RayCare

RAYCARE – THE NEXT GENERATION ONCOLOGY INFORMATION SYSTEM

RayCare* is an innovative oncology information system (OIS) designed to support the complex challenges of modern oncology clinics. It represents the future of oncology information system technology, and supports the vision of one oncology workflow. Seamless integration with RayStation and its powerful treatment planning tools is just the beginning. RayCare will connect to different external systems* including radiotherapy, medical oncology and surgical oncology systems, enabling users to fluidly coordinate tasks and ensure optimal use of resources.

*Regulatory clearance needed in some markets

ADVANCING CANCER TREATMENT

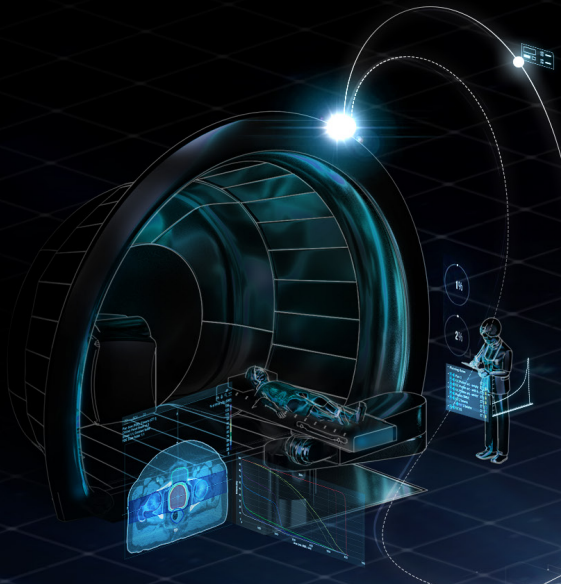
RaySearch Laboratories

RAYCARE OVERVIEW

RayCare is designed to support all phases of cancer care, enabling truly comprehensive treatment centered around individual patient needs. The modern and scalable framework meets the demands of many users and is designed to support current and future functionality requirements of the world's leading cancer centers. RayCare is an innovative system offering high levels of interoperability, quality, and safety.

FUTURE PROOF FOUNDATION

Scalable and robust architecture
Compliance with security standards



INTEROPERABILITY AND CONNECTIVITY

Integration with external health care information systems
HL7 and FHIR interfaces
Adherence to industry standards

PATIENT CHART

Electronic medical record
All patient's clinical data
Care administration

KEY FEATURES

- Unified user experience throughout RaySearch product suite
- Automatically propagated data throughout the workflow
- Data-driven workflows and advanced task management
- Automation support using scripting
- Built-in oncology PACS
- Scalable and robust architecture

DIGITAL WORKFLOWS

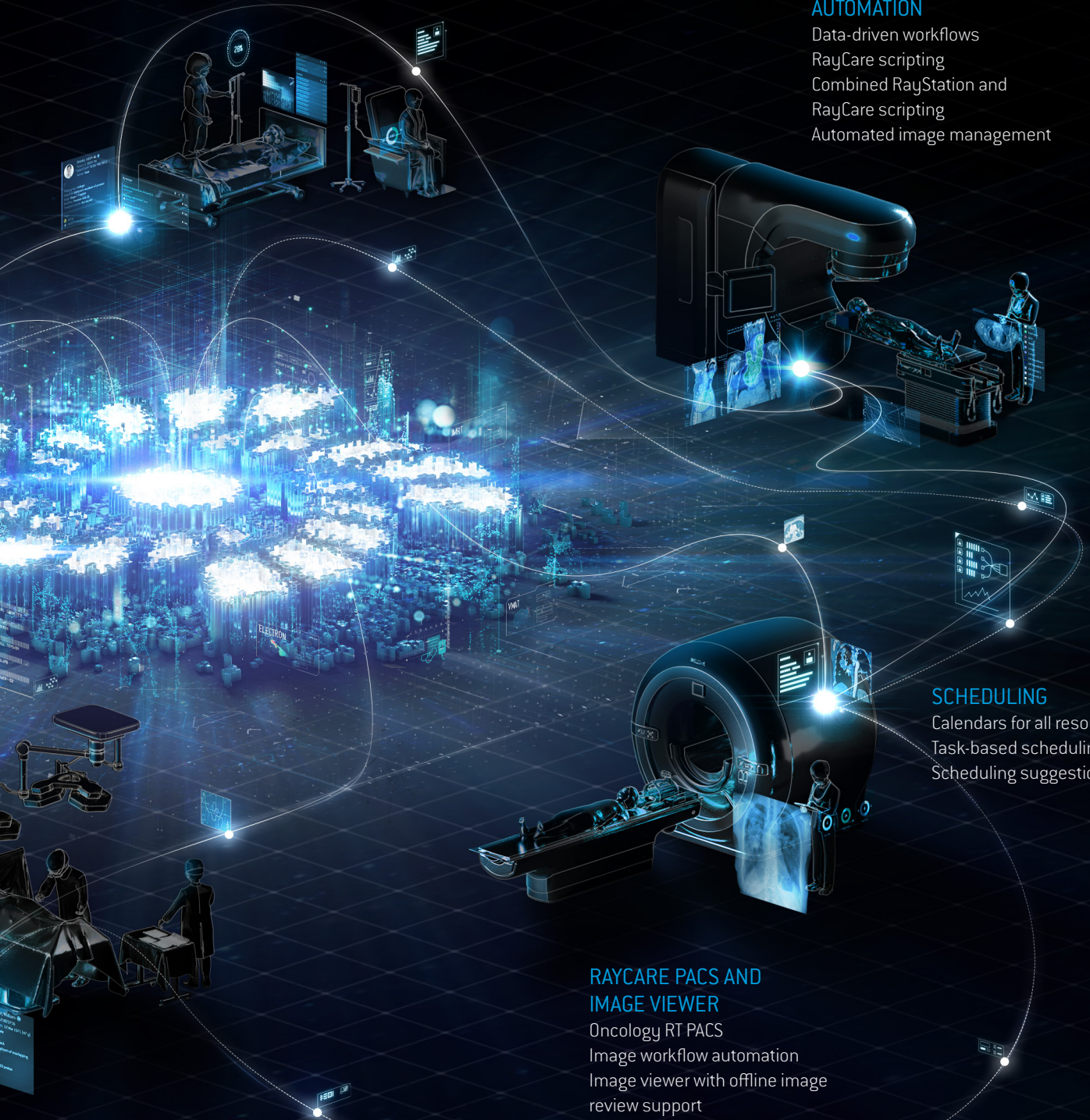
My Home and Team Home
Patient task list
Customizable workflows

TREATMENT PLANNING EFFICIENCY

One-click access to RayStation tasks
Task list in RayStation
Planning & QA whiteboard

AUTOMATION

Data-driven workflows
RayCare scripting
Combined RayStation and RayCare scripting
Automated image management



SCHEDULING

Calendars for all resources
Task-based scheduling
Scheduling suggestions

RAYCARE PACS AND IMAGE VIEWER

Oncology RT PACS
Image workflow automation
Image viewer with offline image review support

TREATMENT MANAGEMENT

Treatment prescription and preparation
Treatment course overview
Treatment management with RayTreat and RayCommand

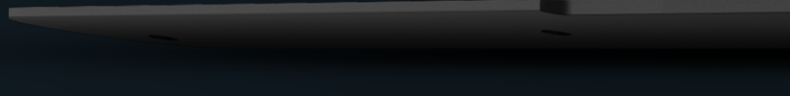
PATIENT CHART

The patient chart in RayCare comprises a wide range of tools to manage the patient's clinical and administrative information. Various workspaces document the patient's comprehensive treatment progress from referral through treatment and follow-up. All information recorded in RayCare is accessible to perform clinic-specific analysis and obtain insight into the overall patient population.

All components of the patient medical record can be entered as structured data using dedicated workspaces. Key information is presented in the innovative patient chart summary feature which provides an at-a-glance, patient-centered overview of data, and a hub for quick navigation to workspaces. Everywhere in the patient chart and throughout RayCare, the patient panel is displayed with the most vital patient information; including safety-critical items such as flags and alerts. Patient data is readily available for all healthcare providers working in the same patient chart.

KEY FEATURES

- User configurable summary of key data
- Care team management
- Referral information
- Diagnosis and tumor staging
- Physicians' intent and prescription
- Flags, alerts, and allergies
- Medication list
- Patients' vitals and lab results
- Order management
- Document and note management
- Clinical trials management
- Financial management and charge capture




RayCare
Home
Patien
CASE 1
OROPHARYNGEAL SQUAMOUS CELL CARCINOMA
Park, Christopher
22241555
15 Oct 1974 (47 Years)
Male
Alerts:
Flags:
Case/Care plan: Oropharyngeal Squamous ...
Tumor group: Head and neck
Diagnosis: Malignant neoplasm of overlapping sites of oropharynx
Stage: T2N0M0 - Stage IB2
Care team: 4
Milestone: In treatment (3 of 25 fractions)

DIGITAL WORKFLOW AND TASK MANAGEMENT

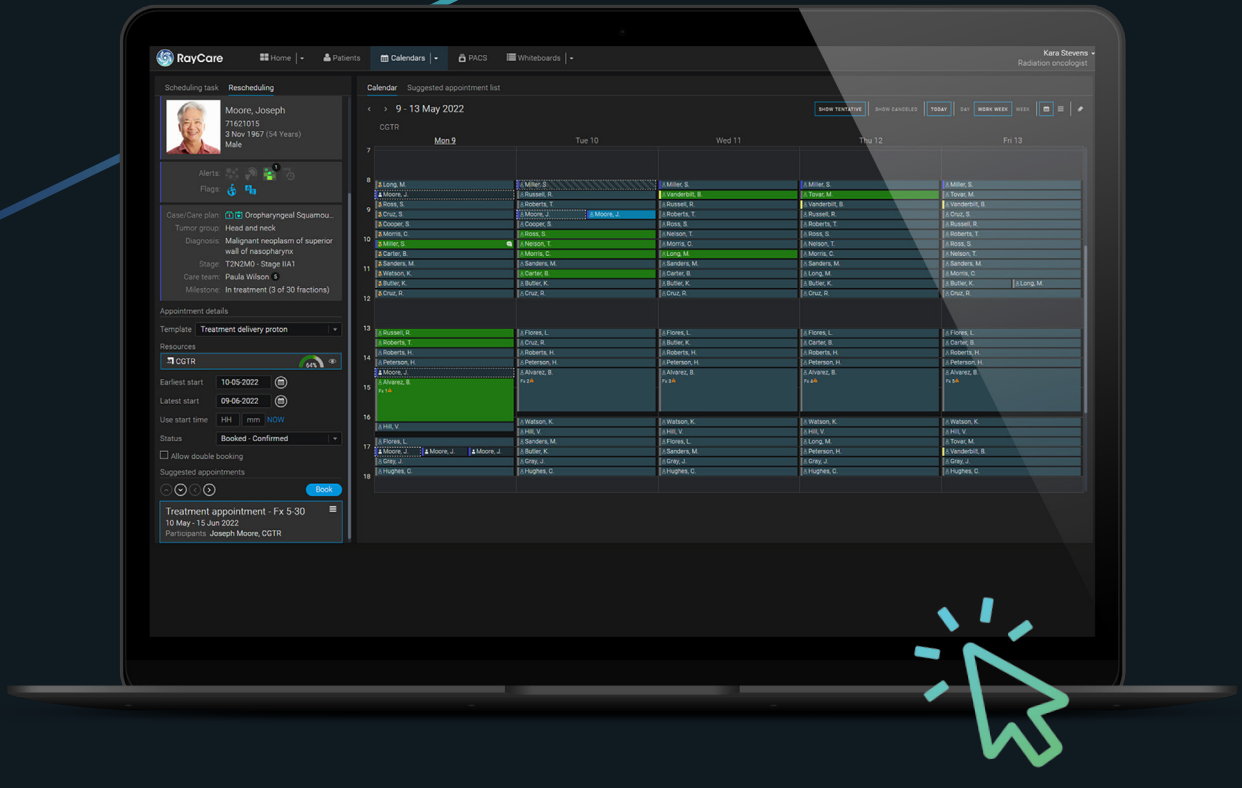
RayCare is a workflow-driven oncology information system which enables fluid and automated task handovers, coordinating patient care across oncology disciplines. The workflows provide guidance throughout the defined treatment processes, while keeping care team members informed on patient progress. Tasks in the workflow are completed automatically when data becomes available in RayCare, eliminating unnecessary manual interaction.

All tasks for a user or a team can be found on the designated "Home" workspaces. Tasks automatically open the appropriate RayCare and RayStation workspaces prompting the user to perform the related action. The system continually monitors the workflow status, completes tasks based on availability of data, and can actively select the next step in the process without further user interaction.

RayCare assigns tasks to the patient's care team and manages follow-up actions. This capability ensures that actions are taken in the correct order, according to protocols. The RayCare whiteboards together with the Home and Team Home provide an interactive real-time overview of all ongoing activities within the system.

KEY FEATURES

- Highly customizable workflows
- User Home and Team Home
- Automated handover of tasks
- Data-driven tasks completed by actions in the system
- Task-based whiteboards



SCHEDULING

Scheduling comprehensive care requires the coordination of many valuable and limited resources including personnel, treatment devices, consultation, and simulation rooms. Complex scheduling needs can result in unnecessary delays to patient care. RayCare is designed to provide full control over appointment scheduling and the use of resources with convenient calendar views, rule-based scheduling, and scheduling suggestions.

RayCare's task and rule-based scheduling supports efficient and timely scheduling of resources for single appointments or series of appointments. Based on user configurable appointment customization, the task and rule-based scheduling engine knows which resources are required for a given procedure and can automatically recommend a time slot. Rescheduling of appointments can be done efficiently from the dedicated rescheduling workspace.

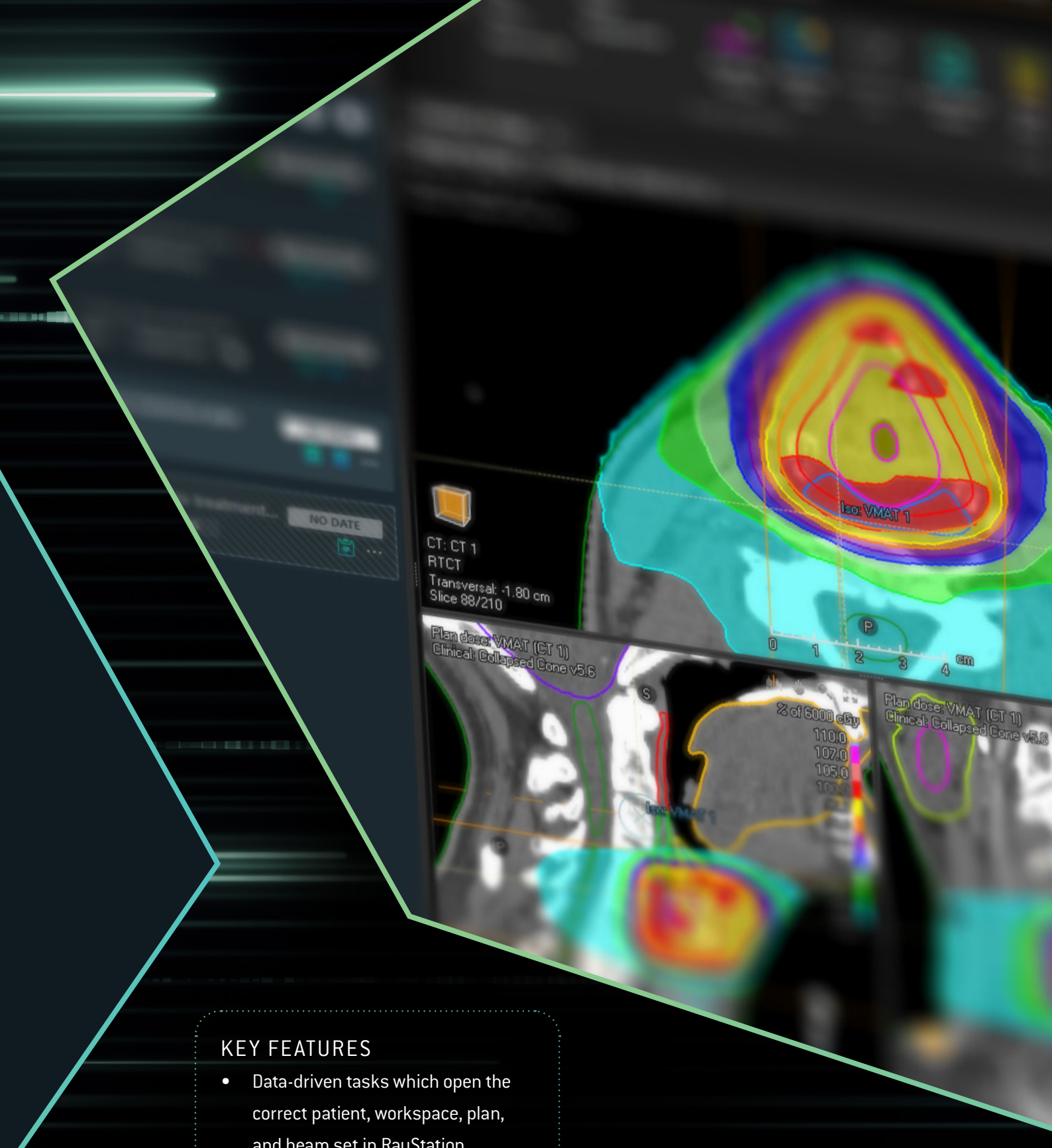
KEY FEATURES

- Calendars and resource management for all clinic resources
- Task and rule-based scheduling
- Scheduling and rescheduling suggestions

TREATMENT PLANNING EFFICIENCY

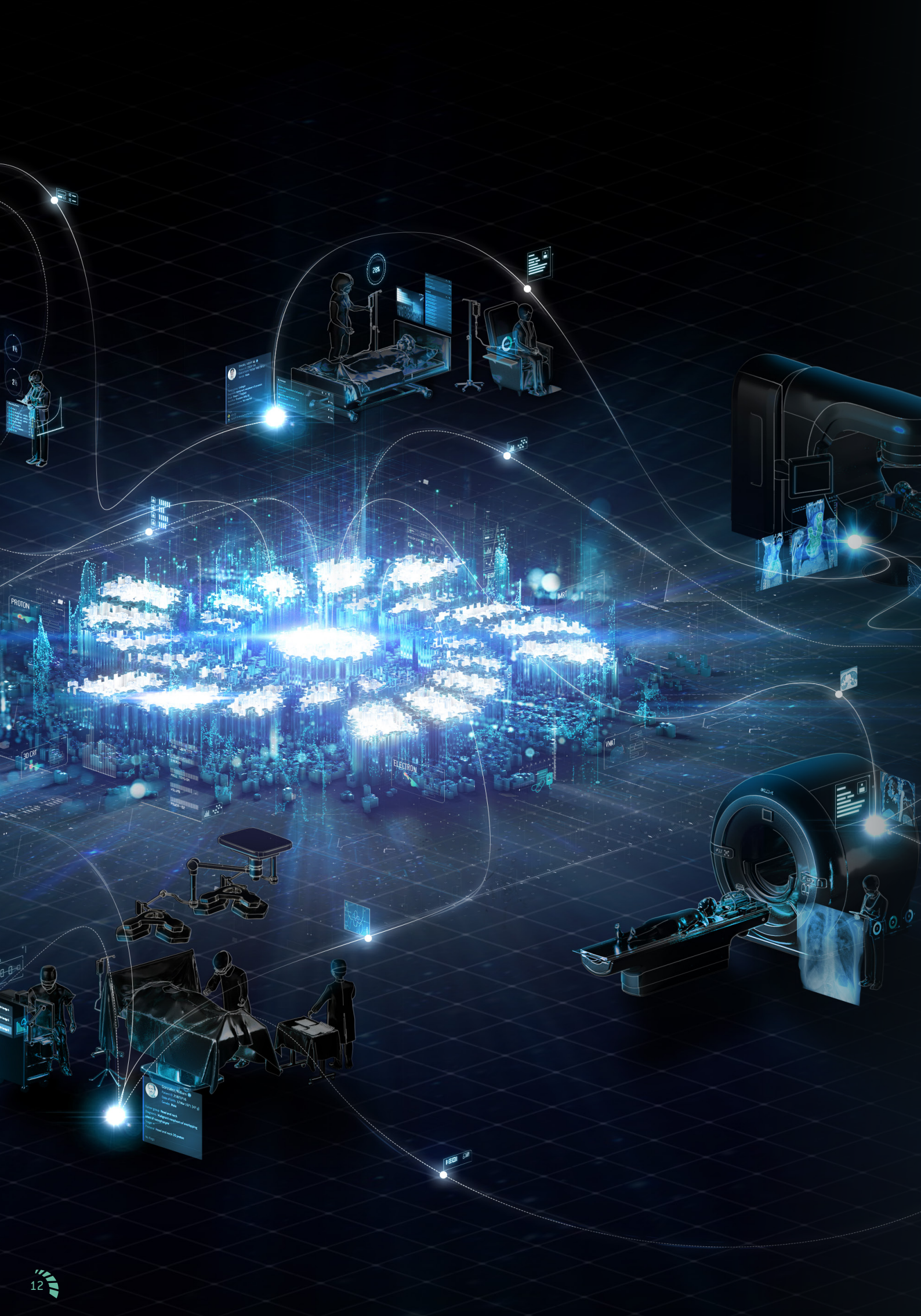
The RayCare planning and QA whiteboards provide an interactive real-time overview of all dosimetry patients and the status of their treatment planning and QA workflow. Combined with the plan overview, RayCare provides all information required to coordinate and support a timely and efficient workflow. RayCare PACS ensures that appropriate images are available, further simplifying treatment planning preparations.

RayCare optimizes the treatment planning process by providing task management for all the steps in the planning and QA workflow. Treatment planning tools and patient task lists are readily available in RayStation, eliminating the need to switch between RayStation and RayCare. Treatment planning tasks automatically open RayStation with the correct workspace, patient, plan, and beam set selected. Patient information, imaging, and data are automatically transferred between RayCare and RayStation, saving users multiple clicks and streamlining the treatment planning process. RayCare becomes the environment from which treatment planning is coordinated and managed.



KEY FEATURES

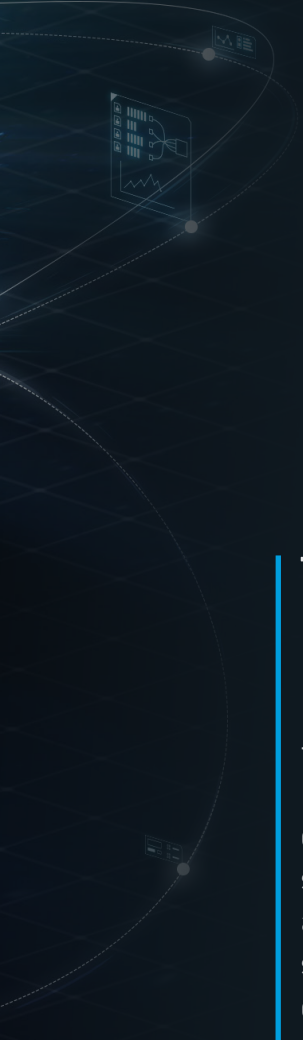
- Data-driven tasks which open the correct patient, workspace, plan, and beam set in RayStation
- RayCare patient panel and task list in RayStation
- Whiteboards for planning and QA
- Plan overview and planning instructions in RayCare
- Automated and integrated image management using RayCare PACS


28%
1%
2%
PROTON
IMRT
3D CRT
ELECTRON
VMAT

TREATMENT MANAGEMENT

RayCare aims to connect seamlessly to all treatment delivery devices in operation at modern oncology centers around the world using the RayCare control room application RayTreat. RayCare together with RayTreat provides a comprehensive system capable of managing patients' treatments from the time the patient is registered for radiation therapy, and throughout the entire treatment delivery process. A continuously updated whiteboard provides a real time overview of the progress of all patient treatments – including treatment readiness alerts – while the treatment course overview workspace serves as a patient-specific treatment overview.

RayTreat
Treatment management system handling the connection between RayCare and the treatment machine vendor software, with automatic transfer of treatment data. The RayTreat interface is available in the control room, and presents the treatment calendar for the treatment machine and the patient specific session data.



KEY FEATURES

- Treatment management workflow support from treatment intent to treatment delivery
- Structured management of radiotherapy prescriptions, setup information, and offline image review
- Treatment course overview with detailed session information
- Treatment whiteboard with overview of all treatments
- Workflow guidance during treatment with task lists in RayTreat

TREATMENT MACHINE INTEROPERABILITY

RayStation provides treatment planning support for a variety of treatment delivery machines, and RaySearch continuously builds on this vision to create an OIS which is machine agnostic and supports treatment delivery machine interoperability for all treatment devices. RaySearch has several established partnerships, and works continuously to enhance and develop support for interoperability with many leading hardware manufacturers.

RAYCARE PACS AND IMAGE VIEWER

RayCare PACS, an integrated oncology PACS system, provides image workflow management and supports automation of workflows based on the availability of imaging data. It is designed to enable efficient adaptive workflows by managing and organizing substantial amounts of patient data created by the adaptive therapy process.

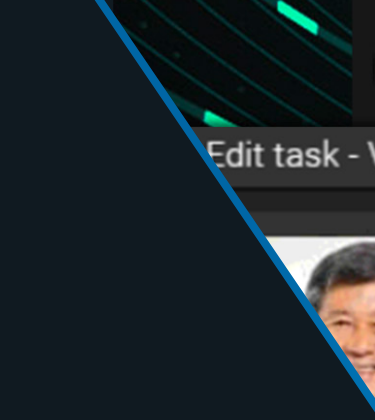
RayCare PACS is bundled with an image viewer which provides the means to visualise image data both as single data sets as well as fusion views of multiple data sets. Structure sets and dose can be displayed, and annotations can be added to the dataset.

Data can be stored, retrieved, and searched using the graphical user interface of RayCare PACS which handles DICOM, DICOM RT and non-DICOM data. Data management between different systems and automation using PACS rules is also possible.

KEY FEATURES

- Support for DICOM, DICOM RT and non-DICOM objects
- Image viewer with support for image registration and annotations
- One-click anonymization of image data
- Image workflow automation using PACS rules


Home
Patients
Calendars
PACS
Whiteboards
heduling
Calendar
Suggested appointment list
9 - 13 May 2022
SHOW TENTATIVE
CGTR
Mon 9
Tue 10
Wed 11
Thu 12
Long, M.
Moore, J.
Ross, S.
Cruz, S.
Cooper, S.
Morris, C.
Nelson, T.
Sanders, M.
Carter, B.
Miller, S.
Russell, R.
Roberts, T.
Moore, J.
Ross, S.
Morris, C.
Long, M.
Butler, K.
Cruz, R.
Vanderbilt, B.
Tovar, M.
Flores, L.
Roberts, H.
Not intended for diagnostic use

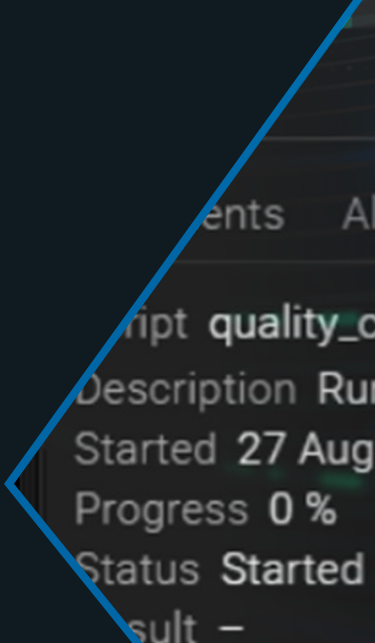


AUTOMATION ACROSS RAYSEARCH PRODUCTS

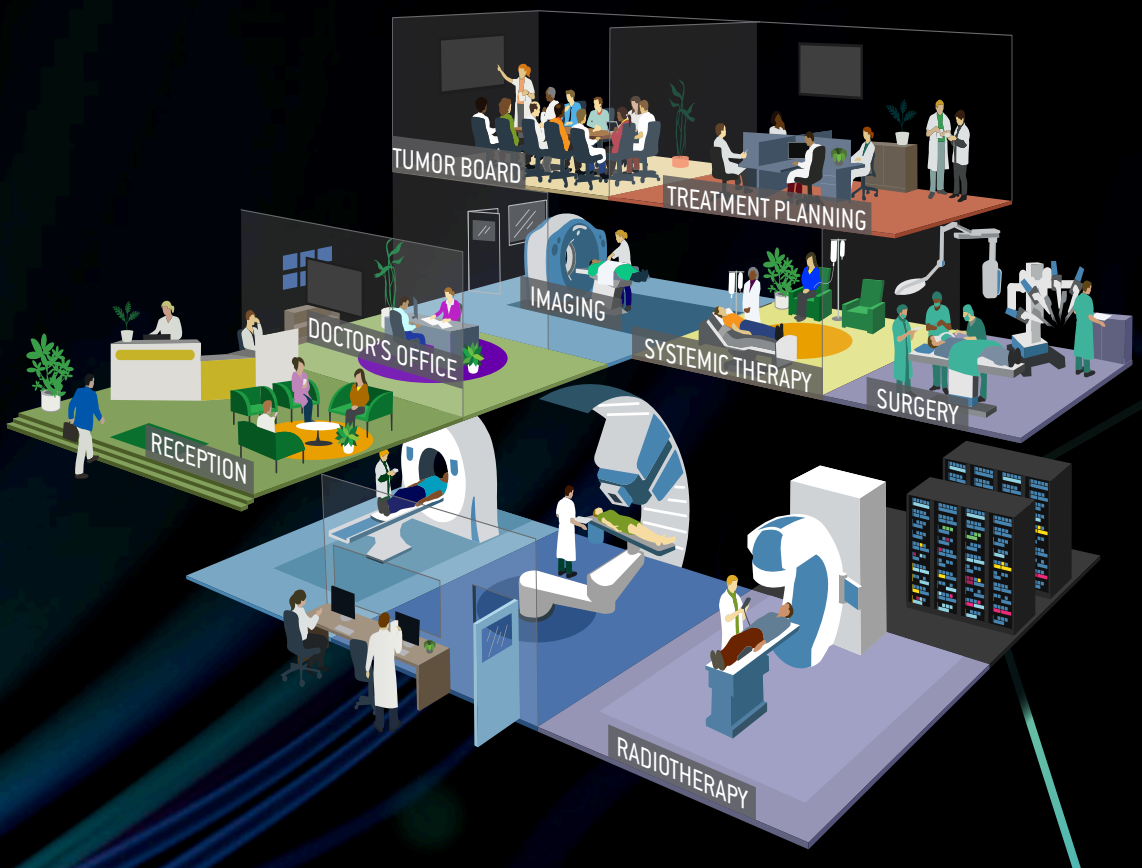
RayCare and RayStation both offer advanced scripting features which can be used for automation. Combining scripting features from both products makes it possible to utilize RayCare data in RayStation scripting, creating multiple automation possibilities. Together with the automation provided by the RayCare workflow engine and the automation of image flows in RayCare PACS, the need for user interaction during routine tasks in the clinic is minimized, saving time, and reducing the potential for manual errors.

KEY FEATURES

- Data-driven workflows with automatic handovers
- Automation of actions using RayCare, RayStation and combined product scripts
- Automation of image management using PACS rules
- Data flows throughout the clinic via external interfaces




RayCare
Home
Verify quality checklist
Calendars
Brooks, Adam
23231134
10 Oct 1960 (60 Years)
Male
Parent task
Scripted plan QA
AR
READY TO START
27-08-2021
Adam Rogers
Radiation oncologist
scripted proton PBS
Charges
Scripts
2021, 12:43:27



FUTURE PROOF PLATFORM

RayCare uses the latest technology and frameworks developed for mission critical systems that must be consistently available.

RayCare is designed to support large numbers of simultaneous users and be accessible on multiple platforms and devices. RayCare is scalable to support both small and large installations in a cost-efficient manner. The system is typically deployed on premise and can accommodate various deployment schemes including support for networks with satellite clinics.

RayCare architecture supports integration with the other RaySearch products, as well as interfacing with other hospital software using an integration engine. All clinical data in RayCare can be retrieved through the report database which is designed for easy access to data using common third-party BI and reporting tools, allowing users to create any necessary custom reports for analyses of clinic data.

RayCare supports the highest standards of security and privacy. All actions performed in the system are audit logged and can be reviewed as needed. All access rights to the system are controlled via Active Directory configuration.

KEY FEATURES

- Client server architecture which is scalable and robust
- Built for connectivity and interoperability using industry standards
- Support for multiple deployment options
- Compliant with safety and privacy standards

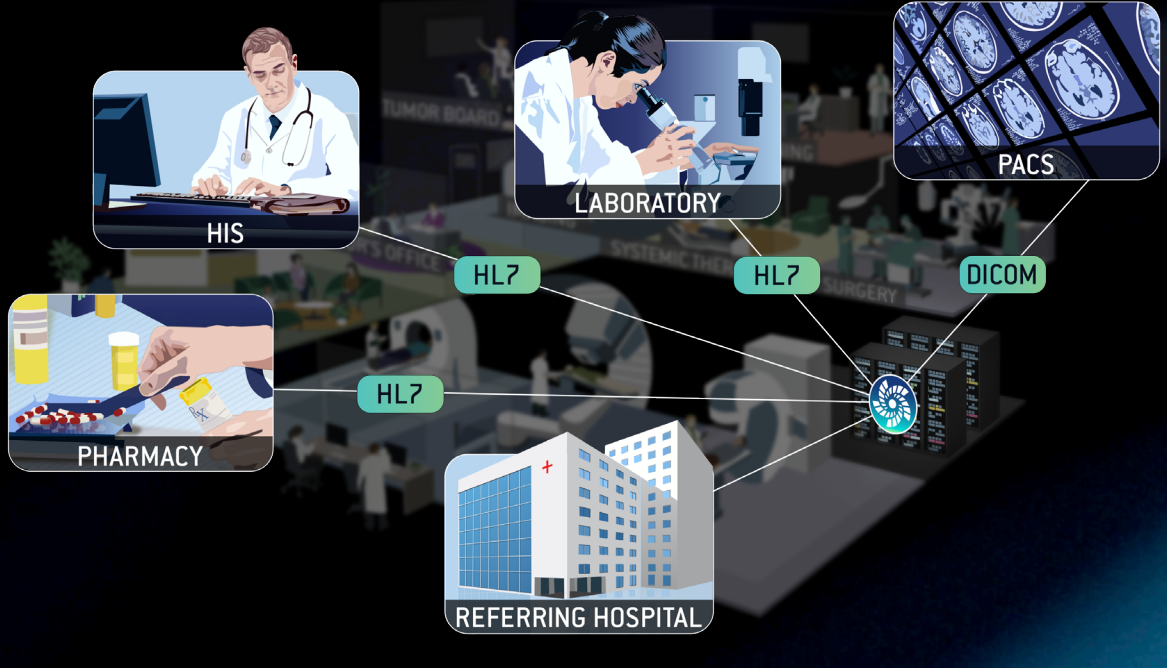
ENTERPRISE-WIDE CONNECTIVITY

RayCare is designed to connect to any systems used by clinics, including the hospital information system (HIS), hospital PACS, radiology information system (RIS), patient portals, billing systems, and treatment machines.

Automated communication between Hospital Information Systems (HIS) and Oncology Information Systems (OIS) or between different oncology information systems supports safe and efficient care by avoiding manual transfer of data. RaySearch is committed to following global industry standards such as HL7, FHIR and DICOM for data exchange. The specific implementation of RayCare in a clinical environment depends on the requirements and existing systems within the radiotherapy department. RayCare supports communication of patient demographics, appointment, charge information, documents, and much more.

KEY FEATURES

- Adherence to industry standards
- Inbound and outbound interfaces to external systems
- Support for HL7, FHIR and DICOM protocols as well as IHE-RO profiles



UNDER DEVELOPMENT/COMING SOON*

COMPREHENSIVE CANCER CARE

RayCare is designed to meet the complex challenges of modern oncology and form the backbone of a comprehensive oncology center. Clinics today often use multiple software systems, including systems for radiation oncology, medical oncology, and surgical oncology – all to support the treatment of one cancer patient. RayCare will combine these into a single, patient-centric system designed to manage the patient's entire oncology treatment – from scheduling through treatment delivery and follow-up.

Integrating all disciplines into one patient chart and one oncology workflow will provide consolidated information to the entire care team simultaneously, saving time and improving processes. A step ahead of existing systems, RayCare will bring comprehensive cancer treatment within reach.

ADAPTIVE THERAPY

RayCare is the first OIS built in the era of adaptive therapy and is designed specifically to support adaptive workflow requirements. RayStation currently provides complete support for adaptive planning through advanced algorithms, dose tracking and adaptive replanning. RayCare utilizes those algorithms and enables automation and management of the complex flow of information in adaptive therapy.

RayCare will include advanced tools for both online and offline dose tracking and adaptive therapy. The system's speed makes it the ideal platform for online dose tracking and adaptations where all calculations and decisions must occur during the treatment session rather than between sessions. The architecture and support for mobile platforms will ensure that necessary staff are notified regardless of their location. Reviews and approvals can be completed quickly and conveniently, without delaying the patient's treatment.

TUMOR BOARD MANAGEMENT

Tumor board meetings play a vital role in comprehensive oncology by facilitating combined treatment strategies. RayCare will provide tools to support preparation of tumor board presentations, including data gathering, scheduling of participants, meeting time management and recording of treatment decisions.

RayCare will automatically document meeting attendance as well as decisions and notes associated with each patient. Necessary follow-up actions can be added directly within the system and be instantly attributed to the patient. RayCare will save valuable tumor board meeting time and ensure that all information is readily accessible, reducing documentation time.

LEARNING SYSTEM

RayCare is designed to become a learning system with the ultimate goal of providing decision support to the clinic. All clinical data is stored in a structured and accessible format compatible with data analysis and machine learning. Structured data can be used to improve workflow efficiency, manage resource allocation, and enhance quality assurance across different treatment modalities. Advanced automated follow-up of treatment outcomes opens the door to further analysis and refinement of treatment processes.

*Regulatory clearance needed in some markets

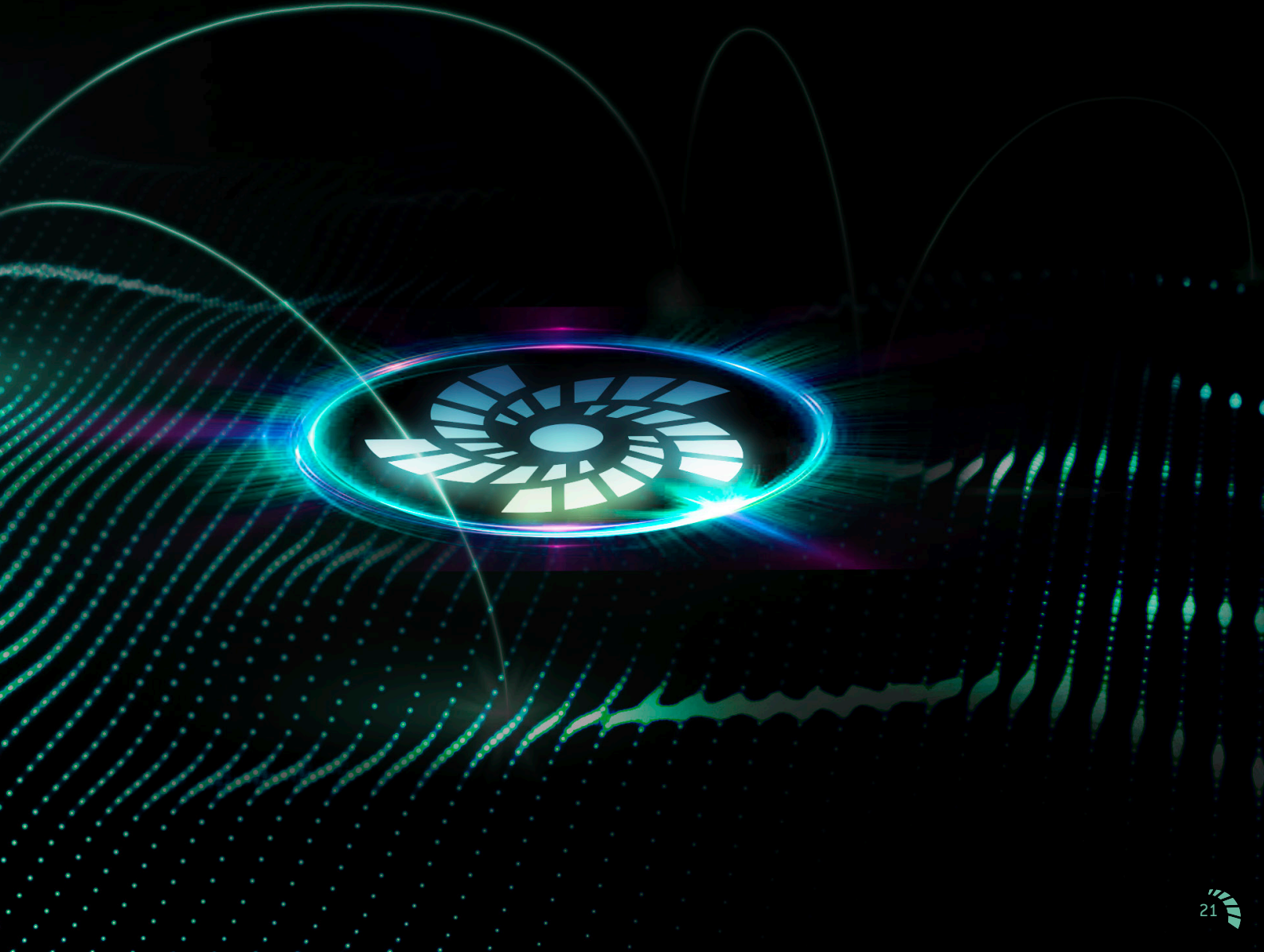
RayCare is developed in collaboration with clinicians, and consistently geared toward more advanced features and increased efficiency. There is a strong focus on unifying RaySearch products and creating a superior user experience throughout the complete suite of RaySearch products.

PATIENT PORTAL

RayCare will incorporate a patient portal application to support and simplify communication between clinicians and patients. The RayCare patient portal will allow patients to securely manage their appointments, review information about their medical record, and receive relevant notifications. The portal will provide tools for patients to communicate with their care team, ask questions, and add personal health data. The portal will save valuable clinic time by reducing in-office visits and phone calls. It will also facilitate patient engagement in their own care, which has been shown to improve patient outcomes.

RESOURCE OPTIMIZATION

RayCare is designed to support clinics in more efficient utilization of resources. RayCare resource optimization will support optimized allocation of treatment machines and clinical personnel, accounting for treatment needs, clinical staff schedules and other key parameters. Knowing which resources are required to support the full patient journey, and in combination with RayStation, RayCare will propose scheduling of all key events in the care trajectory.



ADVANCING CANCER TREATMENT

RaySearch is a committed pioneer of oncology software. Since 2000, we have worked in close cooperation with leading centers to improve life and outcomes for patients. We develop all our products from the ground up and continuously revise every aspect, from algorithms to user interface designs. Medical science never stands still, and neither does RaySearch — our relentless drive to do things better leads us to ever-higher performance, accuracy, safety and usability. And this is just the beginning.

We believe software is the driving force for innovation in oncology today. Our systems use groundbreaking automation and machine learning to create new possibilities. RayCare*, the next-generation oncology information system, will enable one workflow for all the oncology disciplines, ensuring fluid coordination of tasks and optimal use of resources. RayStation harmonizes treatment planning, providing one point of control for all planning needs — any equipment, any scale.

* Subject to regulatory clearance in some markets.

www.raysearchlabs.com

RaySearch Laboratories

RayCare Brochure 2022-09-07