GUS

EXPERT SOFTWARE IN SEEDS

System Gus

The system Gus is a software solution based on 4 complementary tools:

- **IGus**: the ERP tool for the office; it provides the software package necessary to cover any activity of a seed station, from the preparation of the production to the management of manufacturing, stocks, quality, certification, delivery and billing of the finished product.

- **MyGus**: the mobile tool for the field; it provides in-the-field data acquisition and support for implementing your procedures.

- **TiGus**: the Web tool for data exchanges; it automates and streamlines the exchange of essential data between users.

- **Business Objects**: the report tool; it provides ready-to-use universes to query all your data without the help of a computer engineer.

The domain of Gus

Gus is a software solution designed to cover any activity of a seed station:

- Multiple lines of products: even if Gus has originally been designed to manage corn, it can also manage seeds from any crop.

- Multiple sites: Gus can federate the activity of contract givers.

- Multiple contract givers: Gus is also a tool for subcontractors; this way a site can be managed in full.

- Multiple processes: Gus can manage any industrial manufacturing process.

- Quality requirement: Gus aims to continuously manage the interaction between manufacturing and quality in the seed station. As such, Gus is also a tool for seed laboratories.

Because it has been developed by and for seed professionals, Gus is a concentrate of expertise in seed processing.

Activities concerned

- Crop monitoring
- Production
- Manufacturing
- Laboratory
- Quality assurance
- Warehousing and stock management
- Logistics and sales
- Management control and board of directors

The place of Gus in the information system

Gus focuses on the operation of the seed station. It is not intended to replace software solutions that are well suited for traditional functions (sales management or accounting) or highly technical functions (management of machines and physical organs of the seed station).

In contrast, Gus is designed to work synergistically in such an environment through proven data exchange mechanisms.
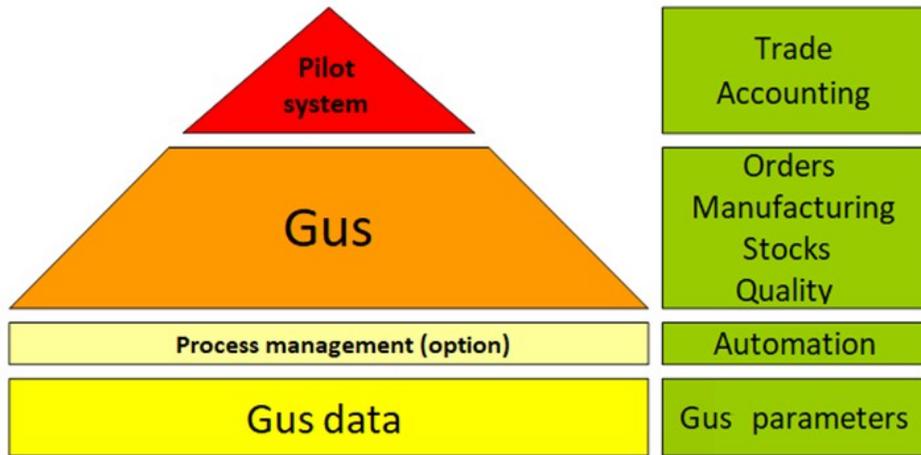
Multiple lines of product

A product is a genetic unit, for example a hybrid. Products are grouped into lines of product: corn, durum wheat, forage ryegrass, bulbs, vegetables, flowers… Lines of products are grouped into families: corn, grain cereals, fodder. Gus manages field crop seeds:

- Corn,
- Grain cereals (wheats, barley…),
- Autogamous plants (sunflower, rapeseed, bean, flax…),
- Forage and turf grass,
- Treatments,
- Consumables (bags, pallets…).

The quantities in stock are expressed in article units, doses (Thousands of Grains) or weight units.

The conversion between these units is automatic (via Thousand Kernel Weight or kernel/kg). Thus, stock record accounting can be performed in kilograms or in doses. Gus also manages foundation seeds.

The articles follow the segmentation of the station

A product is subdivided into articles to follow the segmentation of the seed station: wet raw (before drying), raw (before sorting or calibration), semi-finished (before bagging), finished product, etc. Example: Semilla 50Mgr standard treated.

The batch follows and anticipates manufacturing

The notion of batch is central in Gus. It is the intersection of manufacturing and quality. It applies from the production batch linked to the contract, to the wet raw batch received in the seed station, then to the bagged batch. The notion of external batch facilitates dialogue with the phases upstream or downstream of

the seed station. Thanks to the batch, you can follow the achievements of the seed station, but you can also anticipate subsequent operations.

From raw to delivered finished product

Gus manages such operations as:

- Production: production orders, propagation offers, production plan, crop monitoring…,
- Storage: initial reception, shipping, moving, transfers…,
- Manufacturing: calibration and recalibration, sorting (densimetric table), assembly, bagging, re-bagging…,
- Quality: simulation of batch constitution (corn),
- Per article and per batch (for seeds and treatments),
- And/or per container.

Production

Gus manages production, from the definition of the contract givers' needs to the planting of seeds, and the harvest.

With Gus, you can:

- Control seed planting. Through the Production Plan, Gus aligns production demands from contract givers with propagation offers from propagators. With this simulation tool, you save time during calculation phases such as the parcel distribution calculation.

- Manage relationships with propagators (management of contracts and delivery of seeds). Contracts are generated from the Production Plan, which fills the detailed clauses. Then, the quantities of foundation seeds to be delivered are computed automatically. Finally, provided mother seed batches are known, it is possible to edit the contracts in accordance with the formats required by the official seed certification agencies.

So, with Gus, the management of contracts is faster and more reliable, and the management of deliveries to propagators is easier.

- Control production through crop monitoring (visits of technicians, quality analyses, evolution of crops…). With the Production Order screen, you can follow the main events that are related to crops: sowing, flowering, castration, visits of technicians, harvest… Any of them can be linked to comments and quality analyses. With myGus, technicians can easily enter data directly from agricultural parcels, follow the procedures and the quality assurance plans defined for the lines of products; then, the data are synchronized and become accessible in any other tool belonging to the system Gus: iGus, tiGus or Business Objects.

Gus guarantees the traceability of seeds from the agricultural parcel to the finished product that leaves the seed station in order to be delivered.

Initial reception

The Initial Reception transaction applies to anything entering the seed station. In the Initial Reception screen, you enter the batches and stocks entering the seed station, whatever the seed stage. The reference information, such as the production contract, provides the link with the phases upstream of the seed station. The configuration of the screen automatically adjusts to the context. The Initial Reception can be performed without container or in containers, or even in silos. The batches and stocks can also be distributed from a tipper and allocated to warehouses and storage locations.

The Initial Reception can be performed by using iGus. It can also be performed by using myGus at the weighbridge, with direct printing of weigh tickets, secured by the use of barcodes.

The external batch number is the link with an external system: production, subcontractor purchases or supplier purchases, free supply. The certified batch number is recorded separately (for example Gnis batch number in France). The Initial Reception is also used for entering stocks of treatments. The Initial Reception can be related to an input management.

Manufacturing orders

All the manufacturing orders are managed according to a single mechanism, in a simple and user-friendly way:

- A Reservation screen, to enter the reservations of material,

- A Realization screen, to record inputs and outputs.

Gus handles traditional manufacturing processes:

- Calibration or sorting, recalibration and densimetric table: Gus records, per batch, the calibration plans and the realization of the order; waste and by-products are recorded (e.g. force-feeding/bird farming). It is possible to recycle batches that have an intermediate quality and will be re-sorted.

- Packaging (bagging, re-bagging, re-labeling…): available seeds and consumables (treatment, bags) are reserved. With Gus, packaging can be ordered according to the quality of the seeds.

Gus also adapts to other manufacturing processes: assembly, batch splitting, silo extraction, multi species packaging. The mechanism of the manufacturing orders is highly customizable.

In the seed station, tracking sheets secure the link between iGus and forklift drivers equipped with myGus.

Gus adapts to different factory circuits. Originally, Gus has been designed for the corn model, with intermediate storage. Later, Gus has been adapted to faster or different circuits: sequencing of calibration and bagging orders (treadmill), batch recycling (seeds to be sorted again), etc.

The realized quantities can be entered in gross or in net, as you prefer. Gus automatically computes the net quantities, provided the tare weight is known.

The receptions of each manufacturing operation can be sampled. With myGus, the barcoded labels of each sample can be edited. Thus, laboratory work is easier.

Quality

With Gus, you can save quality results per batch, per container, per sample. Gus can also interface with an existing laboratory information management system.

The Quality screens adjust dynamically: users only see the analysis being in the plan to be executed for the current sample. But it is possible to select another appropriate plan.

The batch carries the quality. A batch is qualified by:

- Its characteristics: year of production, country of origin, size, stage, presence of GMO, comments (doubtful), genetic type, cultivation method (organic/standard)...

- Test results: germination (warm test, cold test), specific purity, certification, kernel/kg, flowering date, etc. In fact, any kind of result.

By automatic or manual classification, you can assign both a choice code that summarizes the batch quality and an action code that determines the batch evolution.

According to the action code, the batch will be chosen, or not, for manufacturing processes.

Customizing quality

The notion of "quality profile" materializes the succession of manufacturing and quality stages. With this profile, each line of product follows its own route. Thus, it is possible to code rules such as:

- Corn should be batched,

- Cereals can be delivered only after certification,

- In the field, special quality plans can be defined according to the contract givers' requirements.

The specific sequences between manufacturing and quality guide the seed station and constitute a real workflow.

Manufacturing is driven by quality

Batch Constitution (corn) is an original operation which aims to create truly homogeneous batches and thus to control the number of grains per bag, for species managed in doses.

Through inheritance, all or part of the batch characteristics and test results are transmitted from an upstream batch to a downstream batch. Inheritance can be configured, computed, dispatched, copied strictly from the main batch.

Through the combination of samples and complex inheritance rules, the laboratory can enforce the control of processes thanks to the quality: tests are automatically inherited downstream, even post processing, thus causing the recalculation of the batch action codes.

Total traceability

The tracking of batches and movements due to manufacturing or warehousing orders is at the origin of a very complete traceability which associates a downstream batch with all the upstream batches from which it is derived.

The screens are completed by traceability reports which display all the manufacturing orders, batches, movements involved in the creation of a batch. Traceability works in both directions: upstream and downstream. It is available to the smallest level of detail (container and movement dated in date and hour, minutes, seconds), including silo complexity.

Finally, with the iGus production module, the traceability between parent seeds, production batches and batches resulting from initial receptions can be established.

Stocks

A stock is linked to an article, a batch, a place (site, warehouse and location) and a container.

The management of physical stock is complemented by the quality aspects: a stock can be available only if it complies with the quality rules.

In addition, you can reserve batch or article quantities per manufacturing order. Thus, stocks are always qualified by a status: quality control, reserved or available. This mechanism governs the sequencing and planning of manufacturing.

Stock movements trace the history of the stock to the finest level: **traceability is total**. Changes in quality and ownership are also translated into movements, which makes **pre-billing** possible.

Stocks are constantly up-to-date, whether they are seeds or consumables. You can also use reports to view the stocks per site, line of products, warehouse, company, seed stage, globally or in detail. In fact, you can use all the characteristics of products, articles, batches, sites…

In iGus and/or myGus, you can manage stock operations such as moving, transferring, containerizing or stockpiling.

At the end of a campaign, the remaining batches are marked as "carry-over" batches. Thus, stocks are carried over when a new campaign starts.

A historical database shows the evolution, over the past years, of batches, movements...

With the "Business reservation", you can reserve a batch quantity for a market before any manufacturing has been started.

Ownership

The batch carries ownership. Ownership movements are traced: sales/purchases, whether explicit or implicit (triggered by manufacturing orders, e.g. bagging). Thanks to these elements, pre-billing and stock record accounting are possible, mostly automatically.

In Gus, you can calculate a default company according to characteristics (line of product, generation).

Orders (from third parties)

In Gus, service orders and/or delivery orders can be recorded. Service orders, if any, drive the creation and monitoring of manufacturing orders. The seed station manager can adjust the production schedule, relying on reports that compare the quantity ordered and the quantity produced. His task is facilitated by a tool that helps him select the batches.

Deliveries

In Gus, deliveries can be managed, with or without purchase orders. Only available batches can be delivered. Gus also manages the delivery of parent seeds related to production contracts.

From the forklift on which it is installed, myGus and/or the preparation sheets inform the driver of the reserved goods. After loading, the operator edits a delivery note.

Returned finished products can be entered on a specific screen.

Payments and billing

Gus manages billing and the posting of journal entries into the Ledger. It generates journal entries (purchases, sales…) from a generator based on complex rules of payments and billing.

The billing mechanism in Gus uses a temporary Ledger. It can manage multiple accounts entries simultaneously in a multi-company context, sort the entries according to various criteria, consolidate bills, rely on analytics... and print bills.

With Gus, manufacturing costs can be estimated precisely per batch, according to configurable types of costs.

Sales management

Gus provides sales and purchases forecasts over several years.

In Gus, one file gathers all the third parties: contract givers, suppliers, customers, etc. This file synchronizes with the accounting system through a pool mechanism, thus avoiding the creation of unnecessary third parties that are not related to Gus.

Every third party may belong to several categories and may be assigned addresses, contacts, administrative data and resources.

Certification

Gus manages every aspect of certification, from the reception of certificates to the certification of batches. This includes the sending of regular and annual returns to the seed certification agencies.

Gus interfaces with their systems. This way, you can edit reports and labels, such as the LT56, LT57, LT58 official reports for the Gnis (seed certification agency in France), official labels (SOC labels in France)…

Highly developed settings

The Gus administrator has configuration tools to meet the specific activity of the organization:

- Management of products: lines of products, products, articles, brands, seed stages. Lines of products are grouped into families.

- Codification of batches: units, campaigns, calibers, generations, types of cultivation, sterility, trays, treatments, active material, companies, automatic change of ownership…

- Codification of quality: tests and families of analyses, choice, actions, quality profiles, automatic computation of action and choice…

- Codification of stocks: containers, types and kinds of containers, warehouses, locations, resources, types of stock movements…

- Codification of shipping: carriers, means of transport, delivery terms…

- General information: areas, countries, sites, certification areas…

Highly studied ergonomics

In computing, coding is a necessity. In Gus, a "list of values" help you make the right choice between codes and labels. All you have to do is double-click on the data to open the list, and select the suggested item. Data entry is minimal.

Screens and editions are linked: for example, in the screen dedicated to the reservation of manufacturing orders, it is easy to edit the tracking sheet related to the manufacturing order you are dealing with.

The number of screens has been voluntarily reduced. The main screens (initial reception, management of manufacturing orders) adjust to the context. Thus, novice users are guided throughout the processes and need to memorize only a few computer techniques.

A wide range of operational reports

Gus provides you with more than 100 reports:

- Reports on stocks (seeds, consumables) and reservations.

- Management of manufacturing orders: available per type of manufacturing orders, evaluation of manufacturing orders, tracking sheets; the latter apply to all manufacturing and warehousing operations, including initial reception or bulk delivery.

- Reports on quality, traceability, batch constitution.

- Order schedules, comparison between ordered and realized quantities.

- Pre-billing and stock record account.
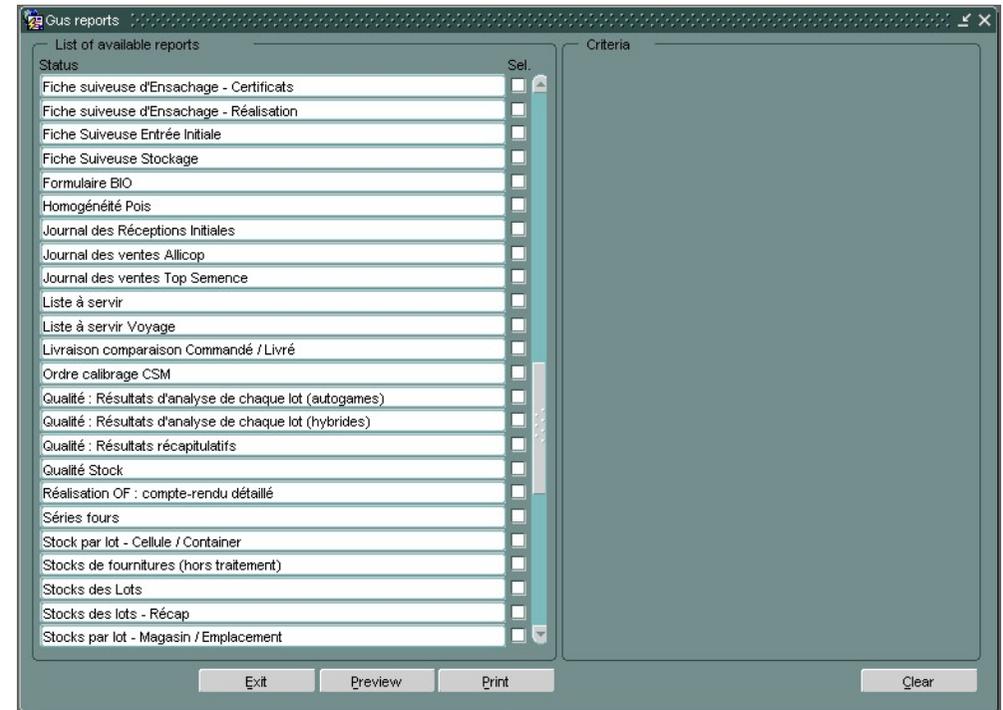
Business Objects, the power of the data center

The data center is the ideal tool for the contract giver, to query all data (lines of products, products, articles, stocks, qualities, manufacturing, stock record account, traceability) and cross this information per location, date, nature of article, type of seed…

A total of four "universes" provide you with more than 500 topics.

With the data center, you have the guarantee that you can access your data without the help of a computer engineer.

Multiple sites

A site is an autonomous entity: it may be the factory of a contract giver or of a subcontractor. The software then federates site activity and centralizes the data into a single database.

A single parameterization site transmits to the factory sites the structure tables (lines of products, products, articles, calibers, units...) and the contract givers' orders.

In return, automatic interfaces aggregate factory data to a center: batches, movements of material, manufacturing orders, stocks, quality…

Transfers between sites are a special case of delivery. During the transfer, Gus records stocks that are in transit. Before the truck arrives, the receiving site receives the information conveyed by the transfer: transfer note, batches, movements and even containers, if any.

There can be several types of multi-site architectures:

- Classical star architecture,

- Entity managed autonomously (e.g.: subcontractors equipped with Gus),

- Reservoir in which the central site can amalgamate several occasional subcontractors.

Interfaces are fully configurable and automatic jobs are managed through an administration tool.

Gus federates sites
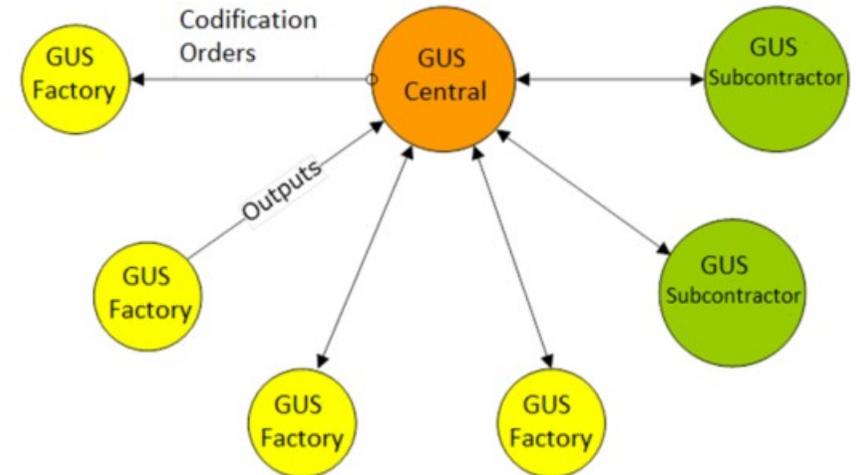
Gus in association with a pilot system

Gus can manage its own orders, but it can also integrate orders from a management system such as SAP. In this case, Gus transmits to the pilot system the data it needs; for example, it can be information on production and quality: batches, manufacturing orders, stock movements, quality results…

Gus in direct connection with the factory

Via the iGus/myGus connection, Gus drives the factory. In return, the factory informs Gus of its achievements, almost instantly. This link is a guarantee of total security.
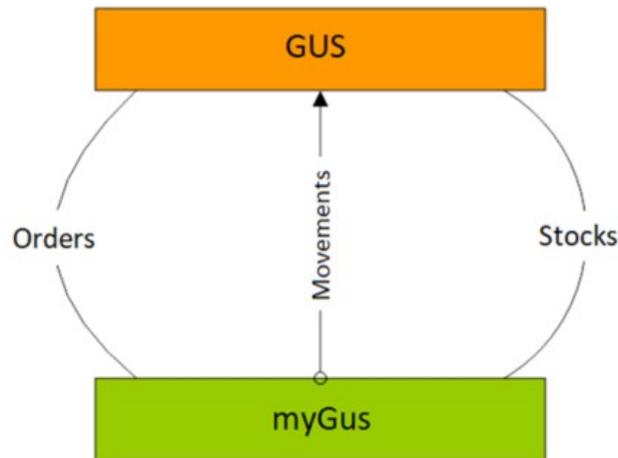
- E.g.: Calibration, Filling

The initialization of a manufacturing order links a hopper to this manufacturing order. The filling is done via barcode reading: the barcode of the hopper is linked to the barcode of the container. Then, myGus uses WiFi to read the weight displayed on the weight sensor. MyGus guarantees the accuracy of the content.

- Drainage for a manufacturing order (e.g. bagging).

- MyGus reads the tracking sheet and controls that each container to be emptied contains one of the batches reserved for the manufacturing order. MyGus ensures that there will be no mixing and that the reserved quantity will not be exceeded.

When dealing with emptying, filling, relocation, transfer processes, the monitoring of movements per container (or silo) is at the origin of a complete traceability, per manufacturing order and/or batch.

Gus in connection with an input management

Gus can estimate inputs through the control of production. Gus initiates forecast initial receptions. In other words, Gus creates a qualified batch for each initial reception. The operator then edits a reception note to control the factory reception.

Bonus of Gus

- A software solution tailored to any organization (contract giver, subcontractor, mixed...),

- A tool that fits each process (configuration of the operational steps that follow the lines of products, products...),

- Quality management with customizable inheritance features per downstream batch,

- Total, accurate and instantaneous traceability,

- Stock management in real time and complete history of movements,

- Management of all the operations related to certification,

- A tool integrated into the information system of the company and interfaced,

- An integrated data center tool,

- A tool designed for seasonal workforce,

- A multi-site/multi-species tool,

- A proven system in reference businesses.

Developed with the leader software of the market

Gus uses an Oracle database and can run in Windows or Linux servers, or any other system accepting ORACLE. As Gus has been written using Forms Developer and SQL, it has Windows standard ergonomics.

MyGus runs in any mobile configuration, embarking a personal data base.

Reports and data mining use Business Objects, the market leader in this domain.

References

- AGRIAL (Saint Sylvain 14)
- ARTERRIS (Castelnaudary 11)
- AGROSEMENS (Rousset 13)
- BENOIT SEM (Bonnétable 72)
- CENTRE SEM (Reignac sur Indre 37)
- COOPÉRATIVE AGRICOLE PROVENCE LANGUEDOC (84)
- COOPÉRATIVE DE BOLLÈNE (84)
- LANCY MIXJET (33)
- NATURAPRO (07)
- ORGANISATION BRETONNE DE SELECTION (Plougoulm 29)
- POMMIER (95)
- RAGT (Rodez 12)
- RAZÈS HYBRIDES (Alzonne 11)
- SEMARA
- SEMENCES DU SUD (Vic Fezensac 32)
- SILOS VICOIS (Vic Fezensac 32)
- SUD VAUCLUSE (84)
- TERRES DIOISES (26)
- TOP SEMENCE (La Bâtie Rolland 26)
- VALFRANCE SEMENCES (Senlis 60)
- VALSOLEIL (26)
- ZG RAIFFEISEN (Heitersheim, Germany)

SemWare

- A young company with very experienced senior executives.
- More than 20 years of expertise in the seed industry: Pioneer, then France Maïs Union.

History

The Gus software package has been developed within the framework of France Maïs Union, with the following objectives:

- Be an operational tool for production cooperatives,
- Federate cooperative activities and data into a unique center,
- Transfer contract givers' requests and inform them of the achievements.

Next, Gus has been adapted to meet the needs of contract givers.

Thanks to this genesis, Gus has become a tool both for the factory and the contract giver, as well as the hub of operational information.

Gus has been in operation since August 2000.

By design, Gus is a business concentrate in software packaging.

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