

SEQENS

Press Kit

Seqens group's digitalization

Digitalization at Seqens enables to accelerate improvement and innovation processes, but also to reach new objectives thanks to the technologies implemented.

For any information : press@SEQENS.com





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SEQENS GROUP PRESENTATION

Seqens is an integrated global leader in pharmaceutical synthesis and specialty ingredients, delivering outstanding performance, unrivalled market responsiveness and custom-made solutions to its customers. In the pharmaceutical industry, Seqens supports its customers in developing, scaling up and manufacturing drug substances from the pre-clinical phase to the commercial phase. Seqens also offers a large portfolio of APIs and proprietary products.

Seqens operates 24 industrial plants and 3 R&D centers in Europe, North America and Asia. More than 300 scientists, engineers and other experts develop tailor-made solutions for our customers and ensure that products are successfully transferred into production.

Driven by true entrepreneurial spirit, our success at Seqens is built on our culture of excellence that aims to provide our customers with the best product performance.

Moreover, respect and care for individuals and nature define our identity. The company always aims to provide collaborators with working conditions that are conducive to their professional development and accomplishing their goals. Attentive to the locations where we are based, Seqens is committed to local development that cares for communities and the environment.

Finally, Seqens and all of our affiliates are committed to complying with the laws and regulations (especially anti-corruption laws) that govern our activities around the world by following a strict line of conduct. Seqens aims to ensure that all persons involved in Seqens' business relations (employees, suppliers and customers), and in particular those who are hired or act in our name, commit to complying with the legal provisions and rules defined by the Company's Code of Conduct while conducting their activities.



Key figures



24
manufacturing
sites



3 200
employees



3
R&D centers in the
EU and US



300
scientists, engineers
and other experts



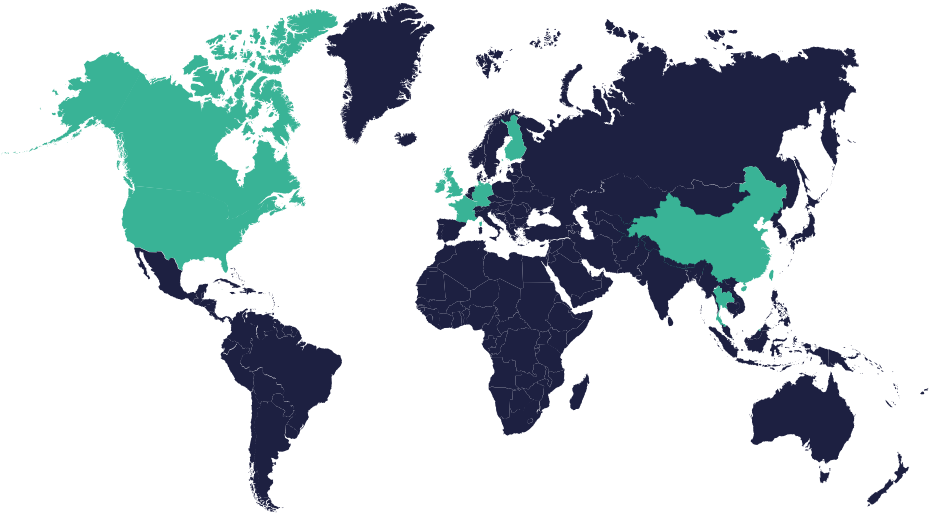
1 000
customers in more
than 80 countries



€ 1,1
billion revenue



SEQENS around the world



EUROPE

- GERMANY
- FINLAND
- FRANCE
- UNITED KINGDOM

NORTH AMERICA

- CANADA
- USA

ASIA

- CHINA
- SINGAPORE
- THAILAND



SEQENS in France



14
manufacturing sites



1 800
employees



€ 290
million of
investment



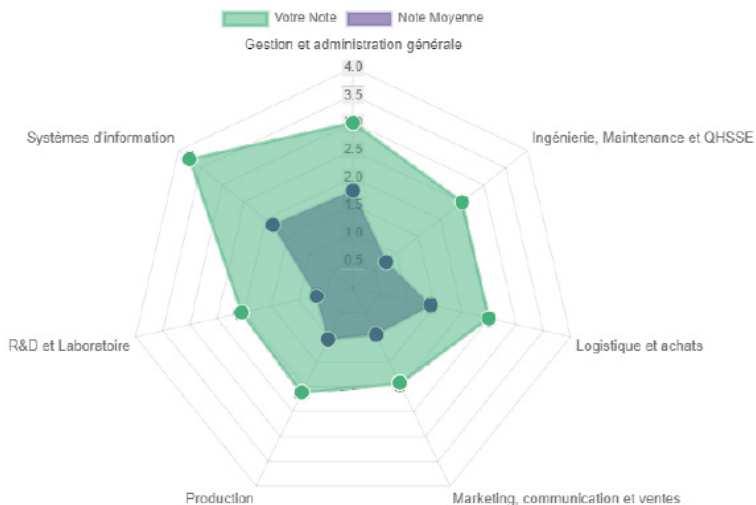
THE DIGITAL TRANSFORMATION OF SEQENS

The Seqens group has been built since its creation on a voluntarist policy of continuous improvement of its plants and processes, in which digital technologies are a natural part.

As a major player in pharmaceutical synthesis, all the efforts of the different Seqens sites are underpinned by common ambitions:

- How to produce in an even safer way ?
- How to continue to optimize the quality of our products ?
- How to always improve customer satisfaction ?

The adoption of new solutions or technologies is very fast as soon as they support these objectives.



“Seqens has a very pragmatic approach to Manufacturing 4.0” explains **Alexandre Gultzgoff**, CIO and CDO of the group.

“It’s not a question of testing technologies for fun, but of responding to issues or areas for improvement identified by the teams in the field. In addition to this, there is also a more strategic dimension carried by the members of the Executive Committee, who are all convinced of the competitive advantage that technology can bring.”

The mixed Business and IT teams of Seqens have built little by little a network of partners sharing our values and ambitions to bring the best possible answer to each challenge. From specialized start-ups to maintenance task scheduling to the essential GAFA, the projects carried by each one are all appreciated at the end on the direct or indirect value they bring to Seqens’ customers.

“As demonstrated by our positioning in the FranceChimie survey, the digital transformation of Seqens is taking place on all the axes at the service of our operations,” says **Alexandre Gultzgoff**.

“The teams are really involved in this necessary process of continuous optimization of our operations thanks to this combination of technology and know-how, which is essential to the viability of future relocation projects in our industry”.





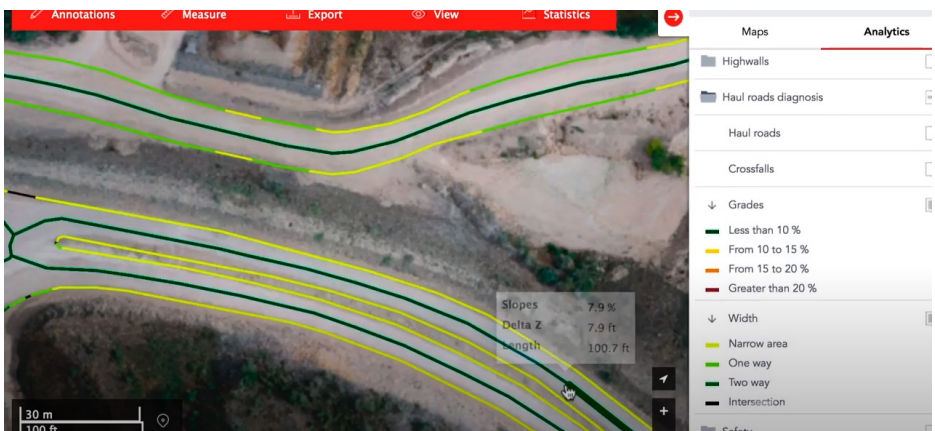
PAGNY-SUR-MEUSE: THE “DIGITAL” CAREER OF SEQENS

Seqens produces in France sodium bi-carbonate which is essential for dialysis.

The necessary limestone is extracted from a quarry where the cutting lines and the routes of the extraction and transport machines are entirely digitalized. A UAV carries out a monthly topographical survey, and the data are then interpreted locally to determine future extraction zones and access routes. This digitalization allows better forecasting of operations and greatly improves the safety of personnel movements in the quarry.



Discover our video « Airware | La Carrière Digitale avec Novacarb » at : <https://www.youtube.com/watch?v=fA4QEcFeYnQ>





DIGITALIZATION OF MAINTENANCE OPERATIONS AT SEQENS SPS

In the continuity of its optimization programs of its operations, Seqens Solvents and Phenol Specialties improved, this summer, the monitoring of its maintenance work thanks to a brand new digital platform!

In partnership with the company Asymptote, all technical operations of this major production site of Phenol has been piloted on the e-Care application. The complete digitalization of the recipe tables allowed a close follow-up of the progress of the operations for a given work order thanks to its operation on both tablets and pcs.

“This global vision via the digital platform allows a better coordination of all production, maintenance, QHSE and external companies”, says **Willy Lemesle**, Director Seqens SPS Roussillon.

“This further improves the safety of interventions on the Seqens sites (provisioning, fluid, electrical, instrumental and platinum plating logging) and a better control of the sequence of maintenance and inspection operations on a given piece of equipment, because from now on the validation of each step can be done directly in the field thanks to the connected tablets.”

A major digital support for the Seqens teams committed to ever more rigor and coordination of activities, while maintaining the necessary reactivity on one of the largest chemical platforms in France, and a further step towards zero paper ...

| CONSIGNATION - PHENOL3-S3 | | | Willy Lemesle | | | | | | | | | | | |
|-----------------------------|----------------------|-------------------|---------------------|------------|---|-----------------------|----------------------|----------------------|--------------------------------------|-----------------------|--------------|--------------|-------------------------|--|
| Repere Equipement / LI | RESPONSABLE TRAVAILX | CHANTIER CRITIQUE | CONDAMNAT. PISCINE | MAD (S) | ADDITIONS & MAD / Equipage services industriels | CONDAMNAT. ELECTRODE | CONDAMNAT. ELECTRODE | CONDAMNAT. RECTIFILM | VALIDATION CONDAMNAT. AVANT PLATRAGE | PLATRAGE EOM | PLATRAGE TIV | PLATRAGE ECA | VALIDATION PLATRAGE (S) | |
| | | | FAB | FAB | FAB | FAB | EEC | INTERFILM | FAB | PLATRAGE | MAINT | ECA | FAB | |
| 20710 Bloquant | | | 16/07/2020 | 16/07/2020 | 16/07/2020 | 16/07/2020 | 16/07/2020 | | | | | | | |
| 7292302 - P3-527 Bloquant | PETIT | | C. BRUNE 16/07/2020 | | | C. BRUNE 16/07/2020 | | | C. BRUNE 16/07/2020 | S. DUPREAT 16/07/2020 | | | C. BRUNE 16/07/2020 | |
| 7292304 - P3-211 Bloquant | PETIT | | C. BRUNE 16/07/2020 | | | C. BRUNE 16/07/2020 | | | C. BRUNE 16/07/2020 | S. DUPREAT 16/07/2020 | | | C. BRUNE 16/07/2020 | |
| 7292305 - P3-213 Bloquant | PETIT | | C. BRUNE 16/07/2020 | | | C. BRUNE 16/07/2020 | | | C. BRUNE 16/07/2020 | S. DUPREAT 16/07/2020 | | | | |
| 7292893 - P3-9900 Bloquant | lavage combine | PETIT | FEU | | | W. LEMESLE 03/08/2020 | | | W. LEMESLE 03/08/2020 | | | | | |
| 7292377 - P3-90700 Bloquant | hale non étanche | PETIT | | | | C. BRUNE 16/06/2020 | | | | | | | | |



ACT4S: THE SEQENS TRACEABILITY BLOCKCHAIN SOLUTION

Seqens, major player in pharmaceutical synthesis and specialty ingredients, offers since May 2019 to its customers an online verification service of the organic baseline respect of our cosmetics actives. ACT4S.com (Active Cosmetic Trust for Seqens) is the name of the traceability solution developed by Seqens based on the Blockchain technology, for a transparent production where each step is COSMOS compliant.



A DIFFERENTIATING FACTOR

Faced to an increasing demand of transparency and traceability, Seqens is offering a unique solution which guarantees the COSMOS referential respect all along the vegetable primary materials transformation to organic certified actives; this solution constitutes a differentiating factor on the cosmetic ingredients market.



ACTIVE COSMETIC TRUST FOR SEQENS, ALIAS ACT4S

ACT4S is the name of the platform developed by Seqens Cosmetics. It offers a real time monitoring of each organic certified cosmetic active, from the primary materials entry to the final product exit, and allows ensuring the COSMOS referential conformity at each step.

“In practice, Seqens customers only have to connect on the ACT4S.com website with the batch number to retrace their organic actives journey and to consult the associated COSMOS certificate.” explains Marie-Alex Premier, Managing Director Seqens Cosmetics.



BLOCKCHAIN, A COMPLEMENTARY GUARANTEE TO THE ORGANIC CERTIFICATION

The Cosmos certification is awarded by an independent and competent organism, but it relies on punctual audits made on a sample of transactions basis.

The blockchain offers a complementary security by covering in real time the totality of the flows and not allowing later-on modifications.

This is the complementarity between the COSMOS certification and the blockchain solution that gives the guarantee to the client that his batch is not only certified, but absolutely conform to the organic referential.



A COLLABORATIVE PROJECT

The project was carried by the operational teams, who expressed their needs and constraints, and the IT teams, who offered an adapted technological solution.

The project includes around ten « smart contracts » formats, executed by our partner Viseo on the Microsoft Azure environment.





EDMS & QMS : A DIGITAL PLATFORM TO PROMOTE THE CONTINUOUS IMPROVEMENT OF SEQENS PRODUCTS QUALITY

The Seqens group is a major player in pharmaceutical synthesis, engaged in the total conformity of its processes and products, with the quality and regulatory requirements. In this domain also, choosing innovating solutions allows to bring the operations a unique platform supporting the files managing and the principal quality processes of the company, thus facilitating the folders knowledge and follow-up.



DIGIQUAL : A DOCUMENT AND QUALITY PROCESS MANAGEMENT SOLUTION

In a few months of project, the Seqens teams accomplished the deployment of a managing documents solution accessible as in Asia than in Europe or North America, fulfilling all requirements of health authorities (FDA, ANSM, EMA ...) regularly inspecting our factories, in particular datas integrity.

“Beyond a common referential, DigiQual (the name of the Seqens Quality platform) allowed a harmonization of practices on our different sites, while conserving a managed adaptation latitude to each specificities.” specifies **Stéphanie Girard**, the group Quality and Regulatory Director.

“Accessible at any time, on our sites or at home office, DigiQual is our everyday tool to access the company files, or to follow the production incidents or the quality control resolution. Everyone’s efforts are directly translated to KPIs, gradually demonstrating our improvements and Seqens progress axes...”

DigiQual is developed on the **Veeva Vault platform**, recognized in pharmaceutical industries for its confirmed SaaS solution. DigiQual is opened to all 3200+ Seqens employees who can find every required procedure to their daily work. The managing of the Quality events is restricted to certified personal, soon sharing an only tool on all 24 of Seqens production sites.

The screenshot displays the QualityOne Veeva Vault interface. At the top, the header includes the QualityOne logo, navigation tabs for 'Home', 'Documents', 'Quality Events', and 'Data & Reporting', and a search bar. The main content area shows a grid of document thumbnails. Each thumbnail includes a status indicator (DRAFT or EFFECTIVE), a document icon, and a title with version and document ID. The left sidebar contains navigation options like 'All Documents', 'Recent Documents', and 'My Documents'. The bottom right corner shows pagination information: '1-25 of 177' and '1 of 8'.

| Status | Document Title | Version | Document ID |
|-----------|------------------------|---------|-------------|
| DRAFT | Backup/ Restore Man. | (v1.13) | DOC-0000121 |
| EFFECTIVE | DigiQual Administra... | (v2.0) | DOC-0000073 |
| EFFECTIVE | DigiQual Administra... | (v1.0) | DOC-0000505 |
| EFFECTIVE | Computerized System. | (v2.0) | DOC-0000094 |
| EFFECTIVE | DigiQual User Acces... | (v3.0) | DOC-0000074 |
| EFFECTIVE | SAP - Enregistrer u... | (v2.0) | DOC-0000117 |
| EFFECTIVE | Charly Informatique... | (v1.0) | DOC-0000000 |
| EFFECTIVE | Charly Informatique... | (v1.0) | DOC-0000001 |
| EFFECTIVE | SAP SD - Creation d... | (v2.0) | DOC-0000198 |
| EFFECTIVE | SAP SD - Fiche art... | (v2.0) | DOC-0000202 |
| EFFECTIVE | SAP MM - Gestion de... | (v2.0) | DOC-0000470 |
| EFFECTIVE | SAP QM - Impression... | (v2.0) | DOC-0000158 |



DIGITALIZATION OF QUALITY CONTROL, A VECTOR OF PERFORMANCE AT SEQENS IN QUEBEC

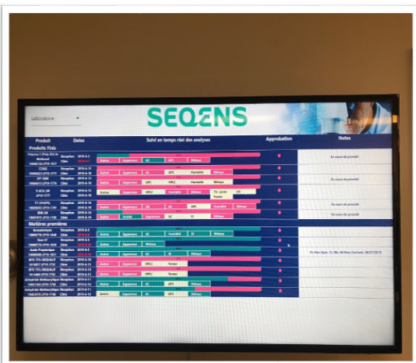
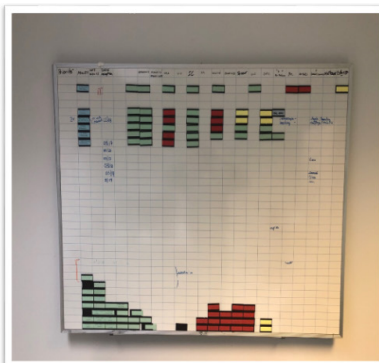
The Seqens site in Saint Jean sur Richelieu, Quebec, specializes in polymer manufacturing for the microelectronics markets. A visual management approach has been initiated to improve operations management.

With this in mind, LabPlus was deployed in the Quality Control laboratory, a key department which regulates both the launching of the fabrication batch (Quality control of the primary materials), the fabrication phases (cleaning confirmation, In Process Control), and the expeditions flow (final products batch release). Thus, LabPlus collects the information of the different laboratory analytic devices (GC, HPLC, ICPM, pH meter, etc.) and transcribes them under an only interface in real time.

“The different departments can then visualize the established priorities, the progress of Quality Control analyses (final products, primary materials, In Process) and can follow the batches release status” specifies **Sébastien Taillemite**, VP Seqens Advanced Specialties.

“The managing of the dates (samples entry in the laboratory, the target expiry and real dates of batches release) is simplified and allow to efficiently measure the department performance.”

A real-time dashboard, visible by everyone and a nice inter-service communication simplification!





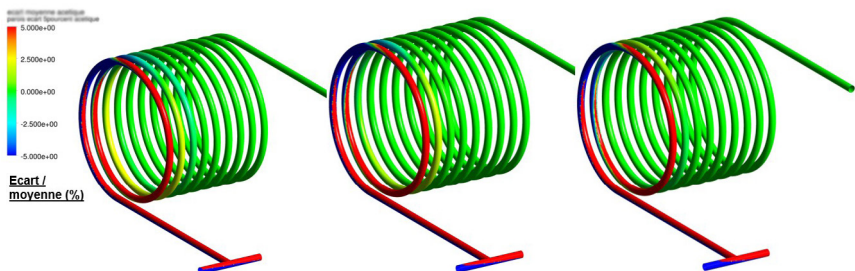
COMPUTER FLUID DYNAMICS AT THE “FLOWCHEM” SERVICE

As part of the reactor sizing for the flow chemistry project, Seqens has launched a CFD (Computer Fluid Dynamics) study to validate the design of the equipment, in particular, the mixing modes of the reagents, whether single-phase or two-phase, such as gas liquid blend.

This study allows us to discover and learn about the effects of some parameters such as the radius of the coils' curvature (spiral tubular reactors) on the mixing speed, the quality of the mixture... Thus, Seqens can ensure the good control of the reaction mixture in order to:

- Avoid the production of impurities
- Have a good conversion
- Have a good selectivity

This study, which involves digitalization in process design, is still ongoing.





DIGITALIZATION – FOR MORE AGILE SUPPLY CHAIN PROCESS

The monitoring of the current order book, the forecasts of future demand and the associated indicators are essential elements in the management of the performance of the Seqens plants.

“In our activity where agility and flexibility are performances vectors, real-time information access is of special importance.”

indicates **Philippe Pessina**, Global Supply Chain Manager at Seqens EDS

“Raw data was existing, but was hardly available and explicit. Therefore, we decided to gather past and present datas (SAP), and the future ones (previ-sions) in an only piloting tool : QlikView.” continues **Philippe Pessina**

A SOLUTION THAT PROVIDES A GLOBAL, INSTANTANEOUS AND EXHAUSTIVE VISION OF THE ACTIVITY, WITH A MODELING AT WILL BY PERIOD, PRODUCT LINE, CLIENT...

The tool allows notably to easily obtain, and in real-time, the order book depth, the prices per order, the rate of transformation of the forecasts, and the “gaps-to-forecast”.

“Today, it has become the reference tool for sales teams, order tracking and an essential support during business rituals.” Indicates **Ludovic Lyonnet**, General Manager at Seqens SPS

In conclusion, from the General Manager to Commercials, through Finance or Supply Chain, each one accesses with 2 clicks to the activity level of its company, and is in capacity to challenge the teams. Moreover, the success is measurable by the quick adoption from other numerous entities of the group.





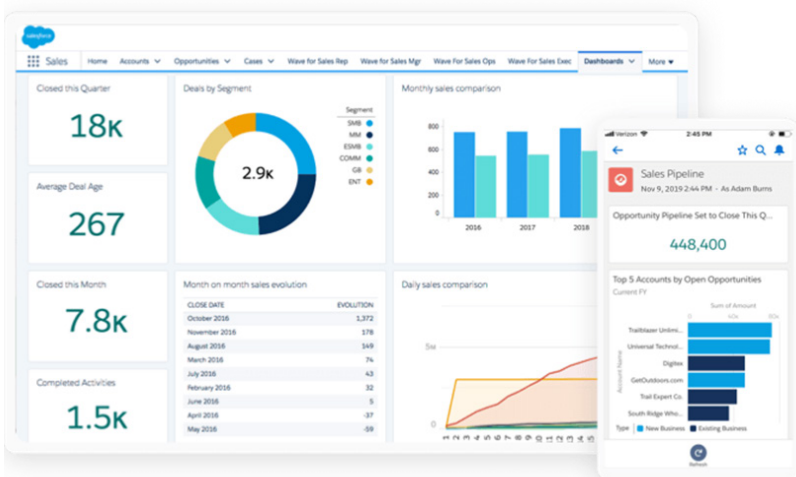
THE CUSTOMER RELATIONSHIP AT THE HEART OF SEQENS' DIGITALIZATION STRATEGY

A year ago, Seqens launched its new global CRM, OneCRM. Opting for a single CRM solution, shared by all the entities of the group, Seqens wants to strengthen the collaboration between its teams with the objective of improving the customer experience.

To meet this challenge, Seqens chose Salesforce software, the world leader in CRM software. For the design of the solution, the company was assisted by the integrator Viséo, an international company with expertise in the digitalization of companies.

“Today, thanks to OneCRM, the Seqens commercial teams benefit of a powerful and easy-to-use sale support tool, which allow them to access in real-time to the customer information’s and to essential performance indicators for decision making.” Rémi Rothéa, Commercial Excellence Director

Thus, OneCRM offers to Seqens a 360° vision of each of its customers on all the markets in which the company operates, facilitating the decision making and supporting the group’s commercial ambitions.





THE DIGITALIZATION OF R&D TO ENSURE THE QUALITY CONTROL OF OUR PRODUCTS IN TIMES OF CRISIS.

Seqens has invested over the last 3 years in state-of-the-art analytical tools to optimise the efficiency of the digitisation of its analytical data.

“Today the clinical development of new APIs involves not only the synthesis of the active ingredient at laboratory scale but also the generation of an exponential amount of analytical data to characterize the API in terms of quality and purity” Indicates **Christophe Eychenne-Baron**, Seqens R&D Director.

“Thanks to the implementation of last generation software, we have for example been able to launch the experiments in the morning during the confinement and to control them remotely in Home Office.” continues **Christophe Eychenne-Baron**

More generally, the current health crisis requires an acceleration of development phases, which can only be achieved through a close and powerful link between Pharmaceutical Chemistry and Digitalization, a topic at the heart of Seqens’ strategy.





DIGITALIZATION OF SEQENS CDMO'S OPERATIONS PLANNING

Seqens invests in its information system to support industrial operations, for better maintenance management, for optimizing product quality controls and for improving delivery forecasts, with a view to enhanced customer satisfaction.



VISUAL CAPACITY MANAGEMENT

“As market demand is increasing, optimizing the use of our industrial units has become a priority to guarantee the right level of service to our customers” explains **Valérie Stoeckel**, CDMO S&OP and Supply Chain Director.

“Our molecules manufacturing needs many long steps in multiple facilities and may involve several sites of the group depending on their know-how. Production planning is therefore a major issue and we have decided to develop a support tool called Visual Capacity Management (VCM) with Applidev company support. We need a simple and flexible tool that can consider the complexity of our production.”

The Seqens teams decided to digitalize the entire process: the customer relationship with Salesforce CRM (Customer Relation Management), the customer market needs with Future Master which feeds the ERP (Enterprise Resource Planning), the result of the MRP (Material Requirement Planning) then feeds VCM via specific interfaces for visual planning by the site planners considering the constraints (production or other). The production plan can then be transferred to the ERP via specific interfaces.

“We have great expectations for this VCM tool, which reflects the method that reign at Seqens: pragmatism, innovation, small steps and vision.” **Bertrand Teissier**, Seqens CDMO Business Partner, continues.

“Business and IT enrich each other throughout the development of the tool. Already a lot of progress has been made for the teams in the field, but we can clearly feel the potential that next versions will still be able to bring...”



CONCLUSION - SEQENS GROUP'S DIGITALIZATION

Seqens' growth has been built on the continuous improvement of its production facilities and innovation in all its fields of expertise. Digitalization at Seqens offers a way to accelerate these processes and even achieving new objectives thanks to the technologies used.

The various examples in this series of articles illustrate the group's willingness to use all the new tools and solutions available and proven to accelerate its R&D, to constantly improve the quality of its production, to guarantee the safety of its collaborators in its plants, all ultimately for the satisfaction of its customers.

These advances, which are gradually being rolled out to all **Seqens** sites around the world, are the beginnings of the new solutions that will have to be implemented as part of the recovery and relocation plan in France. Indeed, only an industrial tool that functions optimally through digitalization will enable a sustainable future for these investments, which are necessary for our future health independence.

We therefore hope that this series of articles has enabled you to discover some of Seqens' projects, and why not make you want to join us to participate in our growth strategy.

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