

Note: This template SOW may be modified as required for each customer but provides a general overview of the work to be performed and project deliverables.

## **Statement of Work**

### **Natural/Adabas Migration**

### **Discovery and Analysis Project**

#### **Introduction**

This Statement of Work (SOW) by and between <Customer Name> (the "Customer") and FBD Associates Inc. ("FBDA") is subject to the Terms and Conditions of Customer Purchase Order XXXXXX dated xxxxxx.

The Customer has a portfolio of legacy Natural/Adabas applications that provide critical business functionality and interface with a variety of internal and external systems. The functional features of the application portfolio are generally satisfactory but the Natural/Adabas implementation technology inhibits improvements and results in higher costs for operations and maintenance.

The Customer wishes to task FBDA with a Discovery and Analysis (DNA) project to assess the feasibility of migrating of the application portfolio from Natural/Adabas to an EGL/DB2 or Java/RDBMS technology platform using the Nat2EGL or JavNat migration tools.

The DNA project will be implemented by FBDA in accordance with the detailed requirements of this SOW

#### **Scope**

FBDA has a suite of tools for analysis and migration of legacy Natural/Adabas systems.

The FBDA NatMiner analysis tools provide a wide variety of quantitative and design information about Natural/Adabas applications. In addition the NatMiner tools provide a comprehensive repository for the ongoing storage and subsequent retrieval of information regarding Natural/Adabas applications.

The FBDA Nat2EGL or JavNat migration tools can support the automated migration of Natural/Adabas applications to a functionally equivalent EGL/DB2 or Java/RDBMS implementation.

Through this DNA project, FBDA will develop an assessment of the feasibility, scope and cost of migrating the Customer Natural/Adabas applications using the JavNat tools. Data and analysis derived from this DNA project will be used to develop budgetary cost and schedule estimates for implementation of the selected migration strategy.

**Note:** This SOW specifies tasks and deliverables for both a basic Level 1 DNA project and for, optionally, a more detailed and comprehensive Level 2 or Level 3 DNA project.

Tasks and deliverables which are unique to a Level 2 or Level 3 DNA are so indicated in this SOW and these tasks and deliverables will be implemented if authorized by the scope of the Customer purchase order.

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## Project Plan

This SOW specifies the services to be provided to the Customer by the FBDA team during the DNA project including the task descriptions, deliverables and schedule. The intent of this DNA project is to undertake sufficient analysis to support the Customer's administrative processes related to planning and funding the portfolio migration project. This objective will be accomplished by execution of the following tasks:

### **Task 1: - Source Code Analysis (Level 1, 2, and 3 DNA Projects)**

FBDA will implement a detailed analysis of the Customer application source code in accordance with the detailed requirements specified in Attachment 1.

**Deliverables:** - NatMiner analysis reports per Attachment 1.

### **Task 2: - Sample Data and Source Code Transformation (Level 2 and 3 DNA Projects Only)**

*FBDA will implement sample transformations (of up to 10 KLOC) of selected application data and source code components in accordance with the detailed requirements specified in Attachment 2.*

***Deliverables:** - functionally equivalent normalized RDBMS schema DDL, test data in RDBMS load format, sample Java source code, cost and schedule estimates for full source code transformation.*

### **Task 3: Pilot Project (Level 3 DNA Projects Only)**

*FBDA will complete remediation, compilation and unit test of a Sample Application (of up to 10 KLOC). The unit tests shall be implemented in the EGL debugger or a Java/Windows test environment and it shall not be a requirement to generate or deploy COBOL to the zOS environment. Any database updates will be limited to flat file records (no PE or MU fields).*

### **Task 4: - Project Summary Report (Level 2 and 3 DNA Projects Only)**

*FBDA will prepare and present an informal report summarizing the DNA findings in sufficient detail to support the Customer use of the deliverables for developing its internal migration project cost and schedule estimates.*

## Schedule

This DNA project will be completed:

- within four (4) weeks after the later of authorization to proceed or the receipt of the audited application source code in SYSTRANS format for a Level 1 DNA project
- within six (6) weeks after the later of authorization to proceed or receipt of audited application source code in SYSTRANS format for a Level 2 DNA project
- within eight (8) weeks after the later of authorization to proceed or receipt of audited application source code in SYSTRANS format for a Level 3 DNA project

## Customer Project Support

The requirements for Customer support to the FBDA team activities are detailed in Attachments 1 and 2.

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## **Attachment 1 – Detailed Task Description**

### **Source Code Analysis and Partitioning**

FBDA will provide to the Customer NatMiner™ Natural/Adabas application reports. The NatMiner facility shall be capable of parsing all components of the Customer applications including all programs, sub-programs, subroutines and help routines, all MAPS, all data areas, all FDTs and all DDMs used by the applications.

NatMiner shall be capable of analyzing Natural source code and Adabas FDTs by parsing and creation of a parsed source code data repository. This repository will contain sufficient data to re-create the source code without reference to the original source text and will be referred to as the Syntax Analysis Repository (SAR). The SAR will be implemented as a relational database.

The NatMiner facility shall be capable of creating a series of static HTML reports with contents to include as a minimum the following:

- **Project Inventory Summary Report**
  - Number of Natural libraries.
  - Total number, total lines and counts of each Natural module by library and module type.
  - Number of external calls (calls to non-Natural modules).
  - Number of FDTs and DDMs actually used in the code base.
- **Non-Natural Calls Report**
  - Detailed list of calls to non-Natural modules showing passed parameters.
- **Missing Objects Report**
  - Provides information about objects that are referenced but not included in the delivered source code. Includes all:
    - DDMs that are referenced but not included.
    - FDTs that are referenced but not included.
    - Data areas that are referenced but not included.
    - Executable modules that are referenced but not included.
- **Project File Usage Report**
  - Provides a summary by FDT for each DDM, showing the number of instances of Read, Update, Delete, and Store.
- **Data Area Usage Report**
  - For each LDA, PDA or GDA, a list showing all modules in which it is referenced.
- **MAP Usage Report**
  - For each MAP, a list showing all modules in which it is referenced.
- **FDT Analysis Reports**
  - For each FDT, an analysis showing FDT complexity and use of Adabas features such as descriptors, MUs and PEs.
- **Parsing Exception Report**
  - This report lists all modules that failed parse, indicating the cause of failure.
- **Migration Issues Reports**

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These reports identify problematic statements such as REINPUT that will require manual inspection or editing after translation.

The NatMiner facility reports will provide for navigation via hyperlinks to allow FBDA and Customer analysts to review the data and conduct detailed analysis tasks.

Additional automated reports may be delivered depending on the complexity of the Customer application environment.

***(Level 2 DNA Projects Only)***

*The NatMiner facility will be used by FBDA, with support from Customer as required to implement the following project activities:*

*Auditing the source code libraries to identify obsolete and non-compilable source modules within the sample 10 KLOC source code translated or a small sample outside of this translated code.*

*Analysis of applications external interfaces to determine the optimum technical approach for supporting these interfaces in the recommended target environment. This will be limited to the external interfaces within the sample 10 KLOC source code translated or a small sample outside of this translated code.*

*Level 1 (major functional components) partitioning of the application source code and Adabas files.*

**Customer Support Requirements**

To support the above Task 1 activities the Customer shall:

Provide the complete source code in SYSTRANS format including all Natural source modules, MAPS and DDMs. The SYSTRANS will be audited for completeness by the customer prior to shipment to FBDA using the SYSTRANS Auditor and instructions provided by FBDA.

Provide the application FDTs in ADAREP format.

Provide the application STEPLIB information.

Support the review of modules not parsed by the NatMiner due to source code defects.

Support the review and confirmation of obsolete or missing modules identified by the NatMiner.

Support the analysis to confirm the scope of the application components to be converted to Java.

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## ***Attachment 2 – Detailed Task Description***

### ***Sample Data and Source Code Transformation (Level 2 DNA Projects Only)***

*FBDA will transform selected samples of the Adabas data and Natural source code components to produce a functionally equivalent Java/RDBMS implementation using the JavNat tools.*

*This task will be implemented using a phased approach as follows:*

***Sample Schema Migration*** – *FBDA will develop a target RDBMS relational schema equivalent to the Adabas file structures of the selected sample application components.*

***Sample Data Migration*** – *FBDA will generate a series of parameters to interface with the data migration tools to extract Adabas sample data from ADAULD file(s) and transform it into a relational form suitable for processing by the target load utility to create a data repository in the target RDBMS environment.*

***Sample Natural Source Code Transformations*** – *FBDA will transform a selected sample of source modules to illustrate the quality, “look and feel” and syntax of the converted code. Representative samples of each module type will be transformed.*

### ***Customer Support Requirements***

*To support the above Task 2 activities the Customer shall:*

*Provide policy guidance for naming standards and file/field selection during the schema migration process.*

*Provide a small-scale test database, in ADAULD format, representative of the production database environment for the selected FDTs to be transformed.*