Intellect™ One Treasury

PRODUCT ADOPTION DOCUMENT

<Structured Products>

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1.0 Introduction

This document describes in detail about Intellect™ One Treasury Structured Product Module covering its functionalities and business process flow.

Purpose

This document is intended to provide the specification for Intellect™ One Treasury Structured Product Module. The intended audience for this document is

1. Business Users
2. Testers
3. Technical Architects & Developers

1.2 Acronyms/Glossary of Terms

S.No.	Term	Explanation
1.	CLN	Currency Linked Notes
2.	LCY	Local Currency
3.	Non-USD	Any Currency other than USD like GBP, EUR, JPY etc.
4.	FO	Front Office
5.	BO	Back Office
6.	CLSP	Currency linked Structured Products
7.	USD/TRY	US Dollar against Turkish Lira
8.	IRLN	Interest Rate Linked Notes
9.		
10.		

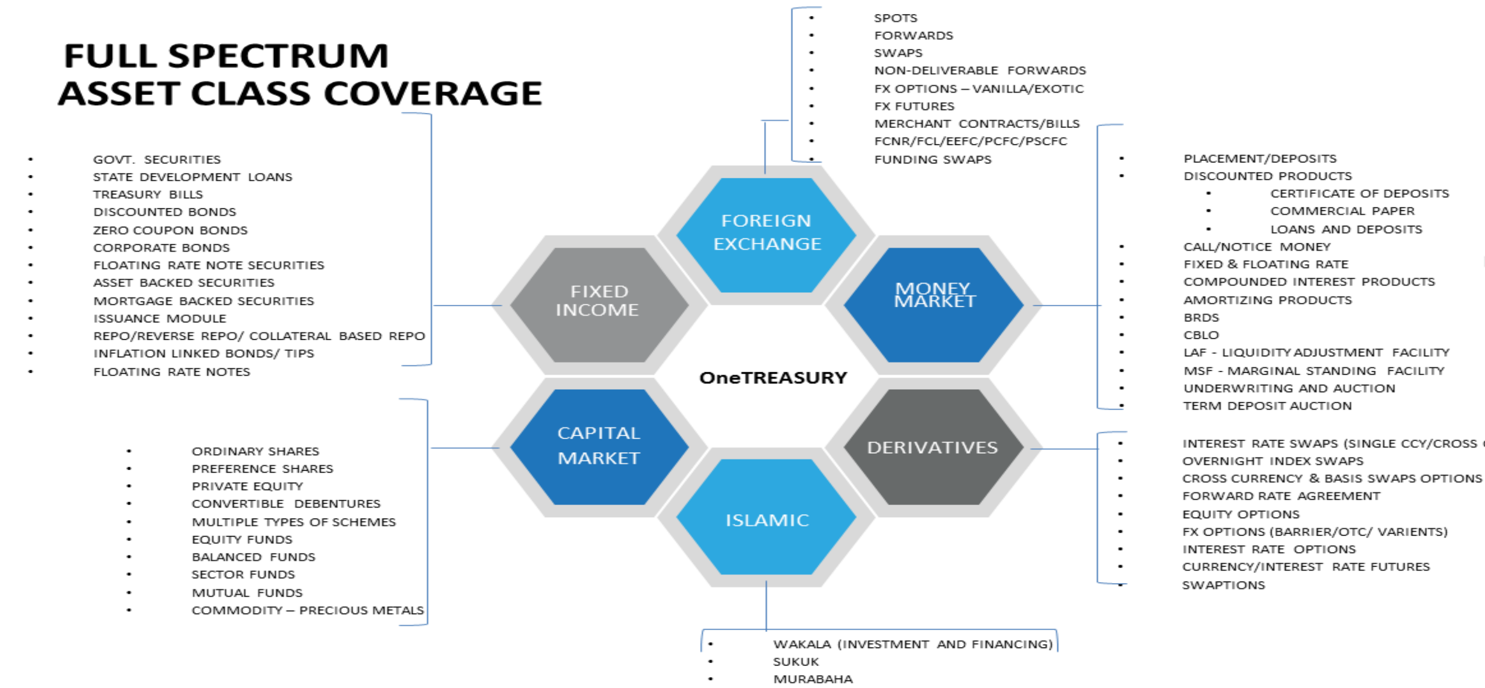
1.3 List of Hot Keys/Shortcuts Used

1.4 References

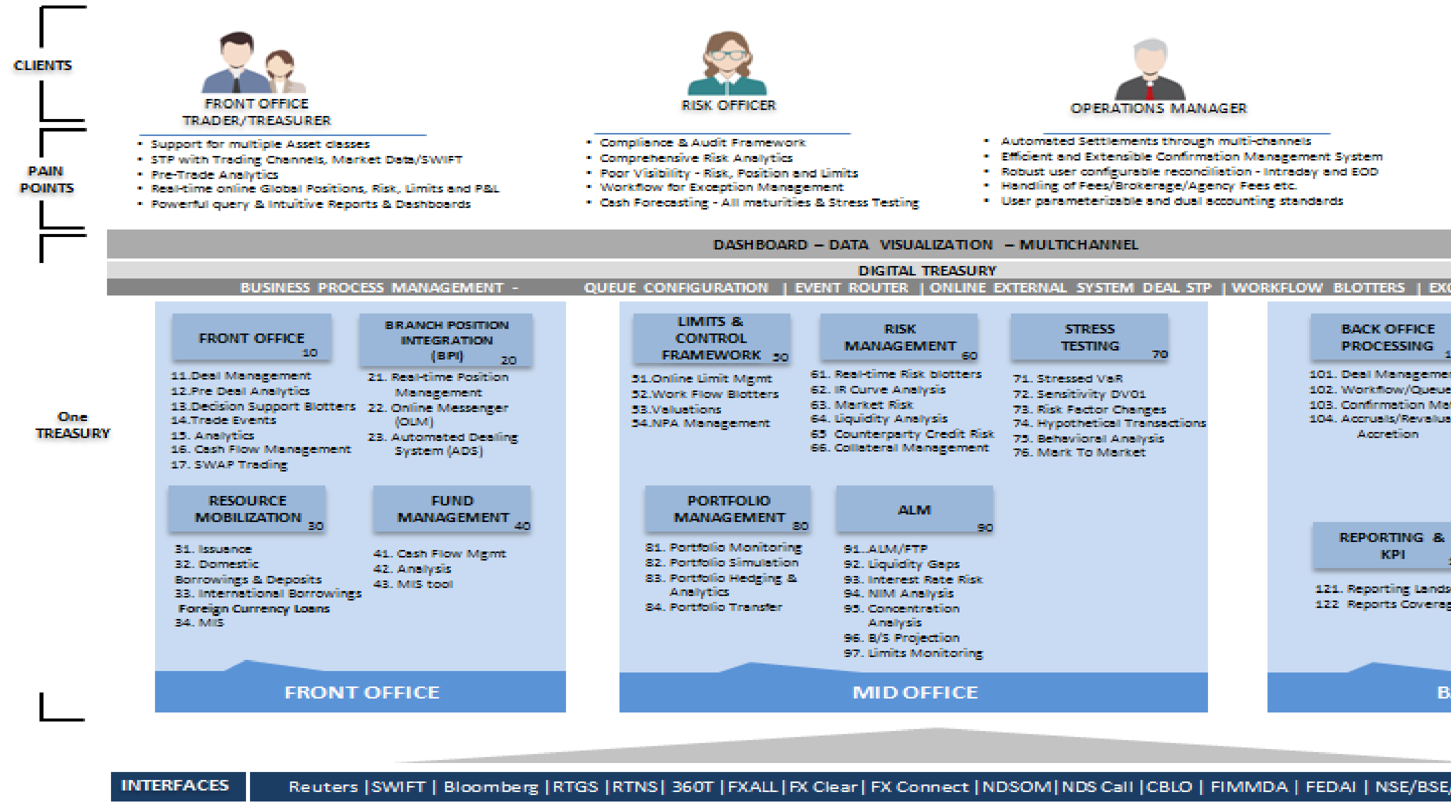
This section should provide references for any specifics on Regulatory requirements, Compliance, Market research that this PRODUCT offers
Example –

2.0 Overview of the Intellect One Treasury

Intellect™ One Treasury Product provides a single platform for integrated risk & treasury management. One Treasury Solution provides Real Time Cash flows and Position Managements. It helps in identifying market and liquidity risk on a real time basis along with limits and control frameworks. Intellect™ One Treasury supports 60 Products across 6 asset classes on a single platform.



2.1 L0 Architecture



2.2 Product Process Flow

<Pictorial representation of the Product process flow depicting interaction with various modules>

2.3 Structured Product Module Overview

Intellect™ Treasury Structured Product module is a rich application covering front office implementation. A structured product, also known as a market-linked investment, is a pre-packaged *investment* strategy based on *derivatives*, such as a single *security*, a basket of securities, *options*, *indices*, *commodities*, debt issuance or foreign *currencies*, and to a lesser extent, swaps. A feature of structured products is a "**principal guarantee**" function, which offers protection of principal if held to maturity. For example, if an investor invests $100, the issuer invests it in a risk-free bond that has sufficient interest to grow to $100 after the five years period. This bond cost $80 today and after five years it will grow to $100.

We have 4 different types of SP products and they are

- Currency/FX Linked Structured Products.
- Commodities Linked Structured Products.
- Interest Rate Linked Structured Products.
- Principal Protected Notes.

Intellect™ One Treasury Structured Product Module covers following functionalities. So, the flow of SP Module is defined as:

S. No.	Module Name/Description	Module ID
1.	Static Data Setup(Maintenances/Master)	Setup
2.	Front Office Deal Management	FISFO
3.	Common Utilities	

3.0 Static Data Setup

Intellect ™ One Treasury supports maintenances and configuration of static data's in the application through setup screens. Setup screens are categorised based upon usage and functionality. One Treasury Supports 2 levels of Check for any request creation and its approval. This check is applicable for all setup screens.

Based upon request raised, a user has option for

a.i.a. Create a new Parameters

a.i.b. Modify/Delete the existing values

a.i.c. Searching for existing values

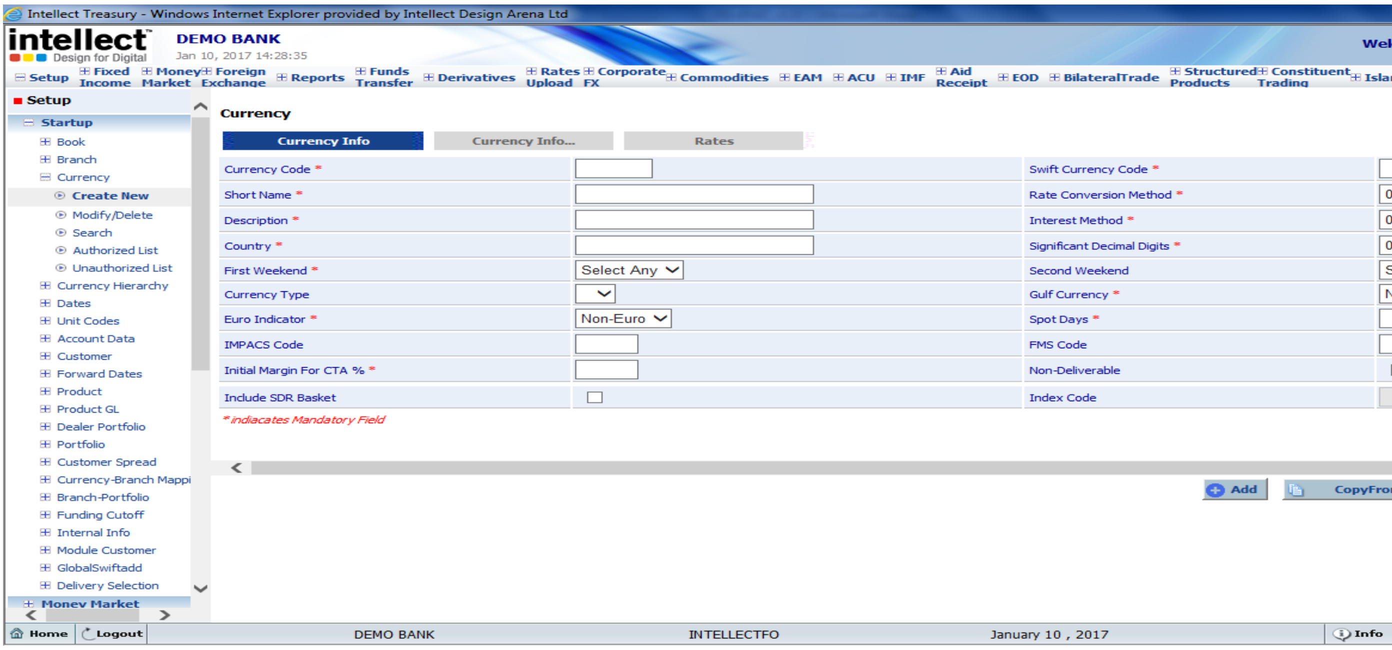
a.i.d. Viewing Authorized and Unauthorized lists.

3.1 Currency Setup

Currency Setup is the first master for setting up and used as base for creating other setups also.

3.1.1 Screen Path & Layout

Navigation Path: Intellect One Treasury >> Setup >> Start Up>> Currency Master



3.1.2 Description

➢ **Prerequisites**

○ Unit codes Setup

Currency Setup screen consist of 3 tabs which accommodates the details such as swift currency code, Rate Conversion method, significant decimal digit, spot days(Based upon currency selected default spot days is auto populated) , and minimum and maximum rates, Interest rates along with other information.

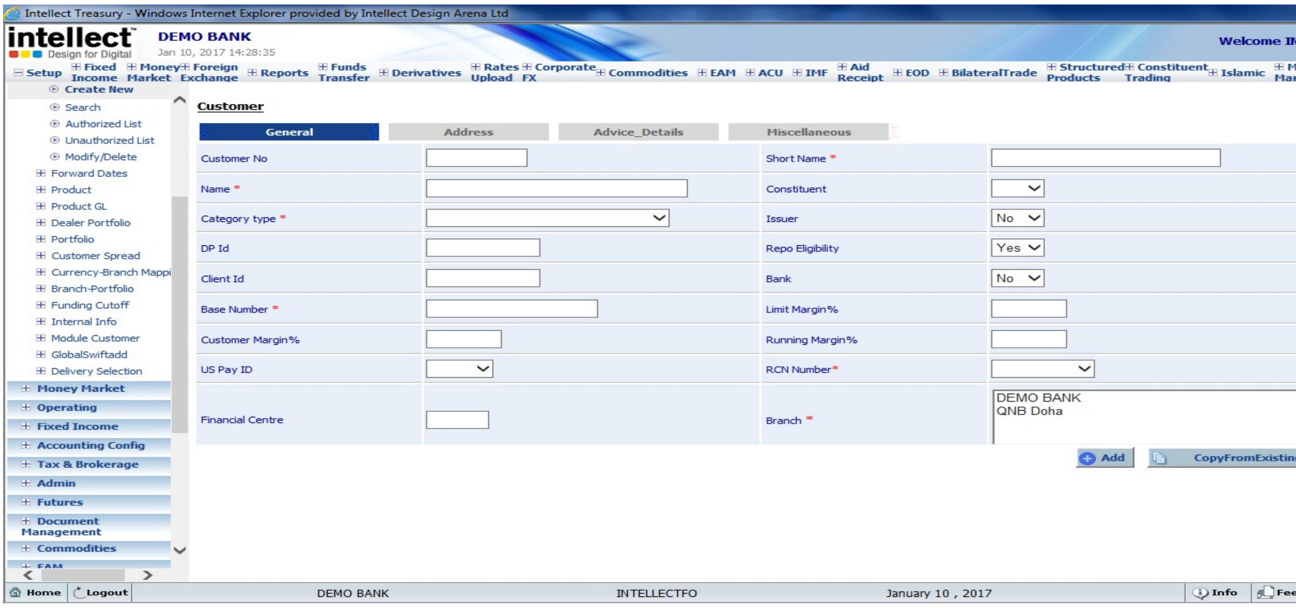
The weekends are to be selected as per the respective countries. Once the 3.11 Account Data is maintained, the currency can be mapped to the respective account.

3.2 Counterparty Setup

Customer maintenance is used for creating/setup of treasury customers in the application.

3.2.1 Screen Path and Layout

Navigation Path: Intellect™ One Treasury >> Setup >> Start Up>> Customer Master



3.2.2 Description

➢ **Prerequisites**

- Unit Code Master where customer category type and other values such as country are maintained in the system.
- Branch Master

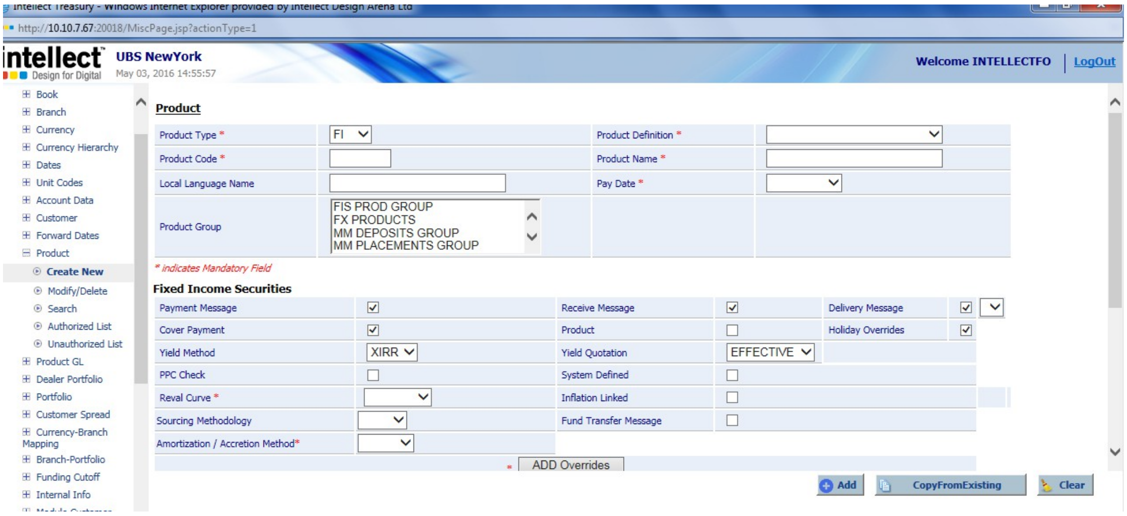
Configuration of customer details, mapping to specific branch, module is done in this master.

3.3 Product Setup

Product Maintenance screen is used for configuring various types of Treasury product in the system. Intellect™ One Treasury supports creation of sub products under each product with its own underlying parameters.

3.3.1 Screen Path and Layout

Navigation Path: Intellect™ One Treasury >> Setup >> Start Up>> Product Master



3.3.2 Description

- **Prerequisites**
  - Unit Codes Maintenances
  - Product level configuration such as
    - To generate specific Message Types(Such as Payment, Cover, Receive, Delivery Messages)
    - Reval Curve selection
    - Sourcing Methodology such as FIFO,LIFO,WAP
    - Amortization/Accretion Method such CYTM,IRR,SLM
    - Hard(Overrides), Soft(Errors) and Deal Verification Checks

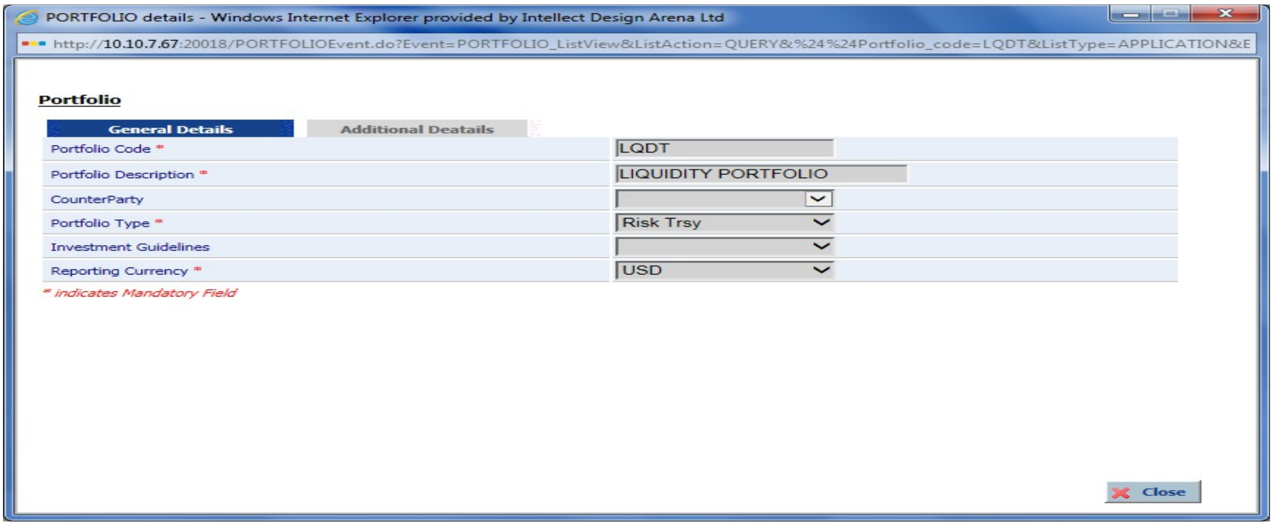
In current application 1XX Product series belongs to Coupon bearing Instruments like Bonds and 2XX series products belongs to discounted instruments such as ZC Bonds, Treasury Bills. (Provide hyper link for FIS Products and flavours supported in the system).

3.4 Portfolio

Portfolio maintenance is used for creating Portfolio's in the application.

3.4.1 Screen Path and Layout

Navigation Path: Intellect™ One Treasury >> Setup >> Start Up >> Portfolio Master



3.4.2 Description

➢ **Prerequisites**

- Unit codes
- Currencies

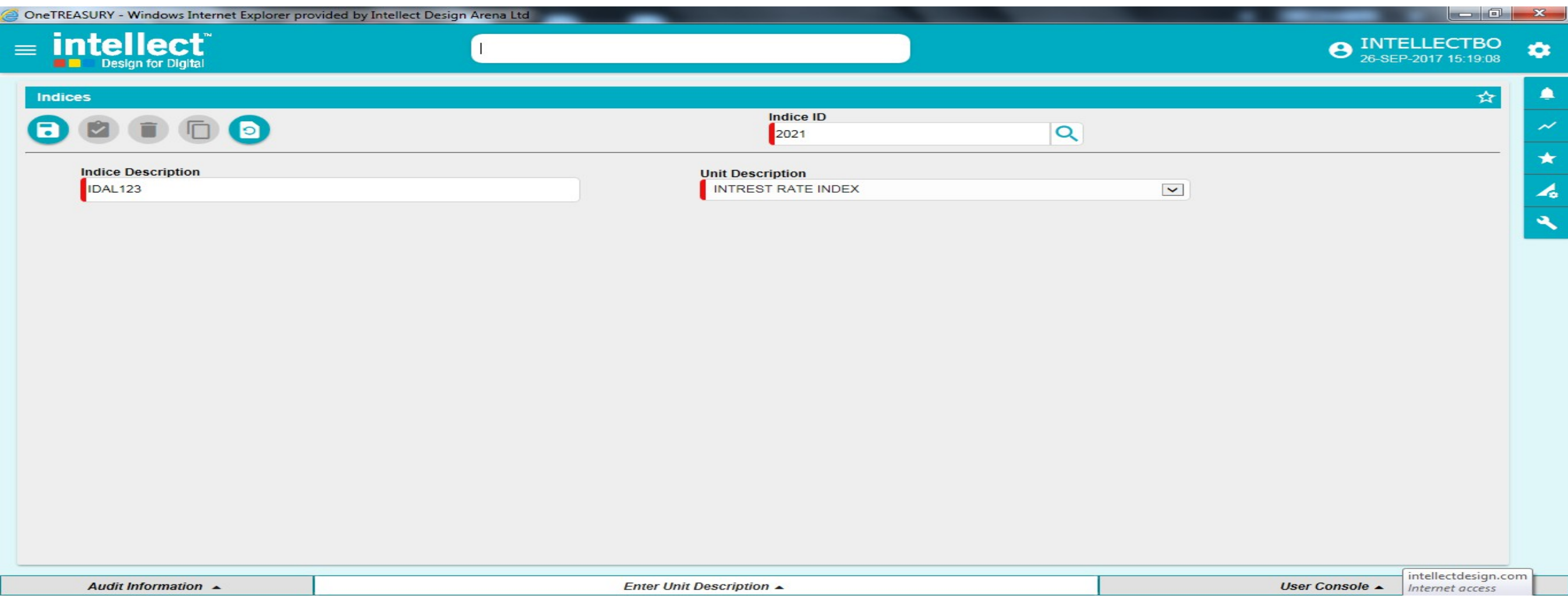
Intellect™ One Treasury tracks investments portfolio wise. This Master is also used for restricting/configuring portfolios to specific modules and currencies under additional details tab.

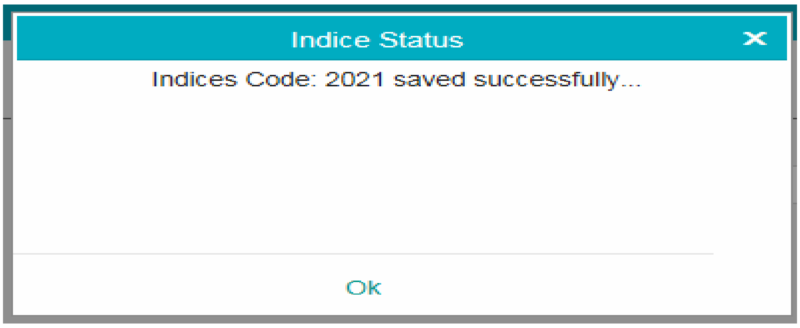
3.5 Indices

Index maintenance is used for creating Index's in the application.

3.5.1 Screen Path and Layout

Navigation Path: Intellect™ One Treasury >> Structured-products >> Front Office >> Indices





3.5.2 Description

- **Prerequisites**

  - Unit Description(Configuration)

Intellect™ One Treasury Structured-products create indice for Currencies/Commodities/Interest Rates. This Indices code will be used for Index creation of the Structured Product and this Index is linked with Note Definition. For booking a Single or Basket of Structured Product we required First indice id, and then Index and lastly Note Code. All are interdependent one on another. These maintenance are created as Maker and Checker.

Field Description

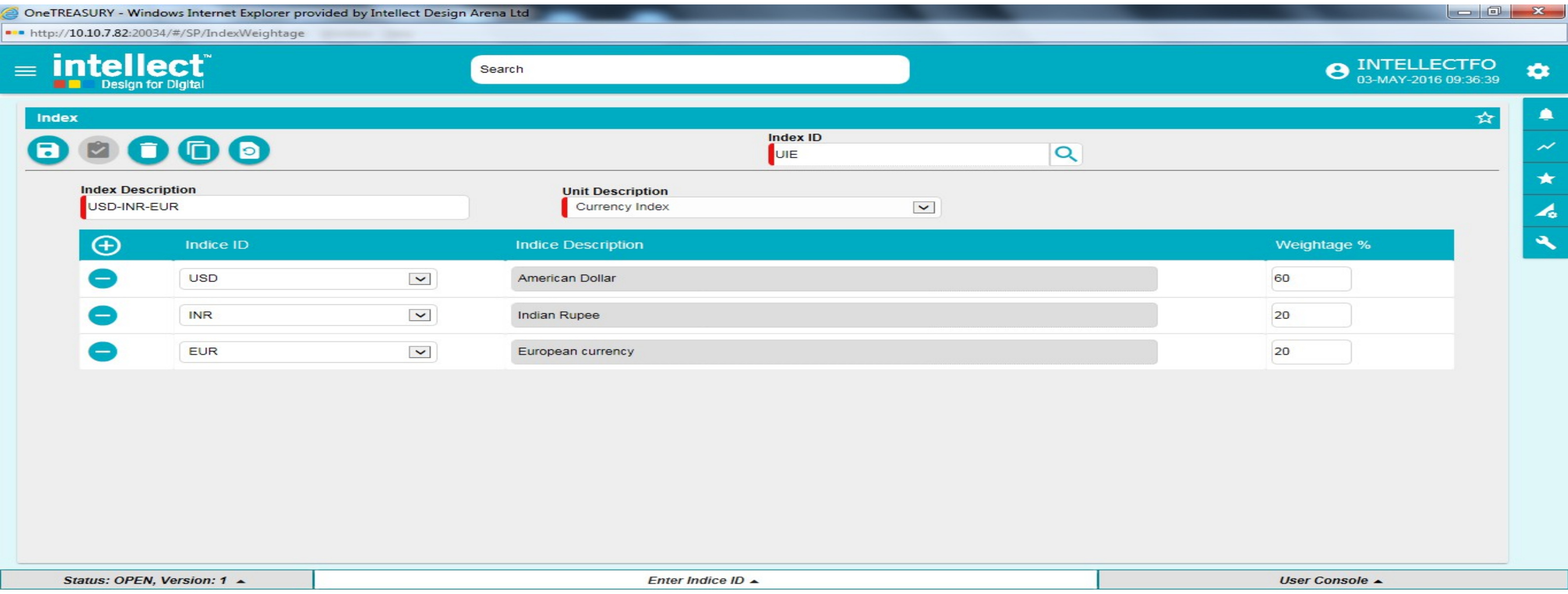
Field	Field Type	Description
Indice ID	Mandatory	This field is used to store the Indice ID
Indice Description	Mandatory	This field is used to store the Indice Description
Unit Description	Mandatory	This field is used to store the type of the Indice (currency Indice/Interest rat

3.6 Index

Index maintenance is used for creating Note Code's in the application.

3.6.1 Screen Path and Layout

Navigation Path: Intellect™ One Treasury >> Structured-products >> Front Office >> Index



3.6.2 Description

➢ **Prerequisites**

- Unit Description(Configuration)
- Indice Id (Configuration)

Intellect™ One Treasury Structured-products create Index with Single/Basket of Currencies/Commodities/Interest Rates for Note code definition. Second tab in the same code will be used to add single or basket of SP products with Weightage and based on this given waightage Note Code will calculate the cashflows when user defines it.

Field Description

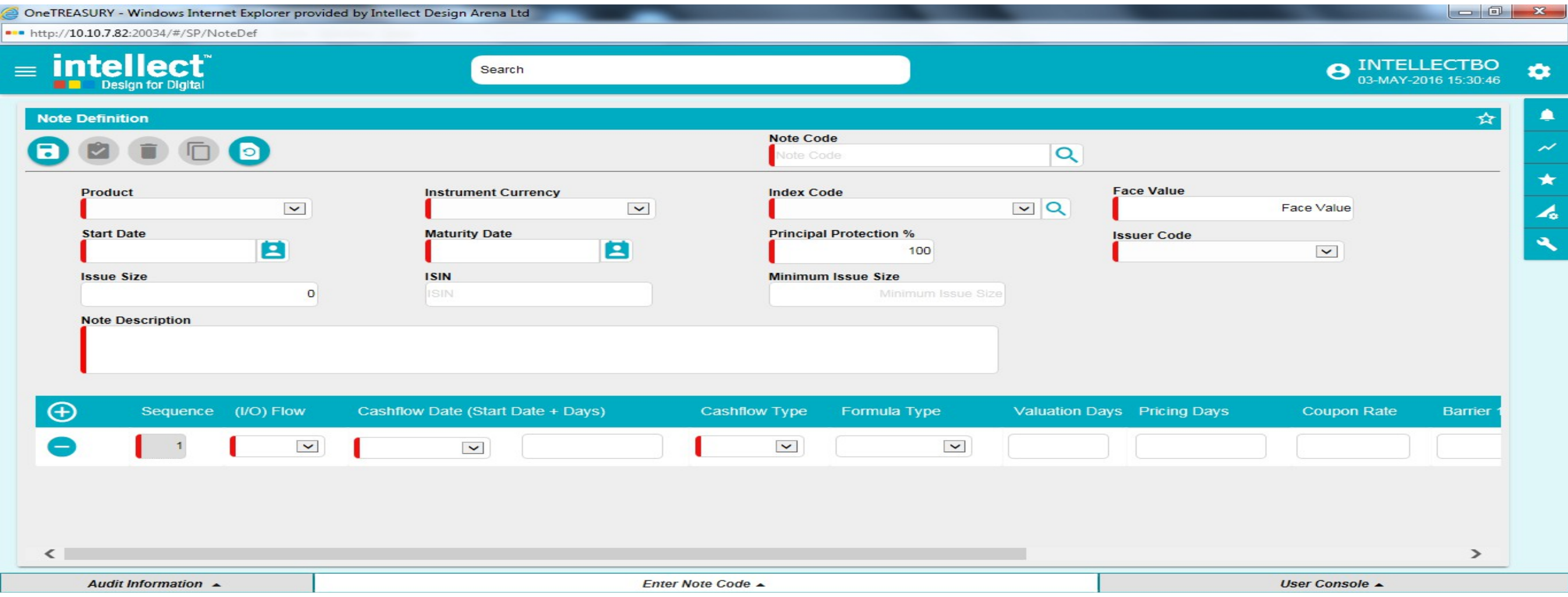
Field	Field Type	Description
Index ID	Mandatory	This field is used to store the Index ID
Index Description	Mandatory	This field is used to store the Index Description
Unit Description	Mandatory	This field is used to store the type of the Index (currency Index/Interest rate Inde
Indice ID	Mandatory	User needs to select the underlying Indice from the drop down menu. All the Aut drop down list
Indice Description	N/A	This field would be auto populated based on the Indice selected
Weight age %	Mandatory	User can assign the required weight age to the underlying indices. Sum of weigh

3.7 Note Definition

Intellect™ One Treasury Structured-products module supports configuration and maintenance of Notes using Notes Definition screen. Notes are manually configured.

3.7.1 Screen Path & Layout

Navigation Path: Intellect One Treasury >> Structured-products >> Front Office >> Notes Definition



3.7.2 Description

- **Prerequisites**
  - Product
  - Currency
  - Index Code
  - Issuer codes(Configuration)

- To create/configure Note Code in the system under Note Definition Screen basic details should be entered such as product type, Instument Currency, Index Code, FV, Start Date, Maturity Date, Principle Protection %, Issuer Code, and Notes Desciption along with Cash Flow Date, Cashflow Type and Formula type details.

- User will create the cashflows by giving the required details from Note definition screen secon grid. This cashflows are having the value of Formula Type and this entry will calculate the cashflow based on the business logic defined from backend.

- Note Code will be generate once data is saved. This Noted code will be used for booking the deal from the Deal Capture screen. Intellect™ One Treasury provides option for saving and then authoring any Note code. System also provides option to directly authorize the Note Code.

- In this Note definition we can create note code for single currency or with Basket of Currencies based on mapping of Index from the Index maintenance. Also while Defining the cashflows we can add multiple Formula types to single Note Code.

➢

S. No	Tabs/Screen	Description	Additional
1	Note Code	This values consists of all the important data for configuring/creating a Note Code. ○ Product, Issuer Details etc. ○ Index Details ○ Cash Flow Details	○
2	Cash flows	○ User will define the cashflows while creating the note code.	○ com ○ crea
3	Index	This tab captures ○ Currency/Commodity/Interest Rate index creation.	○ Cod
4	Indeces	This tab captures ○ Currency/Commodity/Interest Rate Indices creation.	○

➢ Intellect™ One Treasury supports various types of Note Definition along with different flavours. Note Code types supported are as follows

S. No	Product	Type	Description	Flavour
	Single/Basket Currencies Note Code	1. Currency Linked SP 2. Commodity Linked SP 3. Interest Rate Linked SP	○	○ Curr ○ Dual ○ Curr ○ Curr ○ Targ

3.7.3 User Actions

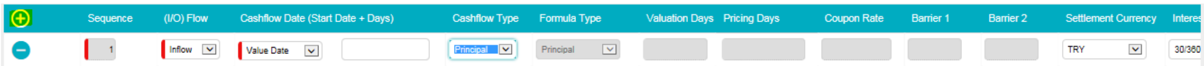
Intellect™ One Treasury system is an entitlement based system and Maker-Checker concept for request creation and authorization. In Security Master Following are the actions which can be done on the security

S. No	Scenario	Action	Revised Status
1	Creating a New Note Code	Save	Note Code is Saved But Not Authorized. (OPEN with Version 1)
2	Creating a New Note Code	Save & Auth	Note Code is Saved and Authorized.(AUTHORIZED) Based upon Authorization rights, Security can be autl

3	Deletion of Note Code	Delete	Note Code is deleted from the System
4	Modification of Note Code	Modify	Modify
5	Create Cash flows	Save	

CASHFLOWS Creation:

Cashflows will be created under note definition only and to create cashflows to the note, Click on button in the lower section of the screen to add the required cash flows.



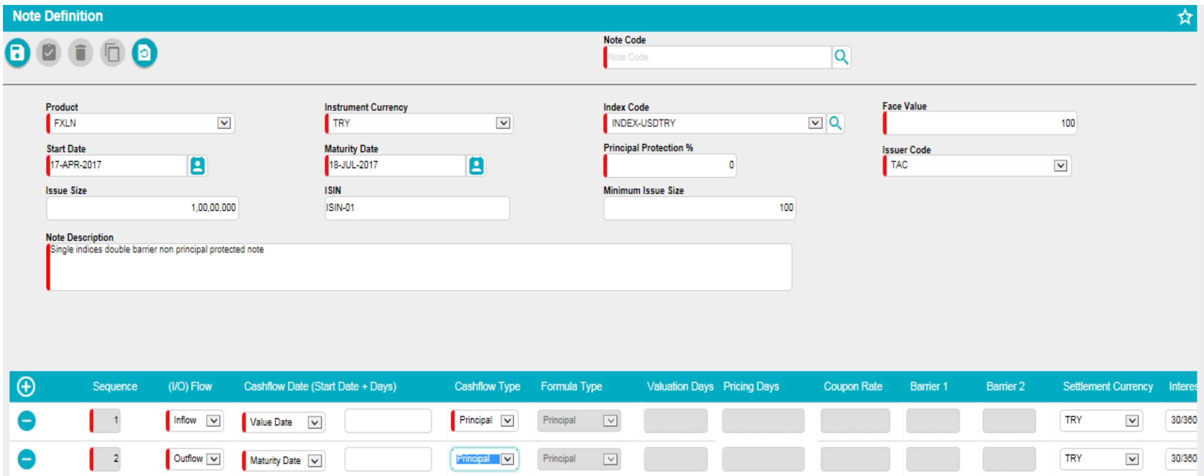
As per the above note details, we would have three cash flows.

1. Counterparty invests on the Value date

2. Counterparty receives the principal amount on maturity

3. Variable return/Coupon amount on the maturity date

In the below screen, we could see two cash flows representing the inflow and outflow of the principal amount. Please note that Cash flow type for Principal exchange should be "Principal" .



Steps to add cash flow to represent Variable return/coupon:

- User needs to select the direction of the cash flow (Inflow/Outflow)
- User need to select the cash flow date as "Coupon Date"
- User needs to select the cash flow type as "Coupon".
- Formula Type: User needs to enter the cash flow date for the record
- User needs to select the pre-defined formula from the Formula Type drop down list.

- Valuation Days: User needs to enter the Valuation Days. In our example, we entered Valuation days as "-1D". It means, to calculate the settlement cash flows system would use "Maturity Date + Valuation Days" market rate. Note is defined with 18-Jul-2017 as Maturity Date. So, as per our cash flow definition, system would use '17-Jul-2017" market rate of "INDEX-USDTRY" index to generate settlement cash flows.

- Pricing Days: Pricing Days would be in reference to the Note start date. This field would be useful if variable return/coupon is dependent on the change in % of the index from a reference date. This field is used to record the reference date.

- Coupon Rate: Coupon/Reference rate of the note

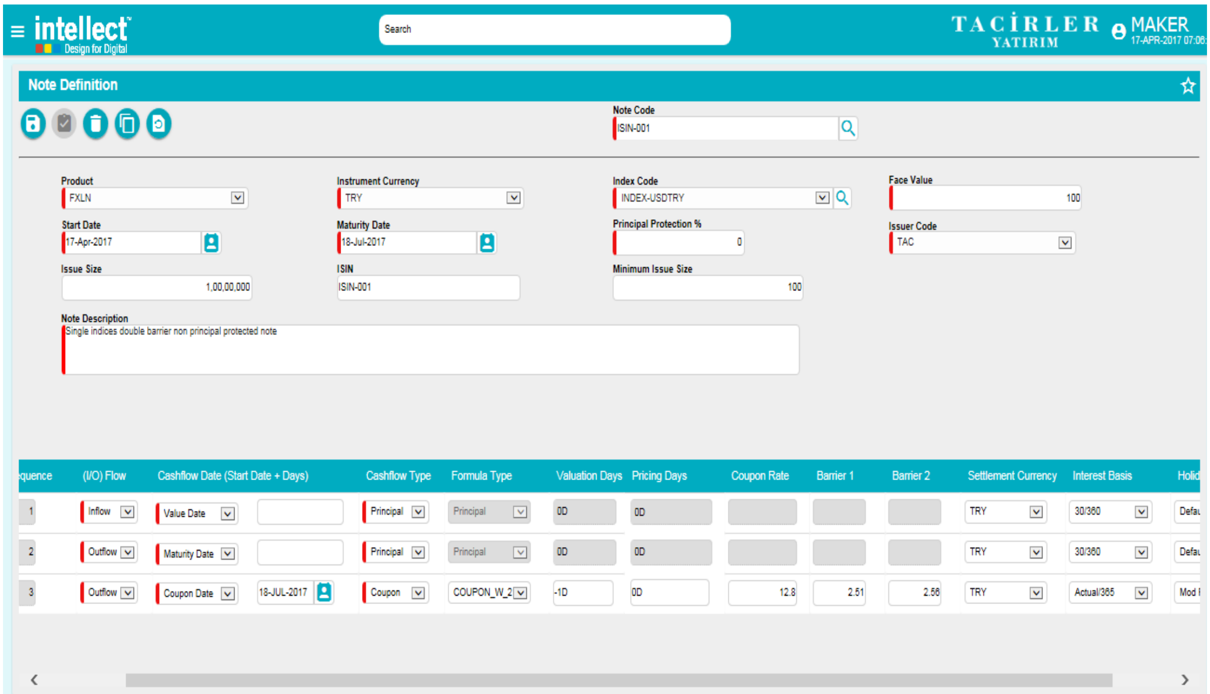
- Barrier1 : Lower Barrier of the note

- Barrier 2 : Upper Barrier of the note

- Settlement Currency: Settlement Currency of the note

- Interest Basis: Interest basis to be applied for calculating coupon/variable return

- Holiday logic: Holiday logic to be applied for the cash flow



Field Description

Field	Field Type	Description
Note Code	Mandatory	Note Code of the issue
Product	Mandatory	Product type of the issue
Instrument Currency	Mandatory	Instrument/Investment currency of the note
Index Code	Mandatory	Index linked to the note
Face Value	Mandatory	Face value of the note
Start Date	Mandatory	Start Date of the note
Maturity Date	Mandatory	Maturity Date of the note

Principal Protection %	Mandatory	Principal protection % for the note.
Issuer Code	Mandatory	Issuer of the note
Issue size	Optional	Issue size of the note
ISIN	Optional	ISIN of the note
Minimum issue size	Optional	Minimum issue size of the note
Note Description	Mandatory	Note Description

4.0 Front Office Functionality

Intellect™ Treasury SP Front Office module support various aspects of Currency, Commodity and Interest Rate Linked SP and deal booking. Structured Product FO Module supports following types of deal/trade booking in the system.

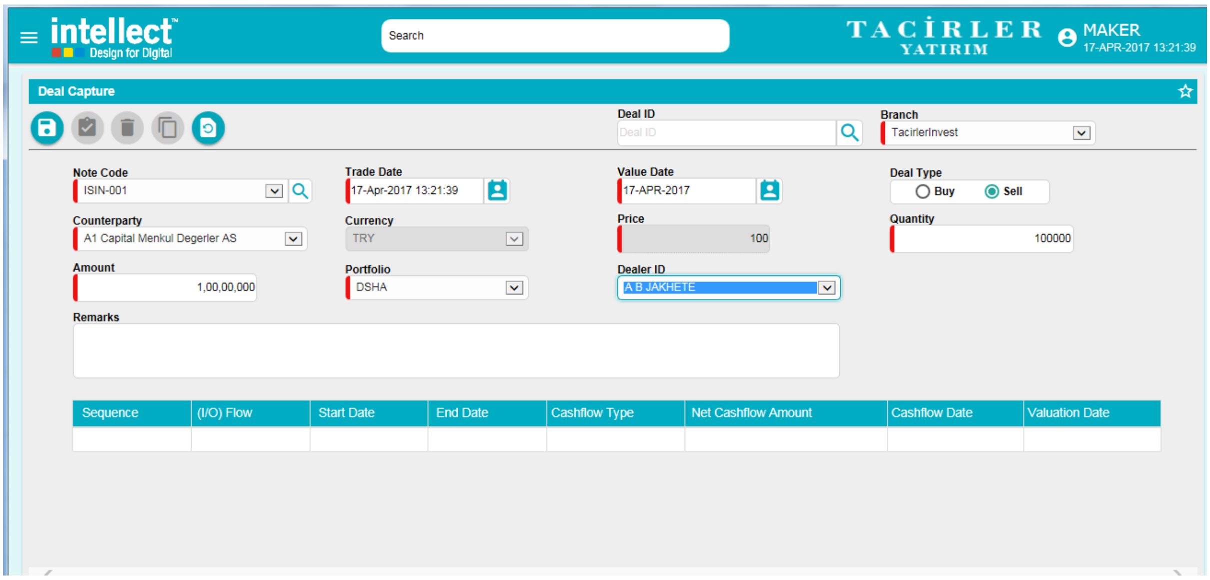
- Currency Linked Structured Product.
- Commodities Linked Structures Product.
- Interest Rate Linked Structured Product.
- Principal Protected Notes(Currently not in Scope)

Below are the functionality for Structured Products module:

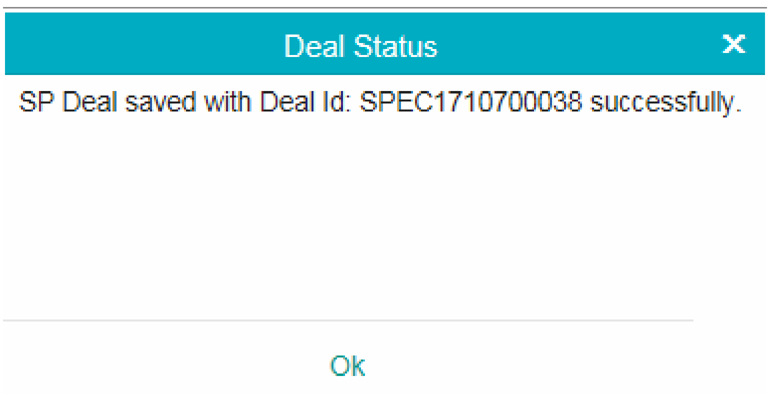
- Once Note is created and Authorized, deal can be booked against the specific note
- Once deal is saved, deal hits the deal blotter
- Cash flows would be generated at deal level
- MTM at both deal level and note level is calculated using Discount Factor
- During EOD, system uses the latest available market rates and re-computes the cash flows

4.1 Deal Capture Screen

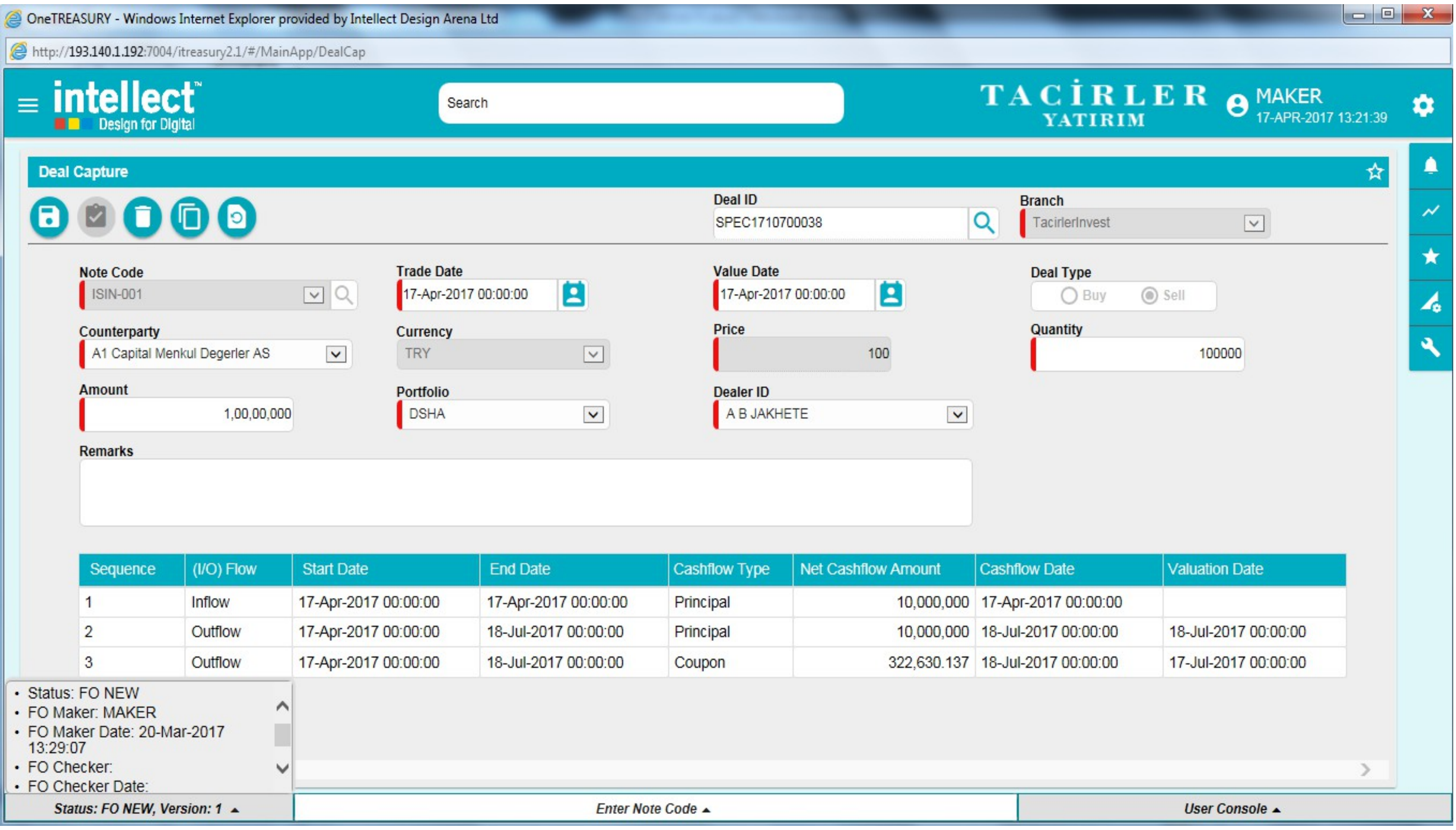
User can book the deal through Deal Capture screen. User needs to fill in the deal details as shown below and click on save button to save the deal.



Once deal is saved, user would have the deal reference id.



Once the deal is reloaded, user can view the deal cash flows. Both real and projected cash flows would be created with the available market rates.

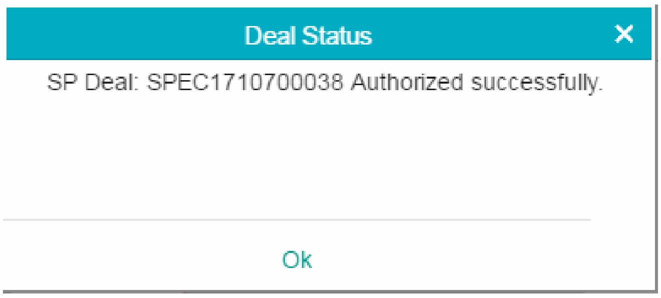


4.1.1 Field Description

Field	Field Type	Description
Note Code	Mandatory	Note involved in the deal
Trade Date	Mandatory	Transaction Date of the deal
Value Date	Mandatory	Value Date of the deal
Deal Type	Mandatory	Deal Type (Buy/Sell)
Counterparty	Mandatory	Counterparty involved in the deal
Currency	Optional	Investment Currency of the deal
Price	Mandatory	Price of the note
Quantity	Mandatory	Quantity bought or sold
Amount	Mandatory	Amount=Price*Quantity
Portfolio	Mandatory	Portfolio of the deal

Dealer ID	Mandatory	Dealer of the deal
Remarks	Optional	Additional comments entered by the dealer while saving the deal

Login as checker and click on Authorize button to Authorize the deal



4.1.2 User Actions

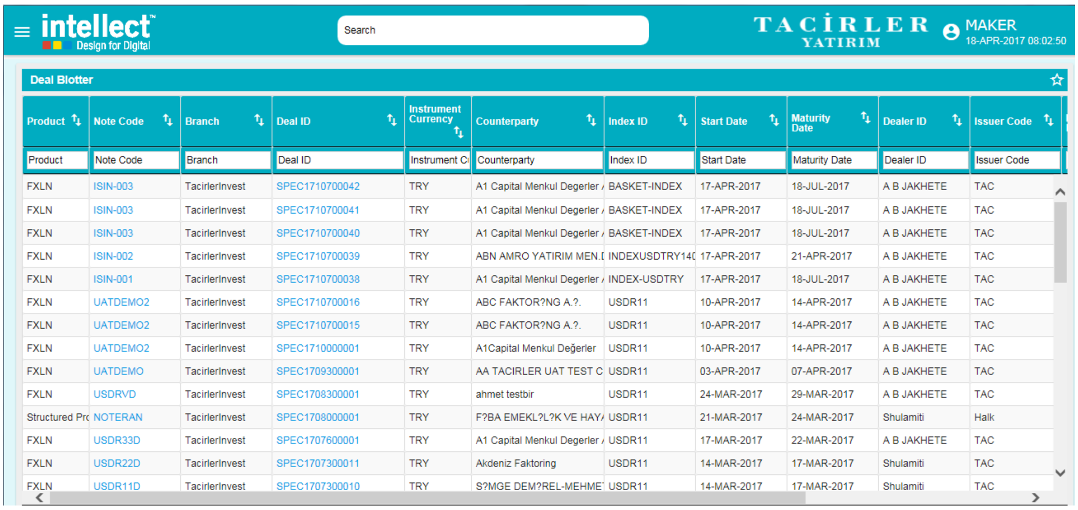
When deal is saved first time in the system, the status of deal stamped in the application is FO NEW. User can perform actions such as modification, cancellation and authorization on deal based upon their entitlements.

Following table shows the Action performed by the user and its impact on deal status.

S. No.	Deal Status	Action Performed	Rev
	FO NEW	Modification	FO MOD
	FO NEW	Delete	FO DELETE
	FONEW	Saved	FOAUTH
	FOMOD	Saved	FOAUTH

4.2 Deal Blotter

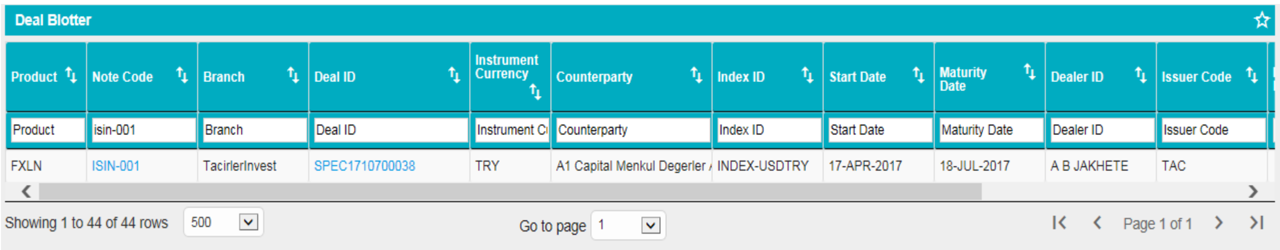
Once the deal is saved, deal would appear in the deal blotter.



Product	Note Code	Branch	Deal ID	Instrument Currency	Counterparty	Index ID	Start Date	Maturity Date	Dealer ID	Issuer Code
FXLN	ISIN-003	TacirlerInvest	SPEC1710700042	TRY	A1 Capital Menkul Degerler	BASKET-INDEX	17-APR-2017	18-JUL-2017	A B JAKHETE	TAC
FXLN	ISIN-003	TacirlerInvest	SPEC1710700041	TRY	A1 Capital Menkul Degerler	BASKET-INDEX	17-APR-2017	18-JUL-2017	A B JAKHETE	TAC
FXLN	ISIN-003	TacirlerInvest	SPEC1710700040	TRY	A1 Capital Menkul Degerler	BASKET-INDEX	17-APR-2017	18-JUL-2017	A B JAKHETE	TAC
FXLN	ISIN-002	TacirlerInvest	SPEC1710700039	TRY	ABN AMRO YATIRIM MEN.	INDEXUSDTRY14	17-APR-2017	21-APR-2017	A B JAKHETE	TAC
FXLN	ISIN-001	TacirlerInvest	SPEC1710700038	TRY	A1 Capital Menkul Degerler	INDEX-USDTRY	17-APR-2017	18-JUL-2017	A B JAKHETE	TAC
FXLN	UATDEMO2	TacirlerInvest	SPEC1710700016	TRY	ABC FAKTOR?NG A.?.	USDR11	10-APR-2017	14-APR-2017	A B JAKHETE	TAC
FXLN	UATDEMO2	TacirlerInvest	SPEC1710700015	TRY	ABC FAKTOR?NG A.?.	USDR11	10-APR-2017	14-APR-2017	A B JAKHETE	TAC
FXLN	UATDEMO2	TacirlerInvest	SPEC1710000001	TRY	A1Capital Menkul Değerler	USDR11	10-APR-2017	14-APR-2017	A B JAKHETE	TAC
FXLN	UATDEMO	TacirlerInvest	SPEC1709300001	TRY	AA TACIRLER UAT TEST C	USDR11	03-APR-2017	07-APR-2017	A B JAKHETE	TAC
FXLN	USDRVD	TacirlerInvest	SPEC1708300001	TRY	ahmet testbir	USDR11	24-MAR-2017	29-MAR-2017	A B JAKHETE	TAC
Structured Pr	NOTERAN	TacirlerInvest	SPEC1708000001	TRY	F?BA EMEKL?L?K VE HAY	USDR11	21-MAR-2017	24-MAR-2017	Shulamiti	Halk
FXLN	USDR33D	TacirlerInvest	SPEC1707600001	TRY	A1 Capital Menkul Degerler	USDR11	17-MAR-2017	22-MAR-2017	A B JAKHETE	TAC
FXLN	USDR22D	TacirlerInvest	SPEC1707300011	TRY	Akdeniz Faktoring	USDR11	14-MAR-2017	17-MAR-2017	Shulamiti	TAC
FXLN	USDR11D	TacirlerInvest	SPEC1707300010	TRY	S?MGE DEM?REL-MEHME	USDR11	14-MAR-2017	17-MAR-2017	Shulamiti	TAC

4.2.1 Additional functionalities in the deal blotter:

- Filtering of the deals.
- User would be able to load the note from the deal blotter by clicking on the Note code
- User would be able to load the deal from the deal blotter by clicking on the Deal ID
- User can sort the records in the deal blotter



Product	Note Code	Branch	Deal ID	Instrument Currency	Counterparty	Index ID	Start Date	Maturity Date	Dealer ID	Issuer Code
FXLN	ISIN-001	TacirlerInvest	SPEC1710700038	TRY	A1 Capital Menkul Degerler	INDEX-USDTRY	17-APR-2017	18-JUL-2017	A B JAKHETE	TAC

Showing 1 to 44 of 44 rows 500 Go to page 1 Page 1 of 1

4.3 MTM Deal Blotter

Users can view the MTM value of the deal in MTM Deal Blotter. MTM Value of the deal is computed using Discount Factor.

MTM Deal Blotter

Deal ID	Note Code	Issue Date	Maturity Date	Barrier 1	Barrier 2	Principal Protection %	Note Interest Rate	Quantity	Amount	Index Rate	Discount Factor	Payout
Deal ID	Note Code	Issue Date	Maturity Date	Barrier 1	Barrier 2	Principal Prot	Note Interest	Quantity	Amount	Index Rate	Discount Factor	Payout
SPEC1634700109	123	22-FEB-2017	22-MAR-2017	2.51	2.56	100	12.8	100	10,000	0	1	
SPEC1634700110	DEMO1	23-FEB-2017	23-MAR-2017	2.51	2.56	100	12.8	100	10,000	0	1	
SPEC1634700144	DEMO1	23-FEB-2017	23-MAR-2017	2.51	2.56	100	12.8	100	10,000	0	1	
SPEC1634700145	DEMO2	23-FEB-2017	23-MAR-2017	2.51	2.56	100	12.8	100	10,000	0	1	
SPEC1634800001	DEMOFEED	24-FEB-2017	23-MAR-2017	2.51	2.56	100	12.8	100	10,000	0	1	
SPEC1634700152	FEED1	24-FEB-2017	24-MAR-2017	2.51	2.56	100	12.8	100	10,000	0	1	
SPEC1710700038	ISIN-001	17-APR-2017	18-JUL-2017	2.51	2.56	0	12.8	100000	10,000,000	2.61	0	-9,82
SPEC1710700039	ISIN-002	17-APR-2017	21-APR-2017	2.93	3.01	100	12.75	50000	5,000,000	2.92	0	-
SPEC1710700040	ISIN-003	17-APR-2017	18-JUL-2017	11	27	100	12.8	100000	10,000,000	0	0	-10,32
SPEC1710700041	ISIN-003	17-APR-2017	18-JUL-2017	11	27	100	12.8	100000	10,000,000	0	0	-10,32
SPEC1710700042	ISIN-003	17-APR-2017	18-JUL-2017	11	27	100	12.8	100000	10,000,000	0	0	-10,32
SPEC1708000001	NOTERAN	21-MAR-2017	24-MAR-2017	2.9	3	100	12	100	10	2.8	1	
SPEC1708000001	NOTERAN	21-MAR-2017	24-MAR-2017	2.9	3	100	12	100	10	2.92	1	
SPEC1708000001	NOTERAN	21-MAR-2017	24-MAR-2017	2.9	3	100	12	100	10	2.88	1	

4.3.1 Additional functionalities in the MTM Deal blotter:

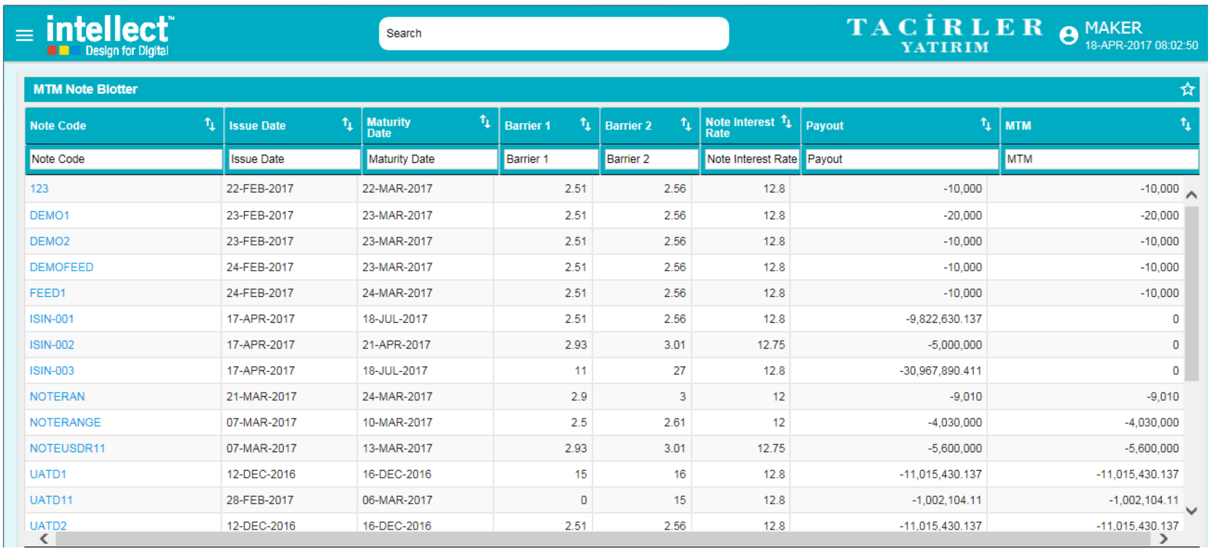
- Filtering of the deals.
- User would be able to load the note from the MTM deal blotter by clicking on the Note code
- User would be able to load the deal from the MTM deal blotter by clicking on the Deal ID
- User can sort the records in the MTM deal blotter

MTM Deal Blotter

Deal ID	Note Code	Issue Date	Maturity Date	Barrier 1	Barrier 2	Principal Protection %	Note Interest Rate	Quantity	Amount	Index Rate	Discount Factor	Payout
Deal ID	isin-001	Issue Date	Maturity Date	Barrier 1	Barrier 2	Principal Prot	Note Interest	Quantity	Amount	Index Rate	Discount Factor	Payout
SPEC1710700038	ISIN-001	17-APR-2017	18-JUL-2017	2.51	2.56	0	12.8	100000	10,000,000	2.61	.980178610268	-10,322,6

4.4 MTM Note Blotter

Users can view the MTM value at note level in MTM Note Blotter. MTM Value of the deal is computed using Discount Factor and consolidated MTM value is shown at note level.



Note Code	Issue Date	Maturity Date	Barrier 1	Barrier 2	Note Interest Rate	Payout	MTM
123	22-FEB-2017	22-MAR-2017	2.51	2.56	12.8	-10,000	-10,000
DEMO1	23-FEB-2017	23-MAR-2017	2.51	2.56	12.8	-20,000	-20,000
DEMO2	23-FEB-2017	23-MAR-2017	2.51	2.56	12.8	-10,000	-10,000
DEMOFEED	24-FEB-2017	23-MAR-2017	2.51	2.56	12.8	-10,000	-10,000
FEED1	24-FEB-2017	24-MAR-2017	2.51	2.56	12.8	-10,000	-10,000
ISIN-001	17-APR-2017	18-JUL-2017	2.51	2.56	12.8	-9,822,630.137	0
ISIN-002	17-APR-2017	21-APR-2017	2.93	3.01	12.75	-5,000,000	0
ISIN-003	17-APR-2017	18-JUL-2017	11	27	12.8	-30,967,890.411	0
NOTERAN	21-MAR-2017	24-MAR-2017	2.9	3	12	-9,010	-9,010
NOTERANGE	07-MAR-2017	10-MAR-2017	2.5	2.61	12	-4,030,000	-4,030,000
NOTEUSDR11	07-MAR-2017	13-MAR-2017	2.93	3.01	12.75	-5,600,000	-5,600,000
UATD1	12-DEC-2016	16-DEC-2016	15	16	12.8	-11,015,430.137	-11,015,430.137
UATD11	28-FEB-2017	06-MAR-2017	0	15	12.8	-1,002,104.11	-1,002,104.11
UATD2	12-DEC-2016	16-DEC-2016	2.51	2.56	12.8	-11,015,430.137	-11,015,430.137

4.4.1 Additional functionalities in the MTM Note blotter:

- Filtering of the deals.
- User would be able to load the note from the MTM deal blotter by clicking on the Note code
- User can sort the records in the MTM deal blotter

Note Code	Issue Date	Maturity Date	Barrier 1	Barrier 2	Note Interest Rate	Payout	MTM
isin-001	Issue Date	Maturity Date	Barrier 1	Barrier 2	Note Interest Rate	Payout	MTM
ISIN-001	17-APR-2017	18-JUL-2017	2.51	2.56	12.8	-10,322,630.137	-10,118,021.262

4.5 Currency Linked SP

Deal Capture screen is used to book set of CLSP instruments that are Dual Currency Deposits (DCD), Currency Linked Investments (CLI), Currency Linked Accrual Deposits (CLAD) and Target Growth Deposits (TGD). It is also used for Delete, Copy, and authorization of the already booked deal.

4.5.1 Pre-requisites

To capture a new CLSP deal in the application, static data that would be required are Currencies, Counterparty, and Portfolio etc. And from front office mainteance required Note Code.

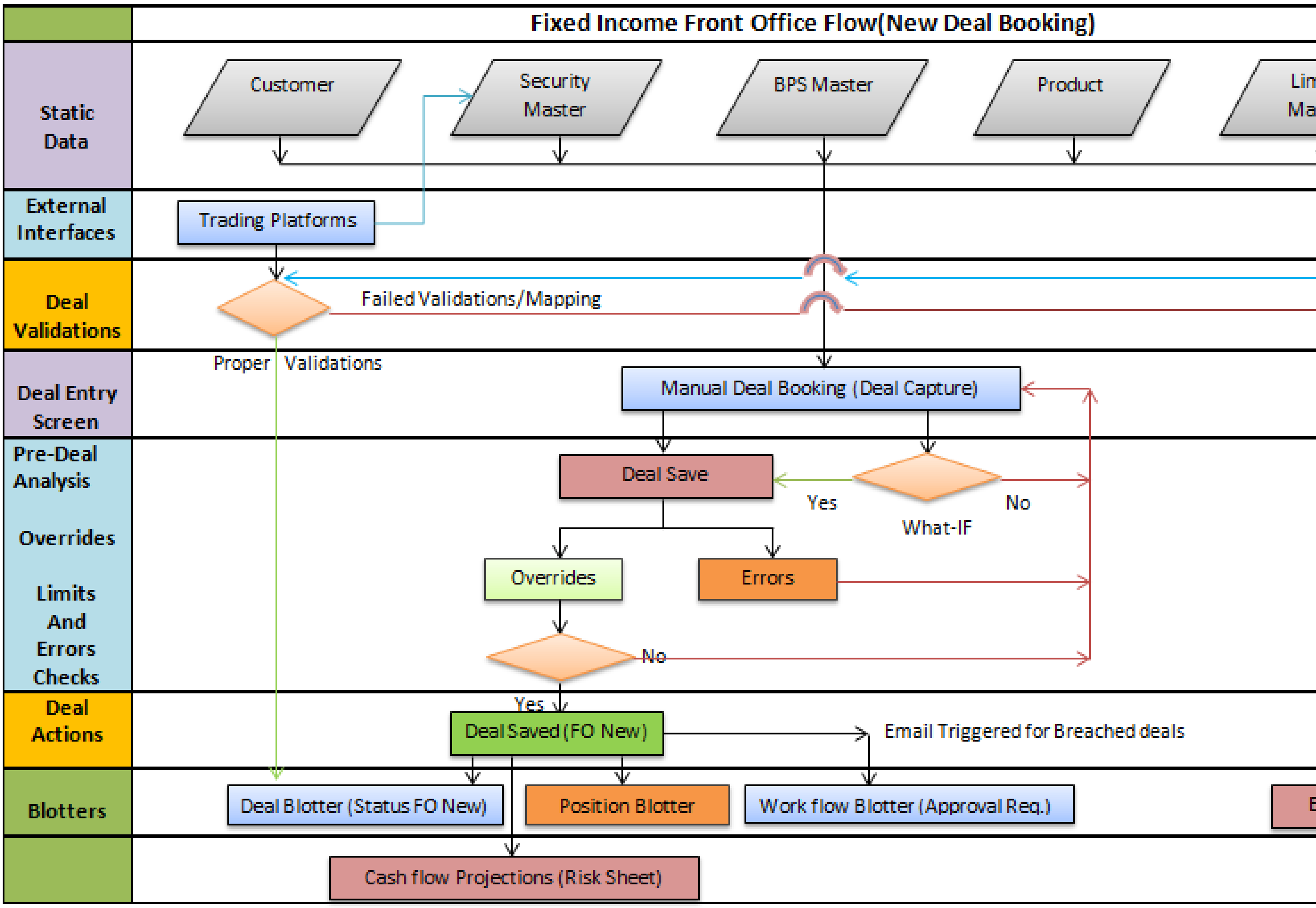
Currency Linked Structured Product Deal capture screen is used for creating/entering new deal in the system. Mandatory Inputs for a deal booking are marked with Red Labels while the fields with blue labels are conditional mandatory and black ones are optional.

Based upon the actions done in front office, the process can be segregated as follows

- New Deal Booking
- Authorization of Deal

- Copy of Deal
- Modification of Deal
- Deletion of Deal

4.5.3 Process Flow



4.5.4 Process Description

4.5.4.1 Example : (Currency Linked Notes Description without BASKET)

Simple Annual Interest rate	12.80%

Base	Actual/365
Underlying Asset	USD/TRY
Issue Size	10,000,000 TL
Minimum Unit Size	100 TL Nominal
Term	92 Days
Starting Date	13/05/14
Maturity Date	13/08/14
Valuation Date	12/08/14
USD/TRY Benchmark Price (The TWO Barriers)	2.51/2.56
Settlement	Cash
Secondary Market	BIST Bond Market
Quantity	100,000

Case 1: Where current (USD/TRY) exchange rate is less than Bid rate (say 2.50) at valuation date (maturity date-1)

In this case when the currency exchange rate at valuation date is less than the Bid rate maintained in the system then the investor will get only coupon amount at maturity along with Principal. There will be no USD/TRY settlement deduction or USD/TRY settlement payment.

Coupon amount will be calculated as follows:

= 10,000,000*12.80%*92/365=322630.137........................ (step1)

Case 2: Where current (USD/TRY) exchange rate is between Bid rate and Ask rate(say 2.54) at valuation date (maturity date-1)

In this case when the currency exchange rate at valuation date is between Bid rate and Ask rate maintained in the system then the investor will get the adjusted coupon which will be calculated as coupon mentioned in step (1) less the amount of USD/TRY settlement deduction.

USD/TRY Settlement Deduction= (USDTRY Price at maturity-Bid rate)

= (2.54-2.51)*10,000,000

Adjusted Coupon amount will be calculated as follows:

= Coupon (step1) – USD/TRY Settlement Deduction

= (10,000,000*12.80%*92/365)-[(2.54-2.51)]*10,000,000

= 22630.1369863

Case 3: Where current (USD/TRY) exchange rate is more than Ask rate (say 2.60) at valuation date (maturity date-1)

In this case when the currency exchange rate at valuation date is more than Ask rate maintained in the system then the investor will get the adjusted coupon which will be calculated as coupon mentioned in step (1) and the difference between USD/TRY settlement deduction and USD/TRY settlement payment.

USD/TRY Settlement Deduction= (USDTRY Price at maturity-Bid rate)

= (2.60-2.51)*10,000,000

USD/TRY Settlement Payment= (USDTRY Price at maturity-Ask rate)

= (2.60-2.56)*10,000,000

Adjusted Coupon amount will be calculated as follows:

= Coupon (step1) – USD/TRY Settlement Deduction+ USD/TRY settlement payment

= (10,000,000*12.80%*92/365)-[(2.60-2.51)]*10,000,000+ [(2.60-2.56)]*10,000,000

= -177369.863013

4.5.4.1(b) Example: (Currency Linked Note with BASKET)

PRIMARY CURRENCY	BASKET	initial exchange rate	Final Exchange Rte	Change %	Weightag
USD	EUR	1.13084	1.08992	3.6185490432	
	JPY	108.636	105.34	-3.128915891	
	CAD	1.2939	1.344	3.7276785714	
	KWD	3.3233	3.3562	-0.989979839	
10000					
			final		
			10184.0942026493		

Here we have taken into consideration the weights of the currencies that the user wants to assign to each of the currencies within the basket, since it is a structured product. The example here demonstrates the variations in the exchange rates after being assigned weights and hence looking out for the overall performance of the basket over the tenor till maturity.

This above example states that, if the Currency Linked Note(offering the basket of currencies of Euro, Japanese Yen, Canadian Dollar and Kuwaiti Dinar against US Dollars at weights assigned as 40%, 20%, 30% and 10% respectively) was sold at $10,000.00 and the tenor was of 1 month and this transaction was done on 9th of May, 2012 then the Maturity value would be $10,184.094 (on 9th June, 2012) itself as the exchange rates have changed and the there is a clear observation that the dollar value has strengthened in comparison to the Euro and Canadian Dollar but has weakened against Japanese Yen and Kuwaiti Dinar in the basket. Thus the appreciation in the amount (as a balance of all the currencies) has happened; hence the return maturity value is $10,184.094. Here the basket has underperformed by 1.84094%, hypothetically. The unique propositions that weights offer here are that the underperforming currencies, if assigned more weightage, help the USD to over perform a bit more and hence improving the performance of the CLN.

4.6 Commodities Linked Structured Products

Commodities Linked Notes are another type of Principal Protected Notes (PPN) linked to a certain commodity index or a “basket of commodities” index. This Principal Protected Note (PPN) does not pay periodic coupons, but instead pays a single amount at maturity depending on the final level of the Commodity Index. It is called ‘principal protected’ because the minimum pay-out of the note at maturity is the initial issue price, so long as the Issuer does not default. However, these notes differ from traditional debt securities in that one will not receive interest payments and they contain a derivative component. At maturity one will receive the principal amount, and may also receive an additional amount called the "Supplemental Redemption Amount" as described below, which is based on the price of commodity or the "basket of commodities" linked over the term of the notes. The notes have been designed for investors who are willing to forgo market rates of interest on their investment, such as fixed interest rates paid on conventional non-callable debt securities.

In case of Commodities Linked Notes, the functionality is exactly similar to the examples mentioned in 4.1 except for the fact that the underlying here are Commodities instead of Currencies. Hence the examples for the same can be referenced by replacing the values of the currencies with commodities i.e. instead of USD/TRY we can take XAU/USD.

4.7 Interest Rate Linked Structured Products

Interest Rate Linked Notes are medium-term notes, typically structured as callable, that offer the potential for an above-market rate of interest. This variable interest rate is based upon a formula that is tied to the performance of one or more interest rate components. The most common interest rate structures are LIBOR Range Accruals, CMS Steepeners, Non-Inversion Notes, and Inflation-Linked Notes. Interest Rate Linked Notes and CDs offer 100% principal protection, if held to maturity and the issuer is able to fulfil its obligation.

In case of Interest Rate Linked Notes, the functionality is exactly similar to the examples mentioned in 4.1 except for the fact that the underlying here are Interest Rate Indices instead of Currencies. Hence the examples for the same can be referenced by replacing the values of the currencies with Interest Rate Indices i.e. instead of USD/TRY we can take LIBOR/USD.

5.2 Business Checks

5.2.3 Other Checks

7.0 Reports

NA

8.0 Interfaces

NA

9.0 Common Screens

10.0 Computation Logics & Formulas

11.0 Utility Features

12.0 Appendix