We are vit
Areas of activity

**Cattle**
- Milk recording data processing
- Herdbook keeping
- Artificial insemination recording
- Herd information and management reporting

**Horse**
- Studbook keeping

**Genetic evaluation**
- Dairy cattle
- Beef cattle
- Horses
- Pigs
- Sheep

**Animal identification**
- Regional branch of the nationwide animal traceability and information system HI-Tier
- Farmer address data authority for Lower Saxony
- Service provider for regional offices and address data authority in other German federal states

**Sheep and goats**
- Herdbook keeping
- Performance recording
- Breeding records for farmers

**Pigs**
- Recording and analysis for producer associations

**IT-products**

**Software for**
- Mobile devices
- Database and information reporting
- PCs

**Online services**
- Internet applications
- Provision of herd information systems to farmers
- Customer-specific collection and provision of data
- Access to databases, e.g. animal breeding database with 83 million cattle

**Computer, printing and logistics center**
- Help desk
- Operation, maintenance and supervision of networks including some 290 physical and virtual servers
- Ensuring system availability and failure recovery
- Data storage and archiving
- Printing and dispatch of some 10 million pages in 1 million postal items per year

**IT consulting**
- Problem and requirement analysis
- System requirement specification
- Solution design
- Modeling and programming

**Informatics**
- Data warehousing technology
- Data integration and archiving
- Data analytics and reporting
- Benchmarking
- Conception and project planning
- Web applications for transplant medicine
IT-Solutions from a single source

Together for modern animal husbandry
vit – service and data from a single source

vit for the future with up-to-date information

vit is an internationally recognized, competent information provider for animal husbandry and breeding. *Service and data from a single source* – this is what vit offers owners and breeders of cattle, horses, sheep, goats and pigs.

vit works for agricultural organizations involved in performance recording, artificial insemination and breeding. vit operates a shared data processing system including integrated specialist applications and a standardized data inventory on their behalf. Operational and breeding management are focal points of the vit service.

Comprehensive preparation is the key to providing valuable information – as it is much more than technology. It depends on handling the data properly and in accordance with its purpose. vit processes all data in a neutral manner and in accordance with the best international and national guidelines. This is how vit ensures maximum data quality and that the information provided by vit is both, reliable and comparable.

vit is focused on quality, and ISO-accreditation and the ICAR Certificate of Quality confirm it’s achievement.

Our offering is designed to contribute to the success of our customers’ services especially in breeding and performance recording. We enable them to strengthen their position in the market. Our ability to combine and analyze multiple databases enables their services to perfectly combine all aspects of animal husbandry including breeding, animal welfare, animal health and resource usage.

Our software products are specific end-to-end solutions, built in a modular way and integrated to sustainably support the success of our members and customers.
MORE KNOWLEDGE, BETTER DECISIONS
We are vit

The IT-company of agriculture

We are vit – an innovative IT-company comprising a data center, software development team and providing expert advice. Our activities are focused on meeting our customers’ requirements. vit operates on the national and international level as a service provider for organizations involved in animal husbandry and breeding.

We consider ourselves to be partners to our customers as it is only by working together that we can maximize and ensure their and our success.
vit in modern technology

vit for good performance

vit for the customer

vit for the future
The group of companies made up of vit, nlb (Neue Landbuch Gesellschaft) and rzv (Rechenzentrum Verden) is focused on providing information services to agriculture. Within this group, the profit-making and registered association vit w.V. is the company that provides information solutions for animal husbandry and breeding. Its members are state recording associations (LKV), insemination co-operatives and cattle as well as horse breeding associations. They send their own members – practicing farmers and horse breeders – as well as employees as their representatives and delegates to sit on the supervisory boards of vit. The guiding principle of vit is to maintain economic efficiency. This maxim benefits both, our members and customers, by ensuring a consistently high quality service at a fair price. This claim is documented by vit in its entrepreneurial vision:

Information is the key to success – vit produces both to be the leading information provider for animal husbandry and breeding. Our members are organizations of farmers, and they are the foundation of vit.
OUR OBJECTIVE: Satisfied customers

OUR SOLUTIONS: Tailor-made, modular and integrated

OUR PROMISE: Quality

OUR CLAIM: Innovation and efficiency

OUR CAPITAL: A competent team

OUR VISION: Perfect animal-related information

We offer a complete package: high-quality IT services
**Information and service**

Since 1965, **vit** has been working as an information service provider for milk recording, herdbook keeping and artificial insemination organizations. Initially data processing was on mainframe computer systems. We migrated to a new operating system on April 24, 2014. This migration was the largest and most extensive project since the foundation of RLN (predecessor organization of **vit**), lasting almost eight years. The resulting new serv.it-applications, developed in close cooperation with our members, are well-adapted to perfectly match future tasks and to facilitate further developments.

**vit** provides comprehensive information on cows and bulls to cattle farmers and breeders which is delivered through their organizations and accompanied by appropriate service. **vit** as part of the DHI service, prepares monthly reports for herd management in agricultural enterprises, furnishing extensive information on animal performance and health. This and other useful information is also available online and via mobile devices. Ever more farmers use the herd information systems **NETRINDmlp** and **NETRINDkb** which enables users to display and to enter additional data. **vit** has integrated information processing for milk recording (DHI), herdbook keeping (HB) and artificial insemination (AI). **vit** provides integrated data processing to 11 DHI-associations, all Holstein herdbook associations in Germany, 11 of 12 German beef cattle breeding associations, almost all insemination stations and the breeding and DHI association in Luxembourg.

**vit** collates and links the data provided by the different organizations. This process is subject to extensive quality checks. As the data is obtained from various sources, it is easier to uncover mistakes and inconsistencies than is the case with isolated data processing. Mistakes are reduced so that only the correct data is used for all purposes. This is a decisive advantage of co-operative data processing by **vit**.
Reliable data and breeding values for each animal guarantee predictable economic success.
Data quality at its best

Accurate and high quality data is essential for producing meaningful and reliable evaluations. This applies for both, individual animal and whole herd information. Centralized computer processing operations offer advantages in terms of costs and technical quality. The vit cattle-breeding database holds identification, ancestry and breeding data on over 83 million cattle. These along with over 250 million daily milk records provide the basis of the vit genetic evaluations. vit updates dairy cattle breeding values three times a year and publishes the results together with Interbull breeding values from 25 other countries. Genomic evaluations are calculated more often.

Cooperation management solutions

vit complements its application systems for animal husbandry and breeding with appropriate, individual solutions for association management. This includes membership administration, premium computation and accounting, materials management, performance recording and invoicing. It also provides support for animal purchases and sales up to production of sale notes. vit provides solutions for staff work recording and for payroll.

There is a high level of integration of these ERP-like features with data from vit-applications for animal breeding and husbandry. A bridge is built wherever needed and wherever additional valuable information is created. This unique feature is very useful, for instance in materials and auction management.

Simple and uncomplicated information with NETRINDmlp, the app for Android smartphones.
Information flow in cattle breeding

Agricultural enterprise

- Milk recording
- Animal registration

Type classification
Animal sales

Insemination
Breeding

Animal registration

DHI-organization

Breeding association

AI-organization

Traceability
HI-Tier, SANITEL

Monthly and annual report

Genome database

Performance testing

Herdbook

Insemination

Invoicing

Genetic evaluation

Database system for cattle

Accounting

Insemination data

Herdbook

Ancestry

Animal sales

Animal registration
Information and service

The application system serv.it PFERD from vit supports the work of horse breeding associations. It offers comprehensive functions for all aspects of horse breeding such as studbook keeping, performance testing, breeding, foal registration, stallion licensing, general registration and approval.

The serv.it PFERD application also provides sport data as important additional information. The vit horse breeding database contains data on some 4 million horses. 85% of all breeding horses in Germany are managed online by 18 breeding associations using serv.it PFERD.

The databases of serv.it PFERD form the basis for the genetic evaluations vit carries out and runs for all competition horses in Germany on behalf of the German National Equestrian Federation (FN) or on behalf of horse breeding associations.

In addition to the breeding functions, serv.it PFERD also integrates modules for association administration such as person and membership administration, premium computation, auction billing and service station management.

serv.it PFERD presents the Stallion Directory online and offers an online entry system. serv.it PFERD provides the best possible support for the workflow in horse breeding associations and is very userfriendly.

vit has recently, with close involvement of our customers, redesigned serv.it PFERD to use the best available computing tools and to provide the best possible support for our customers’ operations.
vit in sport and breeding for the performance of tomorrow!
vit for other livestock species

vit for pigs

In the field of pig husbandry, vit analyzes sow performance as well as fattening and slaughter data for the Chamber of Agriculture and producer co-operatives. vit has built statistical reports to compare animals with different genetic backgrounds.

vit for sheep and goats

serv.it OVICAP is a system which provides a wide range of functions and information for sheep and goats. It uses modern information technology, combined with a profound knowledge of animal breeding and association work.

The majority of sheep and goat breeding associations in Germany use the application serv.it OVICAP for herdbook keeping purposes. serv.it OVICAP uses an integrated database to provide genetic evaluations and breeding advice and to support herdbook keeping.

The efficiency of serv.it OVICAP is also appreciated by sheep and goat breeders as they have online access to their data.

Close co-operation between vit, VDL/BDZ and all those involved in breeding sheep and goats ensures the dynamical further development of serv.it OVICAP.
Supporting the breeding program of sheep and goat breeding associations with serv.it OVICAP

Up-to-date data reveal trends and make vit for the future.
Data warehousing

**vit** is about to establish data warehousing-technology in most of its business branches. This pioneering technology enables **vit** to provide customers with extensive and easy to use data analysis tools. Data warehousing is part of our application **serv.it** ANALYTICS. **serv.it** ANALYTICS is particularly effective for our customers, enabling them to analyze small as well as huge data sets in a matter of seconds. The high-speed processing capacity ensures **serv.it** ANALYTICS-projects reliably provide rapid results. A number of online applications have been developed for our business branches to accelerate and facilitate data analysis and reporting. For example:

**BeMonA**

*BeMonA* is a tool for our herdbook associations to correlate fertility measures on individual animals with factual data.

**Health data**

To stabilize and improve health and performance capacity of dairy cattle, diagnostic findings are compared using flexible benchmarks derived from similar data for other farms.

**Insemination billing**

**vit** has developed an analysis system for insemination billing so as to provide insemination stations with results in real-time. AI-stations can now analyze their business data any time and any place, for all customers or just for one order.

**Milk recording annual report**

**vit** has developed an application system for supervisory associations to analyze the milk recording annual report. Data from 1.8 million cows, some 15,000 dairy farms and 130 million daily milk records can be readily analyzed by our customers. Many statistical evaluations and reports are generated, analyzed online or further processed.

**Horse breeding statistics**

The data analysis is on members and horse stocks as well as breedings and foals. There are different features available to structure and filter this information and to summarize it.
The quantity of raw data in animal husbandry and breeding is constantly increasing and becoming more heterogeneous. It is challenging to generate information and knowledge from this huge and ever growing volume of raw data. **vit** is focused on providing easy connectivity and efficient analysis. **vit**’s integrated databases support the growing complexity of the data, connecting historical with current information and storing data for longer periods of time. **vit** develops solutions on the basis of data warehousing-tools (DWH). The system as a whole is referred to as **serv.it ANALYTICS**.

Based on data warehousing and depending on the different requirements, individual databases are generated for assessment purposes, independent from the operating databases. An online platform provides our organizations with the opportunity to independently analyze the data individually and to use the latest tools and methods.

**vit** combines animal and production data upon customer request. Aggregating different source data eliminates the need for parallel report processes and, as a consequence, reduces the risk of producing deviating results due to the use of different sources. This method requires complex computer operations. Innovative reporting and analysis tools are used to enable the stored data to be analyzed dynamically.

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**serv.it ANALYTICS**

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**vit DB-Server**

**serv.it RIND op. System**

Replica **serv.it RIND**

DWH-RIND

(DWH-customers)

ETL process

Possibility of connecting with external customer data

(Extraction, Transformation, Load)

Additional operative databases...

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- **DHI annual report**
- **Test herd features**
- **AI-invoicing incl. direct invoicing**
- **... additional projects**
- **DWH-customers**

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**vit analysis server**

**vit business divisions develop applications**

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**Analysis and presentation vit/members and customers**
In 1995, **vit** was appointed as a regional authority in the animal identification, registration and traceability system, also known as “HI-Tier”. HI-Tier is a comprehensive identification and registration system for cattle, pigs, sheep, goats and equids in Germany and is mandatory for all animal keepers. The legal basis is the German Livestock Traffic Ordinance (Viehverkehrsverordnung = ViehVerKV) which in turn arises from EU-law. The objective of the system is to protect consumers of animal products and to prevent the transmission of animal epidemics.

Since 1995, all cattle have to be marked with standardized ear tags with a unique ear tag number. This ordinance was extended in 1999 to also record their location in the central HI-Tier database. Official documents, so called „animal passports“, are issued for each animal.

**vit** is the responsible regional authority for Lower Saxony and Bremen for the distribution of official ear tags – depending on the species – for the handling of orders for replacement tags, for the processing of registration data and issuing official documents of origin. As part of BVD restructuring measures, official BVD punch tags have been forwarded to all cattle keepers in Lower Saxony, together with prepared documents for the dispatch of samples to officially authorized laboratories.

Reporting swine populations and acquisition of pigs to HI-Tier became mandatory in 2003. New regulations concerning identification, maintenance of holding registers for sheep and goats and their registration with HI-Tier came into force in 2008. Since 2009/2010, new EU-legislation requires identification of all equids (horses, donkeys, crossings). **vit** allocates official transponders to be used to identify equids and issues passports for non-registered equids.

Since 2014, veterinary drug law stipulates that all animal keepers have to record the use of antibiotics in animal husbandry and that they have to report its application to the responsible authorities. As regional authority of HI-Tier – division veterinary drugs – **vit** advises animal keepers on compliance with mandatory notification regulations and handles the corresponding notifications.

As address data authority, **vit** is entitled to provide animal keepers and all kinds of agricultural enterprises with registration numbers and – if required – the appropriate access code for the central database of HI-Tier resp. ZI-data, a central database in the funding area.

The application systems and technical resources developed for these tasks by **vit** are used by other regional authorities in Germany with cost-saving benefits for all participants.
vit for secure animal identification.
rzv Rechenzentrum Verden GmbH regards itself as service provider for the different, specialized vit-departments and their customers, supervising and maintaining the whole technical infrastructure (hardware, system software, local and decentralized networks, electricity, climate, facility security etc.) on the business premises in Verden.

In the past years, the dependence of companies on fail-safe operating information systems has become more and more important. This is the reason rzv has upgraded and expanded its information system structure according to latest security standards and methods to ensure a general 24/7 operating mode for our customer organizations. The computer center rzv was certified in accordance with the protection and safety aspects of “TÜV PROFI CERT geprüftes Rechenzentrum (tested data center) / Planning – Design – Operation, level 3”. Importance was attached to an economic approach when it comes to technology supply, improvement of energy efficiency and to minimizing operating costs.

The special requirements for a safe and secure physical server and network operation were specifically considered during planning and implementation. The following stipulations were followed:

- Conformity with the relevant stipulations issued by the responsible Federal Office for Information Security (BSI) as well as Property and Access Protection, based on the Federal Data Protection Act (BDSG).

- Observing quality standards such as for security management as is laid down in ISO27001 and security measures as laid down in ISO27002.

- Assessment of computer center infrastructure in conformity with „TÜVIT / Trusted Site“.

- Compliance with the provisions of VdS (association of property insurers) in accordance with directive VdS 2007 (damage prevention).

- Consideration of recommendations and stipulations of Uptime-Institute, particularly when it comes to equipment of supply technology according to the standards of BITKOM Matrix A - E and Tier I - Tier IV level.
There are two rooms available for the server systems to provide mutual backup solutions in case of emergency. An independent data security room is available for all database backups. Standard backup method is to run daily full backup sessions of all important data, including duplication and outsourcing of significant data with a Verden bank. Server rooms and technical area are protected by access control and are also video monitored, just as is done with the whole company premises. An MSR-system (measurement, process and control technology) and appropriate monitoring systems ensure permanent supervision of infrastructure. The technical area was hooked up to an emergency power system (NEA diesel generator) to protect the power supply. Power outage due to power supply problems can be bridged for days. A redundant Internet connection provides failure-proof connection to the customer organizations via virtual private network (VPN) as well as for the end users of NETRIND-applications. The staff of the user service with rzv provides a smooth system operation.
vit in genetic evaluation

“The decisive issue in animal breeding is not the level of performance an animal displays, but rather the extent to which it passes on its superior genetic merits to its offspring!”

vit is known worldwide as one of the leading national genetic evaluation authorities.

The objective of determining breeding values (EBV) is to evaluate an animal’s genetic potential by using all relevant performance data and separating out the hereditary from the non-hereditary environmental influences. The estimated genetic potential of an animal is called its estimated breeding value (EBV), which provides breeders with a tool for reliable selection decisions. A reliable EBV depends first and foremost on comprehensive and accurate performance and pedigree data. The vit data pools of DHI, HB and AI provide the perfect basis. vit has been running the genomic cattle database Rind-Genom-DB with SNP-marker information of some 200,000 genotyped Holstein cattle as the basis for genomic evaluations and identification of specific genetic properties.

A team of highly specialized animal breeding experts at vit works continuously on developing and applying latest EBV-methods. Genetic evaluation systems are developed in close coordination with contractees (breeding associations, supervisory authorities) and science institutes.

vit evaluates all economically important properties of the Holstein, Red Holstein, Red Dairy Cattle and Jersey breeds three times a year for the dairy cattle breeding associations in Germany, Austria and Luxembourg. Genomic breeding values for the same properties for Holstein and Red Holstein are provided on a monthly basis. vit is the responsible authority for the data exchange with the international genetic evaluation at INTERBULL for all mentioned breeds. Since 1996, vit has also been evaluating breeding values for beef cattle breeds. The three Baltic countries and Poland are working with vit applications within the framework of a co-operation contract to evaluate the breeding values of their dairy cattle populations.

vit is responsible for the integrated genetic evaluation on behalf of the FN for all horse breeding associations in Germany, providing a summarizing genetic assessment of all properties generated from equestrian sport and broodmare and stallion performance tests. vit was commissioned by VDL (association of German sheep breeding associations) to estimate field properties for 25 sheep breeds.
Since 1995, development and application of estimation methods have been certified and monitored as is stipulated in the ISO-9001-guidelines. vit was the worldwide first genetic evaluation authority to be awarded this certificate. Besides the two-year-lasting ICAR-certification, vit provides contractees the opportunity for regular monitoring audits.

Maintaining these high standards in German animal breeding demands close co-operation and continuous exchange of information with scientists and other genetic evaluation authorities. This is guaranteed through vit’s participation in national and international working groups and its involvement in ongoing research projects, currently including projects in the field of genome analysis and projects on gathering and processing health data. Apart from the genomic evaluation, vit considers it vital to support breeders and breeding organizations in reviewing and optimizing their breeding programs.
Our customers and members are **vit**

vit/rzv partner network
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