3.0 Appendix B – Project Aspire Enhancement Functional / Technical Design

ADML ID	**1844**
ADML Description	Creation of Cash Worksheet Forecast Structure
ADML Tech#	

3.1 Background

3.1.1 Functional Requirement

Create an Enterprise Cash Forecast Worksheet through the development of a Forecast Tree to capture and report the State's future cash position at different intervals to schedule investment maturities, minimize excess bank balances, enhance short-term investment income, and anticipate cash needs.

3.1.2 Delivered Functionality

As delivered, the Cash Management module offers a demo Tree structure as a model for building a Cash Forecast tree. Although it is an option to customize the demo tree, it is proposed to build a new tree to address the needs of the State Treasury for cash forecasting; the effort to build a new tree proves to be more efficient than attempting to modify the delivered model.

3.1.3 Gap Description

The record views used in the Position Sources for the Cash Forecast tree must be created and/or modified.

3.2 Description of New Functionality

The new Cash Forecast tree will provide the Treasury a method for determining the State's future cash position at different intervals – daily, weekly, quarterly, or yearly. Users will be able to access summary information, as well as detail information at the Transaction level, of all cash movement activities within Aspire. The Cash Forecast tree

will also be leveraged to create a variety of Reports needed by Treasury to support Treasury business requirements.

The development of the Cash Forecast Tree comprises of Nodes representing the additions and disbursements from various modules within Aspire. Nodes will take the form of either Summary values (Recursive nodes) or Detail values (Non-Recursive nodes) to gather the data to populate the worksheet. Mappings within Non-Recursive nodes will be accomplished using Position Sources that will be configured in the system.

Position Sources are comprised of Record Views used to provide a particular window into the database to retrieve the information rather than performing a Query to an entire Record or Component. Position Sources will be augmented by Selection Criteria to collect specific information from a particular data source. For example, a Position Source of BANK BEG BAL will be created in order to obtain the beginning balance of all bank accounts from the bank statement tables (BNK_STMT_TBL) using Selection Criteria such as BAI Code = 045. Position Sources will be developed with flexibility to be used in several Nodes within the Tree by assigning new Selection Criteria to them. This approach minimizes the development effort of the Tree as well eases the process of Tree maintenance.

The data displayed in the Cash Forecast Worksheet will be represented by multiple columns based on number of periods relative to intervals (daily, weekly, quarterly, or yearly). A Source Set is a grouping of Position Sources; the Source Set used will be CASH. Source Sets enable data to be pulled for a given Node depending on how it is mapped in relation to its Source Set definition. The Position Sources for Source Set Cash will be retrieving data from the AR, AP, Cash Management, and Deal Management modules.

The developed Cash Forecast Worksheet will be available for calculation on-screen. The Cash Forecast may be run multiple times a day to retrieve new information collected within its respective Nodes.

3.3 Navigation path

Creating Position Sources:
Set Up Financials/Supply Chain -> Product Related -> Treasury -> Position Source

Creating a Tree Structure:

Tree Manager -> Tree Manager -> Create New Tree

Create Position SQL:

Cash Management -> Administer Cash -> Create Position SQL

Calculating a valid Tree forming the Cash Position Worksheet:
Cash Management -> Cash Position -> Position Manager

3.4 Set Up/Control Data

There is no set up/control data associated with this enhancement.

3.5 Application Changes (e.g., Pages, Components, Menus, Records, App Engines, SQRs, etc.)

The following Tree Structure has been developed to be created in Aspire representing all relevant Nodes (lowest Level represent Detail Nodes retrieving specified values):

LEVEL					NODE DEFINITION	NODE DESCRIPTION
0					TR CASH FORECAST	Treasury Cash Forecast
	1				BEGINNING BALANCE	Beginning Balance
	1				OPERATING ACCOUNTS	Operating Accounts
		2			RECEIPTS	Receipts
		2			DISBURSEMENTS	Disbursements
			3		AP DISB	AP Disbursements
			3		PAYROLL	Payroll
			3		RETIREMENT	Retirement
	1				FINANCE	Finance
		2			TREASURY RECEIPTS	Treasury Receipts
			3		OVERNIGHT INVESTMENTS	Overnight Investments
			3		SHORT TERM INVESTMENTS	Short Term Investments
			3		LONG TERM INVESTMENTS	Long Term Investments
		2			TREASURY PAYMENTS	Treasury Payments
			3		OVERNIGHT INVESTMENTS	Overnight Investments
			3		SHORT TERM INVESTMENTS	Short Term Investments
			3		LONG TERM INVESTMENTS	Long Term Investments
	1				ENDING BALANCE	Ending Balance

The Source Sets used for this particular Tree include:

SOURCE SET	SOURCE SET DESCRIPTION
CASH	Information as reflected by System transactions and Manual Entries.

The Position Sources identified for the Tree, including Selection Criteria, are as follow:

POSITION SOURCE	AVAILABLE SELECTION CRITERIA	DESCRIPTION
BANK BALANCE	Amount, Set ID, Stmt Code	Captures all Bank Account beginning balances.
BANK BALANCE FLOAT	Amount, Set ID, Stmt Code	Captures all Bank Account float balances.
AR PENDING	Amount, Set ID, Entry Type	Capture all pending AR items that are not posted.
AR POSTED BANK	Amount, Set ID, Entry Type, Item Status	Capture all posted AR items that are not pending.
AP DISB	Amount, Set ID, Payment Select Status	Capture all disbursements from all vouchers created.
DEAL CASH FLOWS	Amount, Cashflow Type	Capture all Deal Cashflows
MANUAL_ENTRY	Amount, Tree Name,	Capture all Manual Entries for all nodes.

The PS Record Views identified for the Position Sources are as follow:

POSITION SOURCE	VIEW NAME	VIEW SELECTION CRITERIA
BANK BALANCE	BNK_BAL_HDR_VW	SELECT A.SETID , A.BANK_CD , A.BANK_ACCT_KEY , H.ASOFDATE , B.BNK_ID_NBR , A.BANK_ACCOUNT_NUM , B.BANK_STMT_CODE , A.BUSINESS_UNIT_GL , A.CURRENCY_CD , B.BALANCE , B.IMMEDIATE_BAL FROM PS_BANK_ACCT_TBL A , PS_BANK_STMT_HDR H , PS_BANK_BALANCES B , PS_BANK_CD_TBL C WHERE A.BANK_CD = C.BANK_CD AND A.SETID = C.SETID AND C.BNK_ID_NBR = B.BNK_ID_NBR AND A.BANK_ACCOUNT_NUM = B.BANK_ACCOUNT_NUM AND H.BNK_ID_NBR = B.BNK_ID_NBR AND H.BANK_ACCOUNT_NUM = B.BANK_ACCOUNT_NUM AND H.STATEMENT_ID = B.RECON_CYCLE_NBR
BANK BALANCE FLOAT	BNK_FLT_POS_VW	SELECT A.SETID , A.BANK_CD , A.BANK_ACCT_KEY , B.VALUE_DT , B.BNK_ID_NBR , A.BANK_ACCOUNT_NUM , B.BANK_STMT_CODE , A.BUSINESS_UNIT_GL , A.CURRENCY_CD , B.BALANCE , B.IMMEDIATE_BAL FROM PS_BANK_ACCT_TBL A , PS_BANK_BALANCES B , PS_BANK_CD_TBL C WHERE A.BANK_CD = C.BANK_CD AND A.SETID = C.SETID AND C.BNK_ID_NBR = B.BNK_ID_NBR AND A.BANK_ACCOUNT_NUM = B.BANK_ACCOUNT_NUM AND B.BANK_STMT_CODE = '072'

AR PENDING	FL_ARPITM_VW	SELECT DISTINCT A.DUE_DT ,A.ENTRY_AMT ,A.CURRENCY_CD ,A.BANK_SETID ,A.BANK_CD ,A.BANK_ACCT_KEY ,B.BUSINESS_UNIT_GL ,B.BUSINESS_UNIT ,A.ITEM FROM PS_PENDING_ITEM A , PS_BUS_UNIT_TBL_AR B WHERE A.BUSINESS_UNIT=B.BUSINESS_UNIT AND POSTED_FLAG = 'N' AND A.DISPUTE_STATUS= ' ' AND A.ENTRY_TYPE <> 'CR' AND A.ENTRY_TYPE <> 'PR'
AR POSTED	FL_AR_ITM_VW	SELECT DISTINCT A.DUE_DT ,A.BAL_AMT ,A.BAL_CURRENCY ,A.BANK_SETID ,A.BANK_CD ,A.BANK_ACCT_KEY ,B.BUSINESS_UNIT_GL ,B.BUSINESS_UNIT ,A.CUST_ID ,A.ITEM ,A.ITEM_LINE FROM SYSADM.PS_ITEM A , SYSADM.PS_BUS_UNIT_TBL_AR B WHERE A.BUSINESS_UNIT=B.BUSINESS_UNIT AND A.ITEM_STATUS = 'O' AND A.DISPUTE_STATUS= ' ' AND A.ENTRY_TYPE <> 'CR' AND A.ENTRY_TYPE <> 'PR'
AP DISB	FL_AP_DISB_VW	SELECT DISTINCT A.SCHEDULED_PAY_DT ,%DecMult(A.PYMNT_GROSS_AMT, -1) ,A.TXN_CURRENCY_CD ,A.BANK_SETID ,A.BANK_CD ,A.BANK_ACCT_KEY ,A.BUSINESS_UNIT ,A.VOUCHER_ID ,A.PYMNT_CNT ,B.BUSINESS_UNIT_GL ,B.BANK_ACCOUNT_NUM FROM PS_PYMNT_VCHR_XREF A , PS_BANK_ACCT_TBL B WHERE A.PYMNT_SELCT_STATUS <>'P' AND A.BANK_SETID = B.SETID AND A.BANK_CD = B.BANK_CD AND A.BANK_ACCT_KEY = B.BANK_ACCT_KEY

DEAL CASH FLOWS	FL_DL_CSHFLW_VW	SELECT H.BUSINESS_UNIT , H.TREAS_HEADER_ID , H.TREAS_MASTER_ID , C.CASH_FLOW_LEG , C.TRANSACTION_LINE , C.BUSINESS_DATE , C.BANK_ACCOUNT_NUM , C.BNK_ID_NBR , H.COUNTERPARTY , B.BANK_CD , C.AMOUNT , C.CURRENCY_CD , H.INSTRUMENT_TYPE , D.INSTRMNT_BASE_TYPE , H.TRANSACTION_ISSUER , H.TRANSACTION_BROKER , H.DEALER_OPRID , H.TRANSACTION_DT , H.TREASURY_PORTFOLIO , B.BANK_TYPE , H.LIMIT_RESERVED , H.DEAL_STATUS , D.SETTLEMENT_DT , D.MATURITY_DT , H.FCLTY_ID , C.BANK_SETID , C.BANK_ACCT_KEY FROM SYSADM.PS_CASH_FLOW_TR C , SYSADM.PS_BANK_CD_TBL B , SYSADM.PS_TRX_DETAIL_TR D , SYSADM.PS_TRX_HEADER_TR H WHERE C.TR_SOURCE_CD = 'D' AND C.CASH_FLOW_LINE <> 0 AND C.RECON_STATUS = 'UNR' AND C.NET_STATUS <> 'D' AND B.SETID = C.BANK_SETID AND B.BANK_CD = C.BANK_CD AND C.TR_SOURCE_ID = H.TREAS_HEADER_ID AND C.SOURCE_BUS_UNIT = H.BUSINESS_UNIT AND C.SOURCE_BUS_UNIT = D.BUSINESS_UNIT AND C.TR_SOURCE_ID = D.TREAS_HEADER_ID AND C.TRANSACTION_LINE = D.TRANSACTION_LINE
MANUAL ENTRY	FL_GEN_FORE_VW	SELECT SETID , BUSINESS_UNIT , POS_CATEGORY , SOURCE_SET , VALUE_DT , REFERENCE , CURRENCY_CD , AMOUNT , TREE_NAME FROM SYSADM.PS_POS_GEN_ENT_TBL WHERE TREE_NAME = 'TR_CASH_FORECAST'

3.6 Unit Test Considerations

- It is recommended that an interval of transactions be tested to validate the Cash Forecast Worksheet calculations resulting from the Cash Forecast tree. It is also recommended that this test be performed by State Treasury personnel in collaboration with consultants in order to facilitate some knowledge transfer.

3.7 Miscellaneous

- Validation of the Cash Forecast Worksheet includes data from various modules (AP, AR, Treasury) available in the system.

- Reporting: an nVision layout for the Cash Forecast Tree will be used to create an nVision Cash Forecast Report to be used by State Treasury. The data is from the Financials Enterprise and not EPM (database warehouse).

3.8 Assumptions

- FLAIR data or any other data elements not in Aspire will have to be entered using the Manual Entry page.