

IBM Cúram Social Program Management
Version 7.0.0

*Inside Cúram Eligibility and Entitlement
Using Cúram Rules*

IBM

Note

Before using this information and the product it supports, read the information in "Notices" on page 63

Edition

This edition applies to IBM Cúram Social Program Management v7.0.0 and to all subsequent releases unless otherwise indicated in new editions.

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Developing with Eligibility and Entitlement by using Cúram Rules

Provides details on how the Cúram Eligibility and Entitlement Engine functions when you use Cúram Rules. This does not include Cúram Express Rules eligibility and entitlement processing.

Introduction

Introduction

This document details the functionality handled by the Cúram Eligibility and Entitlement Engine when using Rules. Please be advised that this guide does not cover eligibility and entitlement processing when using Cúram Express Rules (CER). For information on eligibility and entitlement processing when using CER, see the *Inside Cúram Eligibility and Entitlement Using Cúram Express Rules* guide.

The Cúram Eligibility and Entitlement Engine is responsible for the following:

- Determination of customer eligibility over time
The eligibility and entitlement engine uses the rules engine to generate decisions over a period of time. These decisions indicate whether or not the client or clients being assessed are eligible for that product.
- Passing decision information to the rules engine.
The eligibility and entitlement engine can pass decision information to the rules engine so that the rules engine can use this information to make new decisions. In effect, the decision information passed into the rules engine can be used as evidence.
- Calculation of financial benefit over time
The eligibility and entitlement engine calculates the financial benefit due using the decision details produced by the rules engine over a period of time. The financial benefit due is the amount that the client or clients being assessed are entitled to.
- Calculation of liability over time
The eligibility and entitlement engine calculates the value of a liability using the decision details produced by the rules engine over a period of time.
- Creation of financial schedules
The eligibility and entitlement engine creates financial schedules, called financial components, from the decisions produced by the rules engine. Financial components are schedules of transactions to be realized into actual financial transactions.
- Financial Component assignment
Financial components are assigned to nominees. By default, all financial components are assigned to the primary client unless otherwise specified. The eligibility and entitlement engine processes the financial components on a nominee by nominee basis.
- Reassessment, i.e., calculation of under/over payments/bills
Reassessment occurs when there is a change in circumstance for a period that has already been assessed. The eligibility and entitlement engine compares new

financial components to processed financial components to determine if any under/over payments/bills exist. If an under/over payment/bill exists, the eligibility and entitlement engine calculates the amount of the under/over payment/bill.

Document Structure

This document is structured to take a building block approach toward the processing handled by the Cúram Eligibility and Entitlement Engine. The following is an overview of each subsequent chapter in the guide:

Chapter 2 - Cúram Eligibility and Entitlement Engine Overview

This chapter describes the modes of the eligibility and entitlement engine and provides a high level overview of the eligibility and entitlement process.

Chapter 3 - Original Eligibility and Entitlement Result

This chapter provides an overview of eligibility and entitlement processing where reassessment is not required. Reassessment is only required when there are existing decisions stored in the database for the eligibility and entitlement period. The first section in this chapter demonstrates how the eligibility and entitlement engine creates financial components. The second section demonstrates how the eligibility and entitlement engine creates secondary financial components. Secondary financial components are created for deductions. The third section provides an overview on financial component processing with multiple rules objectives assigned to a single case nominee; the fifth section provides an overview of financial component processing with multiple nominees assigned to a single rules objective. The final section demonstrates how the eligibility and entitlement engine passes temporary decision information to the rules engine as part of the decision making process.

Chapter 4 - Change in Circumstance

This chapter provides an overview of eligibility and entitlement processing where a change of circumstance has occurred and a reassessment is required. The first section in this chapter describes reassessment processing for a benefit case. The second section describes reassessment processing for a liability case. The third section in this chapter provides an overview of reassessment processing with multiple rules objectives assigned to a single nominee. The fourth section provides an overview of reassessment processing with multiple nominees assigned to a single rules objective. The fifth section in this chapter demonstrates how the eligibility and entitlement engine processes multiple reassessments. The final section demonstrates multiple reassessment processing with multiple rules objectives.

Prerequisites

There are several guides which are useful to read before understanding the Cúram Eligibility and Entitlement Engine. The eligibility and entitlement engine interacts with case decision processing and case financial processing. The Cúram Integrated Case Management Guide and Cúram Financials Guide provide high-level business overviews of case and financial processing. The eligibility and entitlement engine used nominee functionality to define financial schedules. For a high-level overview of nominees, see the Cúram Nominees Guide.

Audience

This document is intended for both a technical and business audience with the intent of providing an overview of the eligibility and entitlement processing handled by the Cúram Eligibility and Entitlement Engine.

Cúram Eligibility and Entitlement Engine Overview

Introduction

This chapter describes the eligibility and entitlement modes handled by the eligibility and entitlement engine and provides a high level overview of the eligibility and entitlement process. This chapter also describes what happens when the Reassessment Configuration "switch" is enabled. When this switch is enabled, the eligibility and entitlement engine passes decision information to the rules engine as part of the eligibility and entitlement process.

Eligibility and Entitlement Modes

The eligibility and entitlement engine runs in two main modes: the benefit eligibility and entitlement mode and the liability eligibility and entitlement mode. For both of these modes, the eligibility and entitlement engine creates new decisions by calling the rules engine, creates financial components based on the decisions returned, and reassesses financial components, if necessary, by comparing new financial components to processed financial components within the same time period. The difference between the benefit eligibility and entitlement mode and the liability eligibility and entitlement mode is in financial component creation. Financial components for a benefit are payment schedules; financial components for a liability are billing schedules.

Eligibility and Entitlement Overview

There are four main processes within the eligibility and entitlement process. The first process is to create a list of decisions within a defined time period. The second process is to store these decisions. The third process is to create financial components from these decisions. The fourth process is to carry out reassessment by comparing the processed Instruction Line Items (ILIs) with the new financial components within the same time period. This can result in the creation of under or over payments.

Actions that Trigger the Eligibility and Entitlement Process: Certain actions in the reference application will automatically trigger the eligibility and entitlement engine to complete the eligibility and entitlement process. These actions include case submission, case approval, and case activation. The eligibility and entitlement process is also called when there is a change in evidence, certification, or nominee component assignment. Any time the determine eligibility batch is run, the eligibility and entitlement engine completes the eligibility and entitlement process.

Create Decisions Process

As part of eligibility and entitlement processing, the eligibility and entitlement engine must create decisions over a period of time. This period of time is defined by a from and to date passed into the eligibility and entitlement engine. To create these decisions, the eligibility and entitlement engine uses a list of dates. This list of dates can either be provided to the eligibility and entitlement engine or the eligibility and entitlement engine can work out these dates. The former is referred

to the “Event Date List”; the latter as the “Pattern Date List”. In addition to standard create decision processing, there is also the ability to add custom processing.

Pattern Date List: To create decisions using a pattern date list, the eligibility and entitlement engine builds up a list of dates between the eligibility and entitlement engine from date and the eligibility and entitlement engine to date using the delivery frequency of the primary client and the re-rate frequency of the case being assessed. The eligibility and entitlement engine then calls the rules engine to create a decision for each one of these dates. A decision is the determination of eligibility and entitlement on a specific date based on the application of rules to evidence. Decision eligibility indicates whether or not the client or clients being assessed are eligible for a particular product. Eligibility entitlement indicates how much the client or clients being assessed are eligible for (entitlement can be a payment amount or a billing amount depending on the product type).

As the eligibility and entitlement engine creates each decision, it compares the new decision to the previously created decision to find any decision changes. If any of the contiguous decisions are different, the eligibility and entitlement engine enhances the list of dates with every date between the two decision dates. It then calls the rules engine to create a decision for each one of these new dates. Once the eligibility and entitlement engine has created decisions for all the necessary dates by calling the rules engine, all identical, contiguous decisions are rolled up into one decision covering the necessary time period.

The main benefit for using the pattern date list is that it eliminates the need for a developer to decide in advance the dates the rules engine is called. Also, the eligibility and entitlement engine knows to enhance the list of dates with every date between two decisions that differ in order to find the exact date between the decision dates.

Event Date List: To create decisions using an event based date list, the eligibility and entitlement engine simply retrieves the list of events. It then calls the rules engine to create a decision for the eligibility and entitlement engine from date, each one of these dates, and the eligibility and entitlement engine to date. Note, however, the eligibility and entitlement engine does not enhance the date list. This is because only the dates on which decisions may change will be held in the date list.

The event based date list is implemented at the product level. Typically there are two types of dates which are added to this list, core dates and custom dates. Core dates are those that have already been implemented in the core application. These include the case creation date, the certification start date, the date after the certification end date, an evidence tree activation date, and the effective date of a product rule set. Custom dates are dates specific to the product and therefore have to be identified and implemented by the customer.

The main benefit of using the event date list is the reduced number of calls to the rules engine while still capturing the changes in decisions.

Ability to Initiate Custom Processing: The ReviewDecision class inside the eligibility and entitlement engine provides hooks for initiating custom processing. The startDecisionProcessing hook is called just before decisions are created. The reviewGeneratedDecision hook is called when decisions are first generated, prior to being rolled up. The reviewRolledUpDecisions hook is called just after the decisions are rolled up. The endDecisionProcessing hook is called at the end of the

create decision process and can be used to perform a check. Each one of these hooks can include custom operations which will be enacted when the relevant hook is called.

The `setTraversalState` hook is used to indicate the custom processing for traversing decisions. Decisions are traversed as part of reassessing changes in circumstance, the purpose of which is to ascertain when exactly a change is effective from. This hook can be used to govern the way in which the eligibility and entitlement engine transverses decisions as well as govern how the end results of this process are examined.

Store Decisions Process

The second part of the eligibility and entitlement process is to store the created decisions. As part of storing case decisions, the eligibility and entitlement engine creates a case event for each decision and stores each `CaseDecision`, each decision's `CaseDecisionObjective` list, and each decision's `CaseDecisionObjectiveTag` list. Case decisions are the determination of eligibility and entitlement based on the application of rules to evidence. Decision eligibility indicates whether or not the client or clients being assessed for a particular product are eligible for that product. Eligibility determination indicates how much the client or clients being assessed are eligible for (entitlement can be a payment amount or a billing amount depending on the product type).

Each case decision is made up of one or more case decision objectives. These case decision objectives are the eligible rules objectives. Rules objectives are the targets for a rule set. When determining product eligibility, these rules objectives are normally rates. The value of a case decision objective is based on the case decision objective tags associated with the case decision objective. These case decision objective tags are the objective tags for the eligible rules objectives. Where the case decision objective is numeric, the frequency pattern on the case decision objective tags are used to determine the value of the case decision objective for a given period.

Important: Difference between Rules Objectives and Case Decision Objectives

Rules objectives define all possible objectives for a rule set, whereas, case decision objectives define only the eligible rules objectives for a case decision. For information on rules, see the *Cúram Rules Definition Guide*.

The following is an example of a case decision made up of a single case decision objective. The case decision objective consists of two case decision objective tags:

Case Decision: Client is eligible

Case Decision Objective: Max Personal

Case Decision Objective Tag 1 for Max Personal: Daily Rate of 10

Case Decision Objective Tag 2 for Max Personal: Weekly Rate of 70

Note: Using `postInsertExamineDecisions` Hook

Customers can use the `postInsertExamineDecisions` hook to add custom processing to the store decisions process. The custom processing added to this hook will be called after the new decisions have been stored.

Create Financial Components Process

The eligibility and entitlement engine generates financial components from case decision objectives. To generate these financial components, the eligibility and entitlement engine uses the case decision period and the nominee delivery frequency. For a case decision period that encompasses one or more deliveries based on the delivery frequency, the eligibility and entitlement engine will create a recurring financial component. If the case decision period includes a portion of the delivery frequency at the beginning of the period, the eligibility and entitlement engine will create a non-recurring financial component known as a ramp-up financial component. If the case decision period includes a portion of the delivery frequency at the end of the period, the eligibility and entitlement engine will create a non-recurring financial component known as a ramp-down financial component. Ramp-up and ramp-down financial components are once-off, i.e. they will only be processed once.

Note: Using `manipulateFinancialComponents` Hook

Customers can use the `manipulateFinancialComponents` hook to add custom processing to the create financial components process. The custom processing added to this hook will be called prior to the generation of the financial component details.

Financial Component Creation for Multiple Objective Tags: Where there is more than one case decision objective tag associated with a case decision objective, the eligibility and entitlement engine must determine the appropriate objective tags to use when creating financial components. The eligibility and entitlement engine uses the nominee delivery pattern frequency to determine the base objective tag. This base objective tag is used to create recurring financial components. Thus, if the nominee delivery pattern frequency is weekly, and there is a case decision objective tag with a weekly rate, the eligibility and entitlement engine will use this weekly rate for creating any recurring financial components.

The eligibility and entitlement engine uses the case decision objective tags that have a period less than the base objective tag to create once-off financial components. Thus, if the base objective tag is the weekly rate and there is also a case decision objective tag with a daily rate associated with the case decision objective, the eligibility and entitlement engine will use this daily rate for creating any once-off financial components.

The following example demonstrates how the eligibility and entitlement engine uses the multiple objective tags to create financial components:

Nominee Delivery Pattern Frequency: Weekly

Case Decision Objective: Max Personal

Case Decision Objective Tag 1: Daily Rate of 10

Case Decision Objective Tag 2: Weekly Rate of 70

The value of all recurring financial components will be based on the weekly rate, i.e., 70.

The value of all once-off financial components for the Max Personal Objective will be based on the following equation:

Number of days * daily rate = Number of days * 10

Important: A user will not be permitted to change a delivery pattern in the middle of a cover period unless a daily objective tag is assigned to the relevant case components. This is to protect against zero amounts for once-off financial components. For example, a case is paid weekly by check for 4 perfect weeks. If the delivery pattern were changed to weekly by EFT mid-week and if there was no daily objective tag, then a 5-day partial financial component with an amount of zero would be created for the weekly-by-check delivery pattern and a 2-day partial with a zero amount would be created for the weekly by EFT delivery pattern.

Financial Component Creation for Deductions: As part of financial component creation, the eligibility and entitlement engine searches for active deductions during the eligibility and entitlement period by searching through the case deduction item table. If the eligibility and entitlement engine finds any deduction items, it compares the deduction items cover periods to the financial components cover periods. If the deduction records exist during the same cover period as the financial components, the eligibility and entitlement engine creates additional financial components for deductions. These deduction financial components are not considered during any subsequent reassessment calculations.

Reassess Financial Components Process

The fourth part of the eligibility and entitlement process is to check if reassessment is required, and if required, to run reassessment. The purpose of case reassessment is to compare the outputs of a retrospective eligibility and entitlement with the outputs of a previous eligibility and entitlement over the same period of time. This comparison detects differences between these outputs so that the necessary over/under payments or over/under billings are created. An under or over payment occurs when a new decision is created for a period that overlaps with an existing decision or decisions that have already been processed for payment or billing and that new decision differs from the existing decision or decisions. An over or under billing is the same, only for a liability product instead of a benefit. To check if reassessment is required, the eligibility and entitlement engine compares the cover period from date of the new decision to the cover to date of the case. The cover to date of the case is the latest cover period to date for all ILIs. These ILIs are the output from the processed financial components. If the new decision from date is before the cover to date, reassessment must occur. The eligibility and entitlement engine then defines the reassessment period and determines if any under or over payments (under/over billings) exist by comparing the ILIs to financial data associated with the new financial components.

Financial Data: Financial data is a concept internal to the eligibility and entitlement engine. When the eligibility and entitlement engine carries out reassessment, it creates financial data for the new financial components. This financial data is the simulated creation of ILIs that, in the future, would be generated from the new financial components. The purpose of creating this financial data is to support a like for like comparison between ILIs and financial components during case reassessment.

Using the Case Effective Date: The eligibility and entitlement engine uses the case effective date to ensure that the reassessment periods are consistent. The eligibility and entitlement engine uses the from and to dates to determine the eligibility and entitlement periods and these dates are determined based on certification periods, delivery patterns, and nominee component assignments. Since all of these dates are variable, the eligibility and entitlement engine also uses the

case effective date when calculating delivery dates. The case effective date is set to the delivery date on or after the initial case approval date.

The purpose of the case effective date is to establish a fixed date for determining delivery dates. To determine the delivery dates, the eligibility and entitlement engine works its way back from the case effective date to the eligibility and entitlement engine from date and then works its way forward to the eligibility and entitlement engine to date. The following scenario demonstrates how the eligibility and entitlement engine uses the case effective date to determine dates on which the eligibility and entitlement engine will reassess the case.

A benefit case is created on October 16th which is eligible from Thursday, October 11th until Friday November 30th. James Smith is the primary client and nominee; his delivery pattern is 'weekly by check on a Monday'. The benefit case is also approved on October 16th. Since October 16th is not a payment date, the case effective date is set to the next payment date, Monday, October 22nd. The case is paid out as far as Sunday, November 4th, and subsequently reassessed. The eligibility and entitlement engine determines the delivery dates inside the reassessment period as follows:

- The reassessment period is October 11th - November 4th.
- The eligibility and entitlement engine checks if the case effective date is later than the input from date, i.e. October 11th, which it is.
- It then uses the delivery frequency from the case effective date back to the input from date and compiles the delivery dates, October 22 and October 15.
- It then uses the delivery frequency from the case effective date to the input to date and compiles the delivery date, October 29th.

Notice that these are the same delivery dates that would have been found if starting with the input from date; however, by having a fixed date, the case effective date, there eliminates the risk of inconsistencies as the input from and to date vary.

Passing Decision Information to the Rules Engine

When the rules engine executes certain rules, it may need to access previous decisions in order to render new decisions for these rules. For example, when determining eligibility for one benefit component such as child benefit, the rules engine may need to establish that the claimant has been eligible for the base component, max personal objective, over a required period of time. To determine whether or not the eligibility and entitlement engine passes decision information to the rules engine, the Reassessment Configuration switch is contained within the eligibility and entitlement engine.

A hook is provided on this switch which allows customers to place their own logic for turning the switch on or off. The `isReassessToLastActiveDecisionEnabled` inside the switch is where the customer must place their logic. By default, this method takes case details and product details so the switch can work at the case or product level. Customers can change this method so that the switch is enabled only when necessary. For example, customers can add code which enables the switch only when certain evidence has been entered at the case level.

When the Reassessment Configuration switch is enabled, the eligibility and entitlement engine will pass decision information to the rules engine at the start of the eligibility and entitlement process. In order to do this, the eligibility and entitlement engine creates a list of decisions whose cover periods fall within the

eligibility and entitlement period. The list of decisions is made up of any previous decisions stored in the database as well as any temporary decisions. Temporary decisions are decisions which have been created as part of the eligibility and entitlement process, but which have not yet been stored in the database.

After the eligibility and entitlement engine creates the list of decisions, it then organizes the decision data into the Decision Details and Objective Details rules data objects (RDOs). It is important to note that these two RDOs are special RDOs in that do not require loaders to populate them with data. Instead, these RDOs are preinitialized by the eligibility and entitlement engine. These RDOs are also special in that they have pre-defined attributes which cannot be customized. Only the data that matches these attributes can be stored in these RDOs. For a description of these attributes, see “Pre-initialized RDO Attributes.”

Once these RDOs are preinitialized with the required data, the eligibility and entitlement engine passes them to the rules engine. When the rules engine executes rules that require access to the outcome of rules executions for previous dates, it will retrieve the necessary data from these RDOs.

Pre-initialized RDO Attributes

The pre-initialized RDOs, Decision Details and Objective Details, have pre-defined attributes. The following table describes the attributes for the Decision Details RDO:

Table 1. Description of Decision Details Attributes

Attribute Name	Description
From Date	The from date of the decision.
To Date	The to date of the decision.
Result Code	The result of the decision, i.e. Eligible or Not Eligible.

The following table describes the attributes for the Objective Details RDO:

Table 2. Description of Objective Details Attributes

Attribute Name	Description
From Date	The from date of the decision that generated this objective.
To Date	The to date of the decision that generated this objective.
Objective ID	Objective ID that corresponds to the objective record in the rules editor.
Objective Type	Type of this objective, e.g. money.
Objective Value	The value associated with this objective, e.g. monetary value.
Objective Target ID	The target concern role ID for this objective.

Note: The Decision Details RDO is used to stored the decision result while the Objective Details RDO is used to store decision objective information. By separating the result information from the objective information, the rules engine can retrieve the specific decision information it requires, rather than all decision information. For example, if the rules engine requires a result, it will retrieve the

result from the Decision Details RDO; if the rules engine requires an objective value, it will retrieve that value from the Objective Details RDO.

Instructions for a Developer

The following are instructions that a developer should follow to enable the passing of decision information to the rules engine for a product:

1. The developer should add an entry to the REASSESSMENTCONFIGURATIONCLASS codetable.
2. The entry must point to the name of a class that implements the IREASSESSMENTCONFIGURATION interface.

The method `isReassessToLastActiveDecisionEnabled` will be called on this interface passing the case ID. If this returns true, the previous decisions will be passed to the rules engine. If this method returns false (the default), the previous decisions will not be passed in. This method should be configured as appropriate.

Original Eligibility and Entitlement Result

Introduction

The eligibility and entitlement engine creates financial components from the decisions generated by the rules engine. Financial components are created for each case decision objective associated with a case decision. These financial components are schedules of transactions to be realized into actual financial transactions. This chapter demonstrates how the eligibility and entitlement engine creates financial components.

This chapter also demonstrates how the eligibility and entitlement engine creates financial components for deduction items. Financial components created from deduction items are considered secondary financial components. Secondary financial components are related to a primary financial component by the cover period.

Additionally, this chapter demonstrates how the eligibility and entitlement engine handles financial component processing for cases with multiple rules objectives and with multiple nominees. The eligibility and entitlement engine creates financial components separately for each case decision objective. The eligibility and entitlement engine also creates financial components on a nominee by nominee basis to accommodate the different nominee delivery patterns.

The final section in this chapter describes the eligibility and entitlement process when the Reassessment Configuration switch is enabled. When this switch is enabled, the eligibility and entitlement engine will pass decision information to the rules engine.

Financial Component Processing

This section demonstrates how the eligibility and entitlement engine creates financial components at the highest level. Financial components are created from case decision objectives. To create case decisions, the eligibility and entitlement engine uses a list of dates. This is either provided to the eligibility and entitlement engine (event date list) or compiled by the eligibility and entitlement engine (pattern date list). The eligibility and entitlement engine then creates decisions by calling the rules engine for each one of these dates. All identical decisions are rolled up into one decision covering the necessary time period. The eligibility and entitlement engine creates a case event and stores each case decision, each case

decision objective, and each case decision objective tag. The eligibility and entitlement engine generates the financial components from the case decision objectives using the case decision period and the nominee delivery frequency. The following table outlines the sample data used to demonstrate this processing:

Table 3. Sample Data for Financial Component Processing

Sample Data	Description
Primary Client	James Smith is a registered person who is the primary client of the demonstration case.
Product Type	The product used in this demonstration is the Sample Benefit product.
Product Rerate Frequency	The rerate frequency for the Sample Benefit product is set up to recur every week on a Wednesday.
Case Certification Period	The case certification period is April 1st, 2004 to April 30th, 2004.
Case Start Date and Creation Date	The case start date and creation date is April 1st, 2004.
Case Expected End Date	The case expected end date is April 30th, 2004.
Case Nominee Delivery Pattern	There is only one nominee on this case, James Smith. The case nominee delivery pattern is weekly in advance on a Friday. If for any reason delivery cannot be made on a Friday, the delivery must be made on the nearest possible Friday in advance.
Rules Objective	James Smith, the primary client, is eligible for the Max Personal rules objective.
Daily Rate	The daily rate is \$10 until April 5th, 2004, when legislation increases the value of the daily rate to \$11.
Weekly Rate	The weekly rate is \$70 until April 5th, 2004, when legislation increases the value of the weekly rate to \$77.

Changing Case Start and Expected End Dates: A case start date can be modified manually until the case is approved. After approval, the case start date is fixed. For the Sample Benefit product, the case start and expected end dates can be changed, even after case approval, by resetting the certification period. Functionality has been added to the Sample Benefit product where the system sets the case start date to the earliest certification from date provided that the certification from date is before the case start date. The case expected end date is set to the latest certification to date.

Compile Decision Date List

The first step in financial component processing is the creation of case decisions within a defined time period. This time period is defined by a from and to date passed into the eligibility and entitlement engine. To create case decisions within the defined time period, the eligibility and entitlement engine uses either a pattern date list or an event date list. The eligibility and entitlement engine works out the dates on the pattern date list, whereas the event date list is provided to the eligibility and entitlement engine.

Using Pattern Date List: The eligibility and entitlement engine builds up a list of dates using the delivery frequency of the primary client and the re-rate frequency of the case being assessed. The decision date list initially consists of the case start date, each delivery date after the case start date, each rerate date after the case

start date, and the case expected end date. The following is the initial decision date list compiled by the eligibility and entitlement engine using the sample data:

- April 1st, 2004: eligibility and entitlement engine from date, i.e., case start date
- April 2nd, 2004: delivery date based on delivery pattern frequency
- April 7th, 2004: rerate date based on product rerate frequency
- April 9th, 2004: delivery date based on delivery pattern frequency
- April 14th, 2004: rerate date based on product rerate frequency
- April 16th, 2004: delivery date based on delivery pattern frequency
- April 21st, 2004: rerate date based on product rerate frequency
- April 23rd, 2004: delivery date based on delivery pattern frequency
- April 28th, 2004: rerate date based on product rerate frequency
- April 30th, 2004: eligibility and entitlement engine to date, i.e., case expected end date (This is also a delivery date based on the delivery pattern frequency.)

Using Event Date List: The eligibility and entitlement engine creates a decision date list which consists of the case start date and case expected end date as well as all dates on the event date list between these two dates. The list of core event dates can consist of the case creation date, the certification start date, the date after the certification end date, an evidence tree activation date, and the effective date of a product rule set, but only if these dates are between the case start date and the case expected end date. The following is the decision date list compiled by the eligibility and entitlement engine using the sample data:

- April 1st, 2004: eligibility and entitlement engine from date, i.e., case start date (This is also the case creation date.)
- April 5th, 2004: effective date of the product rule set which includes the legislation changes
- April 30th, 2004: eligibility and entitlement engine to date, i.e., case expected end date

Create Decisions from Date List

The eligibility and entitlement engine calls the rules engine to create a decision for each of the dates compiled on the decision date list.

Decision Date List Created Using Pattern Date List: The following is the list of returned decisions for the decision date list created using the pattern date list:

- Decision for April 1st, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70.
- Decision for April 2nd, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70.
- Decision for April 7th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77.
- Decision for April 9th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77.
- Decision for April 14th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77.
- Decision for April 16th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77.
- Decision for April 21st, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77.
- Decision for April 23rd, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77.

- Decision for April 28th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77.
- Decision for April 30th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77.

Decision Date List Created Using Event Date List: The following is the list of returned decisions for the decision date list created using the event date list:

- Decision for April 1st, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70.
- Decision for April 5th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77.
- Decision for April 30th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77.

Compare Contiguous Decisions

When the pattern date list is used, the eligibility and entitlement engine will look for decision changes. It will not do this when the event date list is used.

When Pattern Date List is Used: As the eligibility and entitlement engine creates each decision, it compares the new decision to the previously created decision to find any decision changes. There is only one decision change for the decisions returned using the sample data. The decision for April 7th shows a change in the Max Personal rules objective daily and weekly rates.

When Event Date List is Used: The eligibility and entitlement engine will only create decisions for the dates on the event date list within the eligibility and entitlement period. It will not look for decision changes. This is because the event date list should contain all the dates on which decision changes occur, so there is no need to look for them.

Add Dates between Decisions to Date List

One of the benefits of using the pattern date list is that the eligibility and entitlement engine will automatically enhance the list of dates in order to find the exact date on which the decision change occurred.

When the Pattern Date List is Used: If the eligibility and entitlement engine finds that any of the contiguous decisions are different, it then enhances the list of dates with every date between the two decision dates. The eligibility and entitlement engine also re-adds the two decision dates to the date list. There is a change in decision on April 7th. The decision date before this is April 2nd. The eligibility and entitlement engine adds the following dates to the decision date list:

- April 2nd, 2004
- April 3rd, 2004
- April 4th, 2004
- April 5th, 2004
- April 6th, 2004
- April 7th, 2004

When the Event Date List is Used: The eligibility and entitlement engine does not enhance the event date list.

Create Decisions for Dates added to Date List

The eligibility and entitlement engine creates decisions for the dates added to the pattern date list in order to find the exact date of the decision change.

When the Pattern Date List is Used: The eligibility and entitlement engine calls the rules engine to create a decision for each of the new dates added to the date list. The following is the list of returned decisions for dates added to the decision date list:

- Decision for April 2nd, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70.
- Decision for April 3rd, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70.
- Decision for April 4th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70.
- Decision for April 5th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77.
- Decision for April 6th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77.
- Decision for April 7th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77.

Based on the new decisions returned, the eligibility and entitlement engine has found the first date on which the decision has changed, April 5th.

When the Event Date List is Used: The eligibility and entitlement engine does not enhance the date list, and thus, it does not have to call the rules engine for the new dates. As such, using the event date list puts less of a burden on the rules engine.

Roll Up Decisions

The eligibility and entitlement engine rolls up all contiguous decisions into a single decision with a decision period. This processing is the same when using either date list. As there is one change of decision in the sample data, there are two decisions:

- Decision with cover period of April 1st - April 4th: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70.
- Decision Set with cover period of April 5th - April 30th: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77.

Store Case Decisions

As part of storing case decisions, the eligibility and entitlement engine creates a case event for each decision and stores each CaseDecision, each decision's CaseDecisionObjective list, and each decision's CaseDecisionObjectiveTag list. The following information is stored for each decision:

- Decision with cover period April 1st - April 4th
Case Decision Objective: Max Personal
Case Decision Objective Tag 1: Daily Rate of \$10
Case Decision Objective Tag 2: Weekly Rate of \$70
- Decision with cover period April 5th - April 30th
Case Decision Objective: Max Personal
Case Decision Objective Tag 1: Daily Rate of \$11
Case Decision Objective Tag 2: Weekly Rate of \$77

Generate Financial Components

The eligibility and entitlement engine generates financial components from case decision objectives. To generate these financial components, the eligibility and

entitlement engine uses the case decision period and the nominee delivery pattern. If the case decision period includes a portion of the delivery frequency at the beginning of the decision period, a once-off, ramp-up financial component is created for the decision. If the case decision period encompasses one or more deliveries based on the delivery frequency, the eligibility and entitlement engine will create a recurring financial component. The frequency of the recurring financial component is the delivery frequency. If the case decision period includes a portion of the delivery frequency at the end of the decision period, a once-off, ramp-down financial component is created for the decision. Note that the financial component amount is calculated using the appropriate case decision objective tags. For information on financial component creation with multiple objective tags, see "Financial Component Creation for Multiple Objective Tags" on page 6. The eligibility and entitlement engine generates the following financial components from the two case decisions created from the sample data:

- Once-off Financial Component with Cover Period: April 1st - April 1st
Amount: \$10 (1 * daily rate)
Due Date: March 26th
- Once-off Financial Component with Cover Period: April 2nd - April 4th
Amount: \$30 (3 * daily rate)
Due Date: April 2nd
- Once-off Financial Component with Cover Period: April 5th - April 8th
Amount: \$44 (4 * daily rate)
Due Date: April 2nd
- Recurring Financial Component with Cover Period: April 9th - 29th
Amount: \$77 (weekly rate)
Frequency: Weekly in advance on a Friday
Due Dates: April 9th, April 16th, April 23rd
- Once-off Financial Component with Cover Period: April 30th - April 30th
Amount: \$11 (1 * daily rate)
Due Date: April 30th

Financial Component Due Date Set in Advance: The financial component due date is determined by both the delivery frequency and cover pattern of the nominee delivery pattern. The nominee delivery pattern frequency for the sample data is weekly on a Friday; the cover pattern is "in advance". Thus, the financial component due date must fall on a Friday and if there is no Friday in the cover period, the due date must fall on the closest Friday in advance of the financial component period. It is worth noting that the due dates for two of the financial components are not within the cover period for these financial components. This is because there is no Friday in the cover periods, thus the financial component due dates are set to the Fridays in advance. It is also worth noting the due date for the recurring financial component is rolled forward to the next due date as the financial component is processed.

Secondary Financial Component Processing

This section demonstrates how the eligibility and entitlement engine creates secondary financial components for active deductions. As part of financial component creation, the eligibility and entitlement engine searches for active deductions during the eligibility and entitlement period by searching through the case deduction item table. If the eligibility and entitlement engine finds any deduction items, it compares the deduction item's cover periods to the financial

components cover periods. If the deduction records apply during the cover period of the financial components, the eligibility and entitlement engine creates additional financial components for deductions. These additional financial components are secondary to the primary financial components.

The sample data used in “Financial Component Processing” on page 10 is also used in this section for the primary financial components. In addition to the sample data in “Financial Component Processing” on page 10, this section uses deduction sample data to demonstrate how secondary financial components are created. The following table describes the deduction sample data used in this section:

Table 4. Deduction Data for Secondary Financial Component Processing

Deduction Data	Description
Case	The case on which the deduction has been created and activated.
Start Date	April 10th is the start date of the deduction.
End Date	May 10th is the end date of the deduction.
Percentage	The deduction percentage is 10%. This is the rate to be deducted from the benefit payment.

Summary of Primary Financial Components

The following is a summary of the primary financial components created from the sample data in “Financial Component Processing” on page 10:

- Once-off Financial Component with Cover Period: April 1st - April 1st
 Type: Max Personal
 Amount: \$10 (1 * daily rate)
 Due Date: March 26th
- Once-off Financial Component with Cover Period: April 2nd - April 4th
 Type: Max Personal
 Amount: \$30 (3 * daily rate)
 Due Date: April 2nd
- Once-off Financial Component with Cover Period: April 5th - April 8th
 Type: Max Personal
 Amount: \$44 (4 * daily rate)
 Due Date: April 2nd
- Recurring Financial Component with Cover Period: April 9th - 29th
 Type: Max Personal
 Amount: \$77 (weekly rate)
 Frequency: Weekly in advance on a Friday
 Due Dates: April 9th, April 16th, April 23rd
- Once-off Financial Component with Cover Period: April 30th - April 30th
 Type: Max Personal
 Amount: \$11 (1 * daily rate)
 Due Date: April 30th

Deduction Financial Component Processing

This section provides an overview on deduction financial component processing. The first part of this section describes how the eligibility and entitlement engine

searches for deduction items on a case. The second part of this section describes how the eligibility and entitlement engine creates a deduction financial component.

FC Processing for Deductions: Financial component processing is the same for applied, unapplied and third party deductions. Applied deductions are scheduled to be paid toward outstanding liabilities. Unapplied deductions are scheduled deductions where the deduction is not applied toward a liability. Third Party deductions are scheduled to be paid toward another participant. For all types of deductions, the eligibility and entitlement engine creates the secondary financial component linked to the primary financial component on the case. The eligibility and entitlement engine does not process the financial transactions for all types of deductions. Processing the actual financial transactions is handled by the GenerateInstructionLineItems business process. When this business process is run, it creates two ILIs from the deduction financial component, one ILI is a bill against the benefit and the other ILI is a payment. For applied deductions, this payment is applied toward a selected outstanding liability. For unapplied deductions, the ILI is credited to the organization to be processed at a later stage. For third party deductions, the payment is applied toward a selected third party participant.

Search for Deductions: As part of the financial component creation process, the eligibility and entitlement engine searches for any active deductions on the case. To find deductions, the eligibility and entitlement engine searches through the case deduction item table to find records of active deductions set up on the case during *the case's eligibility and entitlement period*.

Create Deduction Financial Component: If active deduction items are found during the case's eligibility and entitlement period, it then compares the deduction item's cover periods to the financial components cover periods. If the deductions cover periods exist during the same cover periods as the financial components, the eligibility and entitlement engine creates additional financial components for the deductions. These additional financial components are secondary financial components to the primary financial components.

The cover period for the sample deduction item is April 10th - May 10th. The following table compares the cover periods for each of the financial components to the deduction cover period and displays whether or not the eligibility and entitlement engine creates a secondary financial component based on the comparison:

Table 5. Cover Period Comparisons for Deduction

Financial Component Cover Period	Deduction Cover Period	Create Secondary Financial Component
Financial component with cover period of April 1st	April 10th - May 10th	No.
Financial component with cover period April 2nd - April 4th	April 10th - May 10th	No.
Financial component with cover period April 5th - April 8th	April 10th - May 10th	No.
Financial component with cover period April 9th - April 29th	April 10th - May 10th	Yes.
Financial component with cover period April 30th	April 10th - May 10th	Yes.

Summary of Deduction Financial Components: The following is a summary of the deduction financial components created:

- Deduction Financial Component with Cover Period: April 10th - April 15th
Rate: 10%
Due Date: April 9th
Linked to Primary Financial Component with Cover Period: April 9th - April 29th
- Deduction Financial Component with Cover Period: April 16th - April 29th
Rate: 10%
Frequency: Weekly in advance on a Friday
Due Dates: April 16th and April 23rd
Linked to Primary Financial Component with Cover Period: April 9th - April 29th
- Deduction Financial Component with Cover Period: April 30th - April 30th
Rate: 10%
Due Date: April 30th
Linked to Primary Financial Component with Cover Period: April 30th - April 30th

FC Processing with Multiple Rules Objectives

This section demonstrates how the eligibility and entitlement engine creates financial components for cases with a rule set containing multiple rules objectives. When eligibility determination for a case results in eligibility for more than one rules objective during the same cover period, the eligibility and entitlement engine creates financial components for these rules objectives separately and on a nominee by nominee basis.

The eligibility and entitlement engine follows the steps outlined in “Financial Component Processing” on page 10 to create the financial components for each of the case decision objectives. The eligibility and entitlement engine creates the case decisions and stores each of these decisions. It then generates the financial components from the case decision objectives using the case decision period and the nominee delivery frequency.

For the purpose of demonstrating how the eligibility and entitlement engine processes multiple rules objectives, this section adds an additional rules objective to the sample data from “Financial Component Processing” on page 10. The following table outlines this sample data:

Table 6. Sample Data for FC Processing with Multiple Rules Objectives

Sample Data	Description
Primary Client	James Smith is a registered person who is the primary client of the demonstration case. James Smith is also the nominee assigned to both rules objectives.
Product Type	The product used in this demonstration is the Sample Benefit product.
Product Rerate Frequency	The rerate frequency for the Sample Benefit product is set up to recur every week on a Wednesday.

Table 6. Sample Data for FC Processing with Multiple Rules Objectives (continued)

Sample Data	Description
Case Certification Period	The case certification period is April 1st, 2004 to April 30th, 2004.
Case Start Date	The case start date is April 1st, 2004.
Case Expected End Date	The case expected end date is April 30th, 2004.
Case Nominee Delivery Pattern	James Smith's case nominee delivery pattern is weekly in advance on a Friday.
Rules Objective 1	James Smith is eligible for the Max Personal objective. The daily rate for this objective is \$10 until April 5th, 2004, when legislation increases the value of the daily rate to \$11. The weekly rate is \$70 until April 5th, 2004, when legislation increases the value of the weekly rate to \$77.
Rules Objective 2	James Smith is eligible for the Max Child Allowance. The rate for this objective is 10% of the daily rate until April 14th, when legislation decreases the value of the Max Child Allowance to 5% of the daily rate. Note that the daily rate is \$10 until April 5th, 2004, when legislation increases the value of the daily rate to \$11.

Create New Decisions

The following sections provide an outline of the steps taken to create new decisions when both the Max Personal and the Max Child Allowance rules objectives apply. The first section relates to new decisions created for a pattern date list; the second section relates to new decisions created for an event date list.

For Pattern Date List: The following is an outline of the steps taken to create new decisions (for a pattern date list) when both the Max Personal and the Max Child Allowance rules objectives apply:

1. Compile Decision Date List.
 - April 1st, 2004: eligibility and entitlement engine from date, i.e., case start date
 - April 2nd, 2004: delivery date based on delivery pattern frequency
 - April 7th, 2004: rerate date based on product rerate frequency
 - April 9th, 2004: delivery date based on delivery pattern frequency
 - April 14th, 2004: rerate date based on product rerate frequency
 - April 16th, 2004: delivery date based on delivery pattern frequency
 - April 21st, 2004: rerate date based on product rerate frequency
 - April 23rd, 2004: delivery date based on delivery pattern frequency
 - April 28th, 2004: rerate date based on product rerate frequency
 - April 30th, 2004: eligibility and entitlement engine to date, i.e., case expected end date (This is also a delivery date based on the delivery pattern frequency.)
2. Create Decisions from Date List.
 - Decision for April 1st, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70. James Smith is also eligible for the Max Child Allowance objective at 10% of the daily rate = 1.

- Decision for April 2nd, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70. James Smith is also eligible for the Max Child Allowance objective at 10% of the daily rate = 1.
 - Decision for April 7th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance objective at 10% of the daily rate = 1.10.
 - Decision for April 9th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance objective at 10% of the daily rate = 1.10.
 - Decision for April 14th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance objective at 5% of the daily rate = 0.55.
 - Decision for April 16th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance objective at 5% of the daily rate = 0.55.
 - Decision for April 21st, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 5% of the daily rate = 0.55.
 - Decision for April 23rd, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 5% of the daily rate = 0.55.
 - Decision for April 28th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 5% of the daily rate = 0.55.
 - Decision for April 30th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 5% of the daily rate = 0.55.
3. Compare Contiguous Decisions.
 - Decision change on April 7th, 2004
 - Decision change on April 14th, 2004
 4. Add Dates between Decision Changes to Date List.
 - April 2nd, 2004
 - April 3rd, 2004
 - April 4th, 2004
 - April 5th, 2004
 - April 6th, 2004
 - April 7th, 2004
 - April 9th, 2004
 - April 10th, 2004
 - April 11th, 2004
 - April 12th, 2004

- April 13th, 2004
 - April 14th, 2004
5. Create Decisions for Dates added to Date List.
- Decision for April 2nd, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70. James Smith is also eligible for the Max Child Allowance objective at 10% of the daily rate = 1.
 - Decision for April 3rd, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = 1.
 - Decision for April 4th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = 1.
 - Decision for April 5th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = 1.10.
 - Decision for April 6th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = 1.10.
 - Decision for April 7th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance objective at 10% of the daily rate = 1.10.
 - Decision for April 9th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance objective at 10% of the daily rate = 1.10.
 - Decision for April 10th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = 1.10.
 - Decision for April 11th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = 1.10.
 - Decision for April 12th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = 1.10.
 - Decision for April 13th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = 1.10.
 - Decision for April 14th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance objective at 5% of the daily rate = 0.55.
6. Roll Up Decisions.

- Decision with cover period of April 1st - April 4th: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = 1.
- Decision with cover period of April 5th - April 13th: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = 1.10.
- Decision with cover period of April 14th - April 30th: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 5% of the daily rate = 0.55.

For Event Date List: The following is an outline of the steps taken to create new decisions (for an event date list) when both the Max Personal and the Max Child Allowance rules objectives apply:

1. Compile Decision Date List.
 - April 1st, 2004: eligibility and entitlement engine from date, i.e., case start date (This is also the case creation date.)
 - April 5th, 2004: effective date of the product rule set which includes the legislation changes for the Max Personal objective
 - April 14th, 2004: effective date of the product rule set which includes the legislation changes for the Max Child Allowance objective
 - April 30th, 2004: eligibility and entitlement engine to date, i.e., case expected end date
2. Create Decisions from Date List.
 - Decision for April 1st, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70. James Smith is also eligible for the Max Child Allowance objective at 10% of the daily rate = 1.
 - Decision for April 5th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = 1.10.
 - Decision for April 14th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance objective at 5% of the daily rate = 0.55.
 - Decision for April 30th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 5% of the daily rate = 0.55.
3. Roll Up Decisions.
 - Decision with cover period of April 1st - April 4th: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = 1.
 - Decision with cover period of April 5th - April 13th: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = 1.10.

- Decision with cover period of April 14th - April 30th: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 5% of the daily rate = 0.55.

Store Case Decisions

As part of storing case decisions, the eligibility and entitlement engine creates a case event for each decision and stores each CaseDecision, each decision's CaseDecisionObjective list, and each decision's CaseDecisionObjectiveTag list. The case decisions are the same for the pattern date list and the event date list. The following information is stored for each decision:

- Decision with cover period April 1st - April 4th
 - Case Decision Objective 1: Max Personal Allowance
Case Decision Objective Tag 1: Daily Rate of \$10
Case Decision Objective Tag 2: Weekly Rate of \$70
 - Case Decision Objective 2: Max Child Allowance
Case Decision Objective Tag: \$1 (10% of Daily Rate)
- Decision with cover period April 5th - April 13th
 - Case Decision Objective 1: Max Personal Allowance
Case Decision Objective Tag 1: Daily Rate of \$11
Case Decision Objective Tag 2: Weekly Rate of \$77
 - Case Decision Objective 2: Max Child Allowance
Case Decision Objective Tag: \$1.10 (10% of Daily Rate)
- Decision with cover period April 14th -April 30th
 - Case Decision Objective 1: Max Personal Allowance
Case Decision Objective Tag 1: Daily Rate of \$11
Case Decision Objective Tag 2: Weekly Rate of \$77
 - Case Decision Objective 2: Max Child Allowance
Case Decision Objective Tag: \$0.55 (5% of Daily Rate)

Generate Financial Components

The eligibility and entitlement engine generates financial components from case decision objectives. To generate these components, the eligibility and entitlement engine uses the case decision period and the nominee delivery pattern. This section describes the financial components generated for the Max Personal case decision objective and the Max Child Allowance case decision objective based on the sample data.

Financial Components for Max Personal: The eligibility and entitlement engine generates the following financial components for the Max Personal case decision objective:

- Once-off Financial Component with Cover Period: April 1st - April 1st
Type: Max Personal
Amount: \$10 (1 * daily rate)
Due Date: March 26th
- Once-off Financial Component with Cover Period: April 2nd - April 4th
Type: Max Personal
Amount: \$30 (3 * daily rate)
Due Date: April 2nd

- Once-off Financial Component with Cover Period: April 5th - April 8th
Type: Max Personal
Amount: \$44 (4 * daily rate)
Due Date: April 2nd
- Recurring Financial Component with Cover Period: April 9th - 29th
Type: Max Personal
Amount: \$77 (weekly rate)
Frequency: Weekly in advance on a Friday
Due Dates: April 9th, April 16th, April 23rd
- Once-off Financial Component with Cover Period: April 30th - April 30th
Type: Max Personal
Amount: \$11 (1 * daily rate)
Due Date: April 30th

Financial Components for Max Child Allowance: The eligibility and entitlement engine generates the following financial components for the Max Child Allowance case decision objective:

- Once-off Financial Component with Cover Period: April 1st - April 1st
Type: Max Child Allowance
Amount: \$1 [1 * (10% of daily rate)]
Due Date: March 26th
- Once-off Financial Component with Cover Period: April 2nd - April 4th
Type: Max Child Allowance
Amount: \$3 [3 * (10% of daily rate)]
Due Date: April 2nd
- Once-off Financial Component with Cover Period: April 5th - April 8th
Type: Max Child Allowance
Amount: \$4.40 [4 * (10% of daily rate)]
Due Date: April 2nd
- Once-off Financial Component with Cover Period: April 9th - April 13th
Type: Max Child Allowance
Amount: \$5.50 [5 * (10% of daily rate)]
Due Date: April 9th
- Once-off Financial Component with Cover Period: April 14th - April 15th
Type: Max Child Allowance
Amount: \$1.10 [2 * (5% of daily rate)]
Due Date: April 9th
- Recurring Financial Component with Cover Period: April 16th - April 29th
Type: Max Child Allowance
Amount: \$3.85 [7 * (5% of daily rate)]
Frequency: Weekly in advance on a Friday
Due Dates: April 16th and April 23rd
- Once-off Financial Component with Cover Period: April 30th - April 30th
Type: Max Child Allowance
Amount: \$0.55 [1 * (5% of daily rate)]
Due Date: April 30th

FC Processing with Multiple Nominees

This section demonstrates how the eligibility and entitlement engine processes financial components where more than one nominee is assigned to a rules objective. A single nominee can be assigned to more than one rules objective at one time (see “FC Processing with Multiple Rules Objectives” on page 18). Over time, many different nominees can be assigned to the same rules objective, but the periods during which the nominees are assigned to the same rules objective cannot overlap.

When there is more than one nominee assigned to the same rules objective, the eligibility and entitlement engine must create financial components for these nominees separately. This is to account for the different delivery patterns for each nominee. Note that the eligibility and entitlement engine creates the case decisions based on the evidence for the client or clients being assessed. It then generates the financial components for these case decisions using each of the nominee's delivery patterns. Thus, the eligibility and entitlement engine generates financial components for each nominee separately.

The sample data used in “Financial Component Processing” on page 10 is also used in this section, with the addition of a second nominee, Linda Smith. The following is the sample data used to demonstrate financial component processing with multiple nominees:

Table 7. Sample Data for FC Processing with Multiple Nominees

Sample Data	Description
Primary Client	James Smith is a registered person who is the primary client of the demonstration case. James Smith is also the nominee assigned to the Max Personal rules objective from the case start date.
Second Nominee	Linda Smith is the nominee assigned to the Max Personal rules objective from April 12th, 2004.
Product Type	The product used in this demonstration is the Sample Benefit product.
Product Rerate Frequency	The rerate frequency for the Sample Benefit product is set up to recur every week on a Wednesday.
Case Certification Period	The case certification period is April 1st, 2004 to April 30th, 2004.
Case Start Date	The case start date is April 1st, 2004.
Case Expected End Date	The case expected end date is April 30th, 2004.
Case Nominee Delivery Pattern for James Smith	James Smith's case nominee delivery pattern is weekly in advance on a Friday. If for any reason delivery cannot be made on a Friday, the delivery must be made on the nearest possible Friday in advance.
Case Nominee Delivery Pattern for Linda Smith	Linda Smith's case nominee delivery pattern is weekly in arrears on a Monday. If for any reason delivery cannot be made on a Monday, the delivery must be made on the nearest possible Monday in arrears.

Table 7. Sample Data for FC Processing with Multiple Nominees (continued)

Sample Data	Description
Rules Objective	James Smith is eligible for the Max Personal rules objective. He is the nominee assigned to this rules objective from the case start date. Linda Smith is the nominee assigned to this rules objective from April 12th, 2004. The daily rate for this objective is \$10 until April 5th, 2004, when legislation increases the value of the daily rate to \$11. The weekly rate is \$70 until April 5th, 2004, when legislation increases the value of the weekly rate to \$77.

FC Processing for Nominee with Multiple Delivery Patterns: A nominee can have more than one delivery pattern over time. When a nominee has more than one delivery pattern, the eligibility and entitlement engine must create a separate list of financial components for each of these delivery patterns. This is because the cover period and due dates for financial components are based on the delivery pattern.

Create and Store New Decisions

The eligibility and entitlement engine creates case decisions based on the evidence for the case. To create case decisions, the eligibility and entitlement engine uses a pattern date list or an event date list. The eligibility and entitlement engine calls the rules engine for the dates in the date list. All identical, contiguous decisions are rolled up into one decision covering the necessary time period. The eligibility and entitlement engine creates a case event and stores each case decision, each case decision objective, and each case decision objective tag.

The above-described process for creating case decisions is outlined in “Financial Component Processing” on page 10. The following is a summary of the information stored for each of these decisions:

- Decision with cover period April 1st - April 4th
 - Case Decision Objective: Max Personal
 - Case Decision Objective Tag 1: Daily Rate of \$10
 - Case Decision Objective Tag 2: Weekly Rate of \$70
- Decision with cover period April 5th - April 30th
 - Case Decision Objective: Max Personal
 - Case Decision Objective Tag 1: Daily Rate of \$11
 - Case Decision Objective Tag 2: Weekly Rate of \$77

Generate Financial Components

The eligibility and entitlement engine generates financial components from case decisions. When there is more than one nominee assigned to the same rules objective over time, the eligibility and entitlement engine generates the financial components for each nominee from the same stored case decisions. To generate these financial components, the eligibility and entitlement engine uses the case decision period and the nominee delivery period. When there is more than one nominee assigned to the same rules objective, the eligibility and entitlement engine must create financial components for these nominees separately. This is to account for the different delivery patterns for each nominee. This section describes the financial components generated for James Smith and Linda Smith based on the sample data. Note that James Smith's delivery pattern is weekly in advance on a Friday, whereas Linda Smith's delivery pattern is weekly in arrears on a Monday.

Generate Financial Components for James Smith: The eligibility and entitlement engine generates the following financial components for James Smith:

- Once-off Financial Component with Cover Period: April 1st - April 1st
Amount: \$10 (1 * daily rate)
Due Date: March 26th
- Once-off Financial Component with Cover Period: April 2nd - April 4th
Amount: \$30 (3 * daily rate)
Due Date: April 2nd
- Once-off Financial Component with Cover Period: April 5th - April 8th
Amount: \$44 (4 * daily rate)
Due Date: April 2nd
- Once-off Financial Component with Cover Period: April 9th - 11th
Amount: \$33 (3 * daily rate)
Due Date: April 9th

Generate Financial Components for Linda Smith: The eligibility and entitlement engine generates the following financial components for Linda Smith:

- Recurring Financial Component with Cover Period: April 12th - April 25th
Amount: \$77 (weekly rate)
Frequency: Weekly in arrears on a Monday
Due Dates: April 19th and April 26th
- Once-off Financial Component with Cover Period: April 26th - April 30th
Amount: \$55 (5 * daily rate)
Due Date: May 3rd

Configuring Eligibility and Entitlement Engine to Pass Decision Information

This section describes how the eligibility and entitlement engine can be configured to pass decision information to the rules engine. This decision information can be used by the rules engine to create new decisions.

When the Reassessment Configuration switch is enabled, the eligibility and entitlement engine will pass in all temporary decisions created during the eligibility and entitlement process. Each time the rules engine returns a decision result, the eligibility and entitlement engine passes the decision information into the pre-initialized RDOs. The rules engine can then access the temporary decision information to create new decisions.

To demonstrate what happens when this switch is enabled, an additional rule is added to the sample data from “FC Processing with Multiple Rules Objectives” on page 18. This rule states that in order to be eligible for the Max Child Allowance objective, the primary client must be eligible for the Max Personal objective for at least five days. The following table provides an overview of the sample data:

Table 8. Sample Data for Eligibility and Entitlement Processing with Switch Enabled

Sample Data	Description
Primary Client	James Smith is a registered person who is the primary client of the demonstration case. James Smith is also the nominee assigned to both rules objectives.

Table 8. Sample Data for Eligibility and Entitlement Processing with Switch Enabled (continued)

Sample Data	Description
Product Type	The product used in this demonstration is the Sample Benefit product.
Product Rerate Frequency	The rerate frequency for the Sample Benefit product is set up to recur every week on a Wednesday.
Case Certification Period	The case certification period is April 1st, 2004 to April 30th, 2004.
Case Start Date	The case start date is April 1st, 2004.
Case Expected End Date	The case expected end date is April 30th, 2004.
Case Nominee Delivery Pattern	James Smith's case nominee delivery pattern is weekly in advance on a Friday.
Reassessment Configuration	This switch is enabled.
Rules Objective 1	James Smith is eligible for the Max Personal objective. The daily rate for this objective is \$10 until April 5th, 2004, when legislation increases the value of the daily rate to \$11. The weekly rate is \$70 until April 5th, 2004, when legislation increases the value of the weekly rate to \$77.
Rules Objective 2	A rule states that in order to be eligible for the Max Child Allowance objective, the primary client must be eligible for the Max Personal objective for at least 5 consecutive days. The rate for the Max Child Allowance objective is 10% of the daily rate of the Max Personal Objective.

Create New Decisions

The following sections provide an outline of the steps taken to create new decisions when the Reassessment Configuration switch is enabled. The first section relates to new decisions created for a pattern date list; the second section relates to new decisions created for an event date list.

For both date lists, the main processing that occurs that differs from the normal create decision processing is that each time the rules engine returns a new decision to the eligibility and entitlement engine, the eligibility and entitlement engine passes the new decision information back to the rules engine.

For Pattern Date List: As mentioned earlier, one of the main differences between the pattern date list and the event date list is that the eligibility and entitlement engine enhances the date list not only when there are contiguous decisions, but also when there are gaps between decisions on the pattern date list. This becomes important when the Reassessment Configuration switch is enabled as these gaps might affect the outcome of rules which are dependent on decision information. The eligibility and entitlement engine adds the dates within these gaps to the date list; it also re-calls the rules engine on the date before the gap and the date after the gap.

The following is an outline of the steps taken to create new decisions for a pattern date list when the Reassessment Configuration switch is enabled:

1. Pass in Previous Decisions, if found.

The eligibility and entitlement engine checks to see if there are any existing decisions whose cover period falls within the eligibility and entitlement engine from and to dates. The eligibility and entitlement engine from date is the case start date, April 1st, 2004; the eligibility and entitlement engine to date is the case expected end date, April 30th, 2004. Since this is an original eligibility and entitlement result, there are no previous decisions, and thus, the eligibility and entitlement engine does not pass decision information to the rules engine.

2. Compile Decision Date List.

- April 1st, 2004: eligibility and entitlement engine from date, i.e., case start date
- April 2nd, 2004: delivery date based on delivery pattern frequency
- April 7th, 2004: rerate date based on product rerate frequency
- April 9th, 2004: delivery date based on delivery pattern frequency
- April 14th, 2004: rerate date based on product rerate frequency
- April 16th, 2004: delivery date based on delivery pattern frequency
- April 21st, 2004: rerate date based on product rerate frequency
- April 23rd, 2004: delivery date based on delivery pattern frequency
- April 28th, 2004: rerate date based on product rerate frequency
- April 30th, 2004: eligibility and entitlement engine to date, i.e., case expected end date (This is also a delivery date based on the delivery pattern frequency.)

3. Create Decision for First Date in Date List.

The eligibility and entitlement engine creates a temporary decision for April 1st, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70. The rules engine looks for decision results to determine whether or not James Smith is eligible for the Max Child Allowance objective. Since there are no previous decisions, he is found ineligible for the second objective.

4. Pass in Temporary Decision Information

The eligibility and entitlement engine passes in the decision information for the April 1st temporary decision which indicates the James Smith is eligible for the Max Personal objective from April 1st to April 1st. The weekly rate for this objective is \$70. Notice that only the weekly rate is passed in as decision information. This is because the eligibility and entitlement engine will only pass in the decision objective information for the base objective tag. The base objective tag is the objective tag closest to the nominee's delivery pattern frequency, which is the weekly rate.

5. Create Decision for Next Date on Date List.

The eligibility and entitlement engine creates a temporary decision for April 2nd, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70. The rules engine looks for decision results to determine whether or not James Smith is eligible for the Max Child Allowance objective. It reads the April 1st decision information and returns an ineligible result for Max Child Allowance since James has only been in receipt of the Max Personal rules objective for 1 day.

6. Pass in Temporary Decision Information

The eligibility and entitlement engine passes in the decision information for April 2nd which indicates that James Smith is eligible for the Max Personal objective from April 2nd to April 2nd. The weekly rate for this objective is \$70.

7. Create Decision for Next Date on Date List

The eligibility and entitlement engine creates a temporary decision for April 7th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. The rules engine looks for decision results to determine whether or not James Smith is eligible for the Max Child Allowance objective. It reads the April 1st and April 2nd decision information and returns an ineligible result for Max Child Allowance since James has only been in receipt of the Max Personal rules objective for 2 consecutive days.

8. Pass in Temporary Decision Information

The eligibility and entitlement engine passes in the decision information for April 7th which indicates that James Smith is eligible for the Max Personal objective from April 7th to April 7th. The weekly rate for this objective is \$77. The eligibility and entitlement engine sees that there is no decision change between the eligible result on the 2nd and the eligible result on the 7th. If the decision cover period were extended over this gap, then James is likely to be eligible for the Max Child Allowance objective. To ensure that the correct decision results are returned for the dates between the 2nd and 7th, the eligibility and entitlement engine adds April 3rd, April 4th, April 5th, and April 6th to the date list. The eligibility and entitlement engine also re-adds April 7th to the date list. This allows the rules engine to make a decision regarding the 7th using the decision information from the new dates added to the date list.

9. Create Decision for Next Date on Date List

The eligibility and entitlement engine creates a temporary decision for April 3rd, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70. The rules engine looks for decision results to determine whether or not James Smith is eligible for the Max Child Allowance objective. It reads the April 1st, April 2nd, April 3rd, and April 7th decision information and still returns an ineligible result for Max Child Allowance, as James has only been in receipt of the Max Personal objective for three consecutive days.

10. Pass in Temporary Decision Information

The eligibility and entitlement engine passes in the decision information for April 3rd which indicates that James Smith is eligible for the Max Personal objective from April 3rd to April 3rd. The weekly rate for this objective is \$70.

11. Create Decision for Next Date on Date List

The eligibility and entitlement engine creates a temporary decision for April 4th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70. The rules engine looks for the decision results to determine whether or not James Smith is eligible for the Max Child Allowance objective. It reads the April 1st, April 2nd, April 3rd, April 4th, and April 7th decision information and still returns an ineligible result for Max Child Allowance because there must be 5 consecutive days of eligibility (there are 5 days of eligibility but only 4 of which are consecutive).

12. Pass in Temporary Decision Information

The eligibility and entitlement engine passes in the decision information for April 4th which indicates that James Smith is eligible for the Max Personal objective from April 4th to April 4th. The weekly rate for this objective is \$70.

13. Create Decision for Next Date on Date List

The eligibility and entitlement engine creates a temporary decision for April 5th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. The rules engine looks for the decision results to determine whether or not James Smith is eligible for the

Max Child Allowance objective. It reads the April 1st, April 2nd, April 3rd, April 4th, April 5th, and April 7th decision information. James Smith is now found eligible for the Max Child Allowance objective at a daily rate of \$1.10 (10% of the daily rate for the Max Personal rules objective).

14. Pass in Temporary Decision Information

The eligibility and entitlement engine passes in the decision information for April 5th which indicates that James Smith is eligible for both the Max Personal and the Max Child Allowance objectives. The weekly rate for the Max Personal objective is \$77; the daily rate for the Max Child Allowance objective is \$1.10.

15. Create Decision for Next Date on Date List

The eligibility and entitlement engine creates a temporary decision for April 6th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. The rules engine looks for decision results and determines James Smith is eligible for the Max Child Allowance objective at a daily rate of \$1.10.

16. Pass in Temporary Decision Information

The eligibility and entitlement engine passes in the decision information for April 6th which indicates that James Smith is eligible for both the Max Personal and the Max Child Allowance objectives. The weekly rate for the Max Personal objective is \$77; the daily rate for the Max Child Allowance objective is \$1.10.

17. Create Decision for Next Date on Date List

The eligibility and entitlement engine creates a temporary decision for April 7th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance objective at a daily rate of \$1.10. This is the second time the rules engine has returned a decision for this date.

18. Pass in Temporary Decision Information

The eligibility and entitlement engine passes in the decision information for April 7th which indicates that James Smith is eligible for both the Max Personal and the Max Child Allowance objectives. The weekly rate for the Max Personal objective is \$77; the daily rate for the Max Child Allowance objective is \$1.10. Note that this temporary decision replaces the existing April 7th temporary decision.

19. Create Decision for Next Date on Date List

The eligibility and entitlement engine creates a temporary decision for April 9th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance objective at a daily rate of \$1.10. Note that April 9th is the next date after April 7th on the original date list.

20. Pass in Temporary Decision Information

The eligibility and entitlement engine passes in the decision information for April 9th which indicates that James Smith is eligible for both the Max Personal and the Max Child Allowance objectives. The weekly rate for the Max Personal objective is \$77; the daily rate for the Max Child Allowance objective is \$1.10.

21. Continue Creating Decisions and Passing in Temporary Decision Information

The eligibility and entitlement engine continues to create temporary decisions for the remaining dates on the date list. It also continues to pass in the temporary decision information after each decision. All remaining dates on the date list return the same decision result as the April 9th decision.

22. Compare Contiguous Decisions
 - Decision change on April 5th, 2004
23. Add Dates between Decision Changes to Date List.

The rules engine has returned a decision for all dates between the decision changes; therefore, there is no need to add dates to the date list.
24. Roll Up Decisions.
 - Decision with cover period of April 1st - April 4th: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70.
 - Decision with cover period of April 5th - April 30th: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = 1.10.

For Event Date List: The eligibility and entitlement engine does not enhance the event date list with new dates. As such, using the event date list when the Reassessment Configuration switch is enabled will improve system performance.

The following is an outline of the steps taken to create new decisions for an event date list when the Reassessment Configuration switch is enabled:

1. Pass in Previous Decisions, if found.

The eligibility and entitlement engine checks to see if there are any existing decisions whose cover period falls within the eligibility and entitlement engine from and to dates. The eligibility and entitlement engine from date is the case start date, April 1st, 2004; the eligibility and entitlement engine to date is the case expected end date, April 30th, 2004. Since this is an original eligibility and entitlement result, there are no previous decisions, so the eligibility and entitlement engine does not pass decision information into the rules engine.
2. Compile Decision Date List.
 - April 1st, 2004: eligibility and entitlement engine from date, i.e., case start date (This is also the case creation date.)
 - April 5th, 2004: effective date of the product rule set which includes the legislation changes for the Max Personal objective
 - April 30th, 2004: eligibility and entitlement engine to date, i.e., case expected end date
3. Create Decision for First Date in Date List.

The eligibility and entitlement engine creates a temporary decision for April 1st, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70. The rules engine looks for decision results to determine whether or not James Smith is eligible for the Max Child Allowance objective. Since there are no previous decisions, he is found ineligible for the second objective.
4. Pass in Temporary Decision Information

The eligibility and entitlement engine passes in the decision information for the April 1st temporary decision which indicates that James Smith is eligible for the Max Personal objective. The decision period extends from April 1st to April 4th where April 4th is the date before the next date on the event date list. The weekly rate for this objective is \$70.
5. Create Decision for Next Date on Date List.

The eligibility and entitlement engine creates a temporary decision for April 5th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. The rules engine looks for decision results

to determine whether or not James Smith is eligible for the Max Child Allowance objective. It reads the April 1st - April 4th decision information and the April 5th decision information. James Smith is now found eligible for the Max Child Allowance objective at a daily rate of \$1.10 (10% of the daily rate for the Max Personal rules objective).

6. Pass in Temporary Decision Information

The eligibility and entitlement engine passes in the decision information for April 5th which indicates that James Smith is eligible for both the Max Personal and the Max Child Allowance objectives. The weekly rate for the Max Personal objective is \$77; the daily rate for the Max Child Allowance objective is \$1.10.

7. Create Decision for Next Date on Date List

The eligibility and entitlement engine creates a temporary decision for April 30th, 2004: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance objective at a daily rate of \$1.10.

8. Pass in Temporary Decision Information

The eligibility and entitlement engine passes in the decision information for April 30th which indicates that James Smith is eligible for both the Max Personal and the Max Child Allowance objectives. The weekly rate for the Max Personal objective is \$77; the daily rate for the Max Child Allowance objective is \$1.10.

9. Roll Up Decisions.

- Decision with cover period of April 1st - April 4th: James Smith is eligible for the Max Personal rules objective at a daily rate of \$10 and a weekly rate of \$70.
- Decision with cover period of April 5th - April 30th: James Smith is eligible for the Max Personal rules objective at a daily rate of \$11 and a weekly rate of \$77. James Smith is also eligible for the Max Child Allowance rules objective at 10% of the daily rate = \$1.10.

Store Case Decisions

As part of storing case decisions, the eligibility and entitlement engine creates a case event for each decision and stores each CaseDecision, each decision's CaseDecisionObjective list, and each decision's CaseDecisionObjectiveTag list. The case decisions are the same for the pattern date list and the event date list. The following information is stored for each decision:

- Decision with cover period April 1st - April 4th
 - Case Decision Objective 1: Max Personal Allowance
Case Decision Objective Tag 1: Daily Rate of \$10
Case Decision Objective Tag 2: Weekly Rate of \$70
- Decision with cover period April 5th - April 30th
 - Case Decision Objective 1: Max Personal Allowance
Case Decision Objective Tag 1: Daily Rate of \$11
Case Decision Objective Tag 2: Weekly Rate of \$77
 - Case Decision Objective 2: Max Child Allowance
Case Decision Objective Tag: \$1.10 (10% of Daily Rate)

Change in Circumstance

Introduction

This chapter provides an overview of eligibility and entitlement processing where a change in circumstance has occurred and reassessment is required. The purpose of case reassessment is to compare the outputs of eligibility and entitlement results that cover the same period of time. This comparison detects differences between these outputs so that the necessary over/under payments/bills are created. An over/under payment/billing occurs when a new decision is created for a period that overlaps with an existing decision or decisions that have already been processed for payment or billing and that new decision differs from the existing decision or decisions. Changes in circumstance that lead to decision changes include evidence changes, rate changes, rules changes, and time based changes, such as a change to a participant's age due to the passing of time.

To check if reassessment is required, the eligibility and entitlement engine compares the cover period from date of each new decision to the cover to date of the case. The cover to date of the case is the latest cover period to date for all ILIs, i.e., the output of all processed financial components. If any new decision from date is before the cover to date, reassessment must occur. The eligibility and entitlement engine then defines the reassessment period and determines if any over/under payments/bills exist by comparing the ILIs to financial data associated with the new case decisions.

There are five examples in this chapter which demonstrate how reassessment processing works. The first example demonstrates reassessment processing for a benefit case. The second example demonstrates reassessment processing for a liability case. The third example demonstrates reassessment processing where more than one rules objective is assigned to the same nominee. The fourth example demonstrates reassessment processing where more than one nominee is assigned to the same rules objective over a period of time. The final example demonstrates reassessment processing where more than one reassessment occurs within the same time period.

Reassessment Processing for a Benefit Case

This section demonstrates the normal reassessment process for a benefit case. The eligibility and entitlement engine determines that reassessment is required on a case where the from date of a new decision is before the latest cover period to date for all ILIs on that case. If reassessment is necessary, the eligibility and entitlement engine calculates the reassessment period, determines the reassessment details for this period, and stores these results. As part of determining the reassessment details for the reassessment period, the eligibility and entitlement engine retrieves the processed ILIs and creates in memory financial data for the virtual financial components. The eligibility and entitlement engine then compares the financial data to the processed ILIs to determine if any over or underpayments exist. If an over or underpayment is found, the eligibility and entitlement engine records the over or underpayment details and initiates over or underpayment processing.

Extending the Eligibility and Entitlement Period: The eligibility and entitlement engine determines whether or not the eligibility and entitlement period needs to be extended based on the decision dates for both the stored decisions and the new decisions. For cases where there is a list of new decisions, as well as a list of stored

decisions, the eligibility and entitlement engine will extend the eligibility and entitlement period to be the earliest decision from date and the latest decision to date for all overlapping decisions.

For the purpose of demonstrating the normal reassessment process, this section applies a change in circumstance to the sample data in “Financial Component Processing” on page 10. The change in circumstance is an adjustment to the case certification period. The following table describes how the change in circumstance affects the original sample data:

Table 9. Change in Circumstance to Sample Data

Sample Data	Sample Data before Change	Sample Data after Change
Primary Client	James Smith.	Same.
Product Type	Sample Benefit product.	Same.
Product Rerate Frequency	Every week on a Wednesday.	Same.
Case Certification Period	Certification period from April 1st - April 30th, 2004.	Certification period from March 15 - April 15th, 2004.
Case Start Date	April 1st, 2004.	March 15th, 2004.
Case Expected End Date	April 30th, 2004.	April 30th, 2004.
Case Nominee Delivery Pattern	Weekly in advance on a Friday.	Same.
Daily Rate	The daily rate is \$10 until April 5th, 2004, when legislation increases the value of the daily rate to \$11.	Same.
Weekly Rate	The weekly rate is \$70 until April 5th, 2004, when legislation increases the value of the weekly rate to \$77.	Same.
Rules Objective	James Smith, the primary client, is eligible for the Max Personal rules objective.	Same.
Date up to which benefit has already been covered.	No ILIs have been created for the benefit, thus there is no date up to which the benefit has already been covered.	April 30th. This means that all existing FCs on or before April 30th have been realized into actual financial transactions, i.e., ILIs.

Create Virtual Financial Components

The eligibility and entitlement engine creates the virtual financial components based on any changes in circumstance. To create the virtual financial components, the eligibility and entitlement engine creates new decisions based on the changed information. The eligibility and entitlement engine stores the decision information and then creates the virtual financial components from the case decision objectives. To create these virtual financial components, the eligibility and entitlement engine uses the case decision period and the nominee delivery frequency. Virtual financial component creation is the same as financial component creation for an original eligibility and entitlement result. The only difference is that virtual financial components are stored on a temporary basis.

Create Virtual Financial Components: The eligibility and entitlement engines creates the following virtual financial components from the new case decisions based on the nominee delivery pattern frequency:

- Once-off Virtual Financial Component with Cover Period: March 15th - March 18th
Amount: \$40 (4 * daily rate)
Due Date: March 12th
- Recurring Virtual Financial Component with Cover Period: March 19th - April 1st
Amount: \$70 (weekly rate)
Frequency: Weekly in advance on a Friday
Due Dates: March 19th and March 26th
- Once-off Virtual Financial Component with Cover Period: April 2nd - April 4th
Amount: \$30 (3 * daily rate)
Due Date: April 2nd
- Once-off Virtual Financial Component with Cover Period: April 5th - April 8th
Amount: \$44 (4 * daily rate)
Due Date: April 2nd
- Recurring Virtual Financial Component with Cover Period: April 9th - April 15th
Amount: \$77 (weekly rate)
Frequency: Weekly in advance on a Friday
Due Date: April 9th

Check if Reassessment is Required

To check if reassessment is required, the eligibility and entitlement engine compares the cover period from date of all new decisions to the cover to date of the case. The cover to date of the case is the latest cover period to date for all ILIs, i.e., the output of all processed financial components. According to the sample data, the date up to which the benefit has already been covered is April 30th. If any of the new decisions are before this date, then reassessment is required. The cover period from dates for each of the decisions in “Create Virtual Financial Components” on page 35 are March 15th, April 5th, and April 16th, all three of which are before April 30th, and thus reassessment is required.

Defining the Reassessment Period

Before the eligibility and entitlement engine processes reassessment details, it must define the reassessment period. The eligibility and entitlement engine uses the eligibility and entitlement engine from date, the cover to date of the case, and the nominee delivery pattern to define the start and end dates for the reassessment period. (At a low-level, the eligibility and entitlement engine also uses the case effective date; see “Using the Case Effective Date” on page 7.) The start date of the reassessment period is the first nominee delivery date on or before the eligibility and entitlement engine from date. The end date of the reassessment period is the nominee delivery date on or after the cover to date of the case. Based on the sample data, the start date of the reassessment period is March 12th; the end date of the reassessment period is April 30th.

As part of defining the reassessment period, in addition to defining the start and end dates of the reassessment period, the eligibility and entitlement engine returns a list of all delivery dates, beginning with the start date of the reassessment period and ending on the end date of the reassessment period. This list of dates is used for comparing the processed ILIs to the financial data for the virtual financial

components. Based on the sample data, the list of dates are as follows: March 12th, March 19th, March 26th, April 2nd, April 9th, April 16th, April 23rd, and April 30th.

Important: Calculating Eligibility and Entitlement Engine From Date

The change that triggers reassessment determines what information is used to calculate the eligibility and entitlement engine from date. The change in certification period has triggered the reassessment for the above-described reassessment period. This change in certification impacts the case from the case start date; thus, the eligibility and entitlement engine from date is set to the case start date. The eligibility and entitlement engine from date is not always set to the case start date. For example, an evidence change that triggers reassessment would only impact the case during the time period that evidence set is active. In this second example, the eligibility and entitlement engine from date is set to the evidence activation start date.

Extending Reassessment Period to Find Merged Decisions: As described, decisions which share the same financial values will be rolled-up into one decision. The problem is that the rolled-up decisions will result in processed ILLs with cover periods which may cross between two different decisions. In the case of reassessment, these processed ILLs would not be recognized for a reassessment period since their cover period would not fall completely within the reassessment period.

In these circumstances, the eligibility and entitlement engine can traverse through existing rolled-up decisions searching for the earliest decision date and extend the reassessment period to include decisions on or after this date. The eligibility and entitlement engine can then locate the different decisions which were merged and virtually separate them in order to determine the exact processed amount which relates to the specific decisions and the exact cover period the amount relates to. By doing this, the eligibility and entitlement engine is able to find processed ILLs within the reassessment period which are required to complete the reassessment.

A business scenario which demonstrates this is a family allowance case which pays out money for all non-school attending children in a household. In this scenario, James Smith has one child, Lisa, who is eligible for \$50 per week. On the day that Lisa starts school and becomes ineligible for the \$50 is the same day her brother Robert is born. Since Lisa and Robert's details are the same and contiguous, their eligible decisions are rolled-up into one financial component. The delivery pattern for these payments is 'weekly on a Monday'.

If at some future date there is a change detected which triggers reassessment, the eligibility and entitlement engine can traverse through the rolled-up decisions for Lisa and Robert and extend the reassessment period to the earliest decision date. Say, for example, the change in circumstance is that Lisa actually started school 3 days after Robert was born. Thus, on the week Robert was born, both Lisa and Robert are eligible for the family allowance.

The eligibility and entitlement engine can traverse back to the earliest date on which Lisa was eligible and search through the rolled-up decision for each separate decision. It will find the point at which Lisa and Robert's decisions were merged. The eligibility and entitlement engine can virtually separate these decisions. The decision change can then be matched up to the specific decision relating to Lisa in order to determine the reassessed amount.

Get Reassessment Details

As part of determining the reassessment details for the reassessment period, the eligibility and entitlement engine retrieves the processed ILIs during the reassessment period, creates in memory financial data for the virtual financial components, and compares the financial data to the processed ILIs to determine if any over or underpayments exist. If an over or underpayment is found, the eligibility and entitlement engine creates an over or underpayment financial component and initiates over or underpayment processing. Over or underpayment financial components are once-off with a cover period matching the reassessment period.

Process Reassessment Details: To process reassessment details, the eligibility and entitlement engine compares the actual details to the reassessed details. The following table illustrates this process:

Table 10. Description of Process Reassessment for a Benefit

Cover Period	Actual Amount	Reassessed Amount	Difference
March 12th - March 18th	0	40	-40
March 19th - March 25th	0	70	-70
March 26th - April 1st	10	70	-60
April 2nd - April 8th	74	74	0
April 9th - April 15th	77	77	0
April 16th - April 22nd	77	0	77
April 23rd - April 29th	77	0	77
April 30th	11	0	11
Totals	326	331	-5

To determine if an over or underpayment exists, the eligibility and entitlement engine calculates the total difference between the actual amounts and the reassessed amounts. For benefits, if the total difference is greater than zero, an underpayment exists; if the total difference is less than zero, an overpayment exists.

Using the values in the Difference column in the above table, the total Difference between the actual amounts and the reassessed amounts = $-40 + -70 + -60 + 77 + 77 + 11 = -5$.

The total difference, -5, shows that there is an overpayment for this reassessment period.

Over or Underpayment Processing for a Benefit Case: When an over or underpayment is found during reassessment, the eligibility and entitlement engine records the over or underpayment details and initiates over or underpayment processing. Over or underpayment processing for a benefit case is set up at the product level.

Over or underpayment processing for a benefit case can be set up such that a notification is sent to the case owner informing the owner that an over or

underpayment has been discovered during reassessment. The case owner can then decide how to proceed with the over or underpayment.

Over or underpayments can also be processed automatically. Automatic overpayment processing differs from automatic underpayment processing. To automatically process an overpayment, the eligibility and entitlement engine automatically creates an overpayment case. To automatically process an underpayment, the eligibility and entitlement engine checks the 'auto underpayment case creation' setting on the associated product.

If the 'auto underpayment case creation' setting is set to true, a secondary check is performed to see if any live (i.e., non-closed or pending closure) liabilities exist for the primary client on the case. This secondary check is governed by an environment variable, so it can be switched off if desired. If any live liabilities exist for the primary client, the eligibility and entitlement engine creates a benefit underpayment case for each nominee on the original case who received a payment; however, the primary client on the benefit underpayment case(s) will be the same as that of the original benefit case.

If the 'auto underpayment case creation' setting is set to false, the eligibility and entitlement engine creates an underpayment financial component on the original case. This underpayment financial component is a once-off financial component with an amount equal to the underpayment.

Reassessment Processing for a Liability Case

This section demonstrates the normal reassessment process for a liability case. To understand the difference between benefit and liability over or underpayments, consider the example where an overpayment exists on a benefit case with the value of \$5. In this example, the eligibility and entitlement engine has determined that the benefit case has been over paid \$5. To rectify this overpayment, the organization can deduct this \$5 from future case benefits. Now consider a second example where the eligibility and entitlement engine has determined that the liability case has been underbilled \$5. To rectify this, the organization can add this \$5 to a future bill. The organization could also decide to deduct this \$5 from any of the existing benefits related to the liability case. This is the same action the organization would take for a benefit overpayment.

For the purpose of demonstrating reassessment processing for a liability case, this section uses a new set of sample data which includes a change in circumstance for a liability product. Note that the liability sample data used to demonstrate reassessment processing for a liability case is similar to the sample data used to demonstrate reassessment processing for a benefit case. For both benefits and liabilities, the eligibility and entitlement engine follows the same processes when creating new and virtual financial components, checking if reassessment is required, and defining the reassessment period. Thus, by using the similar data, it is not necessary to describe how the eligibility and entitlement engine performs these processes for a liability case. The following table outlines the new set of liability sample data:

Table 11. Liability Sample Data

Sample Data	Before Change in Circumstance	After Change in Circumstance
Primary Client	James Smith.	Same.
Product Type	Sample Liability product.	Same.

Table 11. Liability Sample Data (continued)

Sample Data	Before Change in Circumstance	After Change in Circumstance
Product Rerate Frequency	Every week on a Wednesday	Same.
Case Certification Period	Certification period from April 1st - April 30th, 2004.	Certification period from March 15th - April 15th, 2004. This new certification period is the change in circumstance.
Case Start Date	April 1st, 2004.	March 15th, 2004.
Case Expected End Date	April 30th, 2004.	April 15th, 2004.
Case Nominee Delivery Pattern	Weekly in advance on a Friday.	Same.
Rules Objective	Service Fees Liability rules objective. The daily rate for this rules objective is \$10 until April 5th, 2004, when interest increases the value of the daily rate to \$11. The weekly rate is \$70 until April 5th, 2004, when interest increases the value of the weekly rate to \$77.	Same.
Date up to which liability has been invoiced.	No ILIs have been created for the liability, thus there is no date up to which the liability has been invoiced.	April 30th. This means that all FCs on or before April 30th have been realized into actual financial transactions, i.e., ILIs.

Get Reassessment Details

As part of determining the reassessment details for the reassessment period, the eligibility and entitlement engine retrieves the processed ILIs during the reassessment period, creates in memory financial data for the virtual financial components, and compares the financial data to the processed ILIs to determine if any over or underbillings exist. If an over or underbilling is found, the eligibility and entitlement engine records the over or underbilling details and initiates over or underbilling processing.

Process Reassessment Details: To process reassessment details, the eligibility and entitlement engine compares the actual details to the reassessed details. The following table illustrates this process:

Table 12. Description of Process Reassessment for a Liability

Cover Period	Actual Amount	Reassessed Amount	Difference
March 12th - March 18th	0	40	-40
March 19th - March 25th	0	70	-70
March 26th - April 1st	10	70	-60

Table 12. Description of Process Reassessment for a Liability (continued)

Cover Period	Actual Amount	Reassessed Amount	Difference
April 2rd - April 8th	74	74	0
April 9th - April 15th	77	77	0
April 16th - April 22nd	77	0	77
April 23rd - April 29th	77	0	77
April 30th	11	0	11
Totals	326	331	-5

To determine if an over or underbilling exists, the eligibility and entitlement engine calculates the total difference between the actual amounts and the reassessed amounts. For liabilities, if the total difference is greater than zero, an underbilling exists; if the total difference is less than zero, overbilling exists.

Using the values in the Difference column in the above table, the total Difference between the actual amounts and the reassessed amounts = $-40 + -70 + -60 + 77 + 77 + 11 =$

The total difference, -5, shows that there is an overbilling for this reassessment period.

Over or Underbilling Processing for a Liability Case: The eligibility and entitlement engine creates a financial component for each over or underbilling discovered during the reassessment of a liability case. The following table describes the details of the underbilling created based on the sample data:

Table 13. Description of Overbilling Details - Reassessment Processing for a Liability Case

Underpayment Details	Description
Reassessment Type	Overbilling
Reassessment Mode	Liability
Case Nominee	James Smith
Financial Component Cover Period	Overbilling financial component is once-off, i.e., non-recurring.
Financial Component Amount	5
Financial Component Due Date	Current date on which overbilling is created.

Reassessment with Multiple Rules Objectives

This section demonstrates how the eligibility and entitlement engine handles normal reassessment processing for cases with multiple rules objectives assigned to the same nominee. When there is more than one rules objective assigned to the

same nominee, the eligibility and entitlement engine processes the reassessment details for all of the case decision objectives (these are the eligible rules objectives) at the same time.

Note, however, before the eligibility and entitlement engine can process reassessment details, the eligibility and entitlement engine must create the virtual financial components based on any changes in circumstance. Virtual financial component creation is done for each case decision objective separately and only for those affected by the change in circumstance. The eligibility and entitlement engine then checks if reassessment needs to occur. If reassessment needs to occur, the eligibility and entitlement engine defines the reassessment period.

To process reassessment details for all of the rules objectives assigned to a single nominee, the eligibility and entitlement engine keeps a running total of all the actual amounts within the same cover period, as well as a running total of all the reassessed amounts within the same cover period for said nominee. The eligibility and entitlement engine then compares the total actual amount within the same cover period to the total financial data item amount within the same cover period.

To determine if an over or underpayment exists, the eligibility and entitlement engine calculates the total difference between the actual and reassessed amounts for the entire reassessment period by adding up the differences for each of the cover periods. If an over or underpayment is found, the eligibility and entitlement engine records the over or underpayment details and initiates the over or underpayment processing.

To demonstrate how the eligibility and entitlement engine processes a change in circumstance for a case with multiple rules objectives assigned to a single nominee, this section uses the financial components for the Max Personal and Max Child Allowance rules objectives as outlined in “Financial Components for Max Personal” on page 23 and “Financial Components for Max Child Allowance” on page 24. Note, however, these financial components have been processed into actual financial transactions, i.e., ILIs. This section also uses the change in circumstance sample data from “Reassessment Processing for a Benefit Case” on page 34 with the additional rules objective, Max Child Allowance. The following table outlines the change in circumstance sample data with the second rules objective:

Table 14. Change in Circumstance Sample Data with Multiple Rules Objectives

Sample Data	Sample Data before Change	Sample Data after Change
Primary Client	James Smith.	Same.
Product Type	Sample Benefit product.	Same.
Product Rerate Frequency	Every week on a Wednesday.	Same.
Case Certification Period	Certification period from April 1st - April 30th, 2004.	Certification period from March 15 - April 15th, 2004.
Case Start Date	April 1st, 2004.	March 15th, 2004.
Case Expected End Date	April 30th, 2004.	April 15th, 2004.
Case Nominee Delivery Pattern	Weekly in advance on a Friday.	Same.

Table 14. Change in Circumstance Sample Data with Multiple Rules Objectives (continued)

Sample Data	Sample Data before Change	Sample Data after Change
Rules Objective 1	James Smith is eligible for the Max Personal rules objective. The daily rate for this rules objective is \$10 until April 5th, 2004, when legislation increases the value of the daily rate to \$11. The weekly rate is \$70 until April 5th, 2004, when legislation increases the value of the weekly rate to \$77.	Same.
Rules Objective 2	James Smith is eligible for the Max Child Allowance rules objective. The rate for this rules objective is 10% of the daily rate until April 14th, when legislation decreases the value of the Max Child Allowance to 5% of the daily rate. Note that the daily rate is \$10 until April 5th, 2004, when legislation increases the value of the daily rate to \$11.	Same.
Date up to which benefit has already been covered.	No ILIs have been created for the benefit, thus there is no date up to which the benefit has already been covered.	April 30th. This means that all existing FCs on or before April 30th have been realized into actual financial transactions, i.e., ILIs.

To create the virtual financial components for each case decision objective (these are the eligible rules objectives), the eligibility and entitlement engine follows the same process as described in “Reassessment Processing for a Benefit Case” on page 34. The eligibility and entitlement engine also follows the same processes as described in “Reassessment Processing for a Benefit Case” on page 34 to check if reassessment is required and to define the reassessment period. Thus, by using the similar data, it is not necessary to describe how the eligibility and entitlement engine performs these processes.

Get Reassessment Details

When there is more than one case decision objective (eligible rules objective) assigned to the same nominee, the eligibility and entitlement engine processes the reassessment details for all of the case decision objectives at the same time.

As part of determining the reassessment details for the reassessment period, the eligibility and entitlement engine retrieves all processed ILIs during the reassessment period which were issued to the same nominee. In addition to retrieving the processed ILIs, the eligibility and entitlement engine creates in memory financial data for the virtual financial components. This financial data is the simulated creation of ILIs based on the change in circumstance.

To process reassessment details for all of the case decision objectives assigned to a single nominee, the eligibility and entitlement engine keeps a running total of all

the actual amounts within the same cover period, as well as a running total of all the reassessed amounts within the same cover period for said nominee. The eligibility and entitlement engine then compares the total actual amount within the same cover period to the total financial data item amount within the same cover period.

To determine if an over or underpayment exists, the eligibility and entitlement engine calculates the total difference between the actual and reassessed amounts for the entire reassessment period by adding up the differences for each of the cover periods. If an over or underpayment is found, the eligibility and entitlement engine creates an over or underpayment financial component and initiates over or underpayment processing. Over or underpayment financial components are once-off with a cover period matching the reassessment period.

Process Reassessment Details: To process reassessment details, the eligibility and entitlement engine compares the actual details to the reassessed details. As James Smith is the nominee assigned to both the Max Personal and the Max Child Allowance case decision objectives, the eligibility and entitlement engine keeps a running total of all the actual amounts within the same cover period for both case decision objectives, as well as a running total of all the reassessed amounts within the same cover period for both case decision objectives. The eligibility and entitlement engine then compares the total actual amount within the same cover period to the total reassessed amount within the same cover period. The following table illustrates this process:

Table 15. Description of Process Reassessment with Multiple Rules Objectives

Cover Period	Actual Amount	Reassessed Amount	Difference
March 12th - March 18th	0	44 (40 + 4)	-44
March 19th - March 25th	0	77 (70 + 7)	-77
March 26th - April 1st	11 (10 + 1)	77 (70 + 7)	-66
April 2nd - April 8th	81.40 (74 + 7.40)	81.40 (74 + 7.40)	0
April 9th - April 15th	83.60 (77 + 6.60)	83.60 (77 + 6.60)	0
April 16th - April 22nd	80.85 (77 + 3.85)	0	80.85
April 23rd - April 29th	80.85 (77 + 3.85)	0	80.85

Table 15. Description of Process Reassessment with Multiple Rules Objectives (continued)

Cover Period	Actual Amount	Reassessed Amount	Difference
April 30th	11.55 (11 + 0.55)	0	11.55
Totals	349.25	363	-13.75

To determine if an over or underpayment exists, the eligibility and entitlement engine calculates the total difference between the actual and reassessed amounts for the entire reassessment period by adding up the differences for each of the cover periods. For benefits, if the total difference is greater than zero, an underpayment exists; if the total difference is less than zero, an overpayment exists.

Using the values in the Difference column in the above table, the total Difference between the actual amounts and the reassessed amounts = $-44 + -77 + -66 + 80.85 + 80.85 + 11.55 = -13.75$

The total difference, -13.75, shows that there is an overpayment for this reassessment period. The eligibility and entitlement engine processes this underpayment according to the settings for the benefit product (see “Over or Underpayment Processing for a Benefit Case” on page 38).

Reassessment with Multiple Nominees

This section demonstrates how the eligibility and entitlement engine handles normal reassessment processing when more than one nominee is assigned to a rules objective. Note that only one nominee can be assigned to a rules objective at any point in time; however, multiple nominees can be assigned to the same rules objective over time. When there is more than one nominee assigned to the same rules objective over time, the eligibility and entitlement engine processes reassessment details for each nominee separately. This is to account for each nominee's delivery pattern.

The first part of reassessment processing is the creation of virtual financial components based on changes in circumstance. Virtual Financial component creation is done on a nominee by nominee basis and only for those nominees affected by the change in circumstance. The eligibility and entitlement engine then checks if reassessment needs to occur. If reassessment needs to occur, the eligibility and entitlement engine defines the reassessment period for each nominee affected by the change in circumstance.

The eligibility and entitlement engine determines the reassessment details for each nominee in line with the nominee's reassessment period. As part of determining the reassessment details for the nominee's reassessment period, the eligibility and entitlement engine retrieves all processed ILIs for this nominee during the reassessment period. In addition to retrieving the processed ILIs, the eligibility and entitlement engine creates in memory financial data for the nominee's virtual financial components. This financial data is the simulated creation of ILIs based on the change in circumstance.

The eligibility and entitlement engine then compares each actual amount to each financial data item within the same cover period for the nominee to determine if

an over or underpayment exists. If an over or underpayment is found, the eligibility and entitlement engine records the over or underpayment details for the nominee and initiates over or underpayment processing. Note that this occurs for each nominee affected by the change in circumstance.

To demonstrate how the eligibility and entitlement engine processes a change in circumstance for cases with multiple nominees assigned to a single rules objective over time, this section uses the financial components created for James Smith and Linda Smith as outlined in “Generate Financial Components for James Smith” on page 27 and “Generate Financial Components for Linda Smith” on page 27. Note, however, the financial components outlined in these subsections have been processed into actual financial transactions, i.e., ILIs. This section also uses the change in circumstance sample data from “Reassessment Processing for a Benefit Case” on page 34 with the second nominee, Linda Smith. The following table outlines the change in circumstance sample data with the second case nominee:

Table 16. Change in Circumstance Sample Data with Multiple Nominees

Sample Data	Sample Data before Change	Sample Data after Change
Primary Client	James Smith is a registered person who is the primary client of the demonstration case. James Smith is also the nominee assigned to the Max Personal rules objective from the case start date.	Same.
Second Nominee	Linda Smith is the nominee assigned to the Max Personal rules objective from April 12th, 2004.	Same.
Product Type	Sample Benefit product.	Same.
Product Rerate Frequency	Every week on a Wednesday.	Same.
Case Certification Period	Certification period from April 1st - April 30th, 2004.	Certification period from March 15 - April 15th, 2004.
Case Start Date	April 1st, 2004.	March 15th, 2004.
Case Expected End Date	April 30th, 2004.	April 15th, 2004.
Case Nominee Delivery Pattern for James Smith	James Smith's case nominee delivery pattern is weekly in advance on a Friday. If for any reason delivery cannot be made on a Friday, the delivery must be made on the nearest possible Friday in advance.	Same.
Case Nominee Delivery Pattern for Linda Smith	Linda Smith's case nominee delivery pattern is weekly in arrears on a Monday. If for any reason delivery cannot be made on a Monday, the delivery must be made on the nearest possible Monday in advance.	Same.

Table 16. Change in Circumstance Sample Data with Multiple Nominees (continued)

Sample Data	Sample Data before Change	Sample Data after Change
Rules Objective	James Smith is eligible for the Max Personal rules objective. He is the nominee assigned to this rules objective from the case start date. Linda Smith is the nominee assigned to this rules objective from April 12th, 2004. The daily rate for this rules objective is \$10 until April 5th, 2004, when legislation increases the value of the daily rate to \$11. The weekly rate is \$70 until April 5th, 2004, when legislation increases the value of the weekly rate to \$77.	Same.
Date up to which benefit has already been covered.	No ILIs have been created for the benefit, thus there is no date up to which the benefit has already been covered.	April 30th. This means that all FCs on or before April 30th have been realized into actual financial transactions, i.e., ILIs.

Create Virtual Financial Components

The eligibility and entitlement engine creates the virtual financial components based on any changes in circumstance. When there is more than one nominee assigned to the same rules objective, the eligibility and entitlement engine must create virtual financial components for these nominees separately. This is to account for the different delivery patterns for each nominee.

To create the virtual financial components, the eligibility and entitlement engine creates and stores new decisions based on the new information. Note that the eligibility and entitlement engine creates the case decisions based on the case evidence.

The eligibility and entitlement engine then creates the virtual financial components from the case decision objectives. To create the virtual financial components, the eligibility and entitlement engine uses the case decision period and the nominee delivery pattern frequency. Thus, the eligibility and entitlement engine creates virtual financial components for each nominee separately.

Virtual financial component creation is the same as financial component creation for an original eligibility and entitlement result. The only difference is that virtual financial components are stored on a temporary basis.

Summary of New Decisions: The eligibility and entitlement engine creates and stores new decisions based on the new decision information. The eligibility and entitlement engine creates the case decisions based on the case evidence. The following is a summary of the case decision information stored for the new decisions created from the sample data in “Reassessment with Multiple Nominees” on page 45:

- Decision with cover period March 15th - April 4th

Case Decision Objective: Max Personal

Case Decision Objective Tag 1: Daily Rate of \$10

Case Decision Objective Tag 2: Weekly Rate of \$70

- Decision with cover period April 5th - April 15th

Case Decision Objective: Max Personal

Case Decision Objective Tag 1: Daily Rate of \$11

Case Decision Objective Tag 2: Weekly Rate of \$77

- Decision with cover period April 16th - April 30th

Claimant is not eligible as case is not certified.

Create Virtual Financial Components for James Smith: The eligibility and entitlement engine creates the virtual financial components from the case decision objectives. To create the virtual financial components, the eligibility and entitlement engine uses the case decision period and the nominee delivery pattern frequency. The following is the list of the virtual financial components created from the new case decision objectives for James Smith:

- Once-off Virtual Financial Component with Cover Period: March 15th - March 18th
Type: Max Personal
Amount: \$40 (4 * daily rate)
Due Date: March 12th
- Recurring Virtual Financial Component with Cover Period: March 19th - April 1st
Type: Max Personal
Amount: \$70 (weekly rate)
Frequency: Weekly in advance on a Friday
Due Dates: March 19th and March 26th
- Once-off Virtual Financial Component with Cover Period: April 2nd - April 4th
Type: Max Personal
Amount: \$30 (3 * daily rate)
Due Date: April 2nd
- Once-off Virtual Financial Component with Cover Period: April 5th - April 8th
Type: Max Personal
Amount: \$44 (4 * daily rate)
Due Date: April 2nd
- Once-off Virtual Financial Component with Cover Period: April 9th - April 11th
Type: Max Personal
Amount: \$33 (3 * daily rate)
Due Date: April 9th

Create Virtual Financial Components for Linda Smith: The eligibility and entitlement engine creates the virtual financial components from the case decision objectives. To create the virtual financial components, the eligibility and entitlement engine uses the case decision period and the nominee delivery pattern frequency. The following is a description of the virtual financial component created from the new case decision objectives for Linda Smith:

- Once-off Virtual Financial Component with Cover Period: April 12th - April 15th
Type: Max Personal

Amount: \$44 (4 * daily rate)

Due Date: April 19th

Check if Reassessment is Required

To check if reassessment is required, the eligibility and entitlement engine compares the cover period from date of the new decision to the cover to date of the case. According to the sample data, the date up to which the benefit has already been covered is April 30th. If any of the new decisions are before this date, then reassessment is required. The cover period from dates for each of the decisions in “Summary of New Decisions” on page 47 are March 15th, April 5th, and April 16th, all three of which are before April 30th, and thus reassessment is required.

Defining the Reassessment Period

Before the eligibility and entitlement engine can process reassessment details for a nominee, it must define the reassessment period. The eligibility and entitlement engine defines the reassessment period on a nominee by nominee basis using a combination of the eligibility and entitlement engine from date, the cover to date of the case, the nominee component assignment start and end dates, and the nominee delivery pattern frequency. To define the reassessment period start date, the eligibility and entitlement engine uses either the eligibility and entitlement engine from date or the nominee component assignment start date. The eligibility and entitlement engine uses the eligibility and entitlement engine from date for nominees whose component assignment start date is set to the case start date; otherwise, it uses the nominee component start date. To define the reassessment period end date, the eligibility and entitlement engine uses either the cover to date of the case or the nominee component assignment end date. The eligibility and entitlement engine uses the cover to date of the case for nominees with no component assignment end date; otherwise, it uses the nominee component assignment end date. As part of defining the reassessment period, in addition to defining the start and end dates of the reassessment period, the eligibility and entitlement engine returns a list of all delivery dates, beginning with the start date of the reassessment period and ending on the end date of the reassessment period. This list of dates is used for comparing the processed ILIs to the financial data for the virtual financial components.

Reassessment Period for James Smith: To define the reassessment period start date for James Smith, the eligibility and entitlement engine uses the eligibility and entitlement engine from date. To define the reassessment period end date, the eligibility and entitlement engine uses James Smith's nominee component assignment end date.

James Smith is assigned to the Max Personal rules objective from the case start date until April 11th, the day before Linda Smith is assigned to the Max Personal rules objective. Therefore, the eligibility and entitlement engine defines the start date of the reassessment period for James Smith to be the first delivery date (based on James Smith's delivery pattern) on or before the case start date. The first delivery date before March 15th, the case start date, is March 12th. The eligibility and entitlement engine defines the end date of the reassessment period to be the first delivery date after June 11th, James Smith's nominee component assignment end date, which is Friday, April 16th.

As part of defining the reassessment period, in addition to defining the start and end dates of the reassessment period, the eligibility and entitlement engine returns a list of all delivery dates, beginning with the start date of the reassessment period and ending on the end date of the reassessment period. This list of dates is used

for comparing the processed ILIs to the financial data for the virtual financial components. The list of delivery dates for James Smith's reassessment period are as follows: March 12th, March 19th, March 26th, April 2nd, April 9th, and April 16th.

Reassessment Period for Linda Smith

To define the reassessment period start date for Linda Smith, the eligibility and entitlement engine uses Linda Smith's nominee component assignment start date. To define the reassessment period end date, the eligibility and entitlement engine uses the cover to date of the case.

Linda Smith is assigned to the Max Personal rules objective from April 12th. There is no component assignment end date. The eligibility and entitlement engine defines the start date of the reassessment period for Linda Smith to be the first delivery date (based on Linda Smith's delivery pattern) on or before the nominee component start date. The nominee component assignment start date is April 12th, which is also a delivery date, and hence the start date of the reassessment period for Linda Smith. To define the reassessment period end date for Linda Smith, the eligibility and entitlement engine uses the cover to date of the case, as there is no nominee component assignment end date for Linda Smith. The eligibility and entitlement engine defines the end date of the reassessment period to be the first delivery date after April 30th, the cover to date of the case, which is May 3rd.

As part of defining the reassessment period, in addition to defining the start and end dates of the reassessment period, the eligibility and entitlement engine returns a list of all delivery dates, beginning with the start date of the reassessment period and ending on the end date of the reassessment period. This list of dates is used for comparing the processed ILIs to the financial data for the virtual financial components. The list of delivery dates for Linda Smith's reassessment period are as follows: April 12th, April 19th, April 26th, and May 3rd.

Get Reassessment Details for James Smith

As part of determining the reassessment details for the nominee's reassessment period, the eligibility and entitlement engine retrieves all processed ILIs for this nominee during the reassessment period. In addition to retrieving the processed ILIs, the eligibility and entitlement engine creates in memory financial data for the nominee's virtual financial components. This financial data is the simulated creation of ILIs based on the change in circumstance.

The eligibility and entitlement engine then compares each actual amount to each financial data item within the same cover period to determine if an over or underpayment exists. If an over or underpayment is found, the eligibility and entitlement engine records the over or underpayment details for the nominee and initiates over or underpayment processing.

This section demonstrates how the eligibility and entitlement engine processes reassessment details for James Smith who is the nominee assigned to the Max Personal rules objective from the case start date until April 11th.

Process Reassessment Details for James Smith: To process reassessment details for James Smith, the eligibility and entitlement engine compares the actual details to the reassessed details. The following table illustrates this process:

Table 17. Description of Process Reassessment for James Smith

Cover Period	Actual Amount	Reassessed Amount	Difference
March 12th - March 18th	0	40	-40
March 19th - March 25th	0	70	-70
March 26th - April 1st	10	70	-60
April 2nd - April 8th	74	74	0
April 9th - April 15th	33	33	0
April 16th	0	0	0
Totals	117	287	-170

To determine if an over or underpayment exists, the eligibility and entitlement engine calculates the total difference between the actual amounts and the reassessed amounts. For benefits, if the total difference is greater than zero, an underpayment exists; if the total difference is less than zero, an overpayment exists.

Using the values in the Difference column in the above table, the total Difference between the actual amounts and the reassessed financial data item amounts = $-40 + -70 + -60 = -170$

The total difference, -170, shows that there is an overpayment for this reassessment period.

Get Reassessment Details for Linda Smith

As part of determining the reassessment details for the nominee's reassessment period, the eligibility and entitlement engine retrieves all processed ILIs for this nominee during the reassessment period. In addition to retrieving the processed ILIs, the eligibility and entitlement engine creates in memory financial data for the nominee's virtual financial components. This financial data is the simulated creation of ILIs based on the change in circumstance.

The eligibility and entitlement engine then compares each actual amount to each financial data item within the same cover period to determine if an over or underpayment exists. If an over or underpayment is found, the eligibility and entitlement engine records the over or underpayment details for the nominee and initiates over or underpayment processing.

This section demonstrates how the eligibility and entitlement engine processes reassessment details for Linda Smith who is the nominee assigned to the Max Personal rules objective from April 12th onwards.

Process Reassessment Details for Linda Smith: To process reassessment details for Linda Smith, the eligibility and entitlement engine compares the actual details to the reassessed details. The following table illustrates this process:

Table 18. Description of Process Reassessment for Linda Smith

Cover Period	Actual Amount	Reassessed Amount	Difference
April 12th - April 18th	77	44	33
April 19th - April 25th	77	0	77
April 26th - May 2nd	55	0	55
May 3rd	0	0	0
Totals	209	44	165

To determine if an over or underpayment exists, the eligibility and entitlement engine calculates the total difference between the actual amounts and the reassessed amounts. For benefits, if the total difference is greater than zero, an underpayment exists; if the total difference is less than zero, an overpayment exists.

Using the values in the Difference column in the above table, the total Difference between the actual amounts and the reassessed financial data item amounts = $33 + 77 + 55 = 165$

The total difference, 165, shows that there is an underpayment for this reassessment period. The eligibility and entitlement engine processes this underpayment according to the settings for the benefit product (see “Over or Underpayment Processing for a Benefit Case” on page 38).

Over or Underpayment Processing for Both Nominees

Reassessment of John Smith's payments shows an overpayment of 170; reassessment of Linda Smith's payments shows an underpayment of 165. The system processes the under and overpayments according the settings for the benefit product (see “Over or Underpayment Processing for a Benefit Case” on page 38).

If automatic over or underpayment processing has been set up at the product level, then the system will create a new case for each over or underpayment. Where there are multiple nominees, the system ensures the appropriate nominee is billed or paid, while also linking the primary client of the original benefit case to the related over or underpayment case(s).

Using the example of James Smith, the eligibility and entitlement engine will create an overpayment case. There is a once-off financial component in the amount of 170 and a cover period spanning James Smith's reassessment period (March 12th - April 16th). Since James Smith is the primary client of the original benefit case and the nominee assigned to the overpayment, the system sets John Smith to be both the primary client of the overpayment case and the single nominee in receipt of the overpayment.

Using the example of Linda Smith, the eligibility and entitlement engine will create an underpayment case. There is a once-off financial component in the amount 165 and a cover period spanning Linda Smith's reassessment period (April 12th - May

3rd). Since James Smith is the primary client of the original benefit case, he will also be the primary client of the underpayment case. Note, however, Linda Smith will be the nominee assigned to the once-off financial component. James Smith will be a secondary nominee on the underpayment case.

Multiple Reassessment Processing

This section demonstrates how the eligibility and entitlement engine handles multiple reassessments within the same reassessment period. To handle multiple reassessments, the eligibility and entitlement engine first processes the new reassessment details. The eligibility and entitlement engine performs the same steps described in “Reassessment Processing for a Benefit Case” on page 34 to create virtual financial components, check if reassessment needs to occur, and to determine the reassessment period. As part of determining the reassessment details for the reassessment period, the eligibility and entitlement engine retrieves the processed ILIs during the reassessment period, creates in memory the financial data from the virtual financial components, and compares the financial data to the processed ILIs to determine any over or underpayments.

Once the eligibility and entitlement engine processes the new reassessment details, it must then determine if any previous reassessments exists for the same period of time. If a previous reassessment does exist for the same period of time, the eligibility and entitlement engine must take into consideration any previous over or underpayments when calculating the value of the new over or underpayments. The eligibility and entitlement engine adjusts the value of the new over or underpayment according to the value of the existing over or underpayment.

To demonstrate how the eligibility and entitlement engine handles multiple reassessments, the change in circumstance data used in “Reassessment Processing for a Benefit Case” on page 34 is also used in this section. This sample data represents the first change in circumstance which triggers reassessment. The first change in circumstance is a change in the certification period. An overpayment with a value of 5 resulted from the change in certification. A second change in circumstance is applied to this sample data which triggers reassessment within the same period for a second time. Note that the second change in circumstance does not occur until after the first reassessment. The second change in circumstance is a change in evidence such that James Smith is eligible for the Max Personal component with a daily rate of \$9 as of the case start date and a weekly rate of \$63. The following table describes how this second change in circumstance compares to the original data and the sample data after the first change:

Table 19. Second Change in Circumstance to Sample Data

Sample Data	Sample Data before any Change	Sample Data after 1st Change	Sample Data after 2nd Change
Primary Client	James Smith.	Same.	Same.
Product Type	Sample Benefit product.	Same.	Same.
Product Rerate Frequency	Every week on a Wednesday.	Same.	Same.
Case Certification Period	Certification period from April 1st - April 30th, 2004.	Certification period from March 15th - April 15th, 2004.	Same. Certification period from March 15th - April 15th, 2004.
Case Start Date	April 1st, 2004	March 15th, 2004.	Same. March 15th, 2004.

Table 19. Second Change in Circumstance to Sample Data (continued)

Sample Data	Sample Data before any Change	Sample Data after 1st Change	Sample Data after 2nd Change
Case Expected End Date	April 30th, 2004.	April 15th, 2004.	Same. April 15th, 2004.
Case Nominee Delivery Pattern	Weekly in advance on a Friday.	Same.	Same.
Rules Objective	James Smith is eligible for the Max Personal rules objective. The daily rate for this rules objective is \$10 until April 5th, 2004, when legislation increases the value of the daily rate to \$11. The weekly rate is \$70 until April 5th, 2004, when legislation increases the value of the weekly rate to \$77.	Same.	James Smith is eligible for the Max Personal rules objective. The daily rate for this rules objective is \$9. The weekly rate is \$63.
Date up to which benefit has already been covered.	No ILIs have been created for the benefit, thus there is no date up to which the benefit has already been covered.	April 30th. This means that all FCs on or before April 30th have been realized into actual financial transactions, i.e., ILIs.	No new ILIs have been created for the benefit since April 30th.

Summary of New Reassessment Details

To handle multiple reassessments, the eligibility and entitlement engine first processes the new reassessment details. To process the new reassessment details, the eligibility and entitlement engine performs the same steps described in “Reassessment Processing for a Benefit Case” on page 34. This section provides a summary of the new reassessment details that are created after the second change in circumstance. (These details are based on the sample data after the second change as described in “Multiple Reassessment Processing” on page 53.) The following details are summarized in this section: the virtual financial components, the reassessment period, the actual details, i.e., the processed ILIs, the reassessed details, i.e., the financial data, and the reassessment details (the comparison between the ILIs and the financial data).

Virtual Financial Components: The eligibility and entitlement engines creates the following virtual financial components based on the nominee delivery pattern frequency:

- Once-off Virtual Financial Component with Cover Period: March 15th - March 18th
Amount: \$36 (4 * daily rate)
Due Date: March 12th
- Recurring Virtual Financial Component with Cover Period: March 19th - April 15th

Amount: \$63 (weekly rate)
 Frequency: Weekly in advance on a Friday
 Due Dates: March 19th, March 26th, April 2nd, April 9th

Reassessment Period: Before the eligibility and entitlement engine processes reassessment details, it must define the reassessment period. The eligibility and entitlement engine uses the eligibility and entitlement engine from date, the cover to date of the case, and the nominee delivery pattern to define the start and end dates for the reassessment period. The start date of the reassessment period is the first nominee delivery date on or before the eligibility and entitlement engine from date. The end date of the reassessment period is the nominee delivery date on or after the cover to date of the case. Based on the sample data, the start date of the reassessment period is March 12th; the end date of the reassessment period is April 30th.

As part of defining the reassessment period, in addition to defining the start and end dates of the reassessment period, the eligibility and entitlement engine returns a list of all delivery dates, beginning with the start date of the reassessment period and ending on the end date of the reassessment period. This list of dates is used for comparing the processed ILIs to the financial data for the virtual financial components. Based on the sample data, the list of dates are as follows: March 12th, March 19th, March 26th, April 2nd, April 9th, April 16th, April 23rd, and April 30th.

Important: Calculating Eligibility and Entitlement Engine From Date

The change that triggers reassessment determines what information is used to calculate the eligibility and entitlement engine from date. The change in evidence has triggered the reassessment for the above-described reassessment period. This evidence is active from the case start date; thus, the eligibility and entitlement engine from date is set to the case start date. The eligibility and entitlement engine from date is not always set to the case start date. An evidence change that triggers reassessment would only impact the case during the time period that evidence set is active. If an evidence set is active on a date after the case start date, the eligibility and entitlement engine from date is set to the evidence activation start date.

Process Reassessment Details: To process reassessment details, the eligibility and entitlement engine compares the actual details to the reassessed details, i.e., the financial data. The following table illustrates this process:

Table 20. Description of Reassessment Details - Multiple Reassessment

Cover Period	Actual Amount	Reassessed Financial Data Item Amount	Difference
March 12th - March 18th	0	36	-36
March 19th - March 25th	0	63	-63
March 26th - April 1st	10	63	-53
April 2nd - April 8th	74	63	11

Table 20. Description of Reassessment Details - Multiple Reassessment (continued)

Cover Period	Actual Amount	Reassessed Financial Data Item Amount	Difference
April 9th - April 15th	77	63	14
April 16th - April 22nd	77	0	77
April 23rd - April 29th	77	0	77
April 30th	11	0	11
Totals	326	288	38

To determine if an over or underpayment exists, the eligibility and entitlement engine calculates the total difference between the actual amounts and the reassessed amounts.

Using the values in the Differences column in the above table, the total Difference between the actual amounts and the reassessed amounts = $-36 + -63 + -53 + 11 + 14 + 77 + 77 + 11 = 38$

The total difference, 38, shows that there is a new underpayment for this reassessment period. The system compares this new underpayment to any existing over or underpayments within the same reassessment period.

Resetting Reassessment Values

Once the eligibility and entitlement engine processes the new reassessment details, it must then determine if any previous reassessments exist.

To determine if any previous reassessments exist, the eligibility and entitlement engine retrieves a list of the previous reassessment balances for the case nominee. If this list is not empty, the previous reassessment flag is set to true. Based on the sample data, a previous reassessment balance does exist for James Smith. This is the overpayment with a value of 5 that resulted from the first change in circumstance as described in “Multiple Reassessment Processing” on page 53.

If a previous reassessment does exist, the eligibility and entitlement engine must take into consideration any previous over or underpayments when calculating the value of the new over or underpayments. Thus, the eligibility and entitlement engine must adjust the value of the new over or underpayment according to the value of the existing over or underpayment.

To adjust the value of the new over or underpayment, the eligibility and entitlement engine calculates the difference between the previous reassessment balance and the new reassessment. If the value of the previous reassessment balance is greater than the value of the new reassessment, the eligibility and entitlement engine resets the new reassessment value to be the difference between the two values and it also resets the new reassessment to be an overpayment. If the value of the previous reassessment balance is less than the value of the new

reassessment, the eligibility and entitlement engine resets the new reassessment value to be the difference between the two values and it resets the new reassessment to be an underpayment.

The previous reassessment balance = -5; the new reassessment balance = 38; therefore, the previous reassessment balance is < than the new reassessment balance.

The eligibility and entitlement engine resets the new reassessment value to be the difference between the two values and it resets the new reassessment to be an underpayment:

$$38 - 5 = 33$$

The total difference, 33, shows there is an underpayment for this reassessment period in the amount of 33. The eligibility and entitlement engine processes this overpayment according to the settings for the benefit product (see "Over or Underpayment Processing for a Benefit Case" on page 38).

Multiple Reassessments with Multiple Objectives

This section demonstrates how the eligibility and entitlement engine handles multiple reassessments within the same reassessment period with multiple objectives assigned to the same nominee. It uses the sample date from "Reassessment with Multiple Rules Objectives" on page 41 and "Multiple Reassessment Processing" on page 53. The purpose of this section is to show how the eligibility and entitlement engine takes into account all ILIs in a cover period as part of reassessment, including ILIs for multiple rules objectives.

Table 21. Sample Data for Multiple Reassessments with Multiple Objectives

Sample Data	Sample Data before any Change	Sample Data after 1st Change	Sample Data after 2nd Change
Primary Client	James Smith.	Same.	Same.
Product Type	Sample Benefit product.	Same.	Same.
Product Rerate Frequency	Every week on a Wednesday.	Same.	Same.
Case Certification Period	Certification period from April 1st - April 30th, 2004.	Certification period from March 15th - April 15th, 2004.	Same. Certification period from March 15th - April 15th, 2004.
Case Start Date	April 1st, 2004	March 15th, 2004.	Same. March 15th, 2004.
Case Expected End Date	April 30th, 2004.	April 15th, 2004.	Same. April 15th, 2004.
Case Nominee Delivery Pattern	Weekly in advance on a Friday.	Same.	Same.

Table 21. Sample Data for Multiple Reassessments with Multiple Objectives (continued)

Sample Data	Sample Data before any Change	Sample Data after 1st Change	Sample Data after 2nd Change
Rules Objective 1	James Smith is eligible for the Max Personal rules objective. The daily rate for this rules objective is \$10 until April 5th, 2004, when legislation increases the value of the daily rate to \$11. The weekly rate is \$70 until April 5th, 2004, when legislation increases the value of the weekly rate to \$77.	Same.	James Smith is eligible for the Max Personal rules objective. The daily rate for this rules objective is \$9. The weekly rate is \$63.
Rules Objective 2	James Smith is eligible for the Max Child Allowance rules objective. The rate for this rules objective is 10% of the daily rate until April 14th, when legislation decreases the value of the Max Child Allowance to 5% of the daily rate. Note that the daily rate is \$10 until April 5th, 2004, when legislation increases the value of the daily rate to \$11.	Same.	Since the amounts for this component are based on the daily rate for the Max Personal rules objective and since this rate has changed, the amounts for Max Child Allowance will also change.
Date up to which benefit has already been covered.	No ILIs have been created for the benefit, thus there is no date up to which the benefit has already been covered.	April 30th. This means that all FCs on or before April 30th have been realized into actual financial transactions, i.e., ILIs.	No new ILIs have been created for the benefit since April 30th.

Summary of New Reassessment Details

To handle multiple reassessments, the eligibility and entitlement engine first processes the new reassessment details. The following details are summarized in this section: the virtual financial components, the reassessment period, the actual details, i.e., the processed ILIs, the reassessed details, i.e., the financial data, and the reassessment details (the comparison between the ILIs and the financial data).

Virtual Financial Components: The eligibility and entitlement engines creates the following virtual financial components for the Max Personal rules objective:

- Once-off Virtual Financial Component with Cover Period: March 15th - March 18th
Amount: \$36 (4 * daily rate)
Due Date: March 12th
- Recurring Virtual Financial Component with Cover Period: March 19th - April 15th
Amount: \$63 (weekly rate)
Frequency: Weekly in advance on a Friday
Due Dates: March 19th, March 26th, April 2nd, April 9th

The eligibility and entitlement engines creates the following virtual financial components for the Max Child Allowance rules objective:

- Once-off Virtual Financial Component with Cover Period: March 15th - March 18th
Amount: $(10\% * 9) * 4 = \$3.60$
Due Date: March 12th
- Recurring Virtual Financial Component with Cover Period: March 19th - April 8th
Amount: $(10\% * 9) * 7 = \$6.30$
Frequency: Weekly in advance on a Friday
Due Dates: March 19th, March 26th, April 2nd
- Once-off Financial Component with Cover Period: April 9th - April 13th
Amount: $(10\% * 9) * 5 = \$4.50$
Due Date: April 9th
- Once-off Financial Component with Cover Period: April 14th - April 15th
Amount: $(5\% * 9) * 2 = \$0.90$
Due Date: April 9th

Reassessment Period: Before the eligibility and entitlement engine processes reassessment details, it must define the reassessment period. The eligibility and entitlement engine uses the eligibility and entitlement engine from date, the cover to date of the case, and the nominee delivery pattern to define the start and end dates for the reassessment period. The start date of the reassessment period is the first nominee delivery date on or before the eligibility and entitlement engine from date. The end date of the reassessment period is the nominee delivery date on or after the cover to date of the case. Based on the sample data, the start date of the reassessment period is March 12th; the end date of the reassessment period is April 30th.

As part of defining the reassessment period, in addition to defining the start and end dates of the reassessment period, the eligibility and entitlement engine returns a list of all delivery dates, beginning with the start date of the reassessment period and ending on the end date of the reassessment period. This list of dates is used for comparing the processed ILIs to the financial data for the virtual financial components. Based on the sample data, the list of dates are as follows: March 12th, March 19th, March 26th, April 2nd, April 9th, April 16th, April 23rd, and April 30th.

Process Reassessment Details: To process reassessment details, the eligibility and entitlement engine compares the actual details to the reassessed details, i.e., the financial data. The following table illustrates this process:

Table 22. Description of Process Reassessment with Multiple Rules Objectives

Cover Period	Actual Amount	Reassessed Amount	Difference
March 12th - March 18th	0	39.60 (36 + 3.60)	-39.60
March 19th - March 25th	0	69.30 (63 + 6.30)	-69.30
March 26th - April 1st	11 (10 + 1)	69.30 (63 + 6.30)	-58.30
April 2nd - April 8th	81.40 (74 + 7.40)	69.30 (63 + 6.30)	12.10
April 9th - April 15th	83.60 (77 + 6.60)	68.40 (63 + 4.50 +.90)	15.20
April 16th - April 22nd	80.85 (77 + 3.85)	0	80.85
April 23rd - April 29th	80.85 (77 + 3.85)	0	80.85
April 30th	11.55 (11 + 0.55)	0	11.55
Totals	349.25	315.90	33.35

To determine if an over or underpayment exists, the eligibility and entitlement engine calculates the total difference between the actual amounts and the reassessed amounts.

Using the values in the Differences column in the above table, the total Difference between the actual amounts and the reassessed amounts = $-39.60 + -69.30 + -58.30 + 12.10 + 15.20 + 80.85 + 80.85 + 11.55 = 33.35$

The total difference, 33.35, shows that there is a new overpayment for this reassessment period. The system compares this new overpayment to any existing over or underpayments within the same reassessment period.

Resetting Reassessment Values

Once the eligibility and entitlement engine processes the new reassessment details, it must then determine if any previous reassessments exist.

To determine if any previous reassessments exist, the eligibility and entitlement engine retrieves a list of the previous reassessment balances for the case nominee. If this list is not empty, the previous reassessment flag is set to true. Based on the

sample data, a previous reassessment balance does exist for James Smith. This is the overpayment with a value of 5 that resulted from the first change in circumstance as described in “Multiple Reassessment Processing” on page 53.

If a previous reassessment does exist, the eligibility and entitlement engine must take into consideration any previous over or underpayments when calculating the value of the new over or underpayments. Thus, the eligibility and entitlement engine must adjust the value of the new over or underpayment according to the value of the existing over or underpayment.

To adjust the value of the new over or underpayment, the eligibility and entitlement engine calculates the difference between the previous reassessment balance and the new reassessment. If the value of the previous reassessment balance is greater than the value of the new reassessment, the eligibility and entitlement engine resets the new reassessment value to be the difference between the two values and it also resets the new reassessment to be an overpayment. If the value of the previous reassessment balance is less than the value of the new reassessment, the eligibility and entitlement engine resets the new reassessment value to be the difference between the two values and it resets the new reassessment to be an underpayment.

The previous reassessment balance = -5; the new reassessment balance = 33.35; therefore, the previous reassessment balance is < than the new reassessment balance.

The eligibility and entitlement engine resets the new reassessment value to be the difference between the two values and it resets the new reassessment to be an underpayment:

$$33.35 - 5 = 28.35$$

The total difference, 28.35, shows there is an underpayment for this reassessment period in the amount of 28.35. The eligibility and entitlement engine processes this underpayment according to the settings for the benefit product (see “Over or Underpayment Processing for a Benefit Case” on page 38).

Conclusion

Summary of Main Concepts

The following list summarizes the main concepts covered in this guide:

- The eligibility and entitlement process can be summarized as the creation and storage of case decisions, the creation of financial components, the creation of new decisions based on changes in circumstance, and the completion of reassessment, if required.
- Reassessment processing consists of the retrieval of processed ILIs, the creation of financial data for the new decisions, and the comparison of the financial data to the processed ILIs to determine over/under payment/billings.
- The eligibility and entitlement engine is clever enough to handle benefit and liability cases, multiple rules objectives, multiple nominees, and multiple reassessments.

Summary of Financial Component Types

In total, there are four financial component types: recurring, ramp-up and ramp-down, secondary, underpayment and overpayment. A summary of their attributes is provided in the following table:

Table 23. Summary of Financial Component Types

Financial Component Type	Cover Period	Effective Date	Amount
Recurring	Any number of occurrences based on the delivery frequency. For example, if the delivery frequency is weekly, and there are four occurrences, then the cover period will span the four weeks.	Each effective date will match an occurrence date.	The amount is based on the objective tag which is closest to the delivery pattern frequency. For example, if there are two objective tags, daily and weekly, and the delivery pattern is monthly, the weekly objective tag will be used to determine the amount for recurring financial components.
Ramp-up and Ramp-down	Cover period will be a portion of the delivery frequency.	The effective date is based on the delivery pattern. For example, if weekly in advance on a Friday, the due date will either be a Friday within the cover period or the Friday before it.	The amount is based on the objective tag smaller than the delivery pattern frequency, e.g. a daily objective tag.
Secondary	The cover period matches its primary financial component.	The effective date matches its primary financial component.	The amount is either fixed or else based on a percentage of the primary financial component (see the Cúram Deductions Guide).
Over/Under Payment	The cover period matches the reassessment period	The effective date is the date on which the over or under payment was created.	This is the amount determined by reassessment processing.

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