



IBA Proton Therapy Upgrades

Get more out of your Proton Therapy Center
through smart upgrades

Life.
Science.



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Introduction

Proton therapy is evolving quickly, with new technologies opening up new possibilities and continuously improving clinical practice.











It is critically important to stay current with system advances and new features as they can significantly help to maximize revenues. Upgrading your IBA Proton Therapy center can allow you to treat new indications, deliver faster and sharper treatments, use lower doses, increase your patient throughput and volume, and reduce operational costs. Upgrades also contribute to your system's durability and sustainability.

Failing to upgrade your system could create a significant gap. While your system will continue to function, you will not benefit from the latest innovations and could suffer from inefficiencies or lag behind your competitors.

Ready to take your system to the next level? In this guide, you will find detailed information on upgrade pathways and how you can add on what you may be missing to maximize your investment and continue delivering best-in-class proton therapy treatment now and into the future.

10 reasons to upgrade your Proton Therapy center

Upgrading your Proton Therapy will not only improve patient referral and throughput, it will also allow you to:

-  Keep your assets state-of-the-art
-  Improve efficiency, productivity & workflow
-  Increase speed of treatment
-  Treat new indications
-  Reduce operational costs
-  Treat with lower doses
-  Provide better patient care
-  Increase patient & staff satisfaction
-  Enhance durability & sustainability
-  Stay competitive

90% of Proteus® users believe it is very or extremely important to have an upgradable proton therapy equipment*.

*Results of a survey conducted among ProteusONE users in January 2023

— IBA Proton Therapy

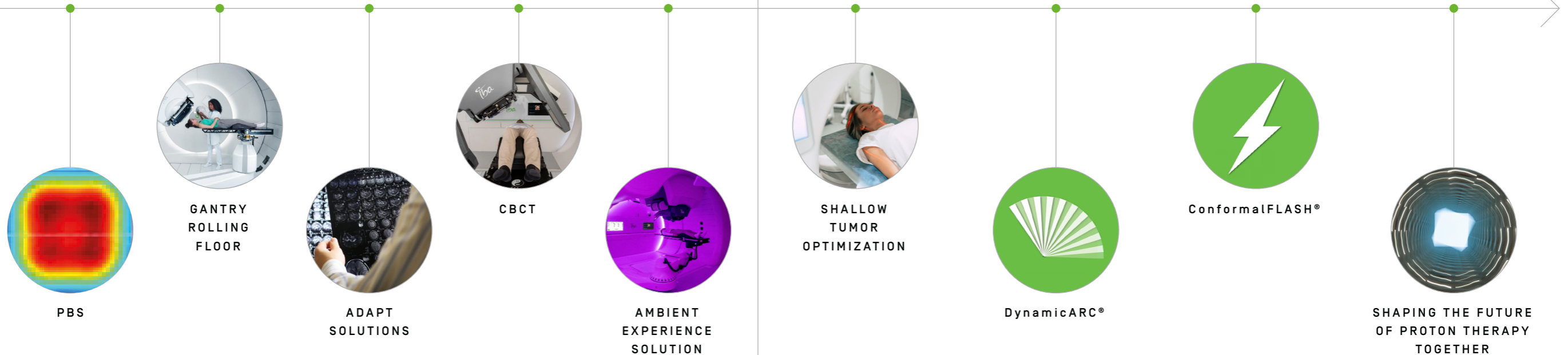
Future-Proof Technology Designed to Evolve with You

The mission of IBA is to **protect, enhance and save lives**. Its business model creates **shared and long-term value for all stakeholders**: patients, clients, employees, shareholders, society and the planet. The company is a certified B Corp¹, acting as a force for good and driving greater inclusivity and sustainability.

Today, IBA is a recognized leader in radiation oncology sustainability. We have adopted eco-design practices to minimize our carbon and waste footprints. In addition, we are the only proton therapy company with a proven upgrade record. Our Proteus systems are designed for upgradability and backward integration to meet evolving user needs and extend their lifecycle. The majority of our upgrades are seamlessly installed and may not require the interruption of clinical operations².

We support our clients at every step of their journey, as they evolve and grow their practice. We have created Campus, a unique platform bringing together the proton therapy community. Our user meetings are also an opportunity to learn how to obtain the full benefits from your IBA proton therapy center. At IBA, we are fully committed to proton therapy.

Examples of upgrades introduced in IBA Proton Therapy centers



¹ B Corp Certification is a designation that a business is meeting high standards of verified performance, accountability, and transparency on factors from employee benefits and charitable giving to supply chain practices and input materials. Certified B Corporations are leaders in the global movement for an inclusive, equitable, and regenerative economy.

² Please refer to the detailed descriptions of upgrades and contact your IBA representative for more information.

— What our clients say

“Our experience with IBA has been outstanding. We have been working together since 2010 and have experienced a lot of upgrades such as moving our uniform scanning systems to pencil-beam scanning, using the couch, etc. Through these different upgrades, we’ve been able to keep the center at the forefront of technology. And we worked with IBA to ensure the upgrades didn’t affect the clinic’s daily operations.”



Dr. Mark Pankuch
Director of Medical Physics
NORTHWESTERN MEDICINE, USA

ConformalFLASH® & DynamicARC® are registered brands of IBA Proton Therapy irradiation solutions which are currently under research and development. ConformalFLASH® and DynamicARC® will be available for sale when regulatory clearance is received. Due to a continuous research and development program, IBA reserves the right to make changes in design, technical descriptions, and specifications of its products without prior notice. Some features are under development and may be subject to review by competent authorities.

Upgrade catalog

Flexible options to boost
your performance

— A large portfolio of upgrades to advance your practice

	ProteusPLUS					ProteusONE
	PLATFORM A	PLATFORM B	PLATFORM C	PLATFORM D	PLATFORM E	
Feature upgrades						
Treatment delivery						
Gating interface-UBTI			✓	✓	✓	✓
Pencil beam scanning		✓	✓	✓		
Imaging						
CBCT	✓	✓	✓	✓	✓	✓
Adapt insight	✓	✓	✓			
Workflow						
Physics mode			✓			
Remote positioning & delivery			✓			
Philips Ambient Experience	✓	✓	✓	✓	✓	✓
System Upgrade	✓	✓	✓	✓		

All upgrades include training with advanced clinical specialists.

Some products may not be available in your country or region. For some specific site configurations or upgrades, IBA may request a technical audit before quotation. Please contact your IBA representative for more information.

Adapt insight is an upgrade for GOLD service contracts and an update for PLATINUM contracts.

FEATURE UPGRADES

Learn about innovative features that contribute to greater productivity, increased precision, and better patient care.

Enhance treatment delivery

Improve imaging capabilities

Increase workflow efficiency

— Gating interface

Benefit from beam triggering for moving target irradiation

Treatment delivery upgrade

Accurately tracking tumor position is a critically important factor when maximizing radiation dose to the tumor and limiting normal tissue exposure. This task is complicated in regions of the body where breathing causes tumor motion, i.e. organs of the chest and abdomen such as the lungs, stomach, pancreas and liver.

To overcome this phenomenon, IBA has developed a gating interface compatible with multiple gating sources. This enables beam control for moving targets irradiations.

Key benefits of Gating interface

- Add potential new indications including lung, stomach, pancreas and liver diversifying the patient mix.
- Increase the total number of patients treated every year by taking on new cases.



— Pencil Beam Scanning

Upgrade now to the most advanced form of proton therapy

Treatment delivery upgrade

Pencil beam scanning (PBS) is a proton beam delivery mode supporting intensity-modulated proton therapy (IMPT). It allows to treat complex cancers with unparalleled precision.

In PBS, the proton beam paints the target volume, one layer at a time, voxel by voxel, to **precisely match the shape of the tumor**. It allows to give a different dose to each voxel of the map. IMPT treats a small section of the tumor at a time, adjusting the proton beam dose and depth to wider and narrower contours of the tumor, section by section.

Combined with the appropriate imaging devices and treatment strategies, IMPT is capable of treating **moving tumors**.

Key benefits of PBS

- Gives you the possibility to **adopt intensity modulated proton therapy**. IMPT precisely targets the tumor while controlling the intensity and spatial distribution of the dose.
- **Allows to sculpt the dose with very high levels of conformality**, even in complex-shaped tumors, thanks to its fine precision.
- **Facilitates treatment planning** and eliminates the need for individualized aperture and compensator devices.
- **Decreases the neutron dose** delivered to the patient during treatment compared to other proton delivery techniques (double scattering and uniform scanning).
- **Enables an increased patient intake** with a more diverse patient mix and the development of new treatment protocols.
- **Helps you stay at the cutting-edge of innovation** and reach the full potential of proton therapy.

— What our clients say about PBS

“PBS proton irradiation in the breast area is often the only option to deliver the prescribed treatment dose to the treatment volume, while avoiding excessive dose to the surrounding normal tissues.”



Vladimír Vondráček
Proton Therapy center
PRAGUE, CZECH REPUBLIC

Case studies

✦ Breast And Chest Wall Treatment with Pencil Beam Scanning At The Proton Therapy Center In Prague



✦ Lung Treatment with Pencil Beam Scanning At The Texas Center For Proton Therapy



— PBS upgrades available according to your system configuration

	ProteusPLUS					ProteusONE
	PLATFORM A	PLATFORM B	PLATFORM C	PLATFORM D	PLATFORM E	
Universal nozzle (UN)						
PBS in UN	✓	✓	✓	✓		
PBS snouts	✓	✓	✓	✓		
Dedicated nozzle (DN)						
PBS in DN		✓	✓	✓		
Low range			✓	✓	✓	✓
Snouts		✓	✓	✓	✓	✓
PBS time improvement		✓				
Fast Layer switching time					✓	

— Cone-Beam Computed Tomography

Leverage 3D volumetric imaging

Imaging upgrade

Cone-Beam Computed Tomography (CBCT) in proton therapy is an innovative imaging technique. It provides new 3D volumetric imaging at treatment delivery isocenter for enhanced patient positioning and anatomy assessment. It can allow you to add new indications and treat complex cases.

CBCT is integrated within adaPT insight* for a fast and efficient workflow.

Key benefits of CBCT

- **New cases:** possibility to increase patient intake by using new treatment protocols.
- **Enhanced visualization:** benefit from soft tissue visualization and volumetric tumor surveillance.
- **Adaptive:** view anatomical changes for adaptive therapy. Review your plans more easily and export to third parties for offline review including correction vector.
- **Patient setup:** improve patient setup based on soft tissue visualization. Achieve better positioning for pelvis, head and neck¹, lung and other tumors².

— What our clients say about CBCT

“CBCT technology enables better visualization of soft tissues, and hence allows better alignment of certain tumors that we could not position with enough accuracy before, such as tumors requiring basicervical irradiation, tumors close to the bladder or the rectum, as well as certain liver and pelvic tumors. In the long term, it is also an essential tool for adaptive treatments.”



Dr. Jérôme Doyen

Oncologist in the Radiotherapy Department & Medical Director
ANTOINE LACASSAGNE CENTER, NICE, FRANCE

“CBCT can help overcome the difficulties for the repositioning of the targets, including the lower cervical spine, due to the superposition of the bone structures. It facilitates positioning and allows close monitoring of soft tissues.”



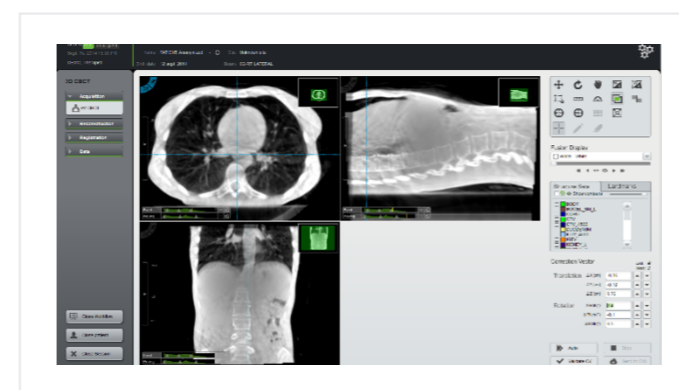
Dr. Pierre-Yves Bondiau

Radiotherapy Department Head
ANTOINE LACASSAGNE CENTER, NICE, FRANCE

*For more details about adaPT insight, please refer to page 15 of this brochure

[1] [www.redjournal.org/article/S0360-3016\(08\)00047-3/fulltext](http://www.redjournal.org/article/S0360-3016(08)00047-3/fulltext)
Comparison of 2D Radiographic Images and 3D Cone Beam Computed Tomography for Positioning Head-and-Neck Radiotherapy Patients

[2] www.ncbi.nlm.nih.gov/pmc/articles/PMC5167282/
Comparison of setup accuracy of three different image assessment methods for tangential breast radiotherapy



Case studies

- ✦ The Antoine Lacassagne Center (Nice, France) treats its first patients with CBCT



- ✦ Expand imaging capabilities of your system by adding CBCT, ProteusPLUS & ProteusONE.



— adaPT® insight

Switch to the next generation software suite

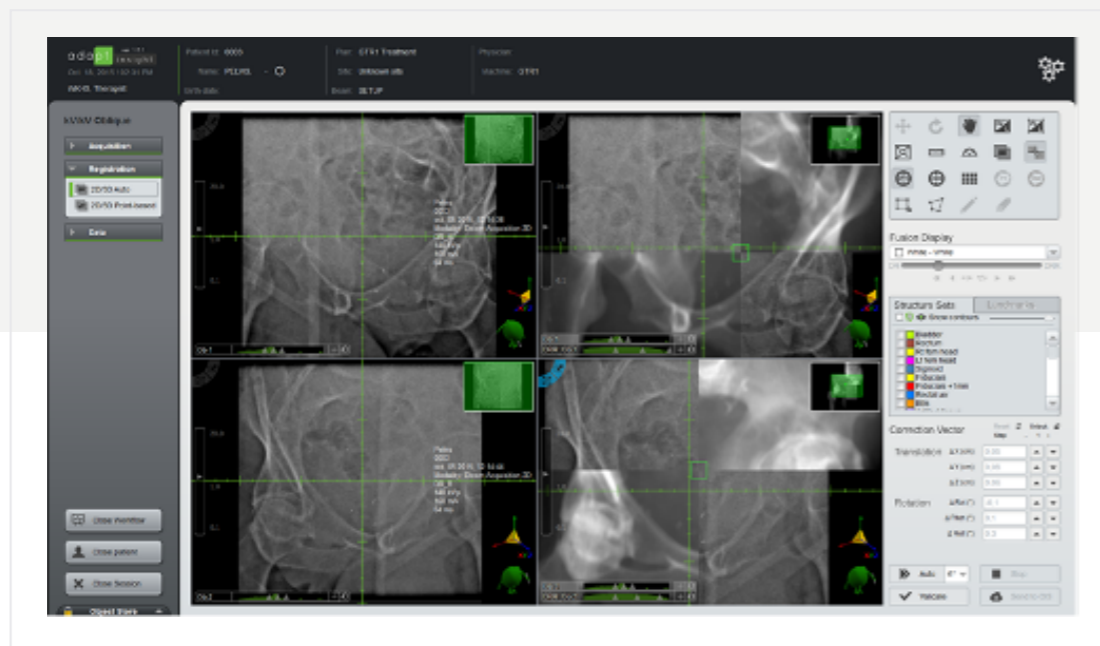
Imaging upgrade

adaPT insight is a imaging platform replacing VeriSuite and DIPS providing a faster workflow compatible with all future hardware and software updates and upgrades. It is a software suite which allows users to perform the verifications required for patient setup prior to or during treatment using either 2D and/or 3D images. New more reliable X-ray generators (EMD) are included. adaPT insight users have access to continuous evolutions including CBCT and other future developments.



Key benefits of adaPT® insight

- **Improve your workflow:** benefit from new functionalities including automatic registration, sticky settings and integration with adaPT® deliver.
- **Stay current with the latest technology:** IBA is developing all future updates and upgrades for patient positioning and imaging on adaPT insight only.



Adapt insight is an upgrade for GOLD service contracts and an update for PLATINUM contracts. Please contact your IBA representative for more details.

— Physics mode

Save quality assurance time

Workflow upgrade

Physics mode is an operation mode in adaPT deliver to simplify and accelerate quality assurance (QA), calibration and research activities. This mode allows you to control the beam delivery in the treatment control room. With physics mode, you can:

- **Edit prescription** (GA, MU)
- **Irradiate non-baselined beams**
- **Perform an irradiation** with options:
 - repeat layers
 - repeat fields
 - pause after layer or tuning pulse
 - disable tuning pulse
 - specify the layer to be irradiated
- **Move PPS during a beam pause** while remaining on the irradiation screen (beam ready)

Key benefits of Physics mode

- **Simplify and accelerate your measurements** for beam data library measurements, clinical commissioning, machine QA, patient QA, verification and absolute dosimetry of PBS fields.
- **Help reduce your patient & machine QA time**



— Remote positioning & delivery

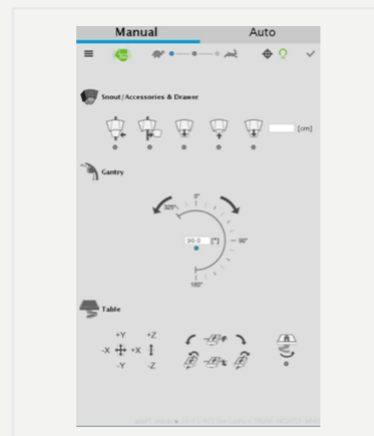
Reposition and treat from the treatment control room

Workflow upgrade

Remote positioning and delivery gives the therapist the opportunity to have full hand pendant functionality from the treatment control room through a virtual hand pendant. As such, it eliminates the need to go into the treatment room for many treatment fields. This upgrade also includes the ability to perform kV imaging from the treatment control room, move snouts and accessories in and out of the beam path, deploy and extract the air gap tuner as well as move the GTR and/or the table.

Key benefits of remote positioning & delivery

- **Save time** during treatment and potentially treat more patient per day
- **Faster QA.**



— Philips Ambient Experience

Create a more soothing environment leading to easier treatment



Workflow upgrade

Based on insights from proton patients, healthcare staff and experts, Philips Healthcare and IBA developed a solution that turns a cold, impersonal environment into one that comforts and reassures.

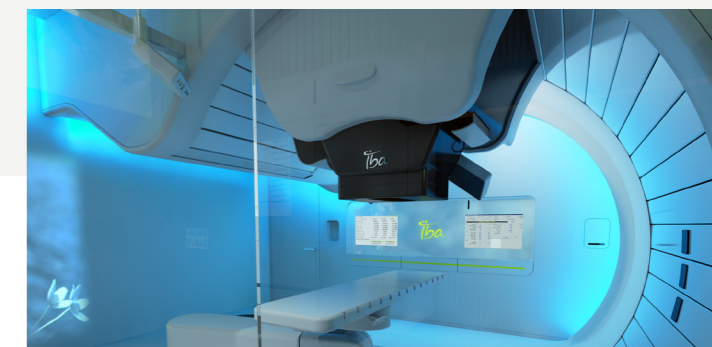
Ambient Experience is an interactive, patient-focused healthcare environment that uses modern technology and people-centric design to create a more comfortable and soothing experience for patients and staff, helping to improve workflows and increase operational effectiveness.

Patients are able to select their preferred theme, light, sound and video prior to undergoing treatment. By creating a relaxing environment, positioning and alignment are facilitated and motion during treatment is reduced.

Key benefits of the Philips Ambient Experience

- **70%** — reduction in rescans.
- **80%** — reduction in sedation.
- **83%** — of respondents rated Ambient Experience impactful in alleviating patient anxiety.

Source: Philips user survey
Ambient Experience study 2020



— What our clients say about the Philips Ambient Experience

"Patients have the ability to change their color themes, music and video. Our patients enjoy the experience as it helps them to relax during treatment and remain still. The Ambient Experience atmosphere is calming for the staff as well as the therapist for this most meticulous of treatments. And it also amazes visitors."



Dr. Lane Rosen
Medical Director
WILLIS-KNIGHTON CANCER CENTER, USA

SYSTEM UPGRADE

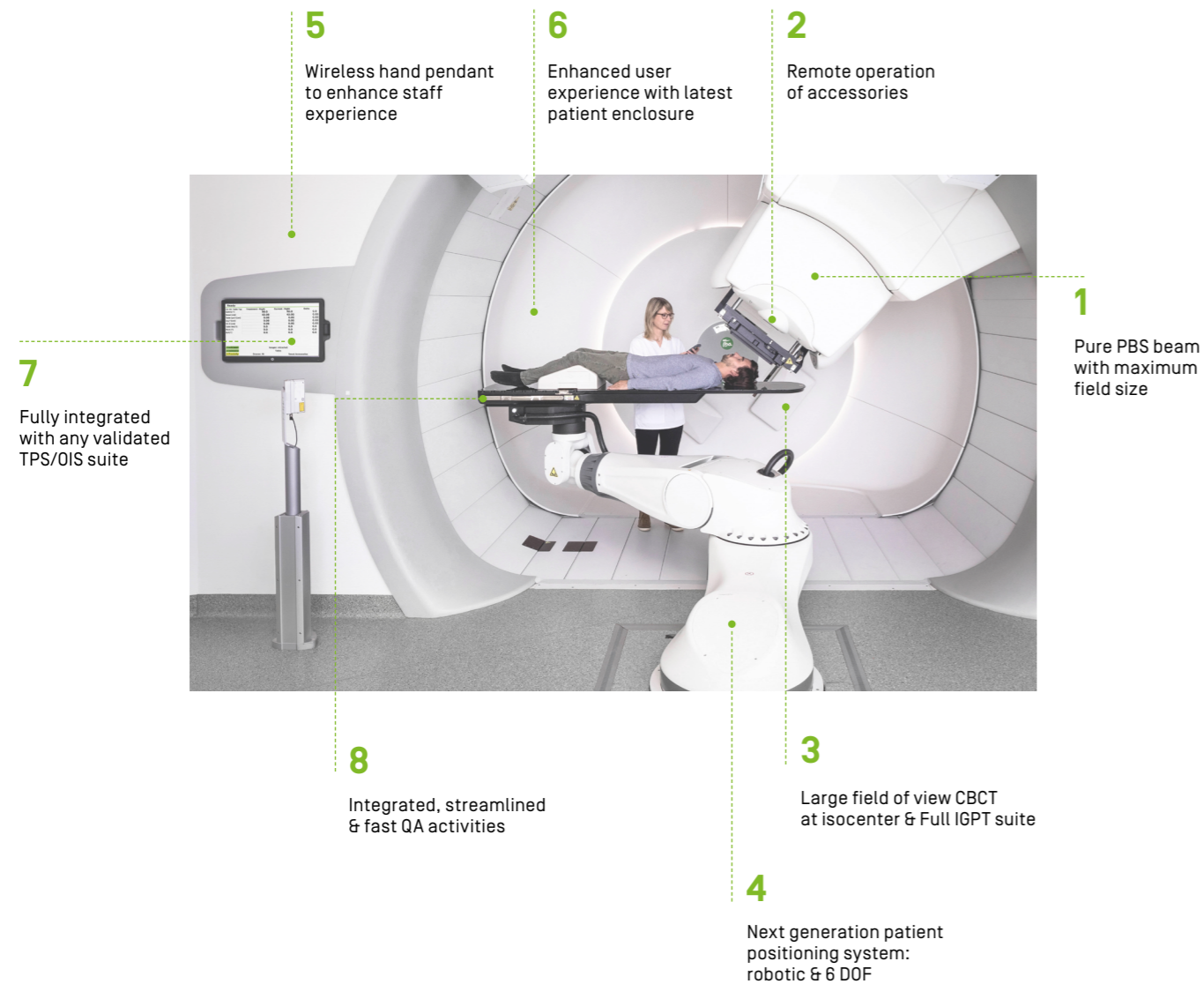
Deliver state-of-the-art patient care

Discover how you could upgrade your center to increase patient throughput, adopting a more advanced platform and eventually adding new proton therapy rooms.

Why not consider a system upgrade to take your center to the next level? System upgrades can be performed while expanding your capacity or keeping it the same.

A system upgrade can significantly augment your center's treatment performances, adding valuable new features to treat more patients and take on new cases, reduce downtime and deliver state-of-the-art cancer care to your community, while fighting obsolescence. Based on your current platform, needs and budget, the IBA team can suggest a system upgrade to level up your proton therapy center.

Here is an example of a Proton Therapy Center after a system upgrade with the addition of new features to enhance treatment precision, optimize the workflow and improve user experience.



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Science.