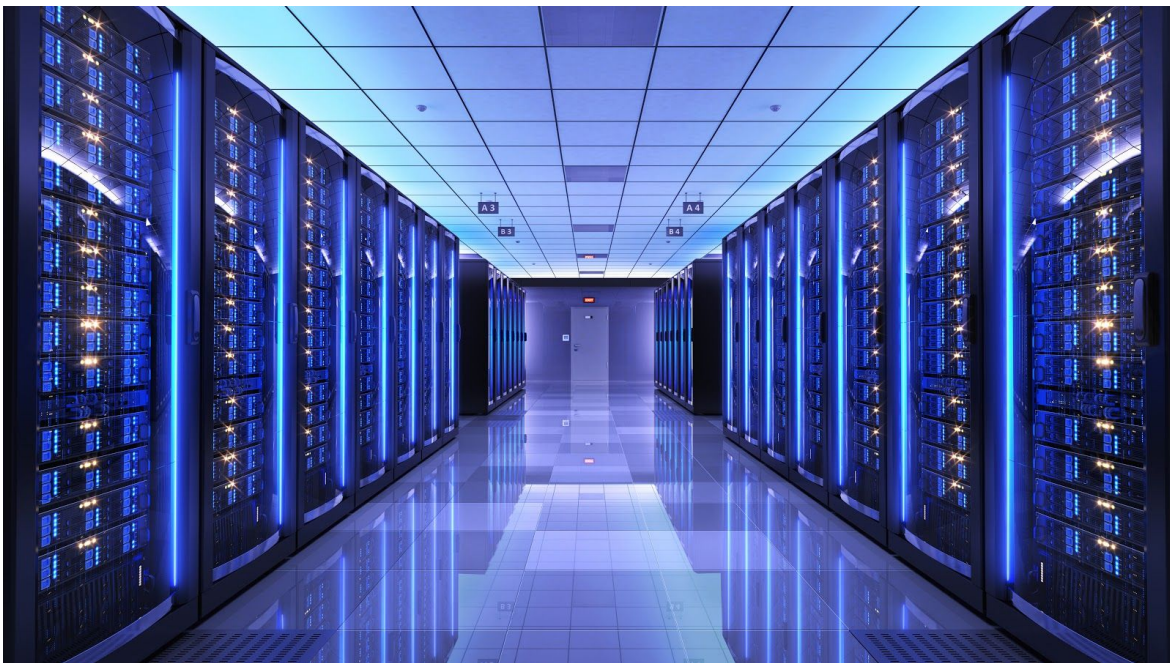


Data Fusion Platform

Integration and Transformation of Data to Enable Secure Collaboration



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Introduction **Data and Information Fusion**

Isolated data islands with valuable information emerge rapidly within organisations. These islands may hold diverse information and may be comprised of structured data such as access control data, log data and process data or they can hold unstructured data such as images, videos and documents. When organisations want to find valuable information by holistic analysis, it becomes impossible with continuous growth and addition of new data islands. It might take days, if not months, to find the critical information on which the organizations have to act. Even if there is only one data island within an organization, representation and packing of the data might prevent uncovering the information.

The Data Fusion Platform seamlessly bridges and connects all data islands by integrating and transforming the data, regardless of type and size, into a single, coherent data set. Organizations can then easily and quickly locate critical information that would have been almost impossible to find with diverse and large data islands.

Even with addition of new data or data sources, data flows into the platform continuously. Incoming data is massaged and represented by corresponding real world objects such as person, place, organisation and events, linked to each other by ample relationship information.

The data is then enriched automatically providing much more information for a better and accurate analysis. The data might also be transformed in various ways to enable better correlation of information.



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Users can observe the continuously collated data in the platform, update information or add new information themselves. Information may be added by submitting reports or linking objects already available in the platform. All actions of change on the data are tracked and access to the data is controlled by the platform.

Humans do not think in tables or columns, they only think about the task in hand and how best to achieve it. Typically, users who are interested in the data analysis provided by the platform are not engineers and hence, do not want to think about the underlying data mechanisms.

The Data Fusion Platform links people, Artificial Intelligence and data to establish strong cooperation. Users can collaborate and search through all data sources at once, pursue different hypotheses, recognize recurring patterns and create new automatisms. This ecosystem of data and capabilities enhances the performance and knowledge of the entire institution.

Technical Overview

Enterprise Knowledge Graph

The Data Fusion Platform allows enterprises to securely store all their data, whether structured or unstructured, in an easily searchable environment that is accessible to both non-technical and technical analysts. The data can be retrieved quickly and efficiently through various search options, such as full-text searches, graph-based searches, fuzzy searches, spatial searches or semantic searches.

The central repository allows multiple analysts to work on the same data and simultaneously track independent



hypotheses. They can share their insights by publishing them and merging their results with those of others across the enterprise. In addition to that, they can connect entity by drawing relationships between them. Workflows that were previously distributed across multiple systems can now be unified.

Fast Response

The Data Fusion Platform is capable of storing data at high performance and processes each date with low latency. Thus raw data can be enriched very fast by additional information, which can be crucial for hypotheses and analyses.

High Security

All data stored in the system is categorized with configurable classification levels as known in the US, such as UNCLASSIFIED, SECRET or TOP SECRET, or according to the German system, such as VS-VERTRAULICH, GEHEIM or STRENG GEHEIM. It is irrelevant whether the information comes from an analyst or from a processing machine. Through an attribute-based access control system, it can be guaranteed that analysts and processing machines only see the information to which they have access. All queries and mutations by an analyst or even a machine, are logged and available for security audits.

High Scalability

All technologies used in the Data Fusion Platform are horizontal scalable in all aspects. This scalability ensures

that the platform is highly fail-safe and that resources are optimally utilized.

Software Development Kit

The Data Fusion Platform has a well documented API that can be used by customers and partners. This makes it easy to integrate the platform into existing environments.

The data model of the platform can be adapted to the requirements. Own objects and relations including the properties can be defined. The data model can be further developed over time with minimal restrictions, without having to accept time-consuming transformations. Thus, new data sources can be integrated at any time.

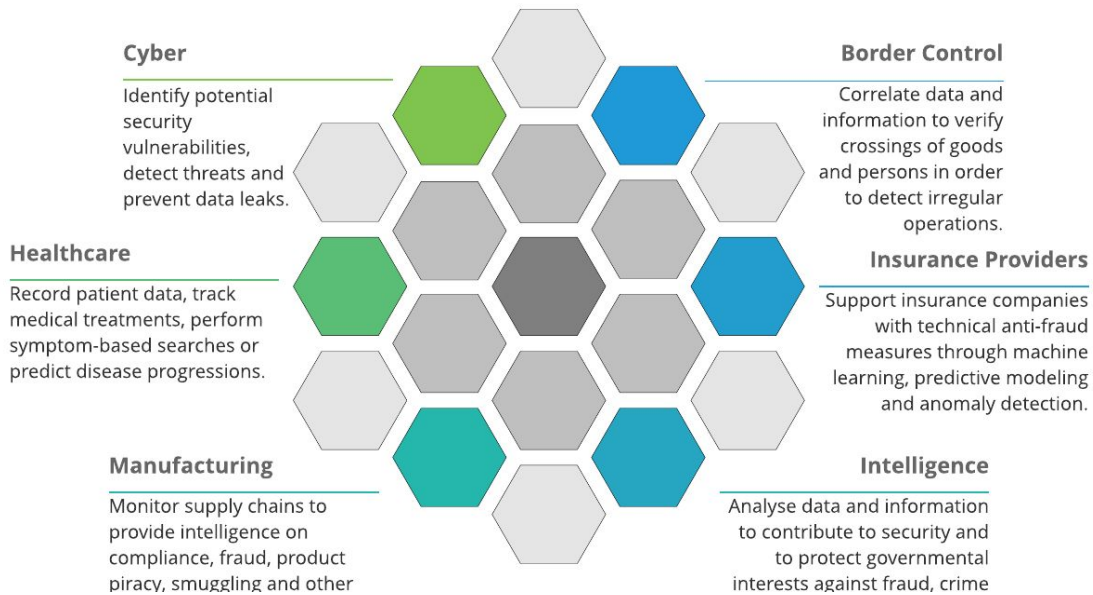
Within the platform own modules for data processing can be written. Different programming languages are supported. In this way, modules based on artificial intelligence can be easily integrated.

A development kit for web-based front ends allow a customer specific adaptation of the user interface. Customers with well-defined workflows can create their own user interfaces.

Artificial Intelligence

When designing the Data Fusion Platform, great importance was attached to integrating new AI-based modules at any time. Raw data that flows into the system can be processed using state-of-the-art pattern recognition techniques to increase clarity for the analysts, and the incoming raw data

can be checked for anomalies to alert analysts to changes at an early stage.



Solutions

Efficient and Effective Use Cases

The use cases differ from organization to organization. It starts with the data that flows into such a system and ends with questions that analysts ask the system. However, the common features of the various use cases are technological requirements, such as flexible and simple design of the data model and processing and high requirements for security, scalability and efficiency.

The Software Development Kit allows a free design of the use case and thus a complete adaptation to the own requirements.

Why Traversals

Experience

The employees of Traversals have 10+ years of experience in the field of data fusion in a wide variety of applications. Numerous complex consolidations have been successfully carried out. Regular participation in conferences results in up-to-date knowledge.

In addition, Traversals is supported by external consultants, who represent the customer side and contribute additional knowledge. The membership in the [DITS.center](#) association enables Traversals to access this knowledge quickly.

Generic Platform

Traversals attaches great importance to a generic platform. This allows different markets and application areas to be served quickly and efficiently, which increases the quality and robustness of the platform. By using the Software Development Kit, customers can develop their own applications based on the platform.

Broad Market

Traversals has external investors who help to enter the civil and non-civil market for data fusion.

Cooperations

Traversals started with the foundation of cooperations with universities and research institutes in the field of artificial intelligence and pattern recognition. The cooperations are supported by research projects.



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Cloud-Native

The Data Fusion Platform is based on state-of-the-art technologies and cloud computing architecture. The platform is therefore regarded as a cloud native. In addition, the technologies are constantly updated in order to always be one step ahead.

Agile Organization

The agile organisational structure of Traversals concentrates on fast iterations and experiments within the development. The implementation of this structured innovation approach saves time, reduces rework, creates opportunities for creative solutions and increases the feeling of personal responsibility, responsibility and performance in the team.

Effective and Efficient

The development platform of Traversals is completely decentralized, which allows the integration of worldwide experts. It also makes the platform highly attractive for young and talented engineers.

Constant and Secure Updates

Since the data world is constantly and quickly changing, it is necessary to keep software systems permanently up to date. The Data Fusion Platform is part of Traversals' Secure Software Supply Chain which ensures that secure libraries without known vulnerabilities/threats are used.



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Make Data Speak Your Language

Traversals is an analysis and intelligence company based in Erlangen/Germany. It offers software products and related services for companies and authorities. Traversals plays a decisive role in making data understandable for people who are not data scientists.

For More Information

If you have questions or would like to discuss this data sheet, please contact us. As an advocate of innovative IT solutions, we are committed to keeping a dialogue open on technologies, processes and best practices that will help us to support our customers.

Contact

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