

# Technical Design Document TDD-002 – Business Central – Financial add-on

Prepared for:

J & P CONSULTING PTE LTD

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# Prepared by:

**Mr Jason Lim** 

**Principal Consultant** 

**T:** +65 6653 4688 **M:** +65 9438 5473

**E:** Jason.lim@jnpconsulting.com.sg

J & P Consulting Pte Ltd

8 Marina Boulevard #11-00

MFBC Tower 1 Singapore 018981

W: https://www.jnpconsulting.com.sg

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# **Document Information**

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Project Name:	J&P Financial Add-on		
Product Name:	Dynamics 365 Business Central		
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<client> ERP Project Manager:</client>	ТВА		
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J&P Project Director:	ТВА		
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**Table 1: Document Information** 



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### 1. EXECUTIVE SUMMARY

### 1.1.Introduction

This Technical Design Document (TDD) applies to the Agreement between <CLIENT> PETROCHEMICAL ASIA PACIFIC PTE LTD (hereinafter referred to as the "<CLIENT>") and J & P CONSULTING PTE LTD (hereinafter referred to as the "J&P").

This document is structured in accordance with J&P's method for implementation of Microsoft Dynamics projects. Generally, this document is structured according to the business functions of the client. These are generally described by means of a business requirement followed by a resolution. The resolution may include use cases, algorithms, context or process diagrams and screenshots to more effectively describe the solution. Technical aspects of the design may also be included for use by developers.

This document is primarily intended for the Client's and the J&P project managers and system developers who will cooperate with developing the new system. The FDD is also intended for those of the Client's users who participated in developing the system design. These users shall report whether the designs specifications meet the requirements of their business functions.

# 1.2. Purpose of the Document

The general purpose of the TDD is to translate those enhancement or customization highlighted in the FDD into technical design document. The FDD specifies what to do and how to do it (from a functional perspective) while the TDD is targeted to technical consultants or developers on how to do it (from a technical perspective).

Predominantly, only processes and fields that will be developed are included in this document. However at times, mention of standard functionality (fields, tables, forms, etc.) will be added to support the proposed solution.

Note: Any detailed specifications not listed in the FDD must be created and estimated separately and are not included in the scope of the estimated effort figures listed here. This FDD generally contains no estimated effort figures for the creation and/or adaptation of documents (reports). These must also be specified and estimated separately.

The FDD forms the basis of:

- Development of the system
- Planning preparation of activity plans
- Planning and execution of system test
- System maintenance/service

It has to be possible to change the TDD so that it always documents the design that has been agreed between the parties. The TDD must be consistent with the implemented system. Thus, any modification of the system may imply a change of the TDD.



# 2. DOCUMENT CONVENTION

# 2.1.Glossary

Abbreviation	Description			
CR	Change Request			
DMS	Data Migration Strategy			
<client></client>	<client> PETROCHEMICAL ASIA PACIFIC PTE LTD</client>			
FDD	Functional Design Document			
FAQ	Frequently asked questions			
FDD	Functional Design Document			
GAR	Guaranteed Annual Rebate			
GLC	Go-live Checklist			
JPSF	J&P Solution Framework			
MSA	Master Services Agreement			
PAD	Pre Analysis Document			
PCN	Project Completion Notice			
PSR	Project Status Report			
PM	Project Manager			
PMP	Project Management Plan			
PS	Project Schedule			
RAD	Readiness Assessment Document			
SA	System Administrator			
sow	Statement of Work			
SVR	Site Visit Report			
TDD	Technical Design Document			
UATD	User Acceptance Test Document			

Table 2: Glossary



# 2.2.BC Objects

Throughout this document, the same conventions have been applied:

# 2.2.1 Dynamics NAV BC Page

Туре	Description
Listing	A tabular style window similar in look to an Excel spreadsheet. Can display several records at the one time.
Card	A card style. Can display single record at the one time.
Trendscape	A combination of list and card style windows which combines the data from multiple tables.

# 2.2.2 Fields types

Туре	Description
Text	Free text field. Any alpha-numeric character can be used.
Boolean	The only values are True or False
Option	Allows selection from a list of specified values only. If the list of valVN values needs to be extended, this will be subject to a development change.
Code	Any alphanumeric characters will be formatted into uppercase. Often used for the Identifying field in a record eg. Client No.
Date	Date format – uses dd-mm-yyyy where dd = day, mm = month and yyyy = year Eg: 29/06/2015 or 29-06-2015
Decimal	Numeric value containing decimal places. The length will be shown as x.y where x is the number of characters before the decimal place and y is the number of decimal places.
Integer	Numeric value containing no decimal places

# 2.2.3 Object types

Туре	Description			
Table	Defines the underlying data structure. Also, defines triggers and valVNation routines that are used when entering data.			
Page	The windows and menus visible to the user.			
Report	Used for reports and processing batch jobs.			
XMLport	Used for import and export routines.			
Codeunit	Used to store program routines.			
Query	A query specifies a set of data from the database.			
MenuSuites A set of menus that are displayed in the navigation pane.				

# 2.2.4 Form/Page controls

Туре	Description
Button	This will open a list of menu options to select from.
Tab	Used to organize the fields on a card.
Field	Used to input or display data.
Look-up	Will open up a new window with a list of data values to choose from.



Туре	Description
Drill-down	Will open up a new window showing detail entries.



# 3. REQUIREMENT & CONSIDERATION

# 3.1 Requirement

Requirement is to cater for <CLIENT> gaps identified around discovery sessions or documents, deriving from the points maintained as per the excel list. This TDD focuses on all the 8 reports required to be custom.

### 3.2 Key Requirements and Business Rules

- Scope within specification stated in point 4
- Other less frequent use or not used features remain as standard system design
- Client should have sufficient development objects for this enhancement
- Key requirements per GAP list / Discussion as follows:
  - BC 365 Issue Log\_<CLIENT> 220528

# 3.3 Design Considerations

- a) New table(s) and page(s) in D365BC development objects to be created to store the <CLIENT> custom data. Codeunit / XMLport / query / report modification to D365BC development objects.
- b) New codeunit(s) in D365BC development objects to be created to process the data in the staging table(s) stated in point (a) into standard BC tables for further sales and inventory processes.
- Not applicable here Custom APIs to be created due to many custom fields, as such standard APIs cannot be used. Reference link to D365BC API endpoints as follows:
   <a href="https://docs.microsoft.com/en-us/dynamics-nav/endpoints-apis-for-dynamics">https://docs.microsoft.com/en-us/dynamics-nav/endpoints-apis-for-dynamics</a>

# 3.4 Impact on Security and Configuration

Follow standard user security for D365BC



### 4. DESIGN SPECIFICATION

# 4.1. Objective of Customization

The objective is to add specific custom fields and functions which are relevant in the context of advanced financial management in organizations. Typical processes in such organizations could include group consolidation, global/group chart of accounts and financial dimensions management. Standard Business Central (BC), if without this add-on, users will have to manage chart of accounts and dimensions manually in multiple legal entities (eg, more than 10). This will reduce efficiency and prone to users' errors or overlook in some of the setup. This custom will ensure consistency across the legal entities you want to control as a group.

### 4.2. Technical Detail

### 4.2.1 Overview

Primary considerations to control are G/L chart of accounts, currencies rates and dimensions. There should setups in HQ legal entity to control what data and which legal entity/subsidiary to release the data to.

Object IDs should cater for in the special ranges to avoid conflict with any existing or potential new custom.

(eg, avoid usual custom range 50xxx series in Table and Field ID)

### 4.2.1.1 Custom Table / Field Structure

New Custom table/page: JNP Financial Plus Setup

No.	Field ID	Data Type	Field Label	Custom Description
1	Primary Key	Code 10	Primary Key	Extension field ( <b>PK</b> ).
2	Global COA Release	Boolean	Global COA Release	Extension field.
3	Global Dimension Release	Boolean	Global Dimension Release	Extension field.
4	Global Exch. Rate Release	Boolean	Global Exch. Rate Release	Extension field.
5	Global Exch. Rate Translation Decimal Place	Decimal	Global Exch. Rate Translation Decimal Place	Extension field.

Note (to BC Technical): Create a new custom card page.

### New Custom table/page: JNP Global COA Fields Exclusion Setup [Similarly to Change Log Setup (Field) List]

No.	Field ID		Data Type	Field Label			Custom Description	
1	Table No.			Integer	Table No.			Extension field ( <b>PK</b> ), relation to G/L account table.
2	Field No.			Integer	Field No.			Extension field ( <b>PK</b> ), relation to Field.
3	Exclude Release	from	Global	Boolean	Exclude Release	from	Global	Extension field.

Note (to BC Technical): Custom list page, accessible via radio button on chart of accounts list page.



# **Existing Standard table/page: Currency Exchange Rate**

No.	Field ID	Data Type	Field Label	Custom Description
1	Relational Exch. Cross Rate_JNP	Decimal	Relational Exch. Cross Rate	Extension field
2	Relational Adjmt Cross Rate_JNP	Decimal	Relational Adjmt Cross Rate	Extension field
3	HQ Exch. Cross Rate_JNP	Decimal	HQ Exch. Cross Rate	Extension field
4	HQ Adjmt Cross Rate_JNP	Decimal	HQ Adjmt Cross Rate	Extension field

Note (to BC Technical): Add extension field(s) to exchange rate page.

# New Custom table/page: JNP Currency Exchange Rate Translation

No.	Field ID	Data Type	Field Label	Custom Description
1	Entry No.	Integer	Entry No.	Extension field (PK).
2	Source Company	Text30	Source Company	Extension field, relation to Company table. "Name"
3	Destination Company	Text30	Destination Company	Extension field, relation to Company table. "Name"
4	Source LCY	Code10	Source LCY	Extension field.
5	Destination LCY	Code10	Destination LCY	Extension field.
6	Starting Date	Date	Starting Date	Extension field.
7	Currency Code	Code10	Currency Code	Extension field, relation to Currency table. "Code"
8	Relational Currency Code	Code10	Relational Currency Code	Extension field, relation to Currency table. "Code"
9	Exchange Rate Amount	Decimal	Exchange Rate Amount	Extension field.
10	Relational Exch. Rate Amount	Decimal	Relational Exch. Rate Amount	Extension field.
11	Adjustment Exch. Rate Amount	Decimal	Adjustment Exch. Rate Amount	Extension field.
12	Relational Adjmt Exch. Rate Amount	Decimal	Relational Adjmt Exch. Rate Amount	Extension field.
13	Fix Exchange Rate Amount	Option	Fix Exchange Rate Amount	Extension field, option values  0: Currency  1: Relational Currency



				2: Both
14	Relational Exch. Cross Rate	Decimal	Relational Exch. Cross Rate	Extension field.
15	Relational Adjmt. Cross Rate	Decimal	Relational Adjmt. Cross Rate	Extension field.
16	HQ Exch. Cross Rate	Decimal	HQ Exch. Cross Rate	Extension field.
17	HQ Adjmt. Cross Rate	Decimal	HQ Adjmt. Cross Rate	Extension field.
18	User ID	Code50	User ID	Extension field, relation to User table.
19	Date Time Created	DateTime	Date Time Created	Extension field.

Note (to BC Technical): New custom list page, accessible via radio button on currencies list page.

# **Existing Standard table/page: Dimension**

No.	Field ID	Data Type	Field Label	Custom Description
1	Global Dimension_JNP	Boolean	Global Dimension	Extension field.

Note (to BC Technical): Add extension field(s) to dimensions list page.

# New Custom table/page: JNP Global Company Release Setup

No.	Field ID	Data Type	Field Label	Custom Description
1	Global Data Type	Option	Global Data Type	Extension field ( <b>PK</b> ), option value  0: G/L Account  1: Dimension  2: Currency Exch. Rate
2	Company Name	Text30	Company Name	Extension field ( <b>PK</b> ), relation to Company table. "Name"
3	Display Name	Text250	Display Name	Extension field.
4	Release to Company	Boolean	Release to Company	Extension field.
5	LCY Code	Code10	LCY Code	Extension field, relation to General Ledger Setup table. "LCY"

Note (to BC Technical): Custom list page.



# 4.2.1.2 Custom Function / Logic

No.	Element	Controls	Custom Description
			Create a new function named "Release" to push all G/L account and related data from one company to other companies. Immediately a screen should pop up for the list of companies (Table: JNP Global company release setup) and user selects the required company to push to and clicks OK. Condition: Minimum 1 company has to be selected. User can use standard "Escape" or "Back" to exit screen if enter into page accidentally.
		Function	Related G/L account tables
			G/L Account
			IC G/L Account
			Default Dimension (filtered to "Table ID" = "15")
	Global COA Release		<b>Note</b> : New records will be inserted and existing records are modified (if any) but no record will be deleted. If a G/L account is created and pushed wrongly, user has to access all relevant companies and delete the record manually. This is a control.
			Note2: The release function to be displayed on chart of accounts list page only and only can be executed in company where JNP Financial Plus Setup. "Global COA Release" = "Yes" (ticked)
			Exclude field list on setup in JNP Global COA Fields Exclusion table.
1			On page level G/L Account Card (17, Card), users <b>are not allowed</b> to add and/or modify field on company where JNP Financial Plus setup. "Global COA Release" = "No"
			Create a new function named "Release" to push all dimension and related data from one company to other companies. Immediately a screen should pop up for the list of companies (Table: JNP Global company release setup) and user selects the required company to push to and clicks OK. Condition: Minimum 1 company has to be selected. User can use standard "Escape" or "Back" to exit screen if enter into page accidentally.
	Global Dimension Release	Function	Related Dimension tables
			Dimension
			Dimension Value
			IC Dimension
			IC Dimension Value
2			Note: On dimensions and dimension values list pages level, users are not allowed to add and/or modify field on company where JNP Financial Plus setup. "Global Dimension Release" = "No"
3	Global Exchange Rate Release	Function	Create a new function named "Release" to push all related data from one company to other companies. Immediately a screen should pop up for the list of companies (Table: JNP Global company release setup) and user selects the required company to push to and clicks OK. Condition:  Minimum 1 company has to be selected. User can use standard "Escape" or "Back" to exit screen if enter into page accidentally.



### **Related Currencies tables**

**Currency Exchange Rate** 

**Note:** On dimensions and dimension values list pages level, users **are not allowed** to add and/or modify field on company where JNP Financial Plus setup. "Global Exch. Rate Release" = "No"

When user go to currencies > function > release to company.

Program will "You have selected on records that have different LCY from the current company whose value is "SGD" (pick from GL setup. "LCY). Program will perform a translation conversion using the specific LCY before inserting records into the destination company. Do you want to proceed?"

Yes – Proceed and execute.

No – Rollback to previous screen. If user clicks on "Close" button [X], exit page without any execution.

Upon execution

For global push companies where "LCY" = existing company GL setup. "LCY", continue to perform the function as it is.

For global push companies where "LCY" <> existing company GL setup. "LCY", then perform following logic:

In source company (eg, CWSG)

Currency Exchange Rate table = CER

Filter CER records. "Starting Date" and "Currency" = source. "LCY" (eg, MYR)

- 1. CER. "Relational Exch. Cross Rate" (new virtual field 1) := (CER. "Relational Exch. Rate Amount" / CER. "Exchange Rate Amount")
- 2. CER. "Relational Adjmt Cross Rate" (new virtual field 2) := (CER. "Relational Adjmt. Rate Amount" / CER. "Exchange Rate Amount")
- 3. CER. "HQ Exch. Cross Rate" (new virtual field 3) := ROUND((CER. "Exchange Rate Amount" / CER. "Relational Exch. Rate Amount"),4)
- 4. CER. "HQ Adjmt Cross Rate" (new virtual field 4) := ROUND((CER. "Relational Adjmt. Rate Amount" / CER. "Exchange Rate Amount"),4)

For other CER records where currencies <> source. "LCY"

(eg, CHF or USD)

- 5. CER. "HQ Exch. Cross Rate" := ROUND((CER. "Relational Exch. Rate Amount" / above #1, 4)
- 6. CER. "HQ Adjmt. Cross Rate" := ROUND((CER. "Relational Adjmt. Rate Amount" / above #2, 4)

Store above values in new custom table COR Currency Exchange Rate Translation table (CERT).

In destination company (eg, Malaysia entities)

Insert and/or Modify records based on "Starting Date" and "Currency" where "Currency" <> source. "LCY" (eg, CHF/USD)



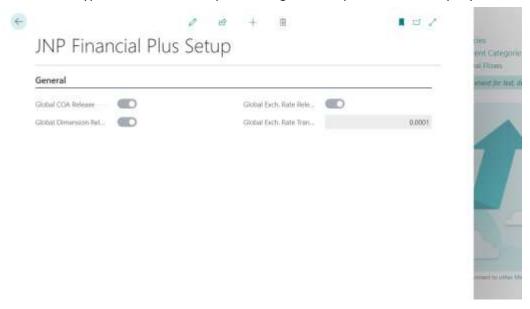
			Dest_CER. "Relational Exch. Rate Amount" := above #5
			Dest_CER. "Relational Adjmt Rate Amount" := above #6
			Insert and/or Modify records based on "Starting Date" and "Currency" where "Currency" = source. "LCY" (eg, SGD)
			Dest_CER. "Relational Exch. Rate Amount" := above #3
			Dest_CER. "Relational Adjmt Rate Amount" := above #4
			For excel mock-up, refer to section 4.1.3.1
4	-	-	-
5	-	-	-



# 4.3. Mock-up Screen and Process

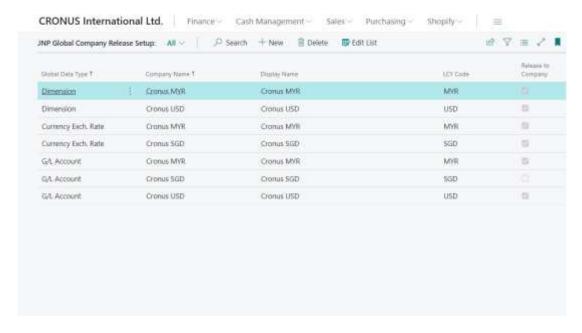
### 4.3.1 JNP Financial Plus Setup

Activate the type of master data required as a global template for the company.



### 4.3.2 JNP Global Company Release Setup

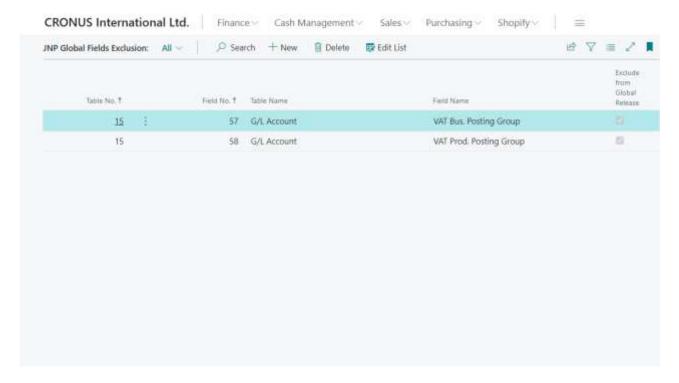
Include the type of global data and the destination companies that you need the information to be transferred across.



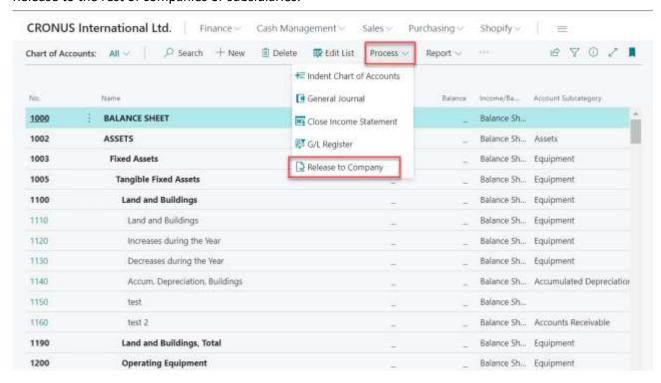


### 4.3.3 JNP Global COA Fields Exclusion Setup

If the other companies are not in the same region or country as the main company, it is best recommended not to copy over the VAT related setup on the global chart of accounts (COA). Below is the setup for the exclusion logic.



Release to the rest of companies or subsidiaries.



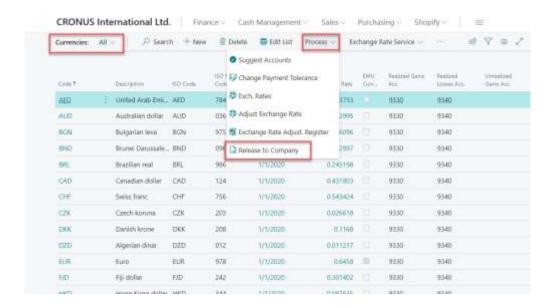


### 4.3.4 JNP Exchange Rate

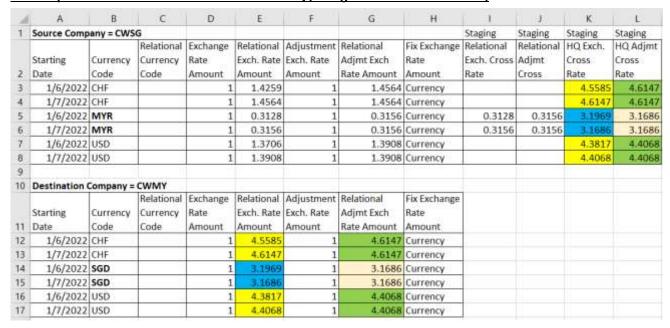
"You have selected on records that have different LCY from the current company whose value is "SGD" (pick from GL setup. "LCY). Program will perform a translation conversion using the specific LCY before inserting records into the destination company. Do you want to proceed?"

Yes - Proceed and execute.

No – Rollback to previous screen. If user clicks on "Close" button [X], exit page without any execution.



### Mock-up excel of Cross rate translation from HQ (1 single data source - CWSG)



Translation of currency exchange rates across your other companies automatically by using 1 corporate (HQ) exchange rates.



# 4.4.Business Documents – Mock-up Layout and Specification

# 4.4.1 Report A

N/A

# 4.4.1.1 Report Field Structure

No.	Data Content	Data Source (Table)	Data Source (Field)	Type and/or Other Remarks
1	Company	Company Information	Name	Header (every page)
2	-	-	-	Body
3	-	-	-	Body (Grouping)
4	-	-	-	Body (Subtotal)



# Appendix A: -

N/A



### 5. CLIENT ACCEPTANCE

The foregoing clearly states our understanding of our engagement with J&P, and we hereby agree to the project scope, objectives, assumptions, task assignments and deadlines described herein. We understand that changes to the engagement details, as described in this document, will require a formal change order.

We accept our responsibility to ensure that scope; resources and time are kept constant through the life cycle of the project, and our responsibility to ensure that our staff meets all the task deadlines. We understand that our failure to meet these responsibilities could result in an out of scope condition and adjustment of the overall project plan and deliverables, including the possibility of change orders or an entirely new project budget and timeline.

<client> Project Manager</client>					
Agrees that all key areas/personnel were consulted for this functional area and that the identified Gaps are mandatory requirements for the business solution.					
	Date:				
<client> ERP Application Support</client>					
Agrees that all key areas/personnel were consulted for this functional area and that the identified Gaps are mandatory requirements for the					
business solution.	Date:				
J&P Project Manager					
Agrees that the document is in adherence of TSF and the solution within					
the agreed project scope.	Date:				
J&P Functional Consultant					
Agrees that the report is in line with the solution provided.					
Agrees that the report is in line with the solution provided.	Date:				

Exhibit : Acceptance