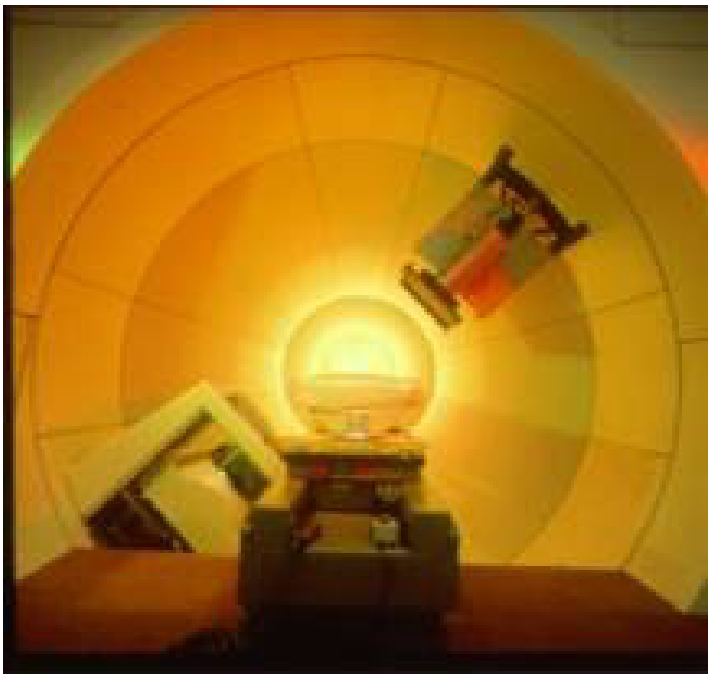
KINEO

Optivus®
The Proton Therapy Company

Case study from Optivus

KineoWorks™ "Automatic Path Planning" for higher accuracy and shorter treatment time of Conforma 3000 Precision Patient Alignment System



Introduction

California-based Optivus Technology is one of the world leaders in proton therapy devices. Proton therapy allows for unobtrusive cancer treatment by focusing a beam of high-energy protons on cancerous tumors.

Optivus' upcoming next-generation treatment facility has been designed to constitute a giant step forward in the world of proton therapy.

Technical issues and challenges

Moving a complex 10-degrees of freedom kinematical system made of a robot arm and other devices, while ensuring the absence of collisions and meeting numerous safety and performance requirements.

Such improvements are possible only through the use of cutting-edge technologies. Safely moving a robot arm supporting a patient amid other moving devices is a challenging problem that can be solved only by using advanced path planning strategies. For that purpose, the technology and expertise of Kineo C.A.M have been chosen.

Solution to the problem

By combining the KineoWorks™ software library with on-site development service, Optivus was able to design and implement a solution that fulfills its customers' needs for both safety and performance.

The solution : A smart motion sequencer built atop KineoWorks™ and the Kineo Collision Detector. It uses a virtual 3-D mockup of the real system, assembled using 3-D data from CAD models.

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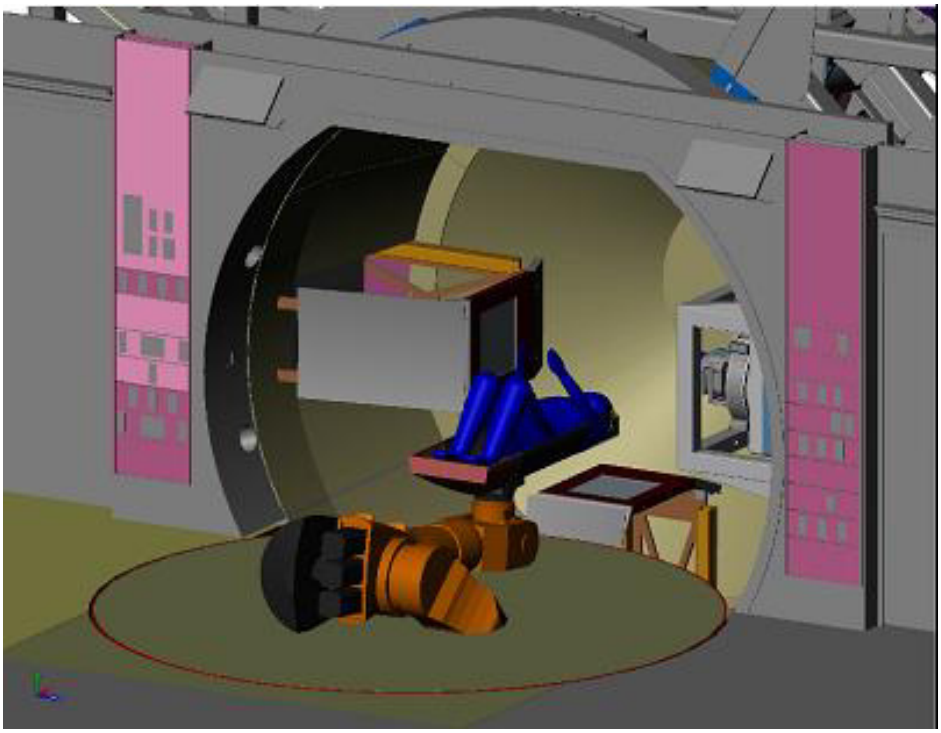
Results and benefits

By adding automation to the treatment process, it will achieve both higher accuracy and shorter treatment times. High accuracy offers patients a higher chance of recovery by focusing the proton beam on the exact tumor shape while leaving surrounding healthy cells untouched. A shorter treatment time enables hospitals to handle more patients daily, thereby justifying the high investment a proton treatment facility represents and lowering per-patient costs.



Conclusion

With Kineo C.A.M's path planning technologies taking care of moving the patient and surrounding instruments between configurations defined in real-time, Optivus is able to offer new precision cancer treatments to more patients.

"This project is the most significant realization with our KineoWorks™ technology in the domain of the robotics combining automated path planning and its execution in the real world. We are particularly proud since this medical application will save human lives and Kineo C.A.M will have contributed to it", says Laurent Maniscalco, Kineo C.A.M General Manager.

"One year ago we chose KineoWorks™ because of its technical performance and because of Kineo C.A.M's ability to provide us with service and support. Today we are pleased with this choice. Initial path planner testing is positive and we continue to develop it for our application. The service provided by the Kineo C.A.M engineer dedicated to our project has been very professional and efficient", says Mr. Ron Kapper, Project Manager at Optivus.

"The integration of KineoWorks™ and Kineo C.A.M into our Conforma 3000 Precision Patient Alignment System is an excellent example of finding the right technology to solve a complex problem. We are very pleased with the flexibility and capability provided by the Kineo technology", says Mr. David Lesyna , VP Engineering at Optivus.