

# Retirement Units Plan Administration (RUPA) Data Migration

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## 1 Overview

The purpose of this document is to explain data migration with a real life example, in layman's terms, using Category Theory. The example comes from an insurance company exiting the pension plan business. In the example, pension plan data is migrated from the source database based on the RUPA schema to the target database based on the OpenPro Enterprise Resource Planning (ERP) System. The description of the migration process will be written so one understands and can follow the data being migrated and housed from one database system to the other. Data migration is described as a single arrow of data integration.

Data integration involves many arrows from one system to another which becomes an integrated part of the architecture. These arrows represent the way data flows between various applications/data stores. This is a process within the AQL tool that can supply data from operational systems to data warehouses which is a necessity for decision making today. The problem of data integration still exists today for many organization. Systems are still operating in the

proverbial silos. For example a purchasing system may exist on it's own without knowledge of it's purchasing budget that is housed in different databases.

This document explains how the Categorical Informatics AQL tool delivers robust database integration that will have conceptual clarity and expressive power required for design decisions made with speed, reliability, and accuracy. The AQL tool provides assurance in data tightness with an extra layer of mathematical validation. The mathematics included in the tool goes through all the integration deductions and gives accurate compilation which leads to validation of the data being moved from a source database to a target database.

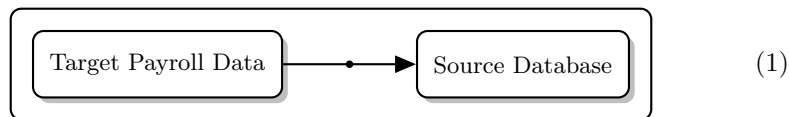
## 2 Integration Stories

The following describes five major user stories for our example of the integration of a pension plan data administration system.

### 2.1 User Story 1 – from Target Payroll Data into our Source Database

Story

As a payroll specialist, I want to load payroll data provided from an Target employer into the Source database used by our retirement plan administration system. The payroll data includes hours worked and salary earned for a recent period, and also includes indicative data for recently newly hired employees. Incomplete data will not be loaded.



Acceptance Criteria

For records in the Target payroll data containing complete data, the data should be matched and mapped to the Source database as follows:

PlanNumber Match on Plan.PlanID EmployeeSSN Match on Person.SocialSecurityNumber

Last Person.LastName

First Person.FirstName

Earnings1 Earnings.BaseSalary

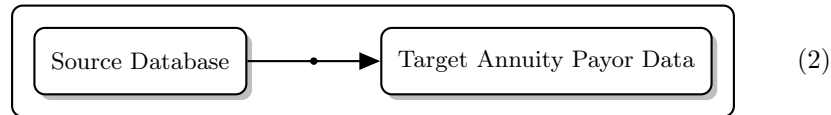
Hour1 Hours.BaseHours

AddressLine1 Address.Line1

## 2.2 User Story 2 – from our Source Database into Target Annuity Payer Data

Story

As a Payer specialist, I want to export retiree data from the Source database used by our retirement plan administration system into a database required by an Target annuity payer. The retiree data includes only required retiree data that has been changed during a recent period. Only plan data as indicated by the PlanID and change data as indicated by the StartDate will be exported.



Acceptance Criteria

For payment records in the Source database with Plan.PlanID = '111' and StartDate = '20170601', data should be exported into the Target annuity payer format:

Plan.PlanID = '111' Payment.PlanID

PaymentHistory.RecordNumber Payment.PaymentID

PaymentHistory.StartDate = '20170601' Payment.StartDate

Person.SocialSecurityNumber Payment.PayeeSSN

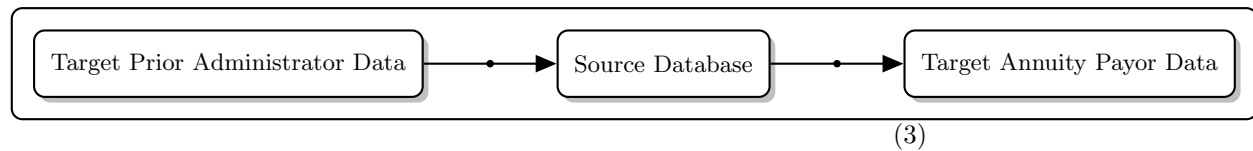
PaymentHistory.Amount Payment.Payment1

Address.Line1 Payment.Address.Street1

## 2.3 User Story 3 – from Target Implementation Data into our Source Database, then to into Target Annuity Payer Data

Story

As an implementation specialist, I want to load implementation data provided from another Target prior administrator into the Source database used by our retirement plan administration system. Then, as in User Story 2, I want to export retiree data from the Source database used by our retirement plan administration system into a database required by an Target annuity payer. All historical data, possible multiple historical payments, will be imported into the Source Database, but as in User Story 2, only change data as indicated by a specific StartDate will be exported.



#### Acceptance Criteria

For implementation data provided from another Target prior administrator, the data should be matched and mapped to the Source database as follow:

Demographic.PlanCode Plan.PlanID

Demographic.SocSecNum Person.SocialSecurityNumber

For payment records in the Source database with Plan.PlanID = '222' and StartDate = '20170701', data should be exported into the Target annuity data.

The data mapping follows:

Demographic.PlanCode Plan.PlanID Payment.PlanID

Demographic.SocSecNum Person.SocialSecurityNumber Payment.PayeeSSN

Demographic.Street1 Address.Line1 Payment.Address.Street1

Payment.StartDate PaymentHistory.StartDate Payment.StartDate

Payment.Payment1 PaymentHistory.Amount Payment.Payment1

Amount.Amount1 CalculatedBenefits null

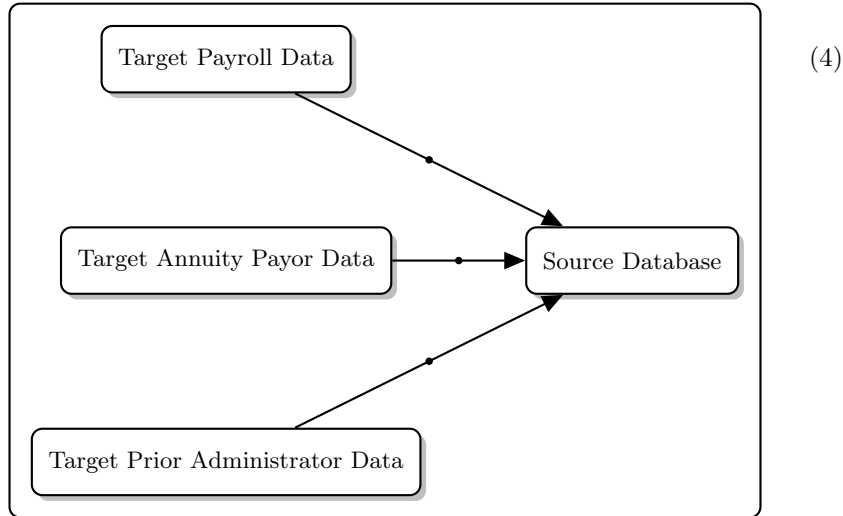
## 2.4 User Story 4 – Combining 3 Target Data into an Source Database (implementing a new employer)

### Story

As an implementation specialist, I want to load data from 3 different sources into the Source database used by our retirement plan administration system:

- Payroll data provided from an Target employer,
- Implementation retiree data provided from another Target annuity Payer, and
- Implementation data provided from an Target prior administrator.

Data will be loaded based on business rules.

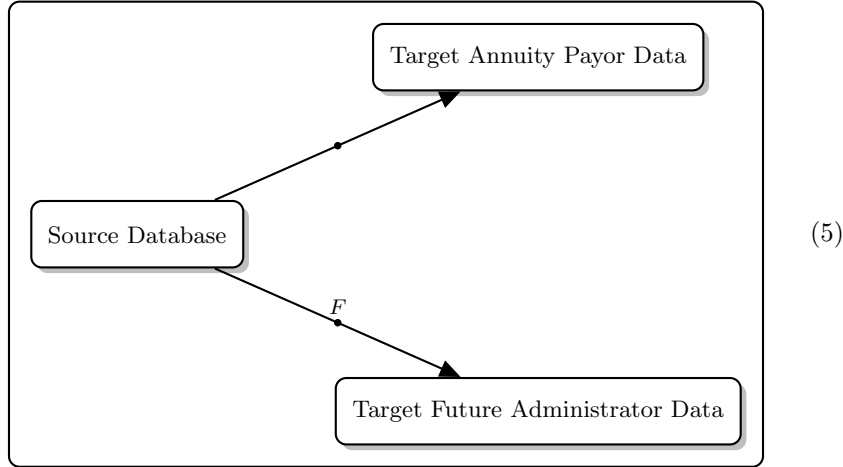


#### Acceptance Criteria

A person to be loaded into the Source database may have records in each of the 3 Target data sets. The data to be loaded into the Source database in Address.Line1 is based on the following business rule. The Target prior administrator data will be loaded first, where Demographic.CurrentStatus is loaded to EmployeeStatusHistory.Status and Demographic.Street1 is loaded to Address.Line1. The Target payroll data will be loaded second and when a record exists for a person, the EmployeeStatusHistory.Status = 'Active' and Address.Line1 = AddressLine1. The Target annuity payer data will be loaded third and when a record exists for a person, the EmployeeStatusHistory.Status = 'Retired' and Address.Line1 = Payment.Address.Street1.

## 2.5 User Story 5 – Source Database to Target (Decommissioning Migration)

Story



The following sections provide details of the functor  $F$  from the Source Database to the database of the successor plan administrator. In the pilot, we used the RUPA Source database as the source and Target (OpenPro's ERP) database as the target of the functor  $F$ .