



www.koelis.com

The future of **prostate care**

Prostate cancer is the second most common cancer in men. In fact, about 1 in 7 men will be diagnosed with this disease during his lifetime. However, most cases are detected in an early stage and are low-risk, posing little or no threat to the patient. Based on the value of 3D imaging, mapping and precisely correlated data, KOELIS, The Prostate Care Company, provides a **more precise, targeted approach** against random, non-personalized baselines. This individualized method allows the clinician to effectively treat tumors while **preserving patient's quality of life** and **reducing costs.** Easily integrated in the healthcare system and in the clinical routine, KOELIS' integrated technology **boasts streamlined workflow** and allows for **multi-disciplinary decision making, increasing productivity** and **improving the patient's experience.**

KOELIS' **cutting-edge comprehensive solution** guarantees integrated attention by offering patienttailored, evidence-based and cost-conscious care at any step of prostate cancer management; from **screening** and **diagnosis** to **patient selection**, **treatment** and **follow-up**.



A comprehensive solution for precise patient management

The fully-integrated, digital Trinity[®] platform is the first image-based cartographer specifically created for personalized prostate care. Equipped with KOELIS' Exclusive, highly validated Organ-Based Tracking[®] technology and multiparametric image fusion, the connected system allows physicians to create a digitized 3D patient-specific prostate map that can be continuously updated with information generated from various sources, ensuring quality control at all steps of prostate cancer management.

SCREENING & DIAGNOSIS

Direct import and definition of different scores and data, multiparametric fusion and live 3D viewing allow for smart biopsies, and thus accurate lesion characterization.

PLANNING & TREATMENT

KOELIS 3D cartography enables confident patient selection and accurate treatment planning and guidance. The recording, storage and export of the map provides a streamlined workflow and fosters multidisciplinary communication, leading to efficient, targeted and costeffective answers.

FOLLOW-UP

Recall capability with the import of previous exams and 3D cartographies for controlled monitoring. A must-have for active surveillance and post-treatment quality control.

KOELIS Targeted Biopsy, the basis for Accurate Diagnosis

Trinity[®] proposes **targeted interventions against random systematic biopsies**. KOELIS' new technical advances further boost the accuracy of both 3D ultrasound-guided and fusion-guided interventions for increased diagnostic precision and higher cancer detection rate.



Continuous control of the procedure for **optimal distribution** of biopsy cores

KOELIS software-based TRUS-targeted interventions are accurate and easy to perform. Spatial distribution of biopsy cores and needle insertions are visualized in real-time throughout the procedure and stored over a 3D, patientspecific prostate cartography. This allows targeted sampling and quality control.

Precise biopsy location is guaranteed thanks to KOELIS exclusive **Organ-Based Tracking**[®]. The organ's position is tracked in order to compensate for prostate deformation and patient motion. As result, excellent biopsy's accuracy is assured.

Elastic Multimodal Fusion MR/PET/CT with live US

Fully integrated multi-modality image fusion (US/CT/MR/ PET) brings more clarity to lesion characterization, giving the physician information that is not necessarily available on PET or MR alone. This new concept simplifies the image evaluation process and provides enhanced diagnostic confidence, a must-have in active surveillance or targeted treatment.

KOELIS' novel **Elastic Multimodal Fusion** technology makes it possible to accurately fuse different images after being smoothly deformed to align anatomical points. The exact location of the lesion is displayed on the 3D map for an optimized approach.



MRI targets

PET targets

Patient journey

Prostate Cancer is suspected



Screening

PSA test and Digital Rectal Exam

MRI or PET Scan

Intuitive, guided workflow for transrectal or transperineal interventions

Easily integrated in routine clinical practice, KOELIS supports **transrectal** and **transperineal** sampling routes. An **intuitive interface saves time while improving precision** in both biopsy methods.





Patient-tailored lesion plan

Fast and accurate definition of the prostate, targets' contour and volumes for millimetric precision

KOELIS technology allows the physician to easily locate, qualify, quantify and plan the target lesion previously detected on MRI, PET or CT images. The prostate, lesions and risk zones can be delineated directly on the imported multiparametric images. The PROMAP VM option allows for the automatic definition of volume measurement. Information-rich images and cartographies from prior procedures can be retrieved at any time for assessment and quality control.

Improving lesion identification with SUV 3D Metric

Measurement of Standardized Uptake Value (SUV) can now be marked on PET images for assessing the activity in a given focus and potentially improve the accuracy and consistency of lesion identification. This feature, available with the PROMAP VM option allows to set standards for lesion staging, localize tumors and define contours and margins with total confidence.

Simple and effective needle guidance



Interventional planning mode for guaranteed feasibility

Instruments can be localized at the beginning of the session. Needle position planning is easily made on 3D TRUS images and automatically projected on the 3D model for live feedback. Biopsy locations and live ultrasound are displayed on the same screen for the best sampling. The plan can be adapted if needed during the intervention and registered for quality control.





Imaging Diagnosis

Targeted Fusion Biopsy

Diagnosis

Benefits of KOELIS 3D Prostate Cartography

PRECISE, CUTTING-EDGE TECHNIQUE

KOELIS 3D ultrasound probes combined with exclusive Organ-Based Tracking® technology allow for simple and accurate interventions. Exact location of 3D biopsy cores and live ultrasound image are displayed on the same screen.

CONFIDENT INTERVENTION

Biopsy simulation allows the user to check the biopsy localization on the real 3D prostate model before taking the sample, helping to avoid unnecessary biopsies and aiding in the adequate distribution.

SMART TRANSRECTAL & TRANSPERINEAL APPROACHES

Freehand, user friendly and with minimal instrumentation, Trinity[®] effectively incorporates into any clinical practice to develop innovative activity and/or research in image-based prostate cancer management.Trinity[®] system enables to perfom transrectal or transperineal interventions, equally, without changing the workflow.

RECALL CAPABILITY FOR QUALITY CONTROL

Biopsy cores and histological data are recorded on a 3D volume-rendered prostate representation at the end of the session for further personalized prostate cancer management and controlled monitoring of the disease.

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MULTIDISCIPLINARY DECISION

The illustrated 3D cartography displaying precisely correlated data and highlighting inputs from different specialists is recorded, stored and exported at any time and from remote sites for fostering enhanced collaboration.

FAST, SIMPLE WORKFLOW

Fully integrated with Worklist and PACS communication.





Diagnosis

Multi-Disciplinary Team (MDT)

One shared vision for patient-centered care management

KOELIS boasts streamlined workflow, increasing productivity while improving the patient's experience. Trinity[®] and MRDraw[®] platforms are easily integrated within the health system, fostering multidisciplinary communication and ensuring the best decision making.





Targeted Therapy

Precise treatment planning adapted to individual needs

Highly detailed KOELIS 3D prostate cartography displaying biopsy samples, prior detected lesions and diagnostic results allows the physician and patient to plan the most adapted strategy with high confidence, including less invasive solutions like targeted treatment or active surveillance.



- MRI Target
 Area to be treated and margin
- Positive coresNegative cores

KOELIS multi-parametric 3D cartography brings an accurate and reliable tool to define a personalized prostate care strategy suiting patient's needs by gathering information from mp-MRI, PI-RADS scores, PET, CT and first and followup biopsies' pathology results.

The 3D documented map not only helps the physician to identify patients potentially eligible for targeted treatment, but also to define the most accurate treatment strategy directly on multiparametric images on Trinity® or MRDraw®. By importing enhanced ultrasound images together with KOELIS 3D quantitative map, including targets, instrument meshes and locations, clinicians are given an improved visualization of suspicious zones and previously confirmed cancerous areas, serving as a basis for excellent delineation of regions to be treated, together with margins and organs to be preserved.

The plan can be reviewed or modified at any time during the intervention for optimal flexibility.



Definition of treatment strategy

Clinical efficacy of treatment procedures

Trinity[®], the **fully integrated imaging platform** that combines 3D ultrasound and **KOELIS exclusive Elastic Image Fusion** brings **accuracy** and **quality control** to **minimally-invasive targeted prostate cancer therapies**.



Area to be treated and marginExpected treatment area and margin

Trinity[®] assists urologists in the performance of effortless but efficient targeted treatments via either the transrectal or transperineal approach. KOELIS provides a comprehensive tool that will help clinicians to optimize their intervention thanks to the precise planning and live guidance of any needle-based prostate cancer therapy technique, such as brachytherapy, IRE or cryotherapy. The instruments' position can be planned on the 3D model and updated in real-time.

The theraphy can be monitored with exclusive 3D contrast imaging and conventional ultrasound B and Power Doppler modes. Treated areas can be contoured in 3D and compared with the initial planning to assess treatment's efficacy, provide optimal quality assurance and give the possibility to perform a complementary ablation if needed.

KOELIS Steady-Pro[®] arm provides freedom of movement to reach every zone of the prostate and stability of the probe throughout the intervention.

Compatibility with HIFU therapy

3D multiparametric prostate map can be imported and used directly in HIFU platforms thanks to the export of the cartography into DICOM format.

Imported multiparametric MRI sequences, localization of lesions, ultrasound 3D positive and negative biopsy cores and identification of suspicious targets can be easily imported from Trinity[®] to the treatment system and fused with live ultrasound through elastic fusion.

Prior cartographies and other valuable information can also be imported for live review of the zone during the HIFU therapy delivery, evaluation of targets' treatment and instant modification of the therapy plan if necessary, allowing the clinician to embrace this tissue-preserving approach with more confidence.







Treatment

Monitoring

Patient-tailored follow-up care

KOELIS brings extraordinary **quality control to adapted prostate care management** solutions like **active surveillance** or **targeted treatments**. Images from previous plans, exams or treatments can be fused with live US imaging for **confirming treatment's efficacy** and evaluating the optimal selection and follow-up processes for men on active surveillance.



Multimodal image fusion for accurate **postoperative assessment**

For the first time, postoperative images for follow-up like Dynamic Contrast-Enhanced Imaging, can be directly merged with preoperative images on Trinity® platform for precise evaluation of the treatment being delivered. Various scoring data and biomarkers from MRI, multimodal fused images, histologic results prior and after interventions, as well as other material like contours, margins or previous biopsies can be combined with 3D live prostate viewing.KOELIS3Dcartographygathersallthevaluablefindingsinordertoassess with the highest accuracy the treatment extent with respect to the planning. A comprehensive report containing all patient information, screenshots and comments can be exported into the PACS for traceability and review.

Repeated targeted biopsies for **safe active surveillance**

Patients with localized low-risk prostate cancer can benefit from active surveillance. To guarantee patient's safety, follow-up biopsies at defined time intervals are necessary to track the progression of the disease. The fusion of previous 3D cartographies displaying last samples with the current exam allows to plan the new biopsy strategy and the areas to target, guaranteeing reliable controlled monitoring of the disease (feature available in Second Look option).

Exact distribution of cores

Trinity[®] allows the user to plan the exact biopsy distribution on previously unsampled areas. By displaying previous cores on the current 3D prostate volume, physicians can easily implement the biopsy strategy with total confidence (feature available in Second Look option).

Total diagnostic **confidence**

Clinicians can biopsy previous treated areas or rebiopsy previously sampled areas with extraordinary precision. Depending on the biopsy plan, the intervention can be made via transrectal, transperinal approach or the two of them combined.





Follow-up



MRDraw[®], the connected solution at the center of a multi-disciplinary environment

MRDraw[®] is the KOELIS software platform for planning and reviewing fusion biopsy whilst fostering multi-disciplinary decision making. An excellent tool for data management and recall that breaks down barriers between clinical specialties and service providers. Sharing and storing data become seamless, leading to greater transparency and collaboration.



MRI Target Positive cores Negative cores

Simplifying the patient evaluation process

MRDraw[®] allows physicians to make image preparation and fusion, define and contour the prostate, targets' and lesions' volumes as well as storing, reviewing and fusing 3D prostate cartographies. Thanks to the unique KOELIS Elastic Fusion, for the first time radiologists can import biopsy cores and pathologic information onto the original MRI for extraordinary feedback. By importing enhanced ultrasound images together with KOELIS 3D multiparametric prostate map, including targets, instrument meshes and locations, physicians are given an improved visualization of suspicious zones and previously confirmed cancerous areas.

A streamlined workflow that encourages multidisciplinary expertise

Urology, radiology, pathology and nuclear medicine can now work more efficiently for better patient selection and treatment planning. Digitalized 3D KOELIS cartography gathering information from different sources can be stored and shared at any time for review. MRDraw[®] platform makes it possible to immediately receive patient's images, KOELIS 3D cartography and other valuable information from the PACS, as well as to export it into other compatible formats, such as DICOM Surface Segmentation, with a simple click. The connected system guarantees improved and more consistent communication between specialists, even in remote sites, creating a synergy that promotes better prostate cancer detection, management and patient monitoring.



Patient

Registration



Exam Radiology/ Nuclear Medicine



Storage PACS System DICOM USB/CD



MRDRAW® Image Preparation Cartography Review



Storage

PACS System

DICOM

USB/CD



TRINITY[®] Prostate Intervention

Do it **your way** Choose the best method suiting your clinical needs for optimal results

Transrectal approach



Improving current practices via the transrectal route

The traditional transrectal method is reinvented with Trinity[®] Recfire. With KOELIS Full 3D Ultrasound End-Fire probe clinicians can easily make a 3D ultrasound volume of the whole prostate without moving the probe. The freehand system brings a great degree of accuracy to image-guided intervention by providing optimal visualization of the organ, as well as full access.



Steady Pro®

The KOELIS compact and light probe holder makes it possible to manipulate KOELIS probes with six degrees of freedom. After the probe is positioned, it is easily locked in place by the clinician to guarantee the probe's stability throughout the procedure. Steady Pro[®] mitigates everyday problems, such as movement restrictions or discomfort, as it helps to reach and maintain the best probe positioning for a maximized target approach.

Designed for transperineal and transrectal approaches, the probe holder has an adaptor for each 3D US probe.





Transperineal approach

Revolutionary Freehand 3D transperineal targeting

Trinity[®] Perine is the first freehand, automated system for 3D transperineal prostate approach. Equipped with a cutting-edge 3D Side-Fire Ultrasound probe and advanced software, interventions are precise, effective and easy to perform. A varied range of modern and smart guides adapting to doctors' needs complete the application for outstanding comfort and results.





Suitable with Local and General Anesthesia

Easily integrated in current clinical structure workflow, thanks to its exclusive technologies, needle guides and the removal of the stepper, interventions are simple and accurate either under local or general anesthesia.

The **simplest way** to perform precise transperineal interventions

KOELIS, inventor of the state-of-the-art Perine Full Grid, proposes a game-changing approach to transperineal prostate interventions. Thanks to a breakthrough fully-automated, controlled crystal and a smart, intuitive software, interventions are precisely planned and easily performed. The ultrasound beam is automatically guided to take the samples at the exact planned location, guaranteeing extraordinary accuracy and comfort.



KOELIS, toward a **better future** in **connected healthcare**

Digital healthcare transformation is a fact. KOELIS cutting-edge technology meets hospitals' and health systems' growing needs associated with connectivity. With a well-integrated comprehensive solution, KOELIS provides the best quality of prostate care to patients while optimizing the workplace for doctors, nurses, and the overall healthcare industry.

KOELIS promotes the value of fast, digital communication to create real-time collaboration between existing clinical disciplines, doctors and patients to improve outcomes while at the same time lowering costs. It sets the bar for **personalized prostate care management and patient safety,** data accuracy and multi-disciplinary communication. Digitalized KOELIS 3D prostate cartography, integrating information from multiple sources, enables specialists to refine their focus to move towards personalized, targeted approach and deliver a more holistic patient experience.

Suggested workflow for KOELIS integration into hospital



"Health innovation as a passion"

KOELIS, The Prostate Care Company, has assisted urologists and radiologists from around the world in their routine clinical practice since 2006, providing the latest technology for personalized prostate cancer planning and management, from biopsy to active surveillance and treatment.

Focused on developing advanced, targeted and less invasive solutions, KOELIS is committed to creating and bringing to the market a new paradigm in prostate cancer care, where physicians can offer the most personalized answers to their patients, avoiding any under or overtreatment and preserving quality of life. Thanks to cutting-edge imaging tools like Trinity[®] cartographer, which combines multiple imaging modalities with full 3D ultrasound, any suspicious lesion is characterized in a detailed 3D prostate map, offering a comprehensive and multiparametric approach and enhancing diagnostic confidence.

The team at KOELIS innovates every day in collaboration with world-renowned universities and hospitals to offer physicians new advancements in imaging and a greater field of view, a must-have in active surveillance and targeted treatment. Based in Grenoble and Boston, KOELIS technology has been featured in more than 60 clinical publications and treats more than 200,000 patients worldwide, including patients in Europe, United States, Canada, Japan, Australia, South America and the Middle East.



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TRINITY® is indicated to generate, visualize and record, 2D and 3D ultrasound images, including particular features in multimodal image fusion and 3D prostate mapping.

KOELIS Reserves the right to modify the design, packaging, specifications and features shown herein, without prior notice or obligation. Manufacturer: Koelis SAS, France - Please read user manual carefully

Caution : Federal (USA) Law restricts this device to sale by or on the order of a physician.