OHR-Clarify Dynamic Interface

Submitted by

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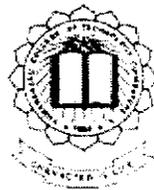Coimbatore - 641006

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OCTOBER 2001

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CERTIFICATE

This is to certify that the project entitled
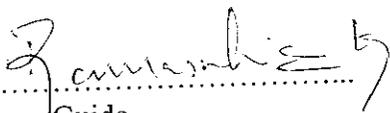
OHR-Clarify Dynamic Interface

has been submitted by

Mr. Rajiv Venkataraman

in partial fulfillment of the award of the degree of

Master of Science in Applied Science – Software Engineering

of

Bharathiar University, Coimbatore

during the academic year 2002-03

....

Guide

S. JL

Head of the Department

Certified that the candidate was examined by us in the Project Work Viva Voce Examination held on ....*C4 APRIL 2003*.... and the University Register Number was 9837S0058

....

Internal Examiner

....

External Examiner

28th Mar 03

<u>To whomsoever it may concern</u>

This is to certify that **Mr. Rajiv Venkataraman** has undertaken a project for "**Technology**" with us from 9th Dec 2002. He has been working with Mr.Arvind Shukla, Manager – Technology to complete his Project.

Yours truly,
For **IPROCESS Pvt. Ltd.**
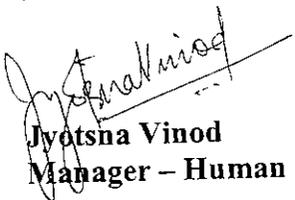
Jyotsna Vinod
Manager – Human Resources

<u>Acknowledgements</u>

Synopsis

Business Case

On an average up to 40% of the contact details in the OracleHR Database is either modified, added or removed because of contacts leaving the company or shifting to another process within the company. Contact details such as, the process the contact belongs to may change frequently. Contact details such as 'Email ID' may not be available when the contact details are created in the Oracle HR Database as. The Internal helpdesk provides IT Service to the contacts in many GE businesses like GECIS, ACOE, GECIS-Software Solutions and GECIS IT Services, and uses the Clarify CRM tool for Helpdesk support and logging tickets.

Clarify requires the Contact (Caller/Employees) details to be available in the Clarify database during case creation and if are not available in Clarify database during Ticket logging, the Helpdesk agent creates contact information for the caller over the call. The helpdesk agents may use contact data such as wrong email ID and wrong process details of the contact as latest information is not available to them.

Resulting in :

- Increase in overall call time
- Creation of junk data in the clarify database

Solution :

OHR-Clarify Dynamic Interface is the answer to this problem. The dynamic interface provides an automatic and flexible interface between the Oracle HR Database and Clarify database.

The interface performs a scheduled update of the Clarify database from the Oracle HR Database by adding the new contacts to the Clarify database and updating the Email Ids of existing contacts.

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1. INTRODUCTION

1.1 Company Profile

GECIS IT Services

Technology at **GECS IT Services** support the IT infrastructure to a business that provides IT helpdesk services to more than 35 GE and non-GE Businesses.

The state of art infrastructure with cutting edge technologies makes it a leading support function as well as a solution provider in various fields of Application monitoring, Exchange Administration, Cognos implementation, Clarify Implementation & maintenance.

True to GE values, excellence and thirst for change has ever been the motivation to constantly innovate and continuously offer business solutions to its stakeholders.

GECS IT Services also supports various **Centers of Excellence** like Server monitoring, CRM implementation and Application-test services.

It is a process-driven organization resource to enable world-class migration of processes, high quality service and delivery, rapid-turn around times and sustained credibility with the customer.

Poised to tap into the IT enabled outsourcing industry in India.
- GECIS IT Services provides remote troubleshooting services for its customers from its world-class facility.
- GECIS IT Services provides web support and maintenance services for any e-enabled activity.

The Focus:
GECIS IT Services has been set up to provide IT-enabled businesses process-outsourcing solutions to GE and non-GE customers.

Helpdesk Services:

The initial thrust areas are IT helpdesks; Enterprise application outsourcing and ECommerce back end processing. IT enabled outsourcing is about delivering services from a remote location in real time.

2. System Analysis

2.1 System Requirement Specifications

2.1.1 Purpose & Scope

Customer loyalty—In order to retain customers over the long term, businesses must invest in those customers over time. A CRM solution provides a unique opportunity for organizations to get to know each customer as an individual, and to develop products and services specifically targeted to their needs. Opportunities to develop existing customers include up selling new and add-on products and services, providing flexible service agreements, and developing new products and enhancements based on customer change requests.

Reduced Sales Costs and Increase Profitability—With sales and marketing costs representing up to 60 percent of revenues for many businesses, companies are now focusing their efforts on reducing the cost of sales. In order to accomplish this, different internal organizations—including marketing, telemarketing, telesales and field sales—must work together to manage the sales process.

Proactive Management of Accounts—Customer service solutions help companies proactively manage customer accounts and build long-term relationships. These solutions help companies provide faster, more accurate answers to customer questions, and increase customer loyalty as a competitive advantage.

Improved Product Quality and Customer Responsiveness—Quality assurance solutions close the loop on a company's customer relationship management processes by ensuring that customers' product and enhancement requests are handled in an efficient, accurate, and timely manner, and that the company's products consistently meet customer needs.

Increased Customer Satisfaction—A CRM system moves companies towards a "one-to-one" relationship with their customers. With CRM, companies can proactively address customer needs—for example, by keeping track of when a larger-than-normal number of support requests are made in a short time frame, and contacting the customer to find a long-term solution to the short-term problem. Companies can also use CRM solutions to identify buying patterns, and then use the information to market directly to a customer's wants and needs.

Transition from Product Selling to Solution Selling—Many customers are requiring solutions from vendors, not just products. The key issue is that how to configure a comprehensive solution from a variety of products and services is often held within the minds of a few resources, making selling an appropriate solution a challenging task. With CRM software tools such as Product Configurators, employees or even customers can automatically configure the very simple to the

most complex solution configurations, based upon a correct combination of products and services.

2.1.2 **General Description**

2.1.2.1 **Service Perspective**

GECIS (GE Capital International Services) provides IT services for the following of its businesses.
 Capital Business

GE Americom
GE Capital Corporate
GE Capital CCMS
GE Capital Equity
GE Capital Corporate GCF
GE Capital CRE
GE Capital SFG
GE Capital Fleet
GE Capital Fleet Europe
GE Capital Card services
GECW Scotland
GE Financial Assurance AMS
GE Financial Assurance LTC
GE Financial Assurance PMG
GE Capital GCF
GE Insurance Holding.
GE Capital Tip
Single Sign On
GE Corporate Finance

Industrial Business

GE Auto Financial Services
GE Corporate R&D
GEERC
GE Industrial Systems
GE Power Systems eOperations
GE Power System Atlanta
GE Transportation Systems
GE Global Exchange service
GE NBC
Single Sign On
GE Supply

2.1.2.2 **Service Functions**

CRM solutions focus on automating and improving processes in customer-facing areas such as sales, marketing, customer service, call center and support. CRM goes several steps further than ERP in that it helps organizations maximize their customer-centric resources (people and assets) and focus them on their customers and prospects. CRM aims to improve organizational effectiveness by reducing sales cycles and selling costs, identifying new markets and channels for expansion, and improving customer value, satisfaction, profitability, and retention.

Today businesses require a single, integrated and centralized system of customer data that can be leveraged easily to analyze customer trends, needs and loyalty to reduce sales costs, increase customer retention rates and increase employee productivity and effectiveness and this is accomplished through a CRM solution.

CRM takes a very customer-centric view of the entire customer life cycle, which means that CRM applications place the customer at the center of the organization's universe. These solutions facilitate the coordination of multiple business functions (sales, marketing, service, and support) and focus them on total customer satisfaction. CRM applications also help achieve this by integrating and coordinating data from multiple channels of interaction, such as face-to-face, call centers, and Web sites.

CRM solutions are not intended to replace ERP systems. On the contrary, a CRM Solution is a key component of a total enterprise solution, which also includes back office systems. Integrating a company's CRM and ERP components provides a link between its two most strategic information systems. This link lets the company deliver a consistent view of customer information across the enterprise. and provides customers with a consistent experience of the company.

2.1.2.3 **User Characteristics** - GECIS makes use of CRM tool called Clarify for its

customer relation problems. The technology team in GECIS has various branches under it like Production support, Development, Cognos, TOPAZ and server management.

2.1.2.4 **Performance Requirements**

SQA

• Identification of test items to test the application for Consistency, functionality, Usability, Performance, and generating the test assets.

• Develop and Implement a process of software configuration and change management for the application.

• Set up and Configure the Rational Tool for the project requirements of test activity and integrating the tool for the development activities with help of rational professional.

• Develop a complete feed back system right from requirements to bug reporting to completely use the rational enterprise suite and maintain the complete project resources for future reference and documentation.

• Utilization of Rational Tool for Test Automation, to minimize the effort on testing activity and regression.
• Conducting performance testing on the application and generating the test reports by analyzing the tool generated results to identify the performance bottlenecks.
• Maximizing the utilization on the tool for the testing activity and pass on the skill to the other teams and projects.
• Execution of test cases for the application bug reporting using the clear quest tool.
• Verification of fixes and conducting regression testing on the application to ensure the overall quality of the application.

2.1.2.5 <u>Standards Compliance</u>

GECIS – IT Services is a pioneer in Managed IT Services with it's core strength been in IT helpdesks. This been proven as we manage the Top Ten IT Helpdesks for majority of the GE businesses operating for companies in United States & Europe. The IT Services Philosophy revolves around achieving the core business objectives of IT infrastructure support for our clients at low cost but high quality efforts. This by focusing on achieving Operational Excellence and Employee satisfaction using *" Six Sigma "* in maximizing Customer satisfaction and business productivity. The whole process is handled through CRM (Customer Relationship Management and GECIS takes care of this with help of CRM tool.

2.1.2.6 <u>Interface and tools</u>

Clarify

Amdocs ClarifyCRM provides the world's only comprehensive CRM solutions focused on enabling companies to achieve measurable ROI from their unique customer strategies. Our end-to-end CRM solutions maximize customer loyalty and profitability and our "No Failures" implementation approach and track record of experience in large-scale implementations enable this success.

Companies in many industries around the globe rely on Amdocs ClarifyCRM to manage their sales and service channels by leveraging our business process and customer analytic models to maximize customer lifetime value and increase profitability. Our solutions enable an integrated and collaborative approach to manage both product and customer lifecycles – uniting front-office and back-office solutions to deliver a single unified view of the customer.

billing

clarifyCRM

customer

ordering
and service
fulfillment

partner
relationship
management
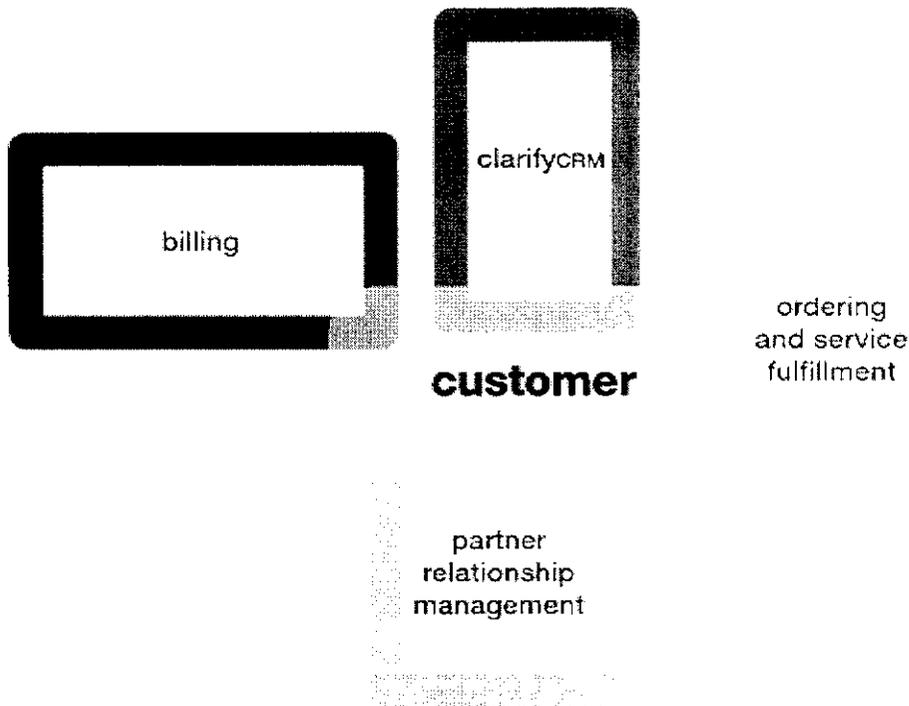
Amdocs ClarifyCRM ensures seamless customer interaction among call centers, websites and sales and service teams. Our Web-driven interfaces support online self-service for lower costs and increased customer satisfaction. Our award-winning data mining technology allows for quick identification of high-value customers prone to churn and creates proactive marketing campaigns to improve customer retention. With our commitment to implementation success and a focus on measurable results, Amdocs ClarifyCRM offers our customers unparalleled ROI through the ability to build and maintain customer loyalty and manage customer expectations while promoting growth and increased profitability.

Clarify provides world-class voice-IP functionality for all lines of business: wireline, broadband, mobile and IP. Clarify Ensemble offers a range of flexible delivery options, including stand-alone application modules, pre-integrated products, product-based customized solutions and a wide range of outsourcing of CRM, billing and data center operations.

Clarify provides full integration between the front and back office with a single customer database and a unified customer view. This powerful ability enables communications providers to dramatically improve customer response times, rapidly launch new services and reduce operating costs. The Clarify offering enables operators to increase revenues, customer satisfaction and loyalty by supporting services, including e-care, mobile commerce, customer hierarchies for large corporate customers and postpaid , and prepaid convergence.

Existing Data model

Data model : data and relationships between logical data structures. Open & flexible structure that adapts to change.

- **Schema** – how the data is represented (usually a conceptual diagram showing relationships). Current description of DD (object.sch) is available from the *Save to File* option within the DDEditor, or by running dataex –gen_sc <filename>.

- **object.sch** – file describing Clarify Schema, like NCOMS.sql. Compiled during installation, and generated from the *Save to File* option within the DDEditor., or by running dataex –gen_sc <filename>.

- **Data Dictonary** – manual describing default schema for help when extending database (Appendix A). Contains details of tables (objects), relations, views, indexes etc)

- **ADP Tables** – contain meta data that interface Clarify code with RDBMS.

- **POMS** – intelligently generates vendor's RDBMS SQL from ADP meta data.
  Database > Schema > POMS >RDMS SQL

Clarify terminology

- **Object** – table of data

- **Field** – column within table

- **Object Instance** – row or record within table (entity instance) referenced by OBJID.

- **Object Identifier** – primary key

- **Relation** – foreign key

- **View** – view of 'virtual table' following select statement.

- **Index** – index of OBJID's enabling faster search time.

Data Dictionary Objects : database tables (corresponding to a logical entity), e.g. *employee* object on p.140 of DD is implemented as table_employee. Also:

> **table_case** – case object
> **table_bug** - change request object

select first_name, last_name from table_employee – *lists all first and last names in employee object*

- Clarify ADP tables reference these objects via internal Object No (e.g. 44 for table_employee).

  Clarify Reserved Object No's: 0 – 429, 5000 – 9999
  Customer defined Object No's: 430 – 511, 2000 – 4999

- **OBJID** is a long integer *artificial (pseudo) key introduced by Clarify* for each Object Instance (record). Is unique within the table, but other tables can have the

same OBJID's. Indexed for fast lookup. OBJISD's are used by Clarify to relate tables. Cannot be changed once assigned. Start at a common number generated from the following algorithm:

SITE_ID x 2^{28} + NEXT_OID

SITE_ID defaults to 1.

(Oracle uses own sequence object to generate objid's)

adp_tbl_oid – table storing next available OID (according to Type)

csp_new_oid - stored procedure that takes value from above and increments it by 1.

e.g. sp_helptext csp_new_oid returns description of stored procedure.

- **Data types** – determine type of data in a field.

> <u>Common type (Clarify) Database Type</u>
> LONG INT
> CHAR_P VARCHAR
> CLK_TIME DATETIME
> FLOAT REAL
> DECIMAL DECIMAL

- **Generic Field ID's** - integer used by Clarify to identify fields in objects that should be handled in a similar way. DO NOT CHANGE.

- **Clarify Code and not the db enforce Required Fields.**

Relationships

- "Normalisation" reduces redundancy and is easier to maintain through use of pointers. Can impact on performance if overdone.

- Relationships are stored simply as entries in another field in the database Object, e.g. the relationship between case creator and case ID is stored as: creator2case OTM

    OTM meaning that one creator can create many cases. Relationships are stored in case object since ONE creator can create MANY cases. From the perspective of the case object, this same relationship is stored as case_empl2employee, linking case object with the employee object. This is an example of an **Inverse Relation**.

- An object can be linked to another object through more than one relation (e.g. case object can be linked to user object through case_originator2user and case_owner2user).

- An object can be linked to itself, e.g. relation from a site to the parent site (if they are the same). The same happens for the reverse.

Types of relationship (Cardinality)

> **PRIMARY KEY** – means of locating an object instance *within* the object. A primary key is a column or set of columns that uniquely identifies the rest of the data in any given row. Clarify uses the OBJID field to uniquely identify each row. This means two things:
>
> no two rows can have the same OBJID, even if two rows have the same first

and last names, the OBJID column ensures that the two owners will not be confused with each other, because the unique OBJID column will be used throughout the database to track the owners, rather than the names.

FOREIGN KEY – A foreign key is a column in a table that points to a primary key in another table, which means that any data in a foreign key column must have corresponding data in the other table where that column is the primary key. In DBMS-speak, this correspondence is known as *referential integrity*. In Clarify, these relationships are stored in local object fields with the following column title format: description2object (thus indicating a from-to relationship). Each instance under this field contains the OBJID of the target object, therefore identifying an exact instance on the object being referenced.

OTO - A One-to-one relationship means that you have a primary key column that is related to a foreign key column, and that for every primary key value, there is one foreign key value.

OTOP - one-to-one primary, and relationship key to an OBJID on another table is stored on the local object in a <description>2<target_object> field. (e.g. employee2login).

OTOF - one-to-one foreign, but relationship key is stored on remote linked object.

OTM - one-to-many, this means that for every column value in one table, there are one or more related values in another table. Relationships are stored on the 'many' table (e.g. customer is related to many cases, but a given case can only relate to one customer. The contact object therefore has an OTM relationship with the case object).

MTO - many-to-one, where relationships are stored on local table. The inverse of OTM (e.g. many cases can be related to a given customer, but only one customer can be related to a given case. The case object therefore has a MTO relationship with the contact object).

MTM - many-to-many, where relationships are stored in new associative table (e.g. more than one contract can relate to the same site, but more than one site can be related to the same contract). MTM tables are not objects, and are handled by the POMS layer. Contain 2 columns – one each for the OBJID's of each object instance to be related. See section 4-17 for diagrams, and DD section 2-7/8 for lists of all MTM tables.

Some relationships are required by the Clarify code (see section 3 of DD).

Indexes, Views and Joins

Indexes -To enhance table search performance, Clarify object OBJID's are indexed by unique fields or combinations of fields (e.g. firstname:lastname:phone) within that Object. This stops clarify from having

to search the entire object (i.e. all fields of all instances) to locate a unique bit of info. Indexes are kept in a separate tablespace (as defined by object.sch so can be modified, added using the SQL CREATE INDEX command, or deleted using SQL DROP INDEX). Uniqueness indexes are REQUIRED for some Clarify objects (e.g. contact), but can slow down updates and deletes if used to excess. See the indexes section of the DD.

Sybase – objindex
Oracle – object_name_index

dbtune script is a Clarify utility to add indexes to most objects to maximize performance. Safer to tweak and use this than to manually edit object.sch.

Views are 'virtual' objects comprised of fields gathered from different objects and organised into a row (instance). Clarify uses joins to link object fields to the view. Again, this improves performance (less data returned) since Clarify would otherwise have to reference each of the objects in turn to extract the desired info. Default view specifications, descriptions and Types (View Numbers – like table Object No.s) can be found in the DD.

to show the SQL description of a table view (e.g. for case, site and contact objects – as used by *Case Query* form):
sp_helptext table_qry_case_view

Programming and interfacing tools and languages

ASP

What is ASP?

- ASP stands for **Active Server Pages**

- ASP is a program that runs inside **IIS**

- IIS stands for Internet Information Services

- IIS comes as a free component with **Windows 2000**

- IIS is also a part of the **Windows NT 4.0 Option Pack**

- The Option Pack can be **downloaded** from Microsoft

- **PWS** is a smaller - but fully functional - version of IIS

- PWS can be found on your **Windows 95/98 CD**

ASP Compatibility

- ASP is a Microsoft Technology
- To run IIS you must have Windows NT 4.0 or later
- To run PWS you must have Windows 95 or later
- ChiliASP is a technology that runs ASP without Windows OS
- InstantASP is another technology that runs ASP without Windows

What is an ASP File?

- An ASP file is just the same as an HTML file
- An ASP file can contain text, HTML, XML, and scripts
- Scripts in an ASP file are executed on the server
- An ASP file has the file extension ".asp"

How Does ASP Differ from HTML?

- When a browser requests an HTML file, the server returns the file
- When a browser requests an ASP file, IIS passes the request to the ASP engine. The ASP engine reads the ASP file, line by line, and executes the scripts in the file. Finally, the ASP file is returned to the browser as plain HTML

What can ASP do for you?

- Dynamically edit, change or add any content of a Web page
- Respond to user queries or data submitted from HTML forms
- Access any data or databases and return the results to a browser
- Customize a Web page to make it more useful for individual users
- The advantages of using ASP instead of CGI and Perl, are those of simplicity and speed
- Provides security since your ASP code can not be viewed from the browser
- Since ASP files are returned as plain HTML, they can be viewed in any browser Clever ASP programming can minimize the network traffic.

Visual Basic : Interface and COM

Microsoft Visual Basic is a popular development tool in industry.
Visual Basic is a language that allows you to create Windows programs. Visual Basic programs use all the elements of other programs written to run under Microsoft Windows, such as buttons, windows, and menus.

For software to survive in the ever-changing jungle of the production environment, it must have three distinct characteristics: reusability, maintainability, and extensibility.

The Component Object Model (COM) is founded on the idea of interface-based programming; COM would have no meaning without the concept of the interface Interface-based programming exists outside the world of COM. It is a programming discipline that is based on the separation of the public interface from implementation. Software engineers who discovered that using distinct interfaces could make their software, especially large applications, easier to maintain and extend, pioneered it in languages such as C++ and Smalltalk. The creators of Java saw the elegance of interface-based programming and consequently built support for it directly into their language.

Interfaces solve many problems associated with code reuse in object-oriented programming. Certain problems are also associated with a popular OOP language feature known as implementation inheritance. This powerful but often misused feature is vulnerable to similar dependency problems, which compromise an application's maintainability and extensibility. Even though Visual Basic does not support implementation inheritance, this document will discuss its strengths and limitations in order to address some of the problems that interface-base programming was created to solve.

The industry has adopted interface-based programming because of the limitations of other common techniques, such as the use of class-based references and implementation inheritance. User-defined interfaces bring a new level of complexity to both application design and programming, but their value is easy to measure in large applications. In a COM is based on interface-based programming through and through. COM requires a formal separation of interface and implementation—that is, it requires that clients communicate with objects exclusively through interface references. This ensures that clients never build dependencies on the classes that serve up objects. This allows COM programmers to revise their object code without worrying about breaking client code. COM clients can get run-time type information from objects. A COM client can always query an object and ask if it supports a specific interface. If the requested interface is not supported, the client can discover this and degrade gracefully. This lets programmers revise components and applications independently. Older clients and older objects can work in harmony with newer clients and newer objects. Herein lies the key to versioning in COM.

SQL Server

Enterprise business applications increasingly are being designed to run in a distributed computing environment. In addition to distributing applications across a network of workstations, servers, and legacy mainframe systems, organizations are distributing applications across geographic boundaries, time zones, and divisions. As organizations evolve and grow, they often acquire a heterogeneous collection of computers, networks, and databases.

As a result, these organizations need access to information and data from diverse enterprise business applications. For example, an organization may need to access the data residing on a UNIX workstation or an Oracle database in a way that is transparent to the end users. Transparent access is key to developing powerful distributed solutions that allow an organization to be responsive to the marketplace. Microsoft's solution is the Universal Data Access) architecture:
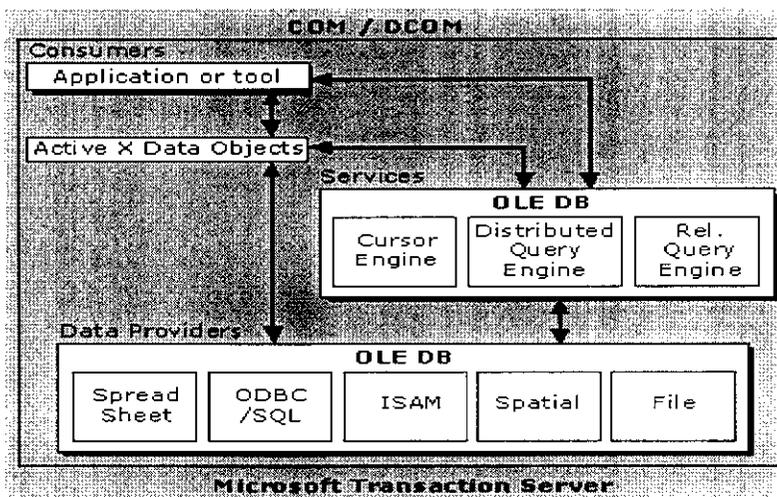
The primary goal of SQL Server 7.0 is to take advantage of the capabilities offered through the UDA architecture, which allows data to exist in multiple formats and be accessed using many different methods. With the release of SQL Server 7.0, Microsoft provides not only a more powerful relational database management system (RDBMS), but also a mechanism for gathering disparate information stores and for presenting data in a consistent and useful manner without having to migrate or convert heterogeneous data to a single data store.

In addition to support for UDA, SQL Server 7.0 provides these new technologies for working with data in a heterogeneous environment:

- Data Transformation Services (DTS). SQL Server 7.0 allows for the import, export, and transformation of data from heterogeneous data sources without any additional software investment. Any OLE DB provider can be used by DTS, including Oracle, Informix, and Microsoft Excel.
- Support for distributed queries. SQL Server 7.0 allows linking remote servers

(using any OLE DB provider) and using data in queries that come from heterogeneous sources. This action is transparent to the client program, which sees the tables as if they were native SQL Server tables, and improves network traffic because the query engine tries to execute as much work as possible at the remote machine. In addition, data does not need to be moved; it continues to live in its native store.

- Heterogeneous replication. Any Open Database Connectivity (ODBC) driver or OLE DB data provider can participate in SQL Server 7.0 replication.
- Integrated support for data warehousing. Data warehouses or data marts can be created easily from a variety of relational databases, including SQL Server, Oracle, and Informix.

TOPAZ
Sitescope / AIM Profile: Provides detailed statistical information on various parameters such as CPU, Disk, Memory Utilization and Application Specific Counters
Active Agent : Gather EUE across locations at Individual Transaction level
Topaz SLM: SLA Performance Management and Trend Comparison
AutoRCA: Based on information provided, it can automatically perform an RCA and drilldown into the top 5-10 suspects
EMS Adapters: 3rd Party connectors to BMC, Tivoli, HP-OV and CA Unicenter software
Topaz Open DataSource: Allows exporting Topaz performance data to enterprise consoles and leveraging existing problem escalation procedures

Cognos

Coordinated Across the Organization
Cognos data marts are created using conformed dimensions, which means your data assets are consistent across the enterprise. A single metadata layer simplifies administration.

Built for Fast, Incremental Rollout
Pick a critical area to start with. If finance is your pain point, create a finance data mart with conformed dimensions in mind. Further departmental marts fit together seamlessly to form your data warehouse. This approach gets you querying critical data within weeks.

Integrated with a Best-of-Breed BI Platform
Building coordinated data marts are just the start. Leverage your data warehousing solution with advanced query, analysis, reporting, and high-level visualization capabilities. The end-to-end Cognos business intelligence (BI) platform covers it all.

Supported by Out-of-the-Box Solutions
Cognos e-Applications, built on the strength of the DecisionStream data extraction and transformation engine, shorten your time to result. Ready-to-deploy data marts, cubes, and reports represent years of business intelligence expertise applied to your source system and line of business

Tools used/developed

Saaral
Tool developed for uploading contacts.

Emailclerk
Facilities provided by clarify to create tickets based on email. The tool is configured in such a way that for a particular kind of a mail from the end user the appropriate ticket is created.

Iclerk
Tool similar to emailclerk but more customized and developed for in house needs.

Voc
Voice of Customer is mainly used for knowing the feed back from the customer about the way you have solved the problem.

Ivoc – called Internal Voice of customer is used mainly for knowing the feedback, inside the organization.

2.1.2.7 Hardware and Software interface
Hardware Used:
> Compaq / Dell Servers
> Dell Desktops
> Dell Laptops
> Cisco Switches
> AT&T Certified Cat 5 Cabling
> Ethernet LAN
> EPABX : Definity from Lucent

Software Used:

Operating Systems	: Windows NT
Others	: Citrix/Metaframe
Desktop	: Windows NT Client
HelpDesk Software	: Clarify
Programming tools	: Microsoft Visual Studio 6

2.2 Existing System

Clarify eFrontOffice Business Applications

Clarify is a Client-Server application
> Server (Database Server) : holds nearly all of the data

Clients: enter and retrieve server data and perform processing on it.
The RDBMS vendor provides networking support
    Sybase and SQL server: OpenConnect (DBLib)
    Oracle : SQL*Net

Basic Clarify Client-Server Architecture
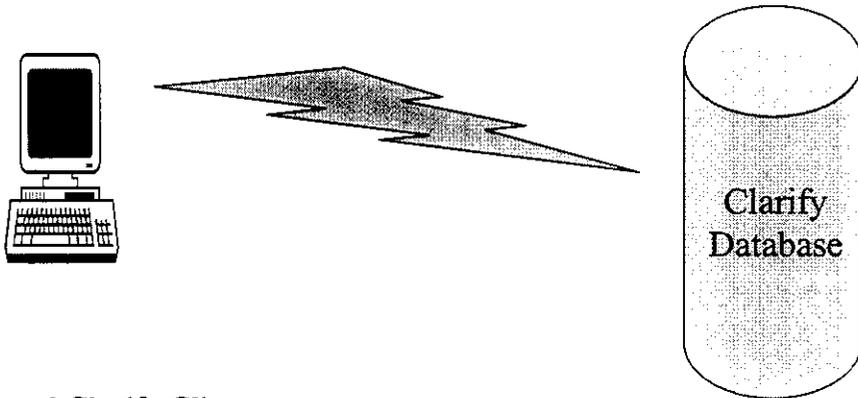
The integrated Clarify Client

Windows UNIX/ Motif	User Interface Management System	Queries	Trends	Reports	Messaging / Notifier		
		Clear Quality	ClearSupport/ Clear Helpdesk	Clear Logistics	ClearSales	Clear Call Center	Clear Contract
		Policies & Customers			Product		
		ClearBasic					
		POMS - Persistent Object Management					

Data Server

Oracle / Sybase / SQL
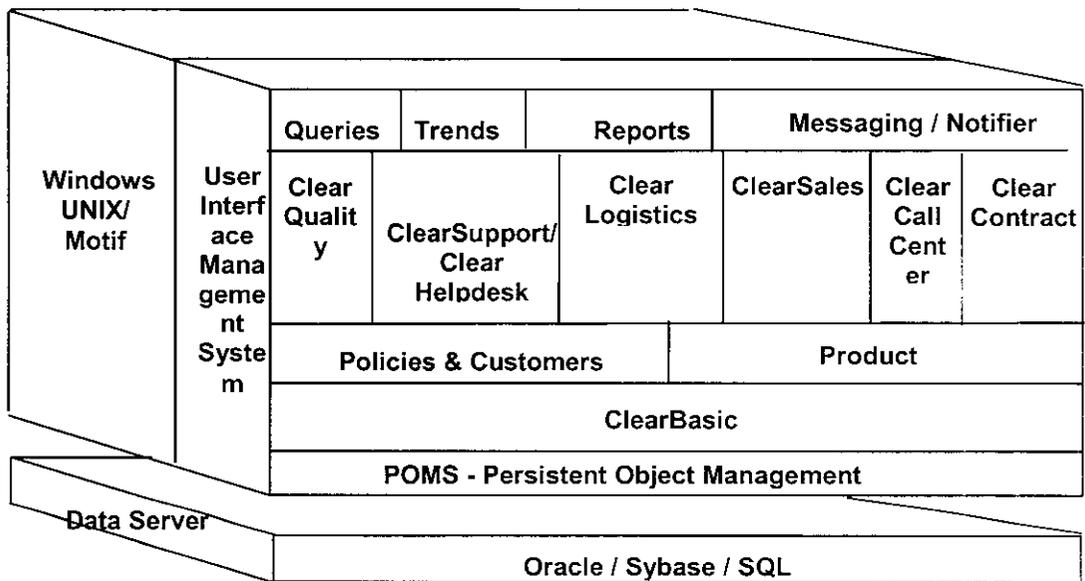
Existing System

On an average up to 40% of the contact details in the OracleHR Database is either modified, added or removed. Contact details such as, the process the contact belongs to may change frequently. Contact details such as 'Email ID' may not be available when the contact details are created in the Oracle HR Database. Our Internal helpdesk provides IT Service to many GE businesses like GECIS, ACOE, GECIS-Software Solutions and GECIS IT Services, and uses the Clarify CRM tool for Helpdesk support and logging tickets.

The Process :
Clarify requires the Contact (Caller/Employees) details to be available in the Clarify database during case creation and are not available in Clarify database during Ticket logging, the Helpdesk agent creates contact information for the caller over the call. The helpdesk agents may use contact data such as wrong email ID and wrong process details of the contact as latest information is not available to them.

Limitations in the existing system :

Increase in overall call time
Creation of junk data in the clarify database

Existing setup

OHR Data base Serv

Contacts', employees' details are frequently created or modified

Due to infrequent updates, contact details may not be available, helpdesk agents hence creates contact info over the

Clarify DB Server GGN

Probable Junk Contact data

Help

two way real - time merg

Clarify DB Server HYD

List of new or updated contacts

The new, updated contact info is loaded into an excel sheet in '.csv'

Contact Upload

User Name | clarify
Password | *********
Server | 3.235.72.65
Database | ipm01p

OK   Cancel

Saral takes the '.csv' file and uploads the contact into clfy

3. System Design

3.1 Proposed Setup
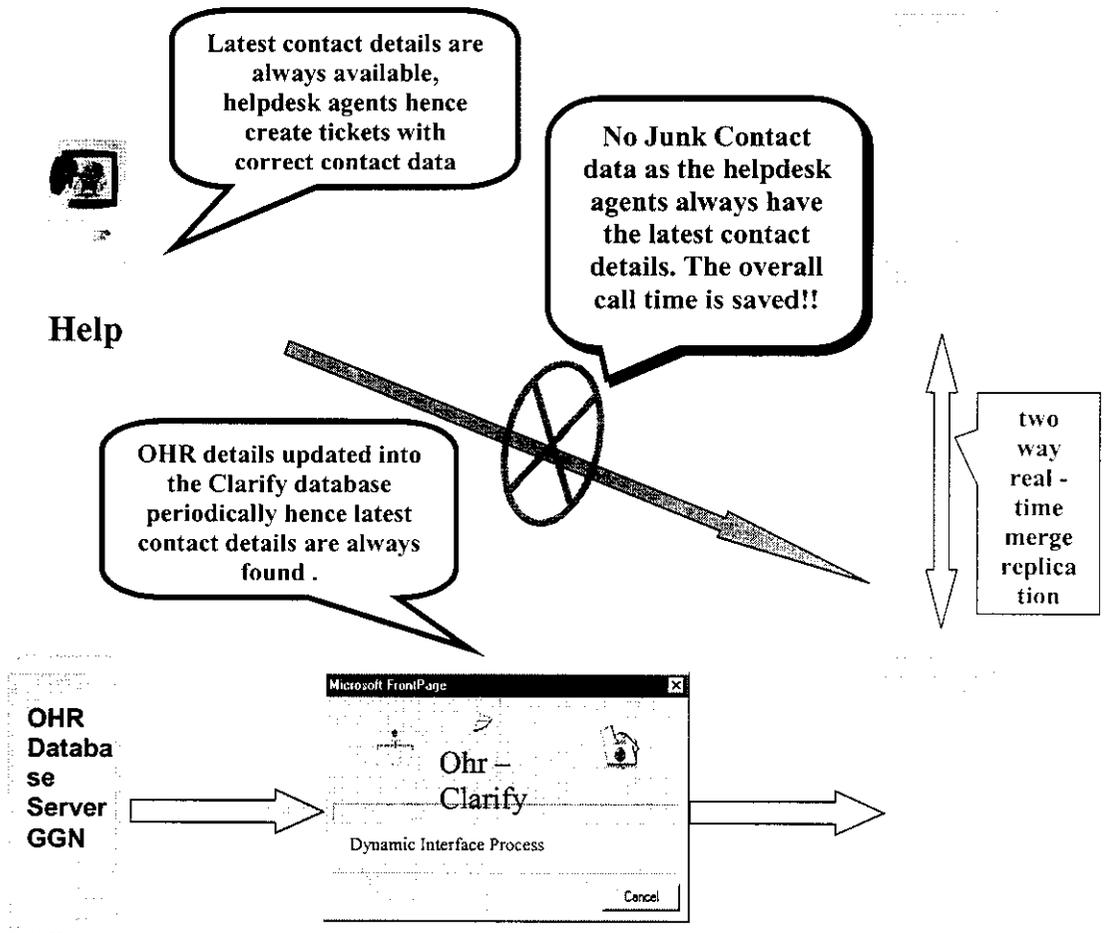
3.2 Process Flow

- The oracle OHR Database that has the details of the contacts is gecshr and the table, which actually holds the data, is ohr_clarify_hyd.
- All contact related tables in the clarify database can be found in the clfy_ihd catalog in the clarify database.

- The contact details in the clarify database are found in the table table_contact. It is mapped to the table_X_Process for getting the process details and it is mapped to table_site through the table_contact_role to get the site details of the contact.
- Each record in the oracle database is checked in the clarify database to see if the contact details already exist by comparing the oracle_hr_id in ohr_clarify_hyd table in the gecishr database to the x_oracle_id in the table_contact in the clarify database.
- The oracle_hr_id field in the ohr_clarify_hyd table is checked against the x_oracle_id field in the table_contact.

  If this value is not present :
  The object id of the new contact is created by executing the 'generateobjid_contact' stored procedure in the clarify database.

  If this value is not present :
  The object id of the contact is obtained from the table_contact table in the clarify database.

  The contact's required process is determined by comparing x_process_id from table_x_process_id with process_code in the OHR database and the object id of the contact's process is obtained.
- The fields in the Clarify database are updated as per the data model.

Logs are created during the upload process and an email is fired to the system administrators after the upload giving the status and result of the upload.

Inserted log :
This log specifies the list of records which were newly created or updated in the clarify database from the Oracle HR database.

Template :

OracleHR ID	First Name	Last Name	Locations

Reject log :
This log contains the list of records not updated into the clarify database. The possible cause for a record to get rejected is when the corresponding contact detail does not contain the right 'location' hence the mapping to site id did not happen.

Template :

OracleHR ID	First Name	Last Name	Locations

OracleHR - Clarify Site Mapping

The between the Oracle HR database and the Clarify Database for the site of a contact is as follows:

A. The organization_name field in the Oracle HR database gives information on whether a contact belongs to one of the following

- GECIS
- GECSI
- GECW

B. The location field in the Oracle HR database gives the actual location of the contact which has to be one of the following

- Gurgaon-DLF
- Gurgaon-22a
- Gugaon-22b
- Gurgaon-90
- Gurgaon-JIL
- HYD-Cyber Towers
- HYD-Cyber Gateway
- HYD-Uppal (provision made for future enhancement)
- Jaipur
- Bangalore

A contact must have a combination A and B.
The mapping interface provides a choice of site ids corresponding to GECIS, GECSI to be mapped for the Oracle HR contacts.

The mapping interface enables user to change the site mapping when required, remove a site mapping if the site no longer exists.
The application will update or create new contacts only if the site mapping is configured in the interface, else the record will be tracked in the 'reject log', which can be dealt with separately.

3.3 Process Summary

Process Summary

Check if contact present in database

Not exist   **exist**

Extract all records from Oracle HR database and for each

Clarify DB Serv

Find the object ID of the Corresponding process.

Update the clarify database with new / modified details like email ID, process...

OHR Database Server GGN

Check if the corresponding site exists and get the site's object ID

two way real – time merge replica

Reject the record and write 'reject record log'

Insert new contact details into the Clarify Database and derive the appropriate relation with the site.

Clarify DB Serv

Write the upload

Write the insert

Send Email to required recipients after the completion of upload with logs

3.4 Data Model for the new system

No. Of Records Scanned :   12932
Test Start time :   2/21/03 4:20 PM
Test End Time :   2/21/03 5:10 PM

Fields Updated :

Clarify Table : table_contact

Clarify Fields	Oracle Fields	
	Action for New Contact	**Action for Existing Contact**
Objid :	*Generated through code*	*Not modified*
first_name :	FIRST_NAME	FIRST_NAME
last_name :	LAST_NAME	LAST_NAME
e_mail :	EMAIL_ADDRESS	EMAIL_ADDRESS
update_stamp :	*contains time when the record was inserted*	*contains time when the record was updated*
x_oracle_Id :	ORACLE_HR_ID	ORACLE_HR_ID
x_band :	BAND	BAND
x_emp_id :	EMPLOYEE_CODE	EMPLOYEE_CODE
Country :	*'INDIA'*	*'INDIA'*

Clarify Table : table_contact_role

Clarify Fields	Oracle Fields	
	Action for New Contact	**Action for Existing Contact**
objid	*Generated through code*	*Not modified*
role_name	*Default'*	*Not modified*
primary_site	1	1
update_stamp	*Contains time when the record was inserted*	*Contains time when the record was updated*
contact_role2contact	*objid of the corresponding contact*	objid of the corresponding contact/replaces existing value
contact_role2site	*objid of the corresponding site*	objid of the corresponding site

4. Results And Discussion

4.1 Screenshots – Main Screen

Screen Shots- Site Mapping

Ohr-Clarify Site Mapping

Oracle HR - Clarify Dynamic Interface

Site Mapping Configuration

User Name testuser

Password xxxxxxxx

Login Cancel

Oracle HR - Clarify Location to Site Mapping

Select Process

Process : GECIS

OHR-Clarify Mapping

OHR - Location : BANGALORE   **Clarify - SiteId :** IHD_BANGALORE

Set OHR-Clarify Site Mapping

OracleHR - Clarify Location Site Mapping

objid	ohr_process_name	ohr_location	clarify_site_id	update_stamp
1	GECIS	GURGAON - DLF	IHD_GURGAON_DLF F	3/25/03 4:36:47 AM
2	GECIS	GURGAON - 22B	IHD_GURGAON_22	3/25/03 4:36:47 AM
3	GECIS	GURGAON - 22A	IHD_GURGAON_22	3/27/03 5:59:37 AM
4	GECIS	GURGAON - 90	IHD_GURGAON_90a	3/25/03 4:36:47 AM
5	GECIS	BANGALORE	IHD_BANGALORE	3/25/03 4:36:47 AM
6	GECIS	HYD - CYBER TOWER	IHD_HYDERABAD_CT	3/25/03 4:36:47 AM
7	GECIS	HYD - CYBER GATEW/	IHD_HYDERABAD_CG	3/26/03 6:46:37 AM
8	GECIS	GURGAON -JIL	SID_JIL	3/25/03 4:36:47 AM
9	GECIS	JAIPUR	IHD_JAIPUR	3/25/03 4:36:47 AM
10	GECIS	HYD - UPPAL	N/A	3/25/03 4:36:47 AM

Double Click on 'objid' to edit that row

Close

4.2 <u>Outputs :</u>

Sample of Upload Log :

Upload Start Time: 2/21/03 6:18:23 AM

Completion Time: 2/21/03 6:40:02 AM

Dynamic Contact Upload Status

~~~~~~

No. of Records Scanned for Upload :12376

No. of Records Updated   :9818

No. of Inserted Records   :1345

No. of Rejected Records   :1213

Sample Email :

From:	Venkatraman, Rajiv (CAP, Contractor)
Sent:	Thursday, February 20, 2003 2:19 PM
To:	Venkatraman, Rajiv (CAP, Contractor)
Subject:	Sample Dynamic Contact Upload Status -2/20/03 3:49:05 AM

Upload Start Time: 2/20/03 3:48:50 AM
Completion Time: 2/20/03 3:48:57 AM

Dynamic Contact Upload Status
~~~~~~
No. of Records Scanned for Upload :0
No. of already exist Records:0
No. of Inserted Records   :0
No. of Rejected Records   :0

For more information Please refer the attachments given below
Regards, Dynamic OHR-Clarify Interface

Note : Auto generated mail, Please do not reply

 << File: InsertedLog20-02-03.txt >> << File: UpdateLog20-02-03.txt >> << File:
Rejectlog20-02-03.txt >> << File: UploadLog20-02-03.txt >>

Test Results on succeccful update:

Before update :

update_stamp	first_name	last_name	e_mail
3/25/2003 8:33	Imtiaz	Hussain	
3/25/2003 8:33	Josiah Krupa	Sagar	
3/25/2003 8:33	M K	Madhu	Madhu.Mk@gecis.ge.com
3/25/2003 8:33	J Raj Kumar	John	Raj.John@gecis.ge.com
3/25/2003 8:33	P Aarti	Raj	Aarti.PRaj@gecis.ge.com
3/25/2003 8:33	M Rebecca	Janet	Rebecca.Janet@gecis.ge.com
3/25/2003 8:33	Pratima	Dasgupta	pratima.Dgupta@gecis.ge.com
3/25/2003 8:33	O. Srinath	Reddy	Srinath.Reddy@geind.ge.com
3/25/2003 8:33	Amrit	Kumar	Amrit.Kumar@gecis.ge.com
3/25/2003 8:33	Joseph	Adrian Long	Adrian.Long@gecis.ge.com
3/25/2003 8:33	Shweta	Anand	swetha.Anand@gecis.ge.com
3/25/2003 8:33	Venkata Girish	S.	Venkatagirish.S@gecis.ge.com
3/25/2003 8:33	Yogish	Shanbhag	Yogish.Shanbhag@gecis.ge.com
3/25/2003 8:33	Sunil	Kapoor	
3/25/2003 8:33	Satish	Bettadapur	Satish.Bettadapur@gecis.ge.com
3/25/2003 8:33	SG	Mahadevan	
3/25/2003 8:33	Pankaj	Rai	
3/25/2003 8:32	Naveen	Mohan	naveen.mohan@geahk.ge.com
3/25/2003 8:32	Gaurav	Sethi	
3/25/2003 8:32	Devesh	Bahl	Devesh.Bahl@gecis.ge.com
3/25/2003 8:32	Duraiswamy	Lakshminarayanan	
3/25/2003 8:32	Bhupendra	Jain	
3/25/2003 8:32	Ashok	Tyagi	Ashok.Tyagi@gecis.ge.com
3/25/2003 8:32	Ashish	Kapoor	
3/25/2003 8:32	Anurag	Sharma	Anurag.Sharma@gecis.ge.com
3/25/2003 8:32	Amardeep	Bali	
3/25/2003 8:32	Vidhya	Venkatarajan	v.vidhya@geind.ge.com
3/25/2003 8:32	S	Rajaram	S.Rajaram@geind.ge.com
3/25/2003 8:32	AP	Ilango	Ap.Ilango@Gecis.GE.com
3/25/2003 8:32	Somit	Kapoor	Somit.Kapoor@gecis.ge.com
3/25/2003 8:32	Santosh	Srinivas	Santoshkumar.Srinivas@geind.ge.com
3/25/2003 8:32	Akashdeep	Shanbhogue	akashdeep.shanbhogue@gecis.ge.com
3/25/2003 8:32	Indraneel	Dutt	Indraneel.Dutt@gecis.ge.com
3/25/2003 8:32	Neeraj	Dewan	Neeraj.Dewan3@gecis.ge.com
3/25/2003 7:25	Rajamani	Swaminathan	
3/25/2003 7:25	Saainath	S	Saainath.S@gecis.ge.com
3/25/2003 7:25	Pratusha	V	Pratusha.V@gecis.ge.com
3/25/2003 7:25	Jagdish	Joghee	Jagdish.Joghee@gecis.ge.com
3/25/2003 7:25	Ravi	Kumar PR	Ravi.KumarPR@gecis.ge.com
3/25/2003 7:25	Sakthi	Muthu P	Sakthimuthu.P@gecis.ge.com
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3/25/2003 7:25	Amith	Ankolekar J	Amith.Ankolekar@gecis.ge.com

3/25/2003 7:25 Sheeja	M	Sandy.Adams@gecis.ge.com
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3/25/2003 7:25 Jiguru	Satyanarayana	
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3/25/2003 7:25 Roopali	Mansabdar	Roopali.M@gecis.ge.com
3/25/2003 7:25 U Suresh	Kumar	Suresh.Uppalpati@gecis.ge.com
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3/25/2003 7:25 P. Venu Gopal	Raju	Penumatcha.Raju@Gecis.GE.com
3/25/2003 7:25 Darbha Bhaskar	Venkatesh	Venkatesh.Bhaskar@gecis.ge.com
3/25/2003 7:25 GN	Rama Krishna	Rama.Krishna@corporate.ge.com
3/25/2003 7:25 P. Surender	Reddy	Surender.Reddy@gecis.ge.com
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3/25/2003 7:25 C.N.	Ramesh	C.Ramesh@Gecis.GE.com
3/25/2003 7:25 M	Sreevani	
3/25/2003 7:25 Pradeep G	Nair	Pradeep.Nair3@Gecis.ge.com
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3/25/2003 7:25 Padmavathi	Meenakshi	Padmavathi.Meenakshi@gecis.ge.com
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3/25/2003 7:25 Praveen	Kuniyil	Praveen.Kuniyil@gecis.ge.com
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3/25/2003 7:25 Raghavendra	P	
3/25/2003 7:25 Yamini	Harikrishnan	
3/25/2003 7:25 Savitry	Kvs	
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After Update :

first_name	last_name	e_mail
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Srinivasu	Vutukuru	Vutukuru.Srinivasu@gecis.ge.com

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Praveen	Kuniyil	Praveen.Kuniyil@gecis.ge.com
Satyam	Soma Shankar	Soma.Shankar@gecis.ge.com
Suresh	N	Suresh@gecis.ge.com
Devi N	Mani	Devi.Mani@gecis.ge.com
Akash	Kiran Rao P	Akash.Kiran@gecis.ge.com
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Arjun	Aathreya	Arjun.Aathreya@gecis.ge.com
TS	Sivakumar	SivaKumar.TS@gecis.ge.com
Jawahar	Mirza Feroz	Jawahar.Mirza@gecis.ge.com
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5. <u>Conclusion</u>

To ensure that the Clarify database always has the new and updated contact / employee details, the use of the dynamic OHR-Clarify interface has the following advantages :

- The dynamic interface helps maintain concurrency between Oracle HR and Clarify database.
- The update of clarify database from Oracle Hr Database can be scheduled with WindowsNT scheduler.
- Contact details such as email and process details can be updated daily to ensure latest data.
- Logs are maintained to show the number of records updated, uploaded or rejected hence the interface's performance and statistics can be always monitored.
- Emails are fired to the required recipients giving the audit of the interface process
- Saves the time taken to upload contacts to the clarify database.
- The old process involved more steps and manual intervention. The dynamic interface just needs to be initiated. The rest of the process if fully automatic.

6. <u>Bibliography</u>

Reference Material

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