



Development of NPP ISO 20022 message usage for Payroll, PAYG Tax  
and Superannuation Payments

Explainer Document

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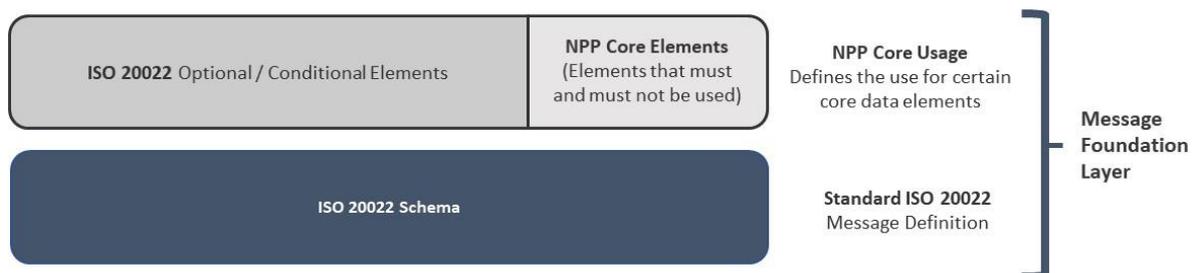
*This document should be read in conjunction with [Development of NPP ISO 20022 message usage for Payroll, PAYG Tax and Superannuation Payments Market Consultation Document](#)*

## Introduction

The NPP has been designed using the ISO 20022 standard<sup>1</sup> as the basis for payment messaging. The ISO 20022 standard provides a set of comprehensive xml formatted messages, rich with both structured and unstructured data. This standard is used across the globe by corporates and governments to rationalise traditionally slower processes. The European Union and the United States, amongst others, have implemented or are in the process of implementing ISO 20022 as the standard for all inter-institutional payment messages, with a particular focus on corporate payments. The Bank of England has recently announced a similar direction towards the use of a common ISO20022 standard for all domestic payments in the UK.<sup>2</sup>

The ISO 20022 standard, with its extensive data capabilities, provides the ability to define particular types of payments and the data elements associated with these. The ISO 20022 message schema uses codes contained within the ISO message to specify a specific purpose of the payment. These codes are defined as 'category purpose codes'. Like the transaction code in a BECS (or aba) file format, these codes enable the identification of the type of payment being made.

In developing ISO messages for use on the NPP, NPPA have built on the standard ISO 20022 message and have further defined certain core data elements within the ISO 20022 message structure which must either be used or not used in the NPP message. Additional data elements are available for use in the NPP ISO 20022 message which could be utilised in the future.



The structured data capabilities of the ISO 20022 message schema ensure that a common data lexicon or 'dictionary' can be established for particular payment types. This means that the data for these payment types is sent in a consistent manner by all participants involved in the processing of a payment. Ingesting these common and consistent data elements into existing business processes and systems will support automation and straight through processing. This reduces error rates and exceptions, thereby reducing the amount of manual reconciliation effort required, which results in overall efficiency improvements for the industry as a whole.

## How is the NPPA format different to BECS (Direct Entry/aba)?

The BECS file format is a fixed length format with limitations on the amount of data that can be captured and passed to the parties involved in the payment. ISO provides xml capability with extended data sets, whilst maintaining all the elements and fields captured in the BECS file.

<sup>1</sup> [https://www.iso20022.org/payments\\_messages.page](https://www.iso20022.org/payments_messages.page)

<sup>2</sup> <https://www.bankofengland.co.uk/news/2018/november/consultation-response-a-global-standard-to-modernise-uk-payments-iso-20022>

The ISO 20022 payment message is composed of 3 building blocks:

1. Group Header

This building block is mandatory and presented once. It contains elements such as Message Identification, Creation Date and Time and Grouping Indicator.

2. Payment Information

This building block is mandatory and may be repeated. Besides elements related to the debit side of the transaction, such as Debtor and Payment Type Information, it contains one or more 'Transaction Information Blocks' (see point 3 below).

3. Transaction Information

This building block is mandatory and may be repeated. It contains, amongst others, elements related to the credit side of the transaction, such as Creditor and Remittance Information.

The number of occurrences of 'Payment Information Block' and 'Transaction Information Block' within a message is indicated by the Grouping field in the Group Header.

The diagrams on the following pages highlight how data contained within the BECS file format would be mapped to an NPP ISO 20022 message for a salary or payroll payment.

*Note: the following diagrams are only representative of the fields and do not reflect the full specification of an NPP ISO 20022 message.*

# 1) Mapping of BECS Header and Footer to ISO 20022 Header

0	01CBA	MY NAME	012345PAYROLL	210119
1123-456123456789	5300000012348	B SMITH	EMPLOYEE PAY	062-000 12223123MY ACCOUNT 00001200
1123-783 12312312	53000000212345	R JONES	EMPLOYEE PAY	062-000 12223123MY ACCOUNT 00001200
7999-999	000022469300002246930000000000			000002

BECS Header (Descriptive Record)

Char Pos	Field Size	Field Description	Specification
1	1	Record Type 0	Must be '0'
2-18	17	Blank	Must be filled.
19-20	2	Reel Sequence Number	Must be numeric commencing at 01. Right justified. Zero filled.
21-23	3	Name of User's Financial Institution	Must be approved Financial Institution abbreviation. Bank of Queensland's abbreviation is BQL, Westpac's abbreviation is "WBC". Consult your Bank for correct abbreviation.
24-30	7	Blank	Must be blank filled.
31-56	26	Name of User supplying file	Must be User Preferred Specification as advised by User's FI. Left justified, blank filled. All coded character set valid. Must not be all blanks.
57-62	6	Name of User supplying file	Must be User Identification Number which is allocated by Australian Payments Network (formerly APCA). Must be numeric, right justified, zero filled.
63-74	12	Description of entries on file e.g. "PAYROLL"	All coded character set valid. Must not be all blanks. Left justified, blank filled.
75-80	6	Date to be processed (i.e. the date transactions are released to all Financial Institutions)	Must be numeric in the formal of DDMMYY. Must be a valid date. Zero filled.
81-120	40	Blank	Must be blank filled.

File Total Record

Char Pos	Field Size	Field Description	Specification
1	1	Record Type 7	Must be '7'
2-8	7	BSB Format Filler	Must be '999-999'
9-20	12	Blank	Must be blank filled.
21-30	10	File (User) Net Total Amount	Numeric only valid. Must equal the difference between File Credit & File Debit Total Amounts. Show in cents without punctuation
31-40	10	File (User) Credit Total Amount	Numeric only valid. Must equal the accumulated total of credit Detail Record amounts. Show in cents without punctuation.
41-50	10	File (User) Debit Total Amount	Numeric only valid. Must equal the accumulated total of debit Detail Record amounts. Show in cents without punctuation.
51-74	24	Blank	Must be blank filled.
75-80	6	File (user) count of Records Type 1	Numeric only valid. Must equal accumulated number of Record Type 1 items on the file. Right justified, zero filled.
81-120	40	Blank	Must be blank filled.

## ISO Group Header

The information contained in the ISO Group Header reflects components of both the header and file total record of the BECS file.

Lvl	Name	XML Tag	Salary Payment
1	Group Header	<GrpHdr>	
2	Message Identification	<MsgId>	Must be unique
2	Creation Date Time	<CreDtTm>	UTC expressed without offset, i.e. YYYY-MM-DDThh:mm:ss.sssZ
2	Number Of Transactions	<NbOfTxs>	Number of individual transactions contained in the message.
2	Control Sum	<CtrlSum>	Hash total of values in Instructed Amount.
2	Initiating Party	<InitgPty>	Employer or Initiating party
3	Name	<Nm>	Name
5	Other	<Othr>	
6	Identification	<Id>	Identification Number (ABN)
6	Scheme	<SchmeNm>	
7	Proprietary	<Prtry>	AUBN = Australian Business Number (ABN)

2) Mapping of BECS Transaction detail to ISO  
200222 Payment Information  
BECS Transaction Detail

Char Pos	Field Size	Field Description	Specification
1	1	Record Type 1	Must be '1'
2-8	7	Bank/State/Branch Number	Must be numeric with hyphen in character position 5. Character positions 2 and 3 must equal valid Financial Institution number. Character position 4 must equal a valid state number (0-9). <b>For credits to Employee Benefits Card accounts, field must always contain BSB 032-898</b>
9-17	9	Account number to be credited/debited	Numeric, hyphens and blanks only are valid. Must not contain all blanks (unless a credit card transaction) or zeros. Leading zeros which are part of a valid account number must be shown, e.g. 00-1234. Where account number exceeds nine characters, edit out hyphens. Right justified, blank filled. <b>For credits to Employee Benefits Card accounts, Account Number field must always be 999999</b>
18	1	Indicator	"N" – for new or varied Bank/State/Branch number or name details, otherwise blank filled. Withholding Tax Indicators: "W" – dividend paid to a resident of a country where a double tax agreement is in force. "X" – dividend paid to a resident of any other country. "Y" – interest paid to all non-residents. The amount of withholding tax is to appear in character positions 113-120.
19-20	2	Transaction Code	53 - Payroll
21-30	10	Amount	Only numeric valid. Must be greater than zero. Shown in cents without punctuations. Right justified, zero filled. Unsigned.
31-62	32	Title of Account to be credited/debited	All coded character set valid. Must not be all blanks. Left justified, blank filled.
63-80	18	Lodgement Reference	All coded character set valid. Field must be left justified and contain <b>only the 16 character</b> . No leading spaces, zeroes, hyphens or other characters can be included.
81-87	7	Trace Record (BSB Number in format XXX-XXX)	Bank (FI)/State/Branch and account number of User to enable retracing of the entry to its source if necessary. Only numeric and hyphens valid. Character positions 81 & 82 must equal a valid Financial Institution number. Character position 83 must equal a valid State number (0-9). Character position 84 must be a hyphen.
88-96	9	(Account number)	Right justified, blank filled.
97-112	16	Name of Remitter	Name of originator of the entry. This may vary from Name of the User. All coded character set valid. Must not contain all blanks. Left justified, blank filled.
113-120	8	Amount of Withholding Tax	Numeric only valid. Show in cents without punctuation. Right justified, zero filled. Unsigned.

ISO Payment Information

Lvl	Name	XML Tag	Salary Payment
1	Payment Information	<PmtInf>	
2	Payment Method	<PmtMtd>	TRF = Credit Transfer
3	Credit Transfer		Yes
2	Batch Booking	<BtchBookg>	"true" or "false" (Default) Identifies whether a single entry per individual transaction or a batch entry for the sum of the amounts of all transactions within the group of a message is requested.
4	Code	<Cd>	SALA = Salary Payment
2	Requested Execution Date	<ReqdExctnDt>	Requested payment date expressed as YYYY-MM-DD
2	Debtor	<Dbtr>	
3	Name	<Nm>	Employer Name
6	Identification	<Id>	Employer ABN
7	Proprietary	<Prtry>	AUBN = Australian Business Number (ABN)
2	Debtor Account	<DbtrAcct>	
4	Other	<Othr>	
5	Identification	<Id>	For BSB (Bank-State-Branch), account number with BSB prefix, or For IIN (cards), Primary Account Number (PAN)
5	Scheme Name	<SchmeNm>	
5	Issuer	<Issr>	NPP: 6-digit BSB number, or 6 digit BIN (Bank Identification Number)
3	Financial Institution Id	<FinInstnId>	
4	BICFI	<BICFI>	BIC
2	Credit Transfer Transaction Information	<CdtTrfTxInf>	
3	Payment Identification	<PmtId>	
4	Instruction Identification	<InstrId>	Unique identification of individual payment.
4	End to End Identification	<EndToEndId>	A customer reference that must be passed on in the end-to-end chain
3	Amount	<Amt>	
4	Instructed Amount	<InstdAmt>	Amount represented as a whole dollar number followed by a decimal point and two decimal digits (e.g. '10.20'). The field structure is n.nn.
5	Xml Attribute Currency	<Ccy>	AUD
3	Creditor Agent	<CdtrAgt>	Payee Bank
4	Financial Institution Id	<FinInstnId>	
5	BICFI	<BICFI>	BIC
3	Creditor	<Cdtr>	Payee
4	Name	<Nm>	Employee
3	Creditor Account	<CdtrAcct>	Payee Account
4	Identification	<Id>	
5	Other	<Othr>	
6	Identification	<Id>	For BSB (Bank-State-Branch), account number with BSB prefix
6	Scheme Name	<SchmeNm>	
7	Code	<Cd>	BBAN = To represent Australian Bank-State-Branch Code (BSB) identification
6	Issuer	<Issr>	NPP: 6-digit BSB number, or 6-digit BIN (Bank Identification Number)
4	Code	<Cd>	SALA = Salary Payment
3	Regulatory Reporting	<RgltryRptg>	Notification to the creditor - N.B. further information to be detailed.

## Categories of NPP payments

Just as a BECS record identifies the transaction code of the payment instruction, ISO 20022 messages use category purpose codes that identify the type of payment being made.

Third parties that want to instruct a financial institution to process a payment to a beneficiary party, either from their own account or from a customer's account, can use these category purpose codes when making these payment instructions. These payments could be initiated using an ISO 20022 message (what is known as an NPP pain.001 message<sup>3</sup>), an alternative file format as agreed with the financial institution receiving the file or via an API hosted by the financial institution.

NPPA proposes to define the use of specific category purpose codes for NPP ISO 20022 messages for certain types of payments. The category purpose codes that NPPA is proposing to use include:

- SALA – for payroll payment
- TAXS – for the payment of tax associated with a payroll payment
- PENS – for payment of superannuation contributions

These category purpose codes are commonly used where ISO 20022 has been implemented in other markets. The intention of defining message usage guidelines for NPP for these categories of payments ensures that vendors, service providers and receiving parties can be guaranteed of consistent information being contained within the NPP ISO 20022 message and transmitted with the payment.<sup>4</sup>

### Payroll/Salary category purpose code – SALA

Australian payroll vendors, payroll outsource providers and employers currently interact with their financial institution under traditional BECS (Direct Entry/aba) processing or proprietary data transfer methods. This provides the sending party with the ability to initiate payroll payments using a batch-based method where the file containing the payment has limited information and typically via an overnight clearing process. Typical payroll processing timeframes would require a payroll file to be complete and authorised prior to 4pm or 6pm cut-off to ensure overnight processing to employees.

For a payroll payment, a debtor – in most cases the employer – instructs a payment to be made to the employee. The transfer is made from the employers account to the employees account.

Payroll payments often have special processing requirements due the sensitivity of the personal information being handled and the requirement to process by a specific date i.e. pay date. Under existing rules (for BECS) the processing of a payroll payment is made using the transaction code 53, which indicates that there is additional reference information such as the employee number and the description of entries (e.g. PAYROLL) to enable appropriate treatment of these payments.

### NPP ISO 20022 SALA message elements

The NPP ISO 20022 message for payroll payments will carry the same data as currently contained within the BECS file or similar file formats (as highlighted in the diagrams above).

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<sup>3</sup> Defined as a Customer Credit Transfer Initiation message

<sup>4</sup> For further information relating to External Code Sets please refer to the ISO website.  
[https://www.iso20022.org/external\\_code\\_list.page](https://www.iso20022.org/external_code_list.page)

The main elements required to identify a payroll or salary payment for an NPP ISO 20022 message are:

1. Category Purpose Code = “SALA” to identify the purpose of the transfer as a payroll/salary payment on the debit side.
2. Employer/Payer details = Employer Name (or ABN)
3. Identification/Private Identification/Identification = Employee Number/Identification
4. Identification/Private Identification/Identification/Code = “EMPL”
5. Regulatory Reporting/Code = Varied – defined <section>.

Due to the nature of the payroll payment it may be required by the employer that the payments be made as a batch payment with a batch booking flag. The purpose of this batch booking flag is to signify that the debtor is requesting a batch entry be made for the sum of the amounts of all the transactions within the group of a message. This would be represented in the message element ‘Payment Information/Batch Booking’.

Using the NPP for payroll payments means the payment is processed in near-real time and allows for more information to travel with the payment. Additionally, the payment could be made using the employee’s PayID<sup>5</sup> to route the payment to the employee’s bank account.

Using the NPP ISO 20022 message also provides an opportunity to include additional information and additional reference information in the payment message. This can include more structured data elements or extended commentary in the payment from the employer, for example, “Adjustment pay for week ending 20/1/19” or “Commission payment for Quarter 1”, up to details of hours paid, superannuation contributions or details relevant to the employee payslip.

Data contained within the NPP payment message is encrypted and available only to the parties to the payment transaction and the sending and receiving financial institution, and is not collected by or available to NPPA, its vendors or any other financial institutions. The NPP itself has been designed with privacy and data security as core features.

## Employee withholding tax category purpose code – TAXS

A component of payroll payment processing is the payment to the ATO of pay as you go withholding (PAYGW) tax related to the payroll payment.

Current payment processing of the PAYGW is as one lump sum payment per employer ABN for all employees paid within the period. The Single Touch Payroll (STP) initiative introduced by the ATO with effect from 1 July 2018, allows employers or their intermediary, such as their payroll provider, to report salaries and wages, PAYGW and superannuation information directly to the ATO from their payroll solution.

The ISO 20022 TAXS category purpose code used for NPP payments allows additional reference or reconciliation information to be included in the payment message which would support the STP initiative. By including additional data in the NPP payment message, this could enhance reconciliation and processing efficiency, thereby further facilitating straight-through-processing of

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<sup>5</sup> A PayID is a unique proxy for an account number, which is registered by a customer with their financial institution, and available to payers for directing NPP payments. For details of PayID go to [www.payid.com.au](http://www.payid.com.au)

the PAYG tax payment. Market participants, such as payroll providers, could choose to incorporate some of these additional data elements when processing PAYG tax payments.

#### NPP ISO 20022 TAXS message elements

The main elements required to identify a PAYG payment for an NPP ISO 20022 message are:

1. Category Purpose Code = "TAXS" to identify the purpose of the payment as a taxation payment on the debit side.
2. Identification = Employer/Identification

#### Superannuation category purpose code – PENS

Requirements for superannuation payments made by employers, or intermediaries, to superannuation funds are defined by the Data and Payment Standards – Payment Methods<sup>6</sup> issued by the ATO. Submitted separately to the superannuation payment is contribution information, which is defined as part of the SuperStream reporting rules.

Superannuation payments and the reconciliation of these relies on SuperStream reporting reconciliation information being transferred with the payment. This is achieved by the SuperStream Payment Reference Number (PRN) being contained within the payment message (which today is usually a BECS credit transfer payment). The PRN and the value of the payment represent the two unique reference points that enable reconciliation to the member reports submitted via SuperStream.

#### NPP ISO 20022 PENS message elements

To facilitate the ongoing reconciliation of superannuation payments, it is critical that key data elements are maintained in the NPP message. The category purpose code 'PENS' can be used to identify that the payment is a superannuation payment and that the payment message will need to contain the minimum data required (the PRN) to reconcile payments to the associated SuperStream reporting.

The main elements required for a superannuation payment in an NPP ISO 20022 message are:

1. Category Purpose Code = "PENS" to identify the purpose of the payment as a superannuation payment on the debit side.
2. Identification = Employee Number/Member Number/Employer
3. Remittance Information/EndtoEndID = PRN

The use of the NPP platform to make superannuation payments as an alternative to the current BECS file payment process would not only result in faster processing times, it would also provide opportunities to provide further information within the payment message such as USI and/or member number. By using existing data elements within the ISO 20022 message structure for the payment, the NPP could further improve automation and operational efficiency with reduced exceptions and less manual intervention involved in the payment process. Contribution data could continue to be sent via the current SuperStream reporting process. Efficiencies could also extend to USM and rollovers where funds can be allocated in near-real time.

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<sup>6</sup> [https://softwaredevelopers.ato.gov.au/sites/default/files/resource-attachments/Schedule\\_3\\_Payment\\_Methods\\_v2%200.pdf](https://softwaredevelopers.ato.gov.au/sites/default/files/resource-attachments/Schedule_3_Payment_Methods_v2%200.pdf)

NPPA will be seeking to work with the ATO to have any agreed ISO 20022 message usage guidelines for NPP superannuation payments approved, thereby incorporating the NPP as an approved payment method within the SuperStream Data and Payment Standards.

## Extending NPP ISO 20022 messages to APIs

The NPP ISO 20022 message usage can also be applied to APIs that have been developed for use on the NPP. NPPA has developed an API Framework which defines the key technical approach and mandatory data attributes for APIs, aligned to ISO 20022 standards<sup>7</sup>. This API Framework is intended to drive inter-operability, standardisation, and consistency in how organisations can use APIs to access the NPP for their payment needs. NPPA will align its ISO 20022 message usage work with the NPP API Framework to facilitate the use of APIs for NPP payments. For more information on the NPP API Framework, click [here](#).

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<sup>7</sup> NPPA, '[New Payments Platform API Framework opens door to capabilities](#)'