**EKA Commodity Analytics Cloud – Functional Specification**

**Credit Risk App**

**Version 0.5**

20 March, 2019

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**Change Control Log**

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Author | Date | Change Description |
| 0.1 | Gaurav Shah | 03 Jan 2019 | Initial Draft |
| 0.2 | Aishwarya Balan | 06 Jan 2019 | Changes in Introduction, Counterparty Maintenance and Limit Maintenance pertaining to Inhouse and Outhouse Functionality. |
| 0.3 | Gaurav Shah | 20 March 2019 | Edits based on walkthrough |
| 0.4 | Gaurav Shah | 4 April 2019 | Updates on:  CP Exposure  TRM Credit Risk Check Request Message  Credit Risk App Calculations |
| 0.5 | Aishwarya Balan | 29 May 2019 | Updated section 1,2 and created section 3 and 6 |

**Table of Contents**

# Glossary of Terms

|  |  |
| --- | --- |
| **Term** | **Description** |

# Requirement Traceability Matrix

|  |  |  |
| --- | --- | --- |
| **Req No** | **Gap ID** | **Requirement Description** |

# Introduction

Credit Risk is a very important business operation performed within organizations. Credit Risk functionality entails the following (is not limited to only them):

1. Counterparty Maintenance
2. Limit Maintenance
3. Credit Exposure
4. Credit Risk Calculations
5. Workflow and Notifications

**Solution Overview**

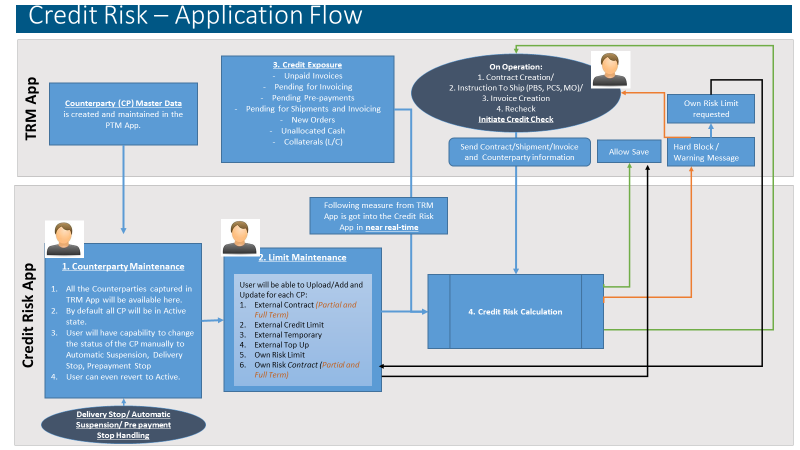
***Proposed Functionality:***

In Credit Risk App the Counterparty Maintenance is driven by a back end flag:

1. Inhouse: This denotes the Credit Risk App is the owner and golden source for Counterparty data. This flag allows the Users to directly upload or add Counterparties in the Credit Risk App.

2. Outhouse: This denotes the owner and golden source of the Counterparty information is an external source outside of the Credit Risk App. In the case of Manuchar, its Eka TRM – hence the MDM Counterparty related data from PTM(CTRM) App is fetched for Counter party Maintenance. This will NOT allow user to upload or add any Counterparty in the Credit Risk App. All the below flows are based on the Outhouse approach.

The flow diagram below gives an overview of the proposed functionality:



*Credit Risk Application Flow*

**Terminologies of the Application:**

* Platform: This is the Eka Digital Platform that houses all the Apps – which includes the PTM (CTRM) App, Credit Risk App, Margin App, Reports and Insights. There are various components in the Platform primarily the following:
  + Apps
  + Templates and Datasets
  + Insights and Dataview
  + Collections
  + Connectors

## 1. Credit App - Counterparty Maintenance for Credit Risk

As back end flag is Outhouhse, the Counterparty Maintenance in Credit Risk App will fetch the data from PTM(CTRM) App.

As Users will be recording and performing various activities on the Business Partner/Counterparty information in PTM (CTRM) App Master Data setup, a connection will already be established between the TRM and Credit Risk App, to enable direct flow of Counteparty information to the Credit Risk App.

The data from CTRM shouldfetch only those Counterparties whose role includes “Buyer”,”Seller” and if both roles are present then those Counterparties should also be included.

Example :

|  |  |  |  |
| --- | --- | --- | --- |
| Counterparty | Role | Include/Exclude | Counterparty Maintenance |
| X1 | Broker & Buyer | Include | Buyer |
| X2 | Bank | Exclude | N//A |
| X3 | Shipment Line & Seller | Include | Seller |
| X4 | Rail & Seller &Buyer | Include | Both |
| X5 | Buyer | Include | Buyer |

**Only those Counterparties are picked whose Roles has Buyer or Seller or Both**

The below 3 operations performed in CTRM Master Data that impact Credit Risk Counterparty Maintenance are:

1. Add – On additon of a new CP, the new CP will start being displayed on the next API pull onwards.
2. Modify – If any fields of interest are modified, then the CP information in Credit Risk CP will be updated.
3. Delete – On deletion of a CP in TRM, the CP will be deleted from the Credit Risk CP too.

### Navigation

Credit Risk > Counterparty Maintenance

### Template Fields

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Field/Button | | Type | UI | Possible Values | Mandatory | Validations/Functionality | | | Standard/UDF | API Field Mapping | | |
| CPID | | Number | Hidden | Outhouse: It will be the CP Ref. No. provided by External source | Yes |  | | | Standard | Business Partner Ref. No. | | |
| Counterparty Group | | String | Display |  | Yes | This is fetched from PTM (CTRM) Master Data | | | Standard | Business Partner Group Name | | |
| Counterparty Name | | String | Display |  | Yes | This is fetched from PTM (CTRM) Master Data | | | Standard | Business Partner Short Name | | |
| Credit Limit Level | | String | Display | Group/Counterparty | Yes | If Counterparty Group is not maintained for a CP, it will be defaulted to Counterparty Level, else it will be Group. | | | Standard |  | | |
| Buyer/Seller | | String | Display | Buyer/Seller/Both |  | Buyer, Seller and Both | | | Standard | Derived from List of Roles | | |
| CRM Status | | String | Display | Active/Inactive  **Note:** By default, the status is Active. | Yes | Is Active = Y, then “Active”, else “Inactive” | | | Standard | Is Active | | |
| Currency | | String | Display | Default Pay In Currency |  | “Default Pay In Currency” captured. If not available, read the default currency of App setup. | | | Standard | Default Pay In Currency | | |
| ~~Contact Name~~ | | ~~String~~ | ~~Display~~ |  | ~~Yes~~ |  | | | ~~UDF~~ | ~~Business Partner Name 1~~ | | |
| Credit Risk Status | | String | Dropdown | - Active  - Automatic Suspension  - Delivery Stop  - Prepayment Stop  -Red Listed  -Sanctioned | Yes | * By Default, the value will be Active. * User can manually modify the status | | | Standard |  | | |
| Status Date | | Date | Display |  | Conditional | Will be defaulted to Today’s date when Status is changed | | | Standard |  | | |
| Reference | | String | Text |  | Conditional | Value will have to be entered when Status is modified | | | Standard |  | | |
| Debtor Number | | String | Text |  | Conditional | This field value will be updated by the User online | | | UDF |  | | |
| Annex Number | | String | Text |  | Conditional | This field value will be updated by the User online | | | UDF |  | | |
| Date of the Decision | | Date | Text |  | Conditional | This field value will be updated by the User online | | | UDF |  | | |
| Decision Remarks | | String | Text |  | Conditional | This field value will be updated by the User online | | | UDF |  | | |
| Credit Collection Status | | String | Drop Down | -Red Listed  -Legal Status  -Sanctioned  -Blank  Note: By default, the value is Blank |  |  | | |  |  | | |

**Note: *The current FX Rate should be used against the captured currency for all credit risk calculations.***

**CRM Status:** If the Is Active status is “N” in CTRM , then CRM status in Credit Risk App is Inactive.

##### Sample Data:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Counterparty Group | Counterparty Name | CRM Status | Status | Status Date | Reference |
| First Metals | First Africa Metals | Active | Active |  |  |
| First Metals | SEZ New Metals | Active | Automatic Suspension | 25-Jul-19 | *CFO -REF-32* |
| ANZ Metals | ANZ Metals | Active | Active |  |  |
| Tera Group | Tera Checmicals (Africa) | Active | Active |  |  |
| Tera Group | Tera Checmicals (EU) | Active | Active |  |  |

## 2. Credit App - Limit Maintenance

The Limits are primarily of 2 types, External and Internal.

External Limits are provided by the agencies and hence the user shoud upload it, also they will have an option to update the records as well.

Internal Limits are provided by Manuchar. Hence these limits need to be created/uploaded into the Limit Maintenance menu.

Following operations can be performed by the user :-

1. Upload
2. Update
3. Create

### Template Fields

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Field/Button | Type | | UI | Values | Mandatory | | | Validations/Functionality | |
| Limit Ref. No. | | Number | Display | Autogenerated | | Yes |  | |
| Counterparty Group/Name | | String | Dropdown | From CP Maintenance – this is list of Counterparty Group and the list of Counterparty | | Yes |  | |
| Credit Limit Source | | String | Dropdown | * If Counterparty Group is selected then list of values will be:  1. Credendo 2. Equinox 3. Own Risk  * If Counterparty is selected, and is of type Buyer or Both, the list of values will be:  1. Credendo 2. Equinox 3. Own Risk  * If Counterparty is selected, and is of type Seller or Both, the list of values will be:  1. Credendo 2. Own Risk | | Yes | Valid values are once given in the backend setup | |
| Credit Limit Type | | String | Dependent-Dropdown | * Credendo  |  | | --- | | 1. Contract (Full Term) | | 1. Contract (Partial Term) | | 1. Credit Limit | | 1. Temporary 2. Prepayment Contract   (Full Term)  6.Prepayment Credit Limit |  * Equinox  1. Top Up Contract(Full Term) 2. Top Up Credit Limit  * Own Risk  1. Limit 2. Contract (Full term) 3. Contract (Partial Term) 4. Prepayment Limit 5. Prepayment Contract(Full Term) 6. Prepayment Contract(Partial term) | | Yes | * When Credit Limit Source = Credendo is selected, available values are * Contract (Full Term) * Contract (Partial Term) * Credit Limit * Temporary * Prepayment Contract * (Full Term) * 6.Prepayment Credit Limit * When Credit Limit Source = Own Risk, available values will be * Limit * Contract (Full term) * Contract (Partial Term) * Prepayment Limit * Prepayment Contract(Full Term) * Prepayment Contract(Partial Term) | |
| From Period | | Date | Text |  | | Conditional | Mandatory when Credit Limit Type = External Temporary | |
| To Period | | Date | Text |  | | Conditional | To Period cannot be less than From Period | |
| Amount | | Number | Text |  | | Yes |  | |
| Limit Status | | String | Dropdown | Active  Inactive | | Yes | By default, value will be set to Active | |
| Decision Ref No | | String | Text |  | | Conditional |  | |
| Coverage Percentage | | String | Text |  | |  |  | |
| Max Payment Term | | String | Text |  | |  |  | |
| Remarks | | String | Text  Note: The minimum number of characters that are allowed should be 1000 |  | |  |  | |



##### Sample Data:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Counterparty Group/Name | Credit Limit Source | Credit Limit Type | From Period | To Period | Amount | Limit Status | Ref. No. |
| SEZ New Metals | Credimundi | Temporary | 15-Feb-19 | 05-Oct-19 | 870.000,00 | Active |  |
| First Africa Metals | Credimundi | Contract |  |  | 100.000,00 | Active | SC-965 |
| SEZ New Metals | Credimundi | Credit Limit |  |  | 80.000,00 | Active |  |
| SEZ New Metals | Credimundi | Temporary | 15-Jan-19 | 25-Dec-19 | 870.000,00 | Active |  |
| SEZ New Metals | Credimundi | Top Up |  |  | 5.000,00 | Active |  |
| SEZ New Metals | CIC2 | Credit Limit |  |  | 60.000,00 | Inactive |  |
| SEZ New Metals | CIC2 | Temporary | 15-Jan-19 | 25-Dec-19 | 98.000,00 | Inactive |  |
| SEZ New Metals | CIC2 | Top Up |  |  | 6.000,00 | Inactive |  |
| SEZ New Metals | Own Risk | Limit |  |  | 100.000,00 | Inactive |  |
| SEZ New Metals | Own Risk | Contract |  |  | 100.000,00 | Active | SC-987 |
| First Africa Metals | Credimundi | Contract |  |  | 5.000,00 | Active | SC-887 |
| First Africa Metals | Credimundi | Credit Limit |  |  | 60.000,00 | Active |  |
| First Africa Metals | Credimundi | Temporary | 15-Jan-19 | 25-Dec-19 | 98.000,00 | Active |  |

### Operations

Following operations will be enabled:

All external limits can be fetched into this menu directly.

1. Create/Upload/Update– User can add Limit records. On click of Add, a pop-up will be displayed. User can enter all the required details and save the record. Business validations are performed at 2 levels – field level and during save. Field level validations are provided in the Field table above. Application will validate for Duplicate entry check.
2. Modify
3. Delete
4. Audit Log
5. Search – A free text, comma separated search for all the text fields

Seeded Upload – A one time upload during implementation will be performed. This will avoid adding manually all the Limit records.

(\*\*Internal – Template to be created, with Append/Modify mode\*\*)

### File Upload Operation

When the user uploads a file, field validation will be performed. In case of validation error, a pop up should be displayed detailing the field error in terms of Data type and Mandatory Fields. The file will not be uploaded till the validation errors are cleared in the file. The user should re-upload the file post correcting the errors as mentioned in the pop-up.

### Design Specification for Counterparty & Limit Specification



## 3. App setup

### FX Rate Currency

API approach should be followed to fetch the data from Site Admin (Master Data Set-up)



### Payment Term

A collection of two columns primarily Contract Payment term and Derived Payment term - LC, PP and Others is needed

|  |  |  |
| --- | --- | --- |
| Contract Management | Multiple Payment terms in a contract | A single contract may have a part of the amount to be pre-paid by some date, a part of amount to be paid some days after the BL and the remaining after some more days after BL.  This is part of Manuchar's "Go the Extra Mile Policy" The impact of this is there on    a. computation of the Credit Insurance premium / Supplier Financing Cost to be used for margin computation.   b. Invoice capture - multiple due dates (with partial amounts for each date) |
| Contract Management | Multiple Payment terms in an Invoice | When a single contract may multiple payment terms, then the invoices for that contract will also have multiple payment terms and that will need to sent across in invoice interface. |



### Country

This field is fetched for Status Logic Calculation based on which the Active Status of Counterparty gets changed to the following sub status accordingly: -

a. Delivery Stop job

b. Automatic Suspension job

c. Pre-Payment Stop job









# Credit Risk Calculations

The following gives the break-up of steps and flows between TRM App and Credit Risk App.

1. TRM App: Sends the **TRM Credit Check Request (TCCR)** message to Credit Risk App
2. TRM App: Sends the relevant **CP(G) Expsoure data** to Credit Risk App
3. Credit Risk App: Fetch ALL the "Active" limits from the Limit Maintenance menu for the Counterparty, Counterparty Group and the Counterparty Group's Counterparties.
4. Credit Risk App: For the CP Exposure run a matching and allocation alogrithm, for EACH combination of (Counterparty, Contract Ref. No., Decision Ref. No. and Limit Ref. No.)
5. Credit Risk App: Performs the credit risk calculations using the Limit Maintenance, CP Exposure and TRM Credit Check Request data and arrive at the result
6. Credit Risk App: Send the result in the **Credit Check Response (CCCR)** message from to TRM App.
7. TRM App: In scenarios where the User initiates a request for Limit increase, send the **TRM Limit Raise Request (TLRR)** message to Credit Risk App.
8. Credit Risk App: Record a new Limit
9. Credit Risk App: Send the response **Credit Limit Raise Response (CLRR)** to TRM App
10. TRM App: Record the Limit Ref. No. sent by Credit Risk App and record it against the Contract. This is required so that when the CP(G) exposure data is sent next time, the available Limit Ref. Nos. are sent with the Contract.

## 3. TRM App - Credit Check Request

### Trigger of Credit Check Request

Credit check is triggered as follows:

1. **For Contracts:**

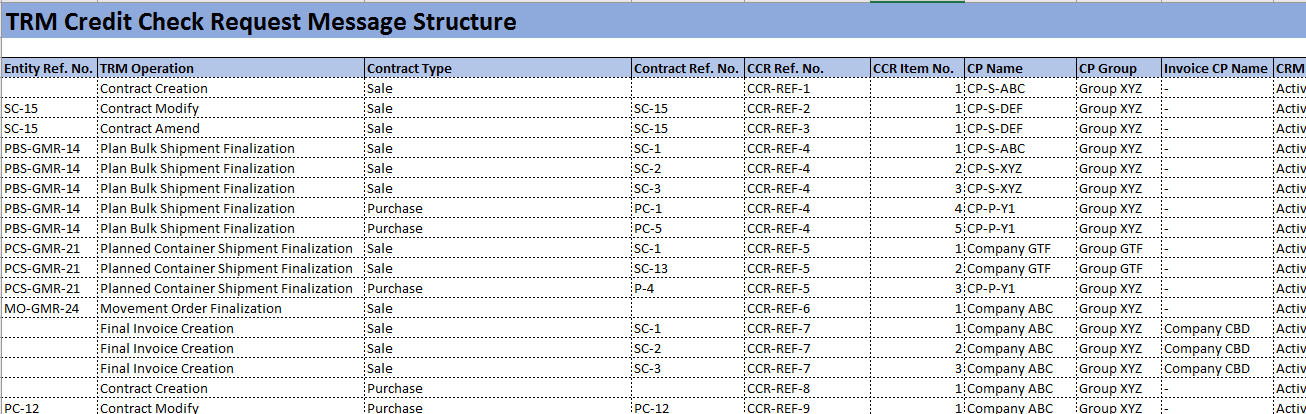
***Credit Check will be performed for ALL the Purchase and Sale Contracts****.* This includes Contracts that have LC Confirmed, Customers with favourable credit score, alternate customers, First Belgian Bank contracts.

***Operations that enable TCCR in TRM App:***

1. New Contract > on click of “Create”
2. New Contracts > on click of “Save As Draft” – **NO CREDIT CHECK REQUEST**
3. Modify Contract > **ONLY when one of these fields has been edited CP, Price, Quantity, Payment Term** > on click of “Modify”
4. Amend Contract > **ONLY when one of these fields has been amended CP, Price, Quantity, Payment Term** > on click of “Amend and Approve Contract”
5. **For Shipments during Instruction To Ship:**
6. For Planned Bulk Shipments > on click of button “Finalize” on Pre Loading
7. For Planned Container Shipments > Container Finalization > on click of button “Finalize”
8. For Movement Orders > on click of “Save”
9. **For Invoice:**
10. Accounting > Invoiceable Items > Tickets & GMR’s > ONLY A/R Invoices > Provisional Invoice/Final Invoice > on click of “Save”
11. Logistics > Contracts > Open Contract Items > Purchase Contracts – Pre Payment Invoice > on click of “Save”

### TRM Credit Check Request (TCCR) Message Structure

Sample screen shot below.



Sample structure embedded here.

### Description

1. The Credit Risk Check Message Request is initaited from the click of the relevant buttons as described in the previous section.
2. TRM will have a placeholder to capture syntax for Credit Check Request – will be a back end configuration
3. Credit Check Request Ref. No. and Item No. will be system generated values by TRM.
4. The Credit Check Request message is to be sent at the Entity + Contract Ref. No. level. i.e. if during PBS Finalization (PBS-GMR-1), there are 3 Sale Contracts and 2 Purchase Contracts, then 1 Credit Check Request will be initated with 5 Item Ref. Nos. for this action on PBS-GMR-1.

### Fields

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field | Type | Mandatory | Validation/Functionality | Accepted Values |
| Entity Ref. No. | String | No | The ref. no. of the entity which is invoking the credit risk check.  Not applicable for TRM Operation = Contract Creation |  |
| TRM Operation | String | Yes |  | * Contract Creation * Contract Modify * Contract Amend * Plan Bulk Shipment Finalization * Planned Container Shipment Finalization * Movement Order Finalization * Final Invoice Creation * Prepayment Invoice Creation |
| Contract Type | String | Yes |  | Purchase or Sale |
| Contract Ref. No. | String | No | Not applicable for TRM Operation = Contract Creation |  |
| CCR Ref. No. | String | Yes | The TRM generated CCR Ref. No. |  |
| CCR Item Ref. No. | String | Yes | The TRM generated CCR Item Ref. No., which should be unique for each contract ref. no. which is part of the entity. |  |
| CP Name | String | Yes |  |  |
| CP Group | String | Yes |  |  |
| Invoice CP Name | String | No | Applicable Only when TRM Operation is Final Invoice Creation |  |
| CRM Status | String | Yes |  |  |
| Currency | String | Yes | The currency of the contract |  |
| Value | Number | Yes | The **apportioned** contract value. This is ONLY applicable for Flat priced Purchase and Sale Contracts. |  |
| Payment Term | String | Yes |  |  |
| Contract Item Attributes – Decision No. | String | No | The Decision Ref. No. which was captured in the TRM **Contract Item level.** |  |
| Available Limit Ref. No. | String | No |  |  |

## 4. TRM App - CP Exposure

To arrive at the CP Exposure, the transaction details are fetched from the PTM (CTRM) App. A backend connection will be setup that will fetch all the required CP Exposure details into the Credit Risk App or with the Credit Check Request message payload the CP Exposure information is also passed? <Dev. Team to finalize>

Important Notes:

Manuchar captures ONLY Flat Purchase and Sale Contracts. The CP Exposure information is only for the Flat Purchase and Sale Contracts. Other Contract Price Types are NOT INCLUDED in this Manuchar release.

TRM App to add CP Exposure for other Contract Price Type in roadmap for future releases.

The following categories of Sub measures will provided in the CP Exposure:

1. New Order but not Planned – This is the Contract (Purchase/Sale) but not planned
2. Pending for Shipments and Invoicing – These are records that have been planned for but Shipment is pending.
3. Pending Invoices – These are the Invoiceable Items (GMR’s that have been executed but not invoiced)
4. Pending Receivables/Payables - These are open invoices that have not yet been fully/partially been paid for
5. Prepaid but not utilized
6. LC not utilized

### Template Fields

|  |  |  |
| --- | --- | --- |
| Field | Type | Accepted Values |
| Entity Reference No. | String |  |
| Counterparty Group | String |  |
| Counterparty Name | String |  |
| Exposure Type | String | * New Orders not planned * Pending for Shipment * Pending Invoices * Pending Payments * Prepaid but not utilized * LC not utilized |
| Contract Ref. No. | String |  |
| Contract Type | String | Purchase or Sale |
| Value | Number |  |
| Currency | String |  |
| Shipment From Date | Date |  |
| Shipment To Date | Date |  |
| Decision Ref. No. | String |  |
| Limit Ref. No. | String |  |

##### Sample Data:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Counteryparty Name | Exposure Type | Ref. No. | Amount | Currency | Shipment Date |
| SEZ New Metals | Pending Invoices | INV-1 | 150000 | EUR |  |
| SEZ New Metals | Pending Invoices | INV-2 | 180000 | EUR |  |
| SEZ New Metals | Pending For Shipments and Invoicing | SHP-1 | 40000 | EUR |  |
| SEZ New Metals | New Orders | SC-2 | 30000 | EUR | 15-Jan-19 |
| SEZ New Metals | New Orders | SC-3 | 20000 | EUR | 18-Apr-19 |
| SEZ New Metals | New Orders | SC-4 | 150000 | EUR | 21-Mar-19 |
| SEZ New Metals | New Orders | SC-5 | 25000 | EUR | 12-Feb-19 |

## 5. Credit App – Credit Calculations

### Description

**The Credit Calculations Logic will be housed at the App + Client level. This is to ensure that unique calculation logics based on unqiue business needs by each client, can be developed and maintained uniquely, thereby not impacting another client.**

The Credit Risk App will perform the Credit Risk Check through a set of series of steps and calculations which are detailed out in the following sections.

### Payment Terms handling

One of the important paramters that drive the output result of the Credit calculations is Payment Terms. The Payment Terms determines that in the event of the Credit being insufficient, can the on-going operation in TRM App be put on hold (hard block) or allow user to proceed with warning (soft block).

As the Payment Terms in business logic can only be of 3 types in the Credit Risk app during calculations – LC, PP and Others.

LC = Letter of Credit, PP = Pre Payment

As the Payment Terms in the TRM App are stored like 180Days\_PP, 30%\_PP, AVLD\_CAD, etc. , the required payment term for Credit risk calculations has be to be derived in the Credit Risk App.

##### Template

New Template/menu “Payment Term Mapping” will be created. This should be a security controlled menu, whose access is driven by the Roles.

This menu will read Payment Term master data data from TRM Admin.

**User Training: Whenever a payment term is modified in TRM, this list should be updated.**

The Derived Payment Term will be the User feeded values. List of accepted values are LC, PP and Others.

Mapping matrix example:

|  |  |
| --- | --- |
| **Payment Term** | **Derived Payment Term** |
| 120 Days LC | LC |
| 180 Days LC | LC |
| 30 Prepayment | PP |
| CAFD | Others |
| CAD | Others |

On receiving the TCCR message, the Credit Risk App will look up the Payment Term Mapping to derive the TCCR. Derived Payment Term field.

### Calculation Details

### Credit Risk Check Output Matrix

The below table will give the Entity and Credit Risk check output matrix:

|  |  |  |  |
| --- | --- | --- | --- |
| Entity | Operation | If Success | If Fail |
| Contracts | Creation | Allow Creation | See Calculation Details Matrix |
|  | Modification | Allow Modify | See Calculation Details Matrix |
|  | Amendment | Allow Amend | See Calculation Details Matrix |
| Instruction To Ship |  |  |  |
| Plan Bulk Shipment | Finalization of Pre Loading | Allow | See Calculation Details Matrix |
| Planned Container Shipment | Container Finalization | Allow | See Calculation Details Matrix |
| Movement Order | Save | Allow | See Calculation Details Matrix |
| Invoice |  |  |  |
| A/P | Creation | Allow | See Calculation Details Matrix |
| A/R | Creation | Allow | See Calculation Details Matrix |

### Credit Risk Calculation Business Rule

Credit Risk check is triggered by the above operations in the PTM (CTRM) App. The PTM (CTRM) App sends across all the required details and information like Operation being performed, Entity Type, Entity Ref. No., Amount, etc. to the Credit Risk App.

The Credit Risk App having the Limit Details, Credit Exposure Details and Credit Risk Check details performs the Credit Risk calculations online. The Credit Risk app sends across the calculation result as an Output to the PTM (CTRM) App instantly, so the User will get the risk output results online.

Legend:

Counterparty Maintenance = CM

Limit Maintenance = LM

Credit Exposure = CE

Credit Risk Check = CRC

### Template Fields for Credit Check Request

|  |  |  |  |
| --- | --- | --- | --- |
| Field | Type | | Accepted Values |
| Request Ref. No. | | String | System generated Credit Check Request reference no. generated by the PTM (CTRM) App |
| Request Ref. Item No. | | String |  |
| Counterparty Name | | String |  |
| Entity Type | | String | * Contract * Instruction to Ship * Invoice |
| Entity Ref. No. | | String |  |
| Contract Ref. No. | | String | In case of “Instruction to Ship” and “Invoice”, the Contract Ref. Nos. attached to these will be passed. |
| Amount | | Number |  |
| Currency | | String |  |
| Shipment Date | | Date |  |

##### Sample Data:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Request Ref. No.** | **Request Ref. Item No.** | **Counterparty Name** | **Entity Type** | **Entity Ref. No.** | **Contract Ref. No.** | **Amount** | **Currency** | **Shipment Date** |
| CRC-REF-1 | 1 | SEZ New Metals | Contract | SC-1 | SC-1 | 80,000 | EUR | 15-Jan-19 |
| CRC-REF-2 | 1 | SEZ New Metals | Contract | SC-2 | SC-2 | 100,000 | EUR | 10-Apr-19 |
| CRC-REF-3 | 1 | SEZ New Metals | Contract | SC-3 | SC-3 | 40,000 | EUR | 16-Jun-19 |
| CRC-REF-4 | 1 | First Metals | Instruction to Ship |  | SC-4 | 49035 | EUR | 16-Jun-19 |
| CRC-REF-5 | 1 | SEZ New Metals | Instruction to Ship |  | SC-3 | 67902 | EUR | 15-Jan-19 |
| CRC-REF-5 | 2 | First Metals | Instruction to Ship |  | SC-6 | 113636 | EUR | 15-Jan-19 |
| CRC-REF-5 | 3 | Unitrial Conductors | Instruction to Ship |  | SC-7 | 62769 | EUR | 15-Jan-19 |
| CRC-REF-6 | 1 | First Metals | Instruction to Ship |  | SC-4 | 57068 | EUR | 21-Jan-19 |
| CRC-REF-6 | 2 | First Metals | Instruction to Ship |  | SC-9 | 54468 | EUR | 21-Jan-19 |
| CRC-REF-6 | 3 | First Metals | Instruction to Ship |  | SC-10 | 42904 | EUR | 21-Jan-19 |
| CRC-REF-7 | 1 | Corus | Invoice |  | SC-4 | 59394 | EUR | 16-Jun-19 |
| CRC-REF-8 | 1 | SEZ New Metals | Invoice |  | SC-1 | 80,000 | EUR | 15-Jan-19 |
| CRC-REF-8 | 2 | SEZ New Metals | Invoice |  | SC-2 | 100,000 | EUR | 10-Apr-19 |
| CRC-REF-8 | 3 | SEZ New Metals | Invoice |  | SC-3 | 40,000 | EUR | 16-Jun-19 |

### Business Logic

The sheet below gives the details of the business rules for Credit Risk check.



### Math Model



### Template Fields for Credit Check Response

|  |  |  |
| --- | --- | --- |
| Field | Type | Description/Accepted Values |
| Request Ref. No. | String | As sent in the Credit check request |
| Request Ref. Item No. | String | As sent in the Credit check request |
| Request Date | Date | As sent in the Credit check request |
| Counterparty Name | String | As sent in the Credit check request |
| Entity Type | String | As sent in the Credit check request |
| Entity Ref. No. | String | As sent in the Credit check request |
| Contract Ref. No. | String | As sent in the Credit check request |
| Amount | Number | As sent in the Credit check request |
| Currency | String | As sent in the Credit check request |
| Shipment Date | Date | As sent in the Credit check request |
| Credit Risk Check | String | Success or Fail |
| Message | String |  |
| Limit Ref. No. | String | Own Risk Limit generated ref. no. |
| Amount | Number | Own Risk Limit Amount |

##### Sample Data:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Request Ref. No.** | **Request Ref. Item No.** | **………..** | **Credit Risk Check** | **Message** | **Limit Ref. No.** | **Amount** |
| CRC-REF-1 | 1 |  | Success | Sufficient Credit available. |  |  |
| CRC-REF-2 | 1 |  | Fail | Insufficient Credit available. Kindly approve LM-REF-41 Own Risk Approval | LM-REF-41 | 10,000 |
| CRC-REF-3 | 1 |  | Success | Sufficient Credit available. |  |  |
| CRC-REF-4 | 1 |  | Success | Sufficient Credit available. |  |  |
| CRC-REF-5 | 1 |  | Success | Sufficient Credit available. |  |  |
| CRC-REF-5 | 2 |  | Success | Sufficient Credit available. |  |  |
| CRC-REF-5 | 3 |  | Fail | Insufficient Credit available. Cannot proceed with operation |  |  |
| CRC-REF-6 | 1 |  | Success | Sufficient Credit available. |  |  |
| CRC-REF-6 | 2 |  | Fail | Insufficient Credit available. Cannot proceed with operation |  |  |
| CRC-REF-6 | 3 |  | Fail | Insufficient Credit available. Cannot proceed with operation |  |  |
| CRC-REF-7 | 1 |  | Success | Sufficient Credit available. |  |  |
| CRC-REF-8 | 1 |  | Success | Sufficient Credit available. |  |  |
| CRC-REF-8 | 2 |  | Success | Sufficient Credit available. |  |  |
| CRC-REF-8 | 3 |  | Fail | Insufficient Credit available. |  |  |

The messages will be shown in the PTM (CTRM) App on the application itself in near real-time. Sample screenshots of responses below:

## 6.Credit Stop Eligibility List

The Couterparty’s both supplier and customer **invoice** data is fetched from the Invoice Summary domain. The existing Invoice domain should also have the Payment Schedule details avaialble. Hence, from Invoice Summary domain fetch records where:

1. Invoice Type = Final Invoice AND Raised/Received = Raised AND Payment Status != Paid

OR

1. Invoice Type = Prepayment Invoice AND Raised/Received = Received AND Payment Status = Paid

The Invoice Summary domain should be joined with CP Details, Physical Trade Details and CP Address Details to fetch the following fields:

1. Counterparty Group from CP Details
2. Trader Name, Shipment From Date, Contract Executed Quantity from Physical Trade Details
3. Counterparty Country from CP Address Details

The above is achieved by using Platform Custom Query on the TRM Domains to create one superset Collection called **“Credit Stop Invoice Summary”.**

A separate Collection – Credit Stop Country Days will be maintained which will give the Country and Delivery Stop-Automatic Suspension days.

Sample file format attached.



**The following enrichments will be added in the Credit Stop Invoice Summary Collection:**

1. Invoice Form – If Invoice Type = Final Invoice AND Raised/Received = Raised, then “Sale Final Invoice” else “Purchase Pre Payment”
2. Delivery Stop Days – If Invoice Form = Sale Final Invoice, (then lookup of the Invoice record’s Counterparty Country on the Credit Stop Country Days file. If record not found then default 60), else 0
3. Automatic Suspension Days – If Invoice Form = Sale Final Invoice, (then lookup of the Invoice record’s Counterparty Country on the Credit Stop Country Days file. If record not found then default 90), else 0
4. Delivery Stop Due Date – this is Invoice Due Date + Delivery Stop Days
5. Automatic Suspension Due Date – this is Invoice Due Date + Automatic Suspension Days
6. Eligible for Delivery Stop – If Invoice Form = Sale Final Invoice (If Delivery Stop Due Date >= Current System Date then ‘Y’, else ‘N’), else ‘N’
7. Eligible for Automatic Suspension – If Invoice Form = Sale Final Invoice (If Delivery Stop Due Date >= Current System Date then ‘Y’, else ‘N’), else ‘N’
8. Prepayment Stop Due Date – If Invoice Form != Sale Final Invoice then Shipment From Date + 60, else Invoice Due Date + 0.
9. Eligible for Pre Payment Stop – If Invoice Form != Sale Final Invoice [(If Prepayment Stop Due Date >= Current System Date AND Contract Executed Quantity = 0) then ‘Y’, else ‘N’], else ‘N’

The transaction are fetched into the Credit Risk App at a scheduled basis. Hence, as and when transactions are refreshed, the invoices will be fetched into the Credit Risk App.

**Template Fields**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field | Type | Accepted Values | Sample data | Domain Detail |
| Eligible | Checkbox | Ticked(yes) by default |  |  |
| Declared | Checkbox | Ticked(yes) by default |  |  |
| Over due | Checkbox |  |  |  |
| Corporate ID | String |  | MANBE | AK\_CORPORATE |
| Counterparty Group | String |  | ABDOULAYE SEYE | BP\_GROUP\_NAME of table BGM\_BP\_GROUP\_MASTER |
| Trader | String | Name of the Trader | Ben | Combining the columns firstname and lastname of the table GAB\_GLOBALADDRESSBOOK |
| Invoice Ref No. | String | Contract Item Level | FI-S-5-MANBE | is\_invoice\_summary |
| Payment Term | String |  | * AR\_10 DAYS\_INV * AP\_LC 75 DAYS\_B/L | pym\_payment\_terms\_master |
| Payment Schedule | Number |  | 20 | It should be the payment schedule number of days |
| Due Date | Date |  | 24-Feb-2019 | IS\_INVOICE\_SUMMARY |
| Payable Currency | String |  | USD | cm\_currency\_master |
| Total Amount | Number |  | 25000 | IS\_INVOICE\_SUMMARY |
| Pending Amount | Number |  | 12000 | Derived using amt\_paid  and amt\_to\_pay  from table IS\_INVOICE\_SUMMARY  (CASE |

Following are the expected activities:-

1. The first three columns Eligible, Declared and Overdue are editable.
2. The other columns are non editable, but the data will be refreshed when the user lands in that page.
3. When another user is editing, the editing status should be displayed in activity log with Invoice Ref No. as reference to the row being edited.This helps in collaboration.

Credit Risk Status Calculation :-

1. On page load of Credit stop eligibility list, the invoices of all the Counterparty’s available in Counterparty Maintenance screen should be fetched from CTRM in real time.
2. User will be able to check/uncheck the flag. User will be able to check/uncheck through a bulk mechanism also (i.e. select all for a subset of the invoices)
3. All the Couterparty’s will be checked by default to eligible in Credit stop eligibility list.
4. The column Declared will be default checked to indicate if the invoice has been declared to credendo(External rating in Limit Maintenance) or not.
5. The column **Overdue will not be default checked** and is used to indicate if the declared invoices are overdued.
6. The App will have a Credit Stop valuation process available. The Credit Stop valuation process can be configured to run once a day. The Credit Stop valuation has 3 sub processes running within it:
   1. Delivery Stop job
   2. Automatic Suspension job
   3. Pre Payment Stop job
   4. Revoking job
7. If a particular Invoice falls under the DS,AS or PS bucket, then automatically the Counterparty fails, there by the Counterparty Group also fails. In addition, all the Counterparties under that Group also fail.
8. Credit team user may use filters in Counterparty Maintenance screen to check the status of the Counterpaty.

***Automatic Suspension Job Calculation Logic:***

At the scheduled frequency the Automatic Suspension job will run first.

1. Pick up all records from Credit Stop Eligibility List where:
   1. Eligible = checked
   2. Eligible for Automatic Suspension = ‘Y’
2. Pick up all the qualified records in the above step and filter the unique set of Counterparties.
3. Go to Counterparty Maintenance listing and fitler the above qualified Counterpaties.
4. If the CM.Status != Automatic Suspension, then convert it to Automatic Suspension.
5. If the CP belongs to a Group, then all the CPs of the Group where CM.Status != Automatic Suspension will be updated to Credit Status = Automatic Suspension.

***Pre Payment Stop Job Calculation Logic:***

At the scheduled frequency the Pre Payment job will run AFTER the Automatic SUspension job.

1. Pick up all records from Credit Stop Eligibility List where:
   1. Eligible = checked
   2. Eligible for Pre Payment Stop = ‘Y’
2. Pick up all the qualified records in the above step and filter the unique set of Counterparties.
3. Go to Counterparty Maintenance listing and fitler the above qualified Counterpaties.
4. If the CM.Status != Automatic Suspension or Pre Payment Stop, then convert it to Pre Payment Stop.
5. If the CP belongs to a Group, the all the CPs of the Group where CM.Status != Automatic Suspension or Pre Payment Stop, then will be updated to Credit Status = Pre Payment Stop.

***Delivery Stop Job Calculation Logic:***

At the scheduled frequency the Delivery Stop job will run last AFTER the Automatic Suspension and Pre Payment Stop jobs.

1. Pick up all records from Credit Stop Eligibility List where:
   1. Eligible = checked
   2. Eligible for Delivery Stop = ‘Y’
2. Pick up all the qualified records in the above step and filter the unique set of Counterparties.
3. Go to Counterparty Maintenance listing and fitler the above qualified Counterpaties.
4. If the CM.Status != Automatic Suspension or Pre Payment Stop, then convert it to Delivery Stop.
5. If the CP belongs to a Group, then all the CPs of the Group where CM.Status != Automatic Suspension or Pre Payment Stop will be updated to Credit Status = Delivery Stop.

***Delivery Stop Revoking Job Calculation Logic:***

At the scheduled frequency the Delivery Stop Revoking job will run last AFTER the Automatic Suspension and Pre Payment Stop and Delivery Stop jobs.

1. Pick up all records from Counterparty Maintenance where Credit Risk Status = “Delivery Stop”
2. Lookup this Counterpaty in the Credit Stop Invoice Summary
3. If this Counterparty is NOT found, then change the Status to “Active”, else do not change the Status.
4. If Counterparty Status is changed to Active, then if Counterparty belongs to a group, then all the CP which have Credit Risk Status = “Delivery Stop”, will be changed to Status = “Active”.

# Open Questions

1. Can one Counterparty be both Customer and Supplier? If yes how will the Counterparty Setup and Credit Limit Setup work?
2. Credit Check can be at the Counterparty Group level and Counterparty level. Add CP Group in wireframe
3. Add Rejection in approval flow
4. Show Credit Risk Limits Insight
5. Delivery Stop and Automatic Suspension automation logic
6. Logic to enable Credit Check to be done or not
7. Supplier Flow to be updated