due to be paid |
| period | Object | Optional | Object containing the start and end date for the period covered by the invoice. |
| { | | | |
| startDate | DateString | Mandatory | The start date of the period covered by this invoice |
| endDate | DateString | Mandatory | The end date of the period covered by this invoice |
| } | | | |
| invoiceAmount | AmountString | Optional | The net amount due for this invoice regardless of previous balance |
| gstAmount | AmountString | Optional | The total GST amount for this invoice. If absent zero is assumed |
| payOnTimeDiscount | Object | Optional | A discount for on time payment |
| { | | | |
| discountAmount | AmountString | Mandatory | The amount that will be discounted if the invoice is paid by the specified date |
| gstAmount | DateString | Optional | The GST amount that will be discounted if the invoice is paid by the specified date. If absent, then zero is assumed |
| date | DateString | Mandatory | The date by which the invoice must be paid to receive the pay on time discount |
| } | | | |
| balanceAtIssue | AmountString | Mandatory | The account balance at the time the invoice was issued |
| services | Array of Strings | Mandatory | Array of service IDs to which this invoice applies. |
| paymentStatus | Enum | Mandatory | Indicator of the payment status for the invoice. One of the following values:<br><br>• PAID<br>• PARTIALLY_PAID<br>• UNPAID |

| Field | Type | Mandatory | Description |
|---|---|---|---|
| accountCharges | Object | Mandatory | Object containing charges and credits related to telco account usage charges |
| { | | | |
| totalUsageCharges | AmountString | Mandatory | The aggregate total of usage charges for the period covered by the invoice (exclusive of GST) |
| totalOnceOffCharges | AmountString | Mandatory | The aggregate total of any once off charges arising from usage for the period covered by the invoice (exclusive of GST) |
| totalOnceOffDiscount | AmountString | Mandatory | The aggregate total of any once off discounts or credits arising from usage for the period covered by the invoice (exclusive of GST) |
| otherCharges | Array of Objects | Optional | Optional array of charges that may be part of the invoice (for example services fees) (exclusive of GST) |
| {[ | | | |
| type | Enum | Optional | Type of charge. Type of charge assumed to be OTHER if absent. Values include:<br><br>• SERVICE<br>• EQUIPMENT<br>• NETWORK<br>• OTHER<br>• … |
| amount | AmountString | Mandatory | The aggregate total of charges for this item (exclusive of GST) |
| description | String | Mandatory | A free text description of the charge |
| ]} | | | |
| totalGst | AmountString | Optional | The total GST for usage charges. If absent, then zero is assumed |
| usage | Object | Mandatory | Usage summary for the invoice |
| { | | | |
| data | Object | Mandatory | Summary of invoice data usage |
| { | | | |
| upload | Number | Mandatory | Amount data uploaded in megabytes (MB) |
| download | Number | Mandatory | Amount data downloaded in megabytes (MB) |
| sessions | Number | Optional | Number of data sessions |
| amount | AmountString | Mandatory | Cost amount of data usage |

| Field | Type | Mandatory | Description |
|-------|------|-----------|-------------|
| } | | | |
| roaming | Object | Mandatory | Roaming data usage |
| { | | | |
| download | Number | Conditional | Amount of data used overseas in megabytes (MB). |
| amount | AmountString | Conditional | Amount value of data roaming charges |
| } | | | |
| voice | Object | Conditional | Summary of voice calls. Required if voice calls are included in product plan |
| { | | | |
| national | Object | Mandatory | National voice calls |
| { | | | |
| duration | TimeString | Mandatory | Total duration (hours, minutes, and seconds) of national voice calls |
| number | Number | Mandatory | Number of national voice calls |
| amount | AmountString | Mandatory | Cost amount of national calls |
| } | | | |
| international | Object | Mandatory | International and roaming calls |
| { | | | |
| duration | TimeString | Mandatory | Total duration (hours, minutes, and seconds) of international and roaming voice calls |
| number | Number | Mandatory | Number of international and roaming voice calls |
| amount | AmountString | Mandatory | Cost amount of international and roaming voice calls |
| } | | | |
| } | | | |
| messaging | Object | Conditional | Summary of messaging. Required if messaging services included in product plan |
| { | | | |
| sms | Object | Mandatory | Summary of SMS usage for the invoice |
| { | | | |

| Field | Type | Mandatory | Description |
|---|---|---|---|
| national | Number | Mandatory | Number of national SMS messages sent. Including premium SMS services |
| international | Number | Mandatory | Number of international and roaming SMS messages sent. Including premium SMS services |
| amount | AmountString | Mandatory | Cost amount of SMS messages. Including premium SMS services |
| } | | | |
| mms | Object | Mandatory | Summary of MMS usage for the invoice |
| { | | | |
| national | Number | Mandatory | Number of national MMS messages sent |
| international | Number | Mandatory | Number of international and roaming MMS messages sent |
| amount | AmountString | Mandatory | Cost amount of MMS messages |
| } | | | |
| } | | | |
| } | | | |
| } | | | |
| } | | | |
| }] | | | |
| } | | | |
| links | Object | Mandatory | |
| { | | | |
| self | URIString | Mandatory | Fully qualified link to this API call |
| first | URI | Conditional | URI to the first page of this set.  Mandatory if this response is not the first page |
| prev | URI | Conditional | URI to the previous page of this set.  Mandatory if this response is not the first page |
| next | URI | Conditional | URI to the next page of this set.  Mandatory if this response is not the last page |
| last | URI | Conditional | URI to the last page of this set.  Mandatory if this response is not the last page |
| } | | | |

| Field | Type | Mandatory | Description |
|---|---|---|---|
| meta | Object | Mandatory | |
| { | | | |
| totalRecords | PositiveInteger | Mandatory | The total number of records in the full set |
| totalPages | PositiveInteger | Mandatory | The total number of pages in the full set |
| } | | | |

# Invoice data for a specific account

## High Level Information

| | |
|---|---|
| **Title** | **Obtain invoice information for a specific account** |
| **HTTP Method** | GET |
| **URI** | /telco/accounts/{accountId}/invoices |
| **Authorisation Scope** | telco:billing:read |
| **Pagination** | Not supported |
| **Specific Errors** | Not supported – 400 and 422 not expected to be returned |
| **Path Parameters** | **accountId**<br>ID of the specific account requested |
| **Query Parameters** | None |

## Request Payload
Not applicable

## Response Payloads

### HTTP Response Code: 200 OK

| Field | Type | Mandatory | Description |
|---|---|---|---|
| data | Object | Mandatory | |
| { | | | |
|   invoice | Object | Optional | |
|   { | | | |
|     accountId | ASCIIString | Mandatory | The ID of the account for which the invoice was issued. accountId must comply in accordance with CDR ID permanence |
|     invoiceNumber | String | Mandatory | The number assigned to this invoice by the telco Retailer |
|     issueDate | DateString | Mandatory | The date that the invoice was actually issued (as opposed to generated or calculated) |
|     dueDate | DateString | Optional | The date that the invoice is due to be paid |
|     period | Object | Optional | Object containing the start and end date for the period covered by the invoice. |
|     { | | | |

| Field | Type | Mandatory | Description |
|---|---|---|---|
| startDate | DateString | Mandatory | The start date of the period covered by this invoice |
| endDate | DateString | Mandatory | The end date of the period covered by this invoice |
| } | | | |
| invoiceAmount | AmountString | Optional | The net amount due for this invoice regardless of previous balance |
| gstAmount | AmountString | Optional | The total GST amount for this invoice. If absent zero is assumed |
| payOnTimeDiscount | Object | Optional | A discount for on time payment |
| { | | | |
| discountAmount | AmountString | Mandatory | The amount that will be discounted if the invoice is paid by the specified date |
| gstAmount | DateString | Optional | The GST amount that will be discounted if the invoice is paid by the specified date. If absent, then zero is assumed |
| date | DateString | Mandatory | The date by which the invoice must be paid to receive the pay on time discount |
| } | | | |
| balanceAtIssue | AmountString | Mandatory | The account balance at the time the invoice was issued |
| services | Array of Strings | Mandatory | Array of service IDs to which this invoice applies. |
| paymentStatus | Enum | Mandatory | Indicator of the payment status for the invoice. One of the following values:<br><br>• PAID<br>• PARTIALLY_PAID<br>• UNPAID |
| accountCharges | Object | Mandatory | Object containing charges and credits related to telco account usage charges |
| { | | | |
| totalUsageCharges | AmountString | Mandatory | The aggregate total of usage charges for the period covered by the invoice (exclusive of GST) |
| totalOnceOffCharges | AmountString | Mandatory | The aggregate total of any once off charges arising from usage for the period covered by the invoice (exclusive of GST) |
| totalOnceOffDiscount | AmountString | Mandatory | The aggregate total of any once off discounts or credits arising from usage for the period covered by the invoice (exclusive of GST) |

| Field | Type | Mandatory | Description |
|---|---|---|---|
| otherCharges | Array of Objects | Optional | Optional array of charges that may be part of the invoice (for example services fees) (exclusive of GST) |
| {[ | | | |
| type | Enum | Optional | Type of charge. Type of charge assumed to be OTHER if absent. Values include:<br><br>• SERVICE<br>• EQUIPMENT<br>• NETWORK<br>• OTHER<br>• … |
| amount | AmountString | Mandatory | The aggregate total of charges for this item (exclusive of GST) |
| description | String | Mandatory | A free text description of the charge |
| ]} | | | |
| totalGst | AmountString | Optional | The total GST for usage charges. If absent, then zero is assumed |
| usage | Object | Mandatory | Usage summary for the invoice |
| { | | | |
| data | Object | Mandatory | Summary of invoice data usage |
| { | | | |
| upload | Number | Mandatory | Amount data uploaded in megabytes (MB) |
| download | Number | Mandatory | Amount data downloaded in megabytes (MB) |
| sessions | Number | Optional | Number of data sessions |
| amount | AmountString | Mandatory | Cost amount of data usage |
| } | | | |
| roaming | Object | Mandatory | Roaming data usage |
| { | | | |
| download | Number | Conditional | Amount of data used overseas in megabytes (MB). |
| amount | AmountString | Conditional | Amount value of data roaming charges |
| } | | | |
| voice | Object | Conditional | Summary of voice calls. Required if voice calls are included in product plan |

| Field | Type | Mandatory | Description |
|---|---|---|---|
| { | | | |
| national | Object | Mandatory | National voice calls |
| { | | | |
| duration | TimeString | Mandatory | Total duration (hours, minutes, and seconds) of national voice calls |
| number | Number | Mandatory | Number of national voice calls |
| amount | AmountString | Mandatory | Cost amount of national calls |
| } | | | |
| international | Object | Mandatory | International and roaming calls |
| { | | | |
| duration | TimeString | Mandatory | Total duration (hours, minutes, and seconds) of international and roaming voice calls |
| number | Number | Mandatory | Number of international and roaming voice calls |
| amount | AmountString | Mandatory | Cost amount of international and roaming voice calls |
| } | | | |
| } | | | |
| messaging | Object | Conditional | Summary of messaging. Required if messaging services included in product plan |
| { | | | |
| sms | Object | Mandatory | Summary of SMS usage for the invoice |
| { | | | |
| national | Number | Mandatory | Number of national SMS messages sent. Including premium SMS services |
| international | Number | Mandatory | Number of international and roaming SMS messages sent. Including premium SMS services |
| amount | AmountString | Mandatory | Cost amount of SMS messages. Including premium SMS services |
| } | | | |
| mms | Object | Mandatory | Summary of MMS usage for the invoice |
| { | | | |
| national | Number | Mandatory | Number of national MMS messages sent |

| Field | Type | Mandatory | Description |
|---|---|---|---|
| international | Number | Mandatory | Number of international and roaming MMS messages sent |
| amount | AmountString | Mandatory | Cost amount of MMS messages |
| } | | | |
| } | | | |
| } | | | |
| } | | | |
| } | | | |
| } | | | |
| links | Object | Mandatory | |
| { | | | |
| self | URIString | Mandatory | Fully qualified link to this API call |
| } | | | |
| meta {} | Object | Mandatory | |