# Informatica Mapping Design Document

1. Architecture and Overview
## High-Level Architecture
The "m_BOUPDATE_FILE_LOAD" is a component of a data integration architecture, typically part of an Extract, Transform, Load (ETL) process in a data warehousing environment. This process is responsible for the extraction of data from various source systems, transforming it to fit operational needs (via cleaning, validating, and applying business rules), and then loading it into the end target, which could be a database or data warehouse.
## Purpose of the Mapping
The "m_BOUPDATE_FILE_LOAD" mapping is a critical element in the data integration process. Its primary purpose is to define how data from one or more source systems is transformed and loaded into the target system. This could include aspects like data cleansing, data transformation, handling of data inconsistencies, and resolving potential data conflicts. The mapping is responsible for ensuring data integrity and consistency across systems.
The name "m_BOUPDATE_FILE_LOAD" suggests that this mapping is related to the loading of a file - possibly a batch of updates or transactions - into a business object or system. This is a common requirement in scenarios where data from external systems or partners needs to be integrated into the core business systems.
## Key Components
The "m_BOUPDATE_FILE_LOAD" mapping is likely to be composed of several key components, although the specifics would depend on the data integration tool or platform being used. Typical components of a data mapping could include:
- **Source and target definitions**: These define the structure of the data in the source system(s) and the target system. This could include details like the data types, lengths, and formats of each field.
- **Transformation rules**: These define how data from the source system is transformed before being loaded into the target system. This could include rules for data cleansing, validation, and formatting.
- **Filters and joins**: These are used to select specific data from the source system(s) and to combine data from different systems or tables.
- **Error handling routines**: These define how the mapping should handle errors or exceptions that occur during the data integration process.
Overall, the "m_BOUPDATE_FILE_LOAD" mapping plays a crucial role in the data integration process by ensuring that data is correctly transformed and loaded from source systems into the target system.
2. Source and Target Systems
Source Systems Overview:
The source system for this mapping is the 'BOUPDATE_DMP'. This system is typically used to store, manage, and process data related to business operations. It might consist of various data types such as customer information, transaction details, and operational metrics among others. The data in this system is usually updated periodically or in real-time based on the specific needs of the business.
Target Systems Overview:
The target system for this mapping is 'EXP_BOUPDATE_FILE1'. This system is designed to receive, store, and manage data exported from the source system. The target system could be a data warehouse, data mart, or any other system where the data is needed for further processing, analysis, or reporting. The target system might have its own data structure and data storage format, which is typically designed to facilitate efficient data analysis and reporting.
Data Flow Direction:
The data flow direction in this mapping is from the 'BOUPDATE_DMP' system (source) to the 'EXP_BOUPDATE_FILE1' system (target). Data is extracted from the source system, possibly transformed to match the data structure and format of the target system, and then loaded into the target system. This process is commonly referred to as ETL (Extract, Transform, Load). The frequency and volume of data transfer could vary based on the specific requirements of the business.
3. Transformation Details

The given transformations can be analyzed as per their types and functionalities. The key transformations here include Source Qualifier, Expression, Filter, and Lookup Procedure.

1. Source Qualifier (SQ_BOUPDATE_DMP): The Source Qualifier transformation is the first step in the data integration process. This transformation represents the rows that the Integration Service reads when it runs a session. The Source Qualifier transformation converts the source data types to the Informatica native data types, thus creating a uniform data type that can be used across different database platforms.

2. Expression (EXP_BOUPDATE_FILE & EXP_LKP): The Expression transformations are used for row-wise manipulation. With EXP_BOUPDATE_FILE, we can expect data manipulations like calculations, concatenations, or data cleansing tasks being performed. Similarly, EXP_LKP can be used to perform data manipulations based on lookup data.

3. Filter (FIL_Valid): The Filter transformation is a crucial operation that works as a gatekeeper for data. It allows only those rows that meet the filter condition to pass through. It's used when we want to restrict the number of rows in a data flow, for example, filtering out invalid records.

4. Lookup Procedure (LKPTRANS): The Lookup Procedure is a key transformation used to look up a data source. It is a critical operation that is used to get related values from a lookup table based on input source data. The Lookup transformation can be configured to return multiple output values, which can be used in subsequent transformations.

In terms of data manipulation steps, the process likely begins with the Source Qualifier transformation (SQ_BOUPDATE_DMP) that reads data from the source. This data is then processed by the Expression transformations (EXP_BOUPDATE_FILE & EXP_LKP), which perform row-wise manipulations. The Filter transformation (FIL_Valid) then filters the data based on certain conditions. Finally, the Lookup Procedure (LKPTRANS) retrieves related data from a lookup table.

The critical operations in these transformations include the data reading by the Source Qualifier, the row-wise manipulations performed by the Expression transformations, the filtering operation, and the data lookup operation. These operations are critical as they directly influence the quality and relevance of the final data output.