

DATA QUALITY ASSURANCE

INTEGRATION WITH SAP® APPLICATIONS

Public security organizations need fast access to the most accurate data on persons of interest from any data source and external system. Hlquality for Identity Resolution provides data cleansing and enrichment at point of entry and consolidates data from multiple sources to ensure an accurate central registry.

Law enforcement and security organizations often rely on software that compares and validates information about persons of interest across multiple databases and information sources. Even slight variations in the spelling of a name can hinder the accuracy of a security check and prevent officials from ascertaining the status of an individual. Foreign names, cultural conventions, and spelling variations caused by different languages all contribute to potential confusion.

Fast data entry often leads to typing and spelling mistakes, especially in time-sensitive and high-stress situations – at border control points or during street checks or surveillance, for example – making an ordinarily simple task much more difficult and mistakes much more likely. Names need to be entered correctly, address details need to be checked, and duplicate data entry needs to be avoided – all within a matter of seconds. In most cases, data must be consolidated across different systems using information from multiple sources, not all of which have the same data quality standards. These factors make it difficult for public security organizations to accurately identify a person of interest and ensure public safety and homeland security.

A Comprehensive Solution

Hlquality for Identity Resolution from Human Inference (HI) Enterprise B.V. provides the necessary tools to meet these challenges. It has a single service point, called Hlquality Base, that allows organizations to control data quality

throughout all processes – regardless of data origin. Furthermore, there is system-wide access to the following Hlquality business service plug-ins:

- **Inspect** to evaluate data quality
- **Transform** to put data through specified filtering functionality
- **Cleanse** to correct names, addresses, and other details contained in the data
- **Identify** to pinpoint data on persons of interest through fault-tolerant searches
- **Merge** to reconcile duplicates in the data and combine specified information
- **Enrich** to check, update, and complete information as needed
- **Report** to present search results from applications, such as the SAP NetWeaver® Business Intelligence component, offered through the SAP for Defense & Security solution portfolio

The Hlquality suite of products can help law enforcement and security organizations address any data quality issue. The suite has features that match the names of persons of interest against administrator-chosen sanction lists. It ensures that new data is accurate at point of entry by cleansing data as it enters the system. And it protects central registries with a firewall that can screen and consolidate data coming in from outside sources.

Automating Data Updates

Hlquality Clearance Center, a composite application, uses smart identity matching with a powerful natural-language processing engine based on country-specific and cultural knowledge so precise that it can make spelling, usage, or contextual

distinctions for words such as “art,” which can be a first name or a noun. Administrators can assign levels of significance to the available elements of a name entry, such as given name or surname. The software translates each element into phonetic code to account for spelling variations of the same name element that might occur in different databases. These elements, along with information such as date and place of birth or country of origin, are compared across selected databases. Hits in similarity are tallied for the entry until a predefined threshold is reached, at which point the entry is considered to be a match with a name found in one or more of the lists chosen for comparison.

The application minimizes the need for end-user intervention with the software and cuts the frequency of inaccurate matches to as little as 1%. Profiles on persons of interest are updated automatically, and field officers can be given immediate instruction – preset by administrators – for how to respond to positive matches. The solution offers flexible matching scenarios and integration with lists internal to the organization or pulled from external sources through third-party portal technology.

Correcting Data at Point of Entry
With First Time Right technology by Human Inference (see Figure 1), new data on persons of interest is checked at point of entry in real time against one or more administrator-selected databases and put through name checks and address corrections to eliminate duplicates and update existing information.

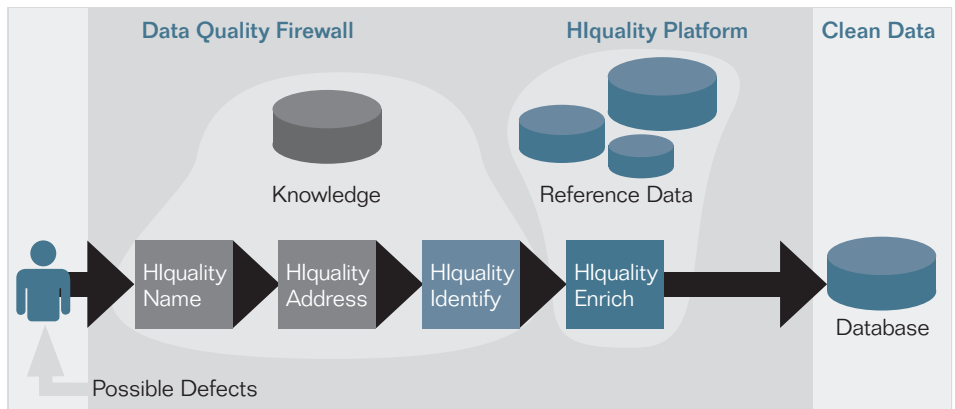


Figure 1: First Time Right Technology at Point of Entry

Hlquality for Identity Resolution offers a selection of user interfaces (see Figure 2) and out-of-the-box functionality that help keep your information up to date and accessible while maintaining a secure environment. It’s compatible with the SAP® ERP and SAP Customer Relationship Management applications and provides online and batch functionality for cleansing and identifying duplicate names and addresses. The software

checks for entries that exist across multiple lists, corrects and removes mistakes and unwanted data, and uses fault-tolerant search functionality to minimize human error. Data quality begins at point of entry with accuracy checks and validation for all data fields, including checks for duplication and suggestions for alternatives. With features like uppercase and lowercase conversion and address standardization, data quality is guaranteed.

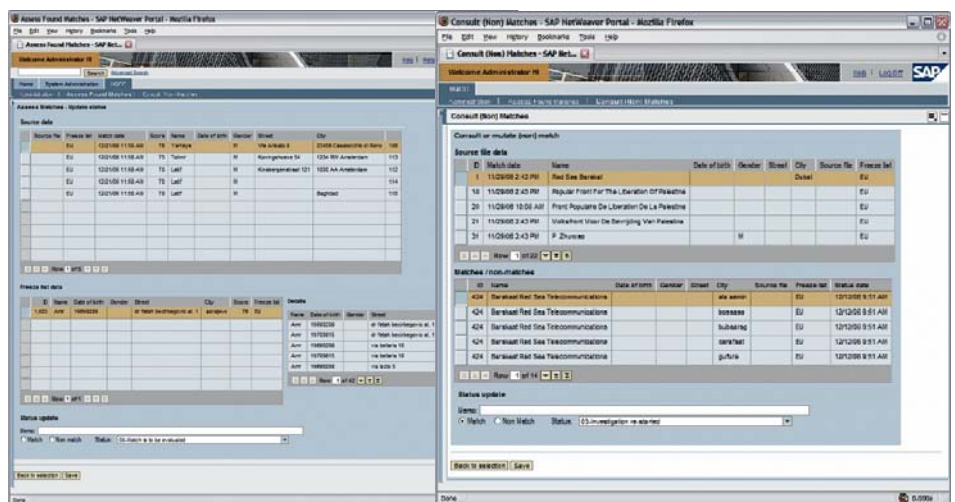


Figure 2: Easy-to-Use Interface

Maximizing Quality Assurance

Ideally, a central registry should only contain data that has been cleansed and consolidated. To ensure this, Hlquality for Identity Resolution interfaces with the SAP NetWeaver Master Data Management (SAP NetWeaver MDM) component, thereby maximizing the cross-system data quality assurance functionalities of SAP NetWeaver MDM. This is achieved in two ways.

The first is by interfacing directly with SAP NetWeaver MDM through an SAP-supplied data enrichment adapter. This adapter allows the Hlquality software to interact with the various data enrichment services in SAP software, in addition to using its own quality assurance functionality. The second way is by connecting to SAP NetWeaver MDM through the SAP NetWeaver Exchange Infrastructure (SAP NetWeaver XI) component. With SAP NetWeaver XI as the building block for a data-quality "firewall" (see Figure 3), data accessed from external sources is checked for quality before it reaches the master

database. Names and addresses are checked and cleansed, and existing records are enriched with new information. Once the data is allowed to enter, SAP NetWeaver MDM can process and synchronize it further and allocate it to target systems.

Flexible, Reliable, and Cost-Effective

The Hlquality suite offers three products to maintain data quality. The software runs checks with virtually any internal or external database, ensures the accuracy of new data from point of entry, and protects data in a central registry. It maximizes existing investments for an increased return on investment and helps save time and money for a decreased total cost of ownership.

Power and Flexibility for Rapid Return on Investment

The Hlquality suite integrates with any system that runs SAP software. It provides features that enable you to gather, cleanse, and consolidate data

from any database you choose, whether it's an existing internal list, one accessed through SAP NetWeaver XI, or one accessed through the Internet. The software can trace duplications across those databases and generate views of possible exceptions in match or cluster table formats. The easy-to-use interface options allow a single, comprehensive view of any person of interest on file, while the data-quality firewall protects central registries by screening incoming data. All that power and flexibility help organizations in the security industry get the most out of their existing investment in database management software and achieve an increased return on investment across the entire data management process.

Clean, Reliable Data for Reduced Total Cost of Ownership

The Hlquality suite makes sure new data is accurate by cleansing it and consolidating it as it is entered, which minimizes the need for human intervention or manual interaction with the software. Recognition functions in each entry field offer suggestions for completion of partially entered data, which speeds up the data entry process and ensures the accuracy of new information. With point-of-entry cleansing and consolidation and minimal human intervention, the security of the system is enhanced, the data entry process is streamlined, and security personnel and other employees are freed up for important security work. Clean, reliable data reduces the need for constant maintenance and actually uses less hardware space. All this adds up to savings in time and money, for a reduced total cost of ownership.

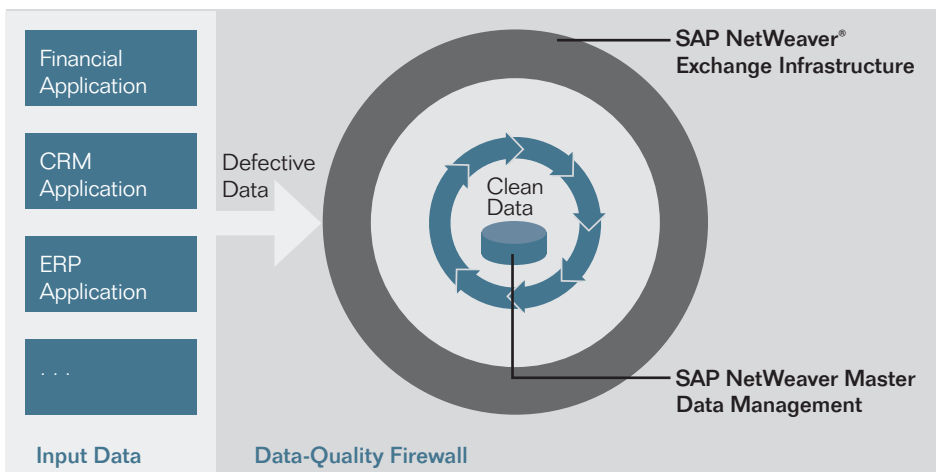


Figure 3: Data-Quality Firewall for Protection of Data

Summary

HIquality for Identity Resolution enables fast access to the most accurate data and profiles on persons of interest from any database, information source, and external system. It uses a knowledge-based interpretation engine to ensure data cleansing and enrichment at point of entry, and it consolidates data from multiple sources to ensure an accurate central registry. The service-oriented architecture can be integrated easily with any system running SAP® software.

Challenges

- Extensive manual effort of data management
- Accuracy of data entry during time-sensitive and high-stress situations
- Consolidation of data across different systems using information from multiple sources

Supported Business Processes and Software Functions

- **Data management** – Control data quality throughout all security processes – regardless of data origin – with automated processes that evaluate data quality, filter data, and cleanse to correct names, addresses, and other details
- **Data security** – Maintain the security of your central registries with a firewall that can screen and consolidate data coming in from outside sources
- **Identification** – Use fault-tolerant searches and a powerful natural-language processing engine based on country-specific and cultural knowledge to pinpoint data on persons of interest
- **Management reporting** – Prepare analyses using search results from applications such as the SAP NetWeaver® Business Intelligence component

Business Benefits

- **Accelerated employee performance** – Increase efficiency and reduce errors with automated tasks that minimize the need for human intervention
- **Increased transparency** – Make decisions based on reliable, integrated, traceable, and accurate data
- **Increased return on IT investment** – Maximize existing investments and save time and money for a decreased total cost of ownership

For More Information

To learn more about how the HIquality knowledge-based product suite can ensure the highest level of data quality with low cost of ownership throughout your data management life cycle, please contact your SAP representative or visit www.humaninference.com.



Human Inference

50 088 627 (08/02)

©2008 by SAP AG

All rights reserved. SAP, R/3, xApps, xApp, SAP NetWeaver, Duet, PartnerEdge, ByDesign, SAP Business ByDesign, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.