

Item	Qty	Product Description
Section 1 TrueBeam Package with RapidArc		

1.01 1 TrueBeam Package

1.02 1 TrueBeam System

TrueBeam system

Premium performance image-guided radiotherapy system

FEATURES:

- Performance per RAD 10094
- High speed, real time network control
- Synchronous, high precision motion, imaging, and dose trajectory management
- Patented variable beam energy generation
- Dual independent jaw collimator system, supporting dynamic jaw tracking and dynamic collimator rotation
- Enhanced dynamic wedge
- Electronic Accessory Detection and Verification system
- LaserGuard II system, a laser protection zone-based proximity sensor that is used to alert the user of system proximity to the patient, associated immobilization devices, and to other parts of the system and limit motion if necessary
- Treatment couch base with sub-millimetric positioning accuracy to isocenter
- Full remote motion control with software-selectable motion axis disable
- Autofield sequencing and full treatment delivery automation
- Radiation-hardened digital CCTV camera system for patient and motion monitoring
- Laser backpointer
- 3D system motion monitoring and touch detector systems
- Integrated controls with visual action prompts
- Two 27 inch monitors for treatment room viewing of system and patient information
- Two 21 inch high performance treatment console monitors
- Integrated audio system, including intercom, optional respiration coaching, input for music
- Low profile console packaging with optional stacking
- Software-selectable IEC601 and IEC 1217 scale convention
- Basic quality assurance and performance test kit, including front pointer set and collimator crosshair
- Standard spare parts
- Smart Connect remote access ready
- One (1) full warranty
- Shipping (Shipment is pending regulatory clearance of this product in the ship-to country. Lead times after receipt of order may vary greatly by country.)

NOTE: The TrueBeam only supports IEC 601 or IEC 1217 scales. Conical collimator accessories (sometimes called "cones") must not be used for treating patients on this device without also using the Barcode Conical Collimator Verification (BCCV) product. Failure to use BCCV with conical collimators may

Item	Qty	Product Description
		<p>result in serious injury or death due to a lack of verification that the correct conical collimator and field size for that collimator are in place for that patient's treatment plan.</p> <p>PREREQUISITES:</p> <ul style="list-style-type: none"> - ARIA Practice Management, Version 8.8.15, or compatible third party oncology information system. - ARIA Rad Onc, including Eclipse, Version 8.9.09.1, or compatible third party oncology information / treatment planning system
1.03	1	<p>Base System Treatment License</p> <p>Includes static and arc X-ray treatment delivery license, supports maximum dose per field of 2500 MU for static fields and 7200 MU for intensity modulated fields</p>
1.04	1	<p>TrueBeam Online Marketing Program</p> <p>Access to the TrueBeam™ Online Marketing Program which provides a broad range of advertising, educational, promotional, and public relations materials targeted to referring physicians, patients, and the media.</p>
1.05	1	<p>New Baseframe</p>
1.06	1	<p>INCL ED: TB201 TrueBeam for Physicists</p> <p>The following Education Course is included with the purchase of a TrueBeam.</p> <ul style="list-style-type: none"> - Includes Tuition and Materials for ONE person - Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals) - Training is non-refundable and non-transferable - Offer is valid for 18 months after installation of product <p>TrueBeam Physics and Administration</p> <p>TrueBeam Physics and Administration course is designed for those personnel responsible for the acceptance, commissioning and QA program development of the TrueBeam in the clinical environment. It is directed primarily towards Medical Physicists. It is recommended that the student attend the TrueBeam Physics and Administration course shortly before the installation of the TrueBeam.</p> <p>The course provides instruction of the basic delivery components, basic imaging components and a general overview of the motion management system components. Machine commissioning, calibration, QA and the responsibilities of Customer Acceptance Procedure (CAP) of the machine are included. The course subject matter is presented from a clinical use perspective. The primary emphasis is on the overall commissioning, calibration, and QA of the TrueBeam and its components. Extensive hands-on laboratory exercises are included.</p> <p>PREREQUISITES: None</p>

Item	Qty	Product Description
		Length: 4 days
1.07	1	STD TRNG: TrueBeam On-Site Support <ul style="list-style-type: none"> - Includes support for TrueBeam - Support is non-refundable and non-transferable - Offer is valid for 18 months after purchase <p>On site follow-up review of the TrueBeam components to include imaging and motion management for support of patient treatment. The emphasis of this support is to ensure that the therapists that attended the TrueBeam Operations (on-site) training are able to operate the TrueBeam in a safe and effective manner in the clinical environment.</p> <p>PREREQUISITES: TrueBeam Operations (on-site) training</p>
1.08	2	INCL ED: TB101 TrueBeam Operations <p>The following Education Course is included with the purchase of a TrueBeam:</p> <ul style="list-style-type: none"> - Includes Tuition and Materials for ONE person - Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals) - Training is non-refundable and non-transferable - Offer is valid for 18 months after installation of product <p>TrueBeam Operations is a course designed for those personnel responsible for the routine operation and clinical use of the TrueBeam. It is directed primarily towards Radiation Therapists. It is recommended that both students attend the TrueBeam Operations course shortly before clinical use and the commencement of patient treatments.</p> <p>The course provides instruction of the basic delivery components, basic imaging components and a general overview of the motion management system components. The course subject matter is presented from a clinical use perspective. The primary emphasis is on the overall understanding of the TrueBeam function and operation to include imaging and respiratory gating. Extensive hands-on laboratory exercises are included. The attendees of this class will be provided tools to allow them to instruct other clinical staff upon their return.</p> <p>PREREQUISITES: None</p> <p>Length: 4 days</p>

Item	Qty	Product Description
1.09	1	6/6 MV Energy (per BJR 11/17) 40 cm x 40 cm maximum field size, dose rate range 0-600 MU/Min
1.10	1	18/23 MV Energy (per BJR 11/17) 40 cm x 40 cm maximum field size, dose rate range 0-600 MU/Min
1.11	1	10X High Intensity Mode 40cm x 40cm maximum field size, dose rate range 400-2400 MU/Min Note: Portal Dosimetry (purchasable option) does not support High Intensity Mode
1.12	1	Electron Applicator Set 6cm x6cm, 6cmx10cm, 10cmx10cm, 15cmx15cm, 20cmx20cm, 25cmx25cm Includes electron arc applicator and final defining aperture mold frame set
1.13	1	6 MeV 25 cm x 25 cm maximum field size, dose range range 0-1000 MU/Min
1.14	1	9 MeV 25cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min
1.15	1	15 MeV 25cm x 25cm maximum field size, dose rate range 0-1000 MU/Min
1.16	1	18 MeV 25cm x 25cm maximum field size, dose rate range 0-1000 MU/Min
1.17	1	22 MeV 25cm x 25cm maximum field size, dose rate range 0-1000 MU/Min
1.18	1	120 Multileaf Collimator - Performance per RAD 10094 - High resolution leaf width of 5 mm (projected at isocenter) for central 20 cm - Leaf width of 10 mm (projected at isocenter) for outer 20 cm

Item	Qty	Product Description
1.19	1	<p>IMRT Treatment Delivery License</p> <p>Capability to simultaneously modulate aperture shape with dose delivery for a static gantry beam</p> <p>FEATURES:</p> <ul style="list-style-type: none"> - Simultaneous modulation of MLC aperture shape and dose delivery for a static gantry beam - Supports dynamic jaw tracking and collimator rotation with supporting treatment planning system - Includes large field IMRT
1.20	1	<p>SRS/SBRT High Total Dose License</p> <p>Required for delivery of hypofractionated or radiosurgical X-ray treatments</p> <p>FEATURES:</p> <ul style="list-style-type: none"> - Provides the capability to deliver high dose fields for any X-ray treatment - Supports delivery of up to 6000 MU for a static aperture beam - Supports delivery of up to 10800 MU for an intensity or volumetric modulated beam <p>NOTE:</p> <p>For total body irradiation treatments, the Total Body Treatment Delivery License is required</p>
1.21	1	<p>RapidArc Treatment Delivery License</p> <p>Capability to simultaneously modulate aperture shape, dose rate, and gantry angle and speed continuously for up to 360 degrees of gantry rotation, with delivery as an arc beam.</p> <p>When coupled with RapidArc Planning and a RapidArc-compatible information system, provides the capability to generate IMRT-quality dose distributions in a single, optimized arc around the patient. When coupled with the Optical Imager, provides the capability for Gated RapidArc.</p> <p>FEATURES:</p> <ul style="list-style-type: none"> - Simultaneous modulation of MLC aperture shape, beam dose rate, and gantry angle and rotation speed during beam delivery - Supports dynamic jaw tracking and collimator rotation with supporting treatment planning system - Provides IMRT-quality dose distributions in a single arc delivery in less than 2 minutes

Item	Qty	Product Description
1.22	1	<p>Total Body Treatment Delivery License</p> <p>Capability to deliver High Dose Total Skin Electron Treatment, Total Body Electron Irradiation, and Total Body X-ray Irradiation treatments</p> <p>FEATURES:</p> <ul style="list-style-type: none"> - Supports delivery of up to 6000 MU for Total Body Irradiation treatments - Supports delivery of up to 9000 MU for High Dose Total Skin Electron treatments <p>For electron based treatments, 6 MeV and/or 9 MeV and corresponding 6 MeV HDTSE and/or 9 MeV HDTSE must be selected.</p>
1.23	1	<p>6 MeV High Dose Total Skin Electron Mode</p> <p>Dose rate range 0-2500 MU/Min</p> <p>Pre-requisite(s)</p> <ul style="list-style-type: none"> - 6MeV - Total Body Irradiation Treatment Delivery License
1.24	1	<p>9 MeV High Dose Total Skin Electron Mode</p> <p>Dose rate range 0-2500 MU/Min</p> <p>Pre-requisite(s)</p> <ul style="list-style-type: none"> - 9MeV - Total Body Irradiation Treatment Delivery License
1.25	1	<p>MV Imager</p> <p>MV image acquisition and data analysis for target localization, patient positioning and motion management</p> <p>FEATURES:</p> <ul style="list-style-type: none"> - Performance per RAD 10094 - High precision, isocenter-aligned positioning system - aS1000 detector system for low dose, high resolution imaging - 2D image acquisition before, after, and during treatment delivery - Online image review and analysis

Item	Qty	Product Description
1.26	1	Basic MV Imaging License Provides capability for radiographic and cine imaging and basic imaging matching for treatment verification
1.27	1	Advanced MV Radiographic Provides capability for 2D radiographic imaging, image analysis, and marker match
1.28	1	Portal Dose Image Acquisition License Provides capability for portal dose image acquisition
1.29	1	Port Film Graticule Set of upper and lower port film graticules
1.30	1	kV Imager kV Image acquisition and data analysis, analysis for target localization, patient positioning and motion management. FEATURES: - Performance per RAD 10094 - High precision, isocenter-aligned positioning system - X-Ray source and detector - 2D image acquisition before, after, or during treatment delivery - Online image review and analysis
1.31	1	Basic 2D kV Imaging License Provides capability for 2D kV radiographic image acquisition and analysis, pretreatment fluoroscopic verification imaging and analysis, 2D marker matching, 2D MV/kV imaging and analysis, fluoroscopic image acquisition during treatment delivery
1.32	1	kV CBCT Imaging License Provides capability to acquire, process, and analyze in 3D a cone-beam volumetric CT dataset

Item	Qty	Product Description
1.33	1	Optical Imager Stereoscopic optical imaging system for monitoring patient respiratory motion and 3D patient position Performance per RAD 10094
1.34	1	Respiratory Gating License Respiratory Gating License FEATURES: - Provides the capability to synchronize image acquisition and treatment delivery with respiration - 3D patient position monitoring - Capability for gated arc therapy
1.35	1	INCL ED: CL222 Respiratory Gating - Includes Tuition and materials for ONE person. - Attendees will be responsible for their own, airfare, hotel, rental car, meals and other travel incidentals. - Training is non-refundable and non-transferable. - Offer is valid for 18 months after installation of product. The RPM course provides training for physicists, or therapists, to obtain knowledge of the principles and practice of respiratory gating in radiation oncology for clinical implementation. Duration: 1 1/2 days
1.36	1	Dynamic MV Imaging License Provides capability for respiration-synchronized MV radiographic image acquisition . PRE-REQUISITE: Optical Imager and accompanying Respiratory Gating Licence
1.37	1	Dynamic kV Imaging License Provides capability for respiratory gating-triggered kV radiographic image acquisition, during, after, and before treatment delivery. PRE-REQUISITE: Optical Imager and accompanying Respiratory Gating License

Item	Qty	Product Description
1.38	1	IGRT Couch Top <p>Carbon fiber treatment couch top, free of metal or other radiation-opaque materials, thereby reducing imaging artifacts</p> <p>FEATURES:</p> <ul style="list-style-type: none"> - Clinically usable section of 120.0 cm - Supports patients up to 500 lbs (227 kg) - Indexed Immobilization® for compatible accessories - Head extension with interface for alternative patient immobilization and positioning device
1.39	1	Exact IGRT Bar <p>The Exact IGRT bar is designed specifically to facilitate increased positive attachment of compatible accessories, such as the Patient Fixation vacuum form cushions. The bar is compatible with the Exact Couch Patient Fixation. While compatible with the vacuum form cushions of Patient Fixation with BF14 Baseplate, the lock bars will not secure the BF14 baseplate to the Exact IGRT couch top.</p>
1.40	1	Standard Stand Configuration
1.41	1	Upper Wedge Set <p>4-way wedge Set, including 15°, 30°, 45°, 60° wedges</p>
1.42	1	Compensator Trays <p>10 compensator trays Includes compensator mount, as required</p>
1.43	1	Patient/Accessory Verification System <p>Provides the capability of accessory identification through use of a barcode scanning system. Patient verification is not supported.</p> <p>FEATURES:</p> <ul style="list-style-type: none"> - One (1) Bar Code Scanner - One barcode label printer <p>PREREQUISITES:</p> <ul style="list-style-type: none"> - ARIA Practice Management, Version 8.8.15

Item	Qty	Product Description
1.44	1	<p>Motion View</p> <p>CCTV Camera Kit</p> <p>FEATURES:</p> <ul style="list-style-type: none"> - Two pan, tilt, zoom CCTV cameras - Two desktop, 81/4 inch LCD displays with built in camera controls - Adjustable viewing angle for patient privacy - Push button pan, tilt, zoom, and home position control
1.45	1	<p>LAP Apollo Green Room Laser Kit</p> <p>LAP Apollo Green Room Laser Kit</p> <p>FEATURES:</p> <ul style="list-style-type: none"> - 1 Apollo Green Remote Controlled Ceiling Crosshair Laser - 2 Apollo Green Remote Controlled Lateral Crosshair Lasers - 1 Apollo Green Remote Controlled Sagittal Line Laser
1.46	1	<p>Additional CCTV Camera System</p> <p>Additional CCTV Camera Kit</p> <p>FEATURES:</p> <ul style="list-style-type: none"> - Two pan, tilt, zoom CCTV cameras - Two desktop, 81/4 inch LCD displays with built in camera controls - Adjustable viewing angle for patient privacy - Push button pan, tilt, zoom, and home position control <p>Prerequisites:</p> <p>Motion View must be selected or installed</p>
1.47	1	<p>Main Circuit Breaker Panel</p> <p>General Electric Co. main circuit breaker panel, interfacing to a single power input feed from the facility Mains. Circuit breakers provide independent over-current protection for equipment at the console and in the treatment room. UL and IEC/CE certified.</p>
1.48	1	<p>Quad Power Conditioner</p> <p>Transtector Power Conditioner</p> <p>Input: 208V, 240V, 480V or 600V</p> <p>Output: 208/120 V and 480/277 V</p>

Item	Qty	Product Description
1.49	1	Filtrine Water Chiller: HE
		See Filtrine Specification sheet for details

Section 2 Eclipse Expansion

2.01 1 Planning for Varian Clinac

Description:

This includes a site LMC license for a Varian Clinac

FEATURE(S):

1. Leaf motion calculation software for multiple-static-segment delivery on a Varian Clinac.

LICENSE(S):

1. LMC for Varian Clinac

PRE-REQUIRE(S):

1. Latest software version must be installed on each Eclipse in the network
2. Interactive IMRT Planning and/or Electronic Surface Compensation

2.02 1 Planning for Varian TrueBeam

Planning for HET Machine

Description:

This includes a site LMC license for a Varian TrueBeam.

FEATURE(S):

1. Leaf motion calculation software for multiple-static-segment and sliding window delivery on a Varian TrueBeam.

LICENSE(S):

1. LMC for Varian Clinac
2. LMC for Varian TrueBeam

PRE-REQUIRE(S):

1. Latest software version must be installed on each Eclipse in the network
2. Interactive IMRT Planning and/or Electronic Surface Compensation
3. Varian TrueBeam

2.03 1 4D Planning

Description:

This includes ONE (1) 4D Planning license.

FEATURE(S):

Item	Qty	Product Description
		<ol style="list-style-type: none"> 1. Import, export and management of 4D CT and PET image sets 2. Automatically register phase- or amplitude-binned image series together with any corresponding derived image series such as MIP, Min-IP, Average-IP or Free Breathing images. 3. View and assess the motion by displaying the 4D image series as movie loops and as blended (or "blinking") images for contouring, field setup and plan review 4. Display 4D image sets in 2D, 3D and digitally reconstructed radiograph (DRR) views. 5. Automatically create ITV's (Internal Target Volumes) <p>LICENSE(S):</p> <ol style="list-style-type: none"> 1. 4D Planning License <p>PRE-REQUISITE(S):</p> <ol style="list-style-type: none"> 1. Software version 8.5 or higher must be installed on all Eclipse in the network.
2.04	1	<p>STD TRNG: 4D Planning</p> <p>Training is included with the purchase of 4D Planning. Training plan details will be provided by the training management team as part of your product implementation process</p> <p>- Offer is valid for 18 months after installation of product.</p> <p>Training is not transferable with other products and services</p>
2.05	1	<p>Eclipse Smart Seg Auto Contouring</p> <p>Description:</p> <p>The Smart Segmentation system expands Eclipse's suite of single-organ automatic image segmentation algorithms to include the automatic delineation of multiple organs or regions of interest.</p> <p>FEATURE(S):</p> <ol style="list-style-type: none"> 1. Smart Segmentation contours body and bone in all CT datasets and other organs of interest in the thorax and male pelvis. The system is implemented in such a way that DICOM CT formatted image data can be transferred to the Smart Segmentation system. The CT images are automatically segmented and made available for subsequent DICOM transfer to treatment planning and management systems. <p>Available in v8.9 or higher:</p> <ol style="list-style-type: none"> 2. Bones of female pelvis will be segmented 3. Segmentation of thorax and pelvis Structures in full body images is supported as well 4. Improved segmentation of bones (pelvis and femur and others), external head contour and the thoracic spinal canal 5. Introduction of new structures such as seminal vesicles and gold markers 6. New user definable structure margins 7. Improved artifact correction and handling of calcifications 8. The Smart Segmentation can also be accessed from the SmartAdapt 1.1 application

Item	Qty	Product Description
		<p>9. Multiple Services per site may be installed and managed with the Segmentation Monitor</p> <p>LICENSE(S):</p> <p>1. Domain license for the pelvis (All Eclipse workstations in one network domain can access the Smart Segmentation service)</p> <p>Domain license for the thorax</p> <p>PRE-REQUISITE(S)</p> <p>1. Eclipse Treatment Planning System version 8.0 or higher</p> <p>OTHER(S):</p> <p>1. Installation</p> <p>2. User documentation on CD.</p>
2.06	1	<p>Eclipse Acuros External Beam</p> <p>Eclipse™ treatment planning with Acuros™ advanced dose calculation</p> <p>DESCRIPTION: This includes a site license for Acuros External Beam</p> <p>FEATURE(S):</p> <p>1. Dose calculation algorithm for photons using a grid-based Boltzmann solution to achieve the same accuracy as Monte Carlo with no statistical noise in a fraction of the calculation time.</p> <p>LICENSE(S):</p> <p>1. Acuros External Beam</p> <p>PRE-REQUISITE(S):</p> <p>1. Eclipse version 10.0 or higher must be installed on all Eclipse workstations in the network.</p>
2.07	1	<p>Eclipse RapidArc Planning License Addl</p> <p>DESCRIPTION: This includes one (1) additional Eclipse Dose Dynamic Arc module for RapidArc planning license</p> <p>FEATURE(S):</p> <p>1. Eclipse Dose Dynamic Arc option for RapidArc planning supports dynamic arc treatments produced through volumetric dose optimization.</p> <p>2. This option uses Dynamic MLC, variable dose rate, and variable gantry speed to generate intensity modulated dose distributions in optimized arcs.</p> <p>3. Supports coplanar and non-coplanar arcs.</p> <p>4. Supports full arcs, partial arcs and avoidance sectors.</p> <p>5. Automated optimization of multiple isocenter plans. (This is available in v10.0 or higher.)</p> <p>6. Simple collision detection rules. (This is available for v10.0 or higher.)</p> <p>7. Automatic Normal Tissue Objective. (This is available for v10.0 or higher.)</p> <p>8. Mean dose objective. (This is available for v10.0 or higher.)</p>

Item	Qty	Product Description
------	-----	---------------------

LICENSE(S):

1. Eclipse Dose Dynamic Arc software option and license
2. Conformal Arc for dMLC

PRE-REQUISITE(S):

1. Eclipse version 10.0 or higher must be installed on all Eclipse workstations in the network
2. Interactive IMRT Planning on Eclipse workstations
3. Varian Linear Accelerator with RapidArc Delivery
4. Minimum hardware requirements as per http://www.varian.com/us/oncology/services_and_support/hardware_specifications/

ARO:

The current best estimate for installation lead time is 150 days.

Section 3 Additonal Onsite Training Days (Qty. 10)

3.01 10 APS TRNG: Additional Day

APPLICATIONS TRAINING: Additional Day

Additional training days are available for previously trained Varian products.

One day is equivalent to 8 hours. Time over 8 hours per day will be deducted from remaining balance.

Location: On-site training at Customer Facility

Varian's obligation to provide training is valid up to 18 months after product or order acceptance as applicable

Section 4 Travel and Lodging Allowance and Old Linac Removal

4.01 1 Travel and Lodging

Allowance is applied only to the travel and lodging expenses, including airfare, hotel accommodations and rental car.

The customer is responsible for any expenses outside of the allowance. Travel and lodging charges will be direct billed and are not reimbursable if travel is booked outside of Balboa Travel. The hotel must be Varian preferred. Any remaining balance is non-refundable.

Item	Qty	Product Description
		<p>Please contact Balboa Travel Agency at 877-593-7220 in order to make the necessary travel arrangements once you complete the online registration at www.variantraining.com and receive an email confirmation for the course. Be sure to provide Balboa your Varian sales order number.</p> <p>This Travel and Lodging allowance expires 18 months from the acceptance date of your equipment.</p>
4.02	1	Remove/Dispose Existing Equipment Catalog #: VAR001001007

Section 5	Biomedical Training
------------------	----------------------------

5.01	81	Varian Flex-Credit <p>Varian FlexCredits are to be used for the purchase of Education courses provided by Varian Medical Systems at one of our Education Centers and/or onsite Applications Training. Entitlement training is not transferable for other courses, products or services and cannot be applied towards flex credits. FlexCredits cannot be applied towards the purchase other Varian products or services.</p> <p>Varian FlexCredits expire 24 months after purchase. Flex credits are for the intended use of the training as listed below. The training is interchangeable for other Varian Education Courses and Applications Training, provided that the changes are equivalent to the total quantity of flex credits purchased.</p> <p>Training Descriptions and Credits Required:</p> <p>-----</p> <p>ED: HEC101 High-Energy Clinac TM1 - (Qty: 1, 15 credits each)</p> <p>Replaces Course High Energy Clinac Tech Maint I EDB001002003 Designed for Biomedical Engineers Pre-Requisites Training and experience in advanced electronic technology. Specific experience with the operation and maintenance of the type of Clinac addressed in the course for a minimum of 3 months. Software Version: n/a</p> <p>Description: This course covers theory of operation, detailed system theory of pulse modulators, microwave power systems, computer control systems, analog and digital dosimetry systems, vacuum pumps and monitoring systems, electro-pneumatic control assemblies, and system concept trouble shooting & servicing.</p> <p>Duration & Location 10.0 days at Las Vegas, Nevada, USA or Beijing, CHINA.</p>
------	----	--

Item	Qty	Product Description
		<p>FlexCredits Eligible</p> <p>Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated.</p> <p>-----</p> <p>ED: HEC102 High-Energy Clinac TM2 - (Qty: 1, 16 credits each)</p> <p>Replaces Course High Energy Clinac TM II EDB001002006 Designed for Biomedical Engineers Pre-Requisites: Completion of Clinac High C Energy Technical Maintenance I. Specific experience with the operation and maintenance of the type of Clinac addressed in the course for a minimum of 1 year. Software Version: n/a</p> <p>Description: This course covers klystron and gun replacement, changing couch bearings and motors, beam finding, tuning and alignment steering, servo calibration, in addition to extensive fault finding and resolution.</p> <p>Duration & Location 10.0 days at Las Vegas, Nevada, USA or Beijing, CHINA. FlexCredits Eligible</p> <p>Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated.</p> <p>-----</p> <p>ED: MLC101 Millennium MLC TM - (Qty: 1, 7 credits each)</p> <p>Replaces Course Millennium MLC Tech Maint EDB001002007 Designed for Biomedical Engineers Pre-Requisites: Experience with Window95/98/NT 4.0/XP Operating Systems. Training and experience with advanced computer controlled electro-mechanical technology would also benefit the student. Software Version: n/a</p> <p>Description: This course covers emergency and safety procedures, detailed system description, Controller and Workstation messaging and interlocks, Shaper and Digitizer operation, MLC model differences, head and carriage calibration of electrical, optical and mechanical subsystems, and routine maintenance procedures.</p> <p>Duration & Location 5.0 days at Las Vegas, Nevada, USA FlexCredits Eligible</p> <p>Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated.</p>

Item	Qty	Product Description
<hr/>		
		<p>ED: OBI101 OBI TM - (Qty: 1, 7 credits each)</p> <p>Replaces Course OBI Technical Maintenance EDB001002026 Designed for Biomedical Engineers Pre-Requisites: High Energy C Technical Maintenance I. All exceptions must be approved by the Varian Education Department before enrolling in the course. Software Version: n/a</p> <p>Description: The course covers OBI/Clinac interface, CPI 100khz x-ray generator, Paxscan 4030CB amorphous silicon imaging panel, Cone-Beam CT and the Customer Acceptance Procedure (CAP) and more. This course consists of a combination of classroom lectures and labs.</p> <p>Duration & Location 5.0 days at Las Vegas, Nevada, USA FlexCredits Eligible</p> <p>Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated.</p>
<hr/>		
		<p>ED: TBM101 TrueBeam TM1 - (Qty: 1, 17 credits each)</p> <p>Replaces Course TrueBeam Technical Maintenance I EDB001002042 Designed for Biomedical Engineers Pre-Requisites: Training and experience in advanced electronic technology. Software Version: n/a</p> <p>Description: It is the intent to acquaint and familiarize the student with the general accelerator function, operation and routine support. The course will give a basic technical understanding of machine concepts and day-to-day maintenance while providing a working terminology for communication with service personnel.</p> <p>Duration & Location 10.0 days at Las Vegas, Nevada, USA FlexCredits Eligible</p> <p>Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated.</p>
<hr/>		
		<p>ED: TBM102 TrueBeam TM2 - (Qty: 1, 19 credits each)</p> <p>Replaces Course TrueBeam Technical Maintenance 2 EDB001002044 Designed for Biomedical Engineers Pre-Requisites: Completion of TrueBeam Technical Maintenance I Software Version: n/a</p> <p>Description: This course covers theory of operation, detailed system theory of modulator, RF system, gun system, embedded computer control system,</p>

Item	Qty	Product Description
		dosimetry systems, vacuum system and imaging systems, electro mechanic assemblies, networking and system concept trouble shooting & servicing. The labs cover beam tuning, couch bearing replacement, imaging calibration and initializations, using MLC diagnostic tools and PMI.
		Duration & Location 10.0 days at Las Vegas, Nevada, USA FlexCredits Eligible
		Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated.

Section 6 Stand Alone Accessories -MMI for BrainLAB

6.01 1 MMI for Brainlab

The Motion Management Interface (MMI- Brainlab) from Varian allows Brainlab's devices (Adaptive Gating) to gate the beam delivery and/or initiate requests for couch shifts. This interface should be purchased when Adaptive Gating is to be installed on a Varian Linac.

Limitation:

- Permits connection with only one external device at a time. Switching between devices and gating with multiple devices is not supported.

Prerequisites:

- C-Series software release 7.6 or above
- MLC with Type II communication
- 4DITC v10+
- Remote Couch Motion

Section 7 SRS/SBRT Education Course-Tuition Only

7.01 1 UAB TrueBeam SRS/SBRT Clinical Sch 1 tui

SRS & SBRT Delivery with Eclipse and TrueBeam
The University of Alabama at Birmingham
Entitlement is for one tuition

Who should attend:

The course is ideally suited for a multi-disciplinary team of 3-4 individuals planning to deliver advanced therapies with Eclipse and TrueBeam, including CNS radiosurgery and stereotactic body radiation therapy. Curriculum is suitable for radiation physicists, radiation oncologists, surgeons, and dosimetrists.

Item	Qty	Product Description
		<p>Prerequisites:</p> <p>none</p> <p>Content:</p> <p>Course content is taught by a multi-disciplinary team from the University of Alabama at Birmingham, including subspecialty surgeons, radiation oncologists and medical physicists. This team installed the first clinical TrueBeam STx in the world and has extensive experience with RapidArc and High Intensity Mode beams. The course content can be individually focused on specific sites (e.g. neuro or thoracic), depending upon the interests of those enrolled. The course is a complete "how to" with didactic and laboratory experiences for advanced therapies with TrueBeam including:</p> <ul style="list-style-type: none"> · Commissioning and QA · 4D simulation · Respiratory motion management · Triggered imaging · RapidArc Radiosurgery · High Intensity Mode (flattening filter free @2400 MU/min) · Clinical implementation of advanced procedures in CNS, H/N, lung, liver, spine, and prostate · Navigation bronchoscopy for fiducial placement <p>The course includes laboratory experiences that mimic the clinical process, including mock tumor board, contouring, and treatment planning.</p> <p>This course is offered and exclusively controlled by University of Alabama Birmingham; Varian is not responsible for and has not reviewed the course topic, content or materials. The student will be required to sign an agreement that disclaims all liability for Varian with respect to the content and training.</p> <p>The course tuition includes course material. Travel and lodging is not included. Customer is responsible for all travel expenses and incidentals.</p> <p>Obligation to provide training is valid up to 18 months after product or order acceptance as applicable. If the clinical school is not available Varian will make all reasonable efforts to find a suitable replacement or convert course to Varian product training flex credits.</p> <p>Duration & Location - Three-day course. Hazelrig-Salter Radiation Oncology Center, The University of Alabama at Birmingham, Birmingham, AL</p> <p>Continuing Education Accreditation - Not Eligible</p> <p>FlexCredits - Not Eligible</p>
8.01	1	Brainlab Custom Quote

iPLAN RT PLATFORM

1 | | IPLAN WORKSTATION PREMIUM WITH FLATSCREEN AND PRINTER

Planning Station for SRS/SRT treatment planning, especially capable to perform fast Monte Carlo Dose Calculations:

- Dual Quadcore Processor Intel Xeon 5660, 2.80 GHz
- 2 Hexa core set-up (12 CPU cores)
- 12 GB Main Memory
- Harddisk (RAID Level 5 + Hotspare) for advanced data security
- Supermulti-DVD/CD writer
- Keyboard and Mouse
- State of the art 64bit OS MS-Windows 7 for latest applications (alternative OS XP for XP only applications)
- 21" SXGA flatscreen monitor (1600x1200)
- ISO A3 inkjet printer for documentation of treatment plan
- Accredited, tested & documented for Brainlab iPlan applications

2 | | DICOM IMPORT

Enables import of major types of Dicom Data into iPlan

- Requires minimum iPlan RT Image 4.1

| TRANSFER CT DICOM NET / CD / MOD

- Selection of patient to transfer by name/ID
- Automatic conversion and data organization

| TRANSFER MR DICOM NET / CD / MOD

- Selection of patient to transfer by name/ID
- Automatic conversion and data organization

| TRANSFER X-RAY DICOM

Transfer of X-ray images using DICOM 3.0 standard

- Selection of patient to transfer by name/ID
- Automatic conversion and data organization

| TRANSFER PET/SPECT DICOM NET

- Selection of patient to transfer by name/ID
- Automatic conversion and data organization
- Verify with Brainlab: Only specific scanners are supported

| DICOM QUERY RETRIEVE

Patient data archiving and communication software:

- Query & Retrieve'' function for all installed PatXfer modules
- Supports 3rd Party DICOM archives or planning systems
- Eliminates need to "send" data from remote scanners
- Preview function for images to be transferred
- Automatic data conversion and organization
- Adjustment of grey-level values with windowing function
- Delete and archive of patient data

3 | | STANDARD DICOM RT IMPORT

Enables import of Dicom RT Structures and fMRI data into iPlan

- Requires minimum iPlan RT Image 4.1

| TRANSFER ANALYZE NET (fMRI)

- Import of Analyze image data generated by third party applications
- Support of third party fMRI or FiberTracking results
- Automatic conversion and data organization
- Allows transfer from "Analyze" format with PatXfer software
- Selection of patient to transfer by name/ID
- Supported transfer media: HDD, NET, or CD-ROM
- Please verify data format requirements with Brainlab prior to order

| DICOM RT STRUCTURE IMPORT

- Import of 3D objects, structures, image fusion data and isocenter position (Dicom RT "Struct" standard) from 3rd Party Applications to iPlan RT Image

4 | | ADVANCED DICOM RT EXPORT PACKAGE

Enables full dose export including one CT set with its corresponding outlined structures, dose distribution, Linac parameters and setup DRRs for treatment and positioning.

- Allows structures (3D contours and isocenters) to be exported for further planning by a 3rd party treatment planning system
- Export of one CT Dataset (Reference CT)
- Supports patient positioning with CBCT
- Convenient interface with straightforward export of patient information
- Also functions as a DICOM RT patient data anonymization tool
- Requires iPlan RT Dose Version 4.1.3 or higher

| DICOM RT STRUCTURE EXPORT

- Export of 3D objects, structures and image fusion data (Dicom RT "Struct" standard) from iPlan RT Image to 3rd Party Applications

| DICOM RT PLAN EXPORT

- Export of treatment plan parameters to VARIIS 6.5 or higher / ARIA and IMPAC / Lantis 6.1 or higher Record & Verify (R&V) Systems with DICOM RT Import capability
- Full export requires Dicom RT functionality/capability of existing R&V system
- Dicom to R&V" converter tool will be installed for R&V systems without Dicom RT functionality to export standard plan parameters (later upgrade to Dicom RT not included)
- Export of plan parameters from the R&V system to the treatment machine (Linac / MLC) not covered by this item

| DICOM RT DRR EXPORT

- Export of DRR Images for verification of patient set-up
- Pre-requisite: existing Dicom RT functionality of R&V system

| DICOM RT DOSE EXPORT

- Export of DICOM RT Dose objects from iPlan RT Dose to 3rd Party Applications
- Requires iPlan RT Dose Version 4.1.3 or higher

| DICOM RT RTOG CLINICAL TRIAL INTERFACE

Convenient data preparation and conversion and export of Dicom RT data into RTOG/clinical study compliant format

- Anonymizes patient data to comply with RTOG guidelines
- Includes clinical trial study ID for identification
- Provides direct transfer to RTOG format within one interface
- Eliminates the need for 3rd party conversion tools
- Requires iPlan RT Image and Dose 4.1 or higher
- Requires Dicom RT Plan Export
- Requires Dicom RT Structure Export
- Requires Dicom RT DRR Export
- Requires Dicom RT Dose Export

5 | **| IPLAN RT IMAGE SOFTWARE 4.1**

Software package for physician viewing, image fusion, contouring and volume definition that provides:

- Planning tools based on clinical workflows for physician viewing, image fusion, contouring and volume definition designed to make the contouring process faster and more streamlined
- Supports the display and fusion of multiple image sets such as CT, MR, PET, Rotational Angio, Cone Beam CT, fMRI and DTI imaging
- Simultaneous display of multiple image sets with independent settings (windowing, reconstruction)
- Support for SUV (Standard Uptake Value) interaction with PET imaging for intuitive contouring
- DICOM Import integrated into iPlan RT Image (requires DICOM Import Brainlab Article B33503)
- Convenient windowing selection from pre-defined settings
- Enhanced viewing tools such as zooming with mouse wheel and object identification with mouse over
- Mouse-driven distance and angle measurements
- Automatic localization of Brainlab CT localizer on Brainlab Headring / Mask or H&N System for stereotactic planning
- Additional third party localizer/head ring support (requires Brainlab Article 21224)
- Manual Image Fusion of multiple diagnostic data sets with fine adjustment
- Automatic mutual information based Image Fusion of multiple data sets (CT, MRI, PET, Rotational Angio, etc.) (Brainlab Article 21340)
- Allows creation of user defined object templates
- Interactive object delineation with intuitive "brush" and "eraser" functionality
- Linear interpolation between contours for fast and effective object delineation with manual adjustment in any slice
- Object delineation in single or multiple windows, original data or axial, coronal & sagittal reconstructions
- Simultaneous object delineation in fused data sets
- Object manipulation possibilities with boolean operations such as unions and object splitting for targeted dose planning

- Voxel based surface generation and comprehensive 3D visualization of patient anatomy and delineated objects
 - Advanced segmentation for blood vessels in angiograms, bones in CT and activation regions in functional imaging
 - iPlan RT Image supports Automatic Atlas Segmentation including Cranial, Prostate, Spine and Head and Neck Lymph Level Automatic Segmentation for fast and consistent contouring results (Brainlab Article B32100, 21280, 21281 or 21282)
 - Fast target definition by adjustable threshold-based detection algorithm
 - iPlan RT Image is a prerequisite for Smart Segmentation Software including Smart Brush and Smart Shaper 3D segmentation - providing rapid interactive update of contours in axial, coronal and sagittal 3D reconstruction (Brainlab Article 21220)
 - Ability to move contoured anatomical objects in 3D
 - iPlan RT Image is a prerequisite for iPlan RT 4D-CT Analysis and Object Morphing Software (Brainlab Article 21288)
 - iPlan RT Image is a prerequisite for iPlan RT FiberTracking (Brainlab Article 21217)
 - iPlan RT Image is a prerequisite for iPlan RT BOLD MRI Mapping (Brainlab Article 21289)
 - Supports DICOM RT Import and Export (Brainlab Article B33504 and B33500)
 - Seamless Export of planning information to iPlan RT Dose for SRS / SRT / IMRT planning (Brainlab Article 21381)
 - 64 bit operating system compatibility
 - iPlan RT Image is supported by iPlan Net Anywhere, Anytime Connectivity Solution (Brainlab Article 21255)
 - Requires iPlan RT Dose Version 4.5 (Brainlab Article 21381)
 - Recommended: Brainlab Premium Workstation (Brainlab Article 10958-01) or iPlan Net Remote Planning 3.0 and Server (Brainlab Article 21255, 21253 or 21254 and 10911)
 - Requires minimum 1x SERVICE ON-SITE BY BRAINLAB SERVICE ENGINEER (1 DAY) (Brainlab Article 82993-01)
 - Requires minimum BLA: TREATMENT PLANNING AND PHYSICS (1 PERSON/ 5 DAYS) (Brainlab Article 82012-01) or if installed without iPlan RT Dose BLA: PRE-PLANNING USING IPLAN RT IMAGE (1P) (Brainlab Article 82012-35)
- Further training courses offered if needed:
- CASE COVERAGE / CLINICAL TRAINING ON-SITE (1 DAY BRAINLAB CLINICAL TRAINER) (Brainlab Article 82032-01)
- The customer is solely responsible for the measurement and correctness of dose data, for stereotactic localization and for patient setup, as well as validation and quality assurance regarding all of the foregoing. Brainlab disclaims any and all liability in connection therewith. This disclaimer does not apply to the extent that claims are based on statutory product liability.

6 | iPLAN AUTOMATIC IMAGE FUSION SOFTWARE

Fast automatic fusion based on mutual information algorithm:

- Supports CT, MR (T1, T2, MRA), PET, SPECT in combination with the corresponding transfer modules
- Compatible with data sets of various body regions
- Definition of "Region of Interest" to exclude areas from fusion
- Manual fine-adjustments possible in all dimensions
- Simultaneous visualization in axial, coronal and sagittal

- planes
- Color overlay and spyglass verification for all planes

7 | **IPLAN SMART BRUSH AND SMART SHAPER SEGMENTATION SOFTWARE**

Includes Smart Brush and Smart Shaper to provide:

- Powerful drawing tools for fast and convenient update to anatomical images and contours
- Quick update of Automatic Segmentation results
- Interactive modification possible at any time - speeds up contouring and treatment planning
- Smart Brush provides:
 - Fast target delineation by adjustable threshold-based detection algorithm
 - Automatic linear interpolation between slices
 - Immediate and automatic identification of object boundaries
- Smart Shaper provides:
 - Interactive object shaping in 3D for elegant and fast optimization of contoured volumes
 - Rapid update of contours in axial, coronal and sagittal reconstructions at once
- Supports adaptive RT possibilities with fast 3D object adjustment
- Requires minimum iPlan RT Image version 4.1

8 | **IPLAN AUTOMATIC SEGMENTATION PACKAGE**

Fast automatic structure segmentation for Cranial, Head and Neck, Prostate & Spine applications using a volumetric atlas-based 3D Atlas and image morphing.

| **IPLAN AUTOMATIC SEGMENTATION SOFTWARE CRANIAL**

Software module that allows anatomical images to be easily enriched with brain structures

- Anatomical structure-based automatic image morphing
- Separate volumetric calculation for each object
- Manual editing of automatically segmented objects
- Threshold based segmentation for quick and easy selection of anatomical structures
- Teaching tool for visualization and identification of patient anatomy in diagnostic images
- Requires T1 weighted MRI patient scan
- Minimum requirement (software): iPlan Cranial 2.0 or iPlan RT Image 3.0
- Minimum requirement (hardware): Pentium IV, 2.4 GHZ, 1 GB Ram, 40 GBHDD with Graphic card supporting OpenGL

| **iPLAN AUTOMATIC SEGMENTATION PROSTATE AND SPINE**

Fast automatic segmentation algorithm using 3D atlas for prostate & spine indications:

- Automatic, volumetric atlas-based segmentation
- Anatomical structure-based automatic image morphing
- Increased resolution and anatomical detail in 3D representation
- Threshold based segmentation for quick and easy selection of anatomic structures (lesions, vessels, bones, etc.)
- Allows manual editing of automatic segmented objects
- Separate volumetric calculation for each object
- Transparent mode for each object

- Requires CT patient scan (without contrast agent)
- Requires minimum iPlan RT Image version 4.1 or higher

| iPLAN AUTOMATIC SEGMENTATION HEAD & NECK INCL. LYMPH LEVELS

- Fast and automatic segmentation using a 3D Head and Neck Lymph Level Atlas
- Automatic, volumetric atlas-based segmentation with image morphing
- Automatic delineation of more than 45 objects simultaneously specifically optimized for head and neck treatments
- Allows manual adaptation of automatically segmented objects
- Separate volumetric calculation for each object
- Transparent mode for each object for advanced visualization
- Valuable teaching tool for visualization and identification of patient anatomy in diagnostic images
- Requires CT scan (recommended)
- Requires minimum iPlan RT Image version 4.1

9 | | **iPLAN RT ANGIOGRAPHIC REGISTRATION**

For AVM treatments using Angiographic images:

- Identification of Brainlab CT/X-Ray localizer fiducials
- Automatic correlation of X-Ray images onto CT images for target delineation on both data sets
- Pan, Zoom & Windowing functions for easy localization

10 | | **iPLAN RT ANGIOGRAPHIC DISTORTION CORRECTION**

Automatic correction of distorted x-ray images caused by the general design of x-ray image intensifiers and external magnetic fields (e.g. magnetic field of the earth):

- Lightweight carbon fibre reference plate
- Rapid attachment to Brainlab cranial Localizer for 2D X-Rays
- Software detection of beads for distortion correction

11 | | **iPLAN RT DSA PROCESSING**

- X-ray localization and transfer of stereotactic coordinate system to analogue or digital DSA image series
- Target definition within DSA images

12 | | **iPLAN RT DOSE SOFTWARE 4.5.**

Software for stereotactic radiosurgery and radiotherapy treatment planning that provides:

- Workflow based planning built around radiosurgery clinical needs offering streamlined treatment planning
- Beam/Plan Library and Templates for fast planning of standard indications
- Interactive 3D object manipulation including combine, enlarge and split objects and shell generation
- Software interaction with mouse wheel zooming and mouse over for easy object identification
- Comprehensive 3D visualization of objects, patient anatomy and radiation beams from any angle
- Supports different CT Couchtop Settings (Brainlab Imaging Couchtop, Varian Exact™ IGRT Couchtop)

- Automatic isocenter placement into PTV center of gravity
- 3D Room display to view table and gantry angles
- Dose prescription and fractionation scheme planning
- Pencil Beam dose calculation from 4MV to 25MV (as defined by the British Journal of Radiology - BJR 25)
- Fine 1.5 mm pencil beam grid size for accurate dose calculation
- Ability to save multiple scanner HU Setups
- Optional manipulation of patient surface for dose calculation
- Tissue inhomogeneity compensation with pencil beam path length correction
- Adaptive dose grid for fast dose visualization
- Flexible dose calculation allows the ability to prescribe either to a volume or to a point
- Enhanced Dose-Volume-Histogram (DVH) for all structures with variable grid size and conformity index calculation - enables interactive and flexible settings of clinical qualifiers
- Plan comparison allows two treatment plans to be viewed simultaneously for informed decision making with combined viewing and interaction with dual treatment plan reconstructions, overlay of isodose information and DVH curve comparison
- Dose baseline concept, enables import of dose of previously calculated treatment plans
- Measurement capabilities for dose verification at any 3D point
- Composite Planning combining different iPlan RT Dose treatment modalities
- Multiple color schemes each with different levels for dose visualization as isodose line, isodose wash or threshold dose
- Print out function for plan and templates enabling stereotactic patient set-up using the Brainlab Target Positioner
- Mapping of entire treatment plan to phantoms for verification
- DRR calculation (Digitally Reconstructed Radiographs) for set-up verification
- Integrated quality assurance checks for maximum safety
- Pre-configured interface for DICOM RT Import and Export (requires corresponding software modules)
- Automated plan optimization for efficient treatment delivery, clockwise and counter clockwise arc rotation, automatic optimization of arc/beam order and gantry rotation for delivery
- iPlan RT Dose Version 4.x is a prerequisite for the following extra planning modules:
 - Circular Arc SRS/SRT Planning (Brainlab Article 20630), Conformal SRS/SRT Planning (Brainlab Article 23010), Dynamic Conformal Arc Planning (Brainlab Article 23050), IMRS/IMRT Inverse Planning (Brainlab Article 23060), HybridArc Planning (Brainlab Article 21383)
- Support of Brainlab iPlan Monte Carlo Dose Algorithm (XVMC) (Brainlab Article 23071)
- Prerequisite for HybridArc (Brainlab Article 21383)
- Prerequisite for iPlan RT Adaptive (Brainlab Article 21382)
- Supports HIPAA compliance
- Supported by iPlan Net Anywhere, Anytime Connectivity Solution (Brainlab Article 21255)
- 64 bit operating system compatibility
- Requires iPlan RT Image Version 4.1.1 (Brainlab Article 21211)
- Recommended: Brainlab Premium Workstation (Brainlab Article 10958-01) or iPlan Net Remote Planning 3.0 and Server (Brainlab Article 21255, 21253 or 21254 and 10911)
- Requires DICOM RT Import capabilities of used Record & Verify system

- Does not support VARIs database Link or RTP file export via dcm2rv (not compatible with Siemens Moduleaf MLC).
- Does not support Varian VARIs versions prior to 6.5
- Compatible to Exactrac 3.5 or greater
- US only: Not compatible with Siemens Moduleaf MLC
- m3 on Siemens Linacs without Advanced Siemens Integration (Brainlab Article 24870) and m3 on Elekta Linacs is no longer supported
- Supports following Elekta MLCs: MLCi, MLCi2, Beam Modulator, Agility
- Supports Elekta Cones (Elekta cones require cone verification system from Elekta)
- Requires minimum 3x SERVICE ON-SITE BY BRAINLAB SERVICE ENGINEER (1 DAY) (Brainlab Article 82993-01)
For additional linacs, fluence modes, MLCs, workstations and/or iPlan Net extra days of service are required.
- Requires minimum BLA: TREATMENT PLANNING AND PHYSICS (1 PERSON/ 5 DAYS) (Brainlab Article 82012-01)
Further training courses offered if needed:
- BLA: PRE-PLANNING USING IPLAN RT IMAGE (1P) (Brainlab Article 82012-35)
- CASE COVERAGE / CLINICAL TRAINING ON-SITE (1 DAY BRAINLAB CLINICAL TRAINER) (Brainlab Article 82032-01)
The customer is solely responsible for the measurement and correctness of dose data, for stereotactic localization and for patient setup, as well as validation and quality assurance regarding all of the foregoing. Brainlab disclaims any and all liability in connection therewith. This disclaimer does not apply to the extent that claims are based on statutory product liability.

13 | CIRCULAR ARC SRS/SRT PLANNING

Planning for cranial SRS/SRT using Circular Collimators:

- Interactive positioning of up to 16 isocenters in various views
- Efficient tools to control and optimize the dose to critical structures while maximizing target volume coverage
- Interactive optimization of start and stop angles in beams eye display or arc plane reconstruction
- Numeric manipulation of all relevant treatment parameters
- Independent dose weighting of Arc Planes or Isocenters
- Requires iPlan RT version 4.x or greater
- Not available for BrainSCAN upgrades

14 | CONFORMAL AND DYNAMIC CONFORMAL SRS / SRT

Planning software for cranial SRS and SRT treatments using Conformal Beams, Conformal Arcs and Dynamic Conformal Arcs:

- Dynamic conformal arc modality utilizes continuously changing MLC field shape optimized to the contour of the PTV with rotating gantry
- Interactive placement and 3D manipulation of beams and conformal arc planes in various displays including beams eye views
- Intuitive and rapid beam and arc placement guided by 3D collision map to minimize critical structure involvement while maximising target volume coverage
- Automatic and interactive optimization of beam shape using "paintbrush" function in beams eye views

- Definition of beam margins and primary jaw settings
- Numeric manipulation of all relevant treatment parameters
- Independent dose weighting of beams and arc planes

15 | IMRS/IMRT INVERSE PLANNING

Inverse Planning for Intensity Modulated treatments:

- Intuitive specification and weighting of relative importance of PTV, risk organ and normal tissue dose constraints
- Simultaneous calculation of four optimized IMRT plans with varying emphasis of PTV versus risk organ consideration
- Comprehensive side-by-side comparison and selection of preferred plan from the four options
- Fast dose preview and "intelligent" re-calculation with modified parameters
- Optional boost volumes within PTV
- Integrated leaf sequencing and "tongue & groove" optimization
- Automated Step&Shoot or Dynamic continuous delivery of IMRT plans with standard Varian MLCs or with m3 micro-MLC attached to Varian Clinacs (requires Varian Clinac Controller 5.4 or higher, Digital Interface, Dynamic Capabilities enabled and m3 Advanced Clinac Integration)
- Automated Step&Shoot delivery of IMRT plans with standard Siemens MLC, Siemens Moduleaf micro-MLC or m3 micro-MLC attached to Siemens Linacs (requires Advanced Siemens Linac integration of m3 and Siemens Digital Interface Linac, Linac Console Software 6.5/7.2 or higher (not 7.0/7.1), SIMTEC AFS or IMRT or IMMAXX option enabled and PRIMEVIEW/Impac Sequencer Interface Version 1.5 or higher)
- IMRT requires iPlan RT Dose 4.1.2, Conformal SRS/SRT Planning Software, and specific MLC module: SRT Planning for Varian MLCs / Siemens MLCs, SRS / SRT Planning for Siemens micro-MLCs

16 | IPLAN RT MONTE CARLO DOSE ALGORITHM

Monte Carlo advanced Dose Calculation algorithm:

- Calculates dose distributions for IMRT and conformal radiotherapy treatment planning by modelling the transport of single photons and electrons through the linac head and the patient
 - Based on XVMC (Xray Voxel Monte Carlo)
 - Monte Carlo dose calculation exclusively for photons from 4MV to 20MV
 - Systematic calculation accuracy above 2% or 2mm
 - Calculation time ~3 minutes to achieve 2% statistical accuracy in the PTV for a prostate case with 3 beams (Varian Clinac 6 MV, Millennium MLC) and 2 mm x 2 mm x 4 mm voxel resolution. The calculation time is inversely proportional to the number of processors.
 - Support of Novalis/Novalis Tx and Brainlab m3 high-resolution mMLC on Varian, Siemens and Elekta
 - Support of Varian linacs with MLC HD120 , 120, 80, 52
 - Support of Siemens linacs with MLC 160, 82, 58 and Moduleaf
 - Siemens Moduleaf requires iPlan RT Dose 4.5 or higher; not supported for US
 - Support of Elekta linacs with MLCi, Beam Modulator
 - Commissioning by standard dose measurements in air and water
 - Requires Minimum iPlan RT Workstation Premium
 - Requires Minimum iPlan RT Dose Version 4.1.2
 - Requires MC Individual Base Data Generation per MLC and per Energy
 - Requires MC Data Acquisition Support per MLC and per Energy
- The customer is solely responsible for the measurement and correctness of dose data, for stereotactic localization and for patient setup, as well as validation and quality assurance regarding all of the foregoing. Brainlab

disclaims any and all liability in connection therewith. This disclaimer does not apply to the extent that claims are based on statutory product liability.

17 | | SRT PLANNING FOR VARIAN MLCs

Treatment planning support for Conformal Beams, Conformal Arcs, Dynamic Ars, automated Step&Shoot IMRT, Dynamic IMRT and HybridArc with Varian MLC-52, MLC-80, MLC-120 and HD120:

- Requires iPlan RT Dose 3.x or higher and corresponding software planning modules
- Requires DICOM RT Plan Export
- Dynamic treatments require the dynamic capability of the MLC enabled

EXACTRAC PLATFORM 6

18 | | EXACTRAC 6.0 X-RAY & INFRARED PACKAGE

Room-based IGRT System to position patient at isocenter according to stereotactic coordinates determined in a CT data set. ExacTrac 6.0 software, dual x-ray generators, x-ray tubes and ceiling-mounted digital imagers combined with optical 3D patient tracking system to provide fast workflow

- Stereoscopic imaging of internal anatomy through high- resolution kV x-ray images from dual x-ray sources including software control of radiographic imaging settings (kV / mAs)
- Dedicated operator console for remote motion and x-ray control
- Automatic loading of patient data for linacs equipped with ADI Interface (Varian only)
- Multiple 6D DRR calculation from CT data in different planes to identify rotational error
- Automatic and manual fusion of DRR to x-ray
- Calculation of positioning deviation in 6 degrees of freedom
- Import of images, isocenters and volumes in Dicom RT Format
- Supports definition of volumes of interest for improved image registration
- Automatic export of set-up images, pre-registration and post-registration DRR's in DICOM RT format (Requires ARiA version 10.0. If above requirements not met by R&V System, alternative data push of PDF document containing all relevant patient specific IGRT data for storage in ARiA/ MOSAIQ/Multi Access/Lantis (Import Capacity for PDF document needs to be available within R&V Environment)) Please note that CBCT data will always only be exported in PDF format.
- Calibration to radiation isocenter of linear accelerator (based on Winston-Lutz pointer)
- Positioning protocol for treatment documentation
- Comprehensive Quality Assurance checks
- User Management and password restricted access
- 2 separate I/O interfaces (Linac console & in-room touch screen monitor)
- Brainlab Imaging Table Top strongly recommended for Varian Exact/TrueBeam Couches
- For Varian ETR, Siemens and Elekta couches the Brainlab Imaging Couch Top or a third-party imaging couchtop is mandatory. The couch top must not contain metallic structures around the treatment region and should not contain any inhomogeneous structures that are visible in x-ray images.
- ExacTrac Autopositioning recommended (Varian couches)
- Please provide system specific data and configure room per Brainlab's form sheet "ExacTrac 6.0 Pre-Installation Information"

- Supports following separate modules:
Frameless SRS Package
ExacTrac Robotics 1.0 / 2.0

DICOM RT Export to R&V
X-Ray Snap Monitoring

IGRT Review & Approval
iPlan RT Users: Compatibility requires iPlan RT Dose 4.5.1 or higher

| EXACTRAC 6.0 INFRARED SOFTWARE

- ExacTrac 6.0 software with wizard guided setting of treatment parameters for fast workflow
- Patient position monitoring during treatment with visual alarm
- Import of images, isocenters and volumes in Dicom RT Format
- Automatic loading of patient data for linacs equipped with ADI Interface (Varian only)
- Documentation printout and positioning report
- Integrated patient archive
- Self-explanatory calibration wizard
- User Management and password restricted access

ET INFRARED CAMERA SYSTEM

Minimum requirement: ExacTrac 5.5 Software

EXACTRAC 6.0 SYSTEM CONTROL UNIT (1 RACK)

- 19" TFT Monitor, Mouse and Keyboard for control room workspace
- 17" Touch Screen Monitor for treatment room control
- System electronic rack for user workstation, interfaces and cabling

EXACTRAC 6.0 USER WORKSTATION

Intel quad core 2,66 GHz workstation with:

- min 4 GB RAM
- 1000 GB HDD
- CD/DVD burner
- min 4x COM Port
- 6x USB 2.0 (2x front, 4x rear)
- 2x X-ray frame grabber
- 1x video frame grabber
- Quadro 2000 graphic card
for 19" rack

EXACTRAC 6.0 ISOCENTER PHANTOM

For ExacTrac system calibration

- Includes 2 sets of Reflective Marker Spheres

| ET BODY MARKER SOCKETS KIT

- 1 package of ET Marker Sockets (250 pcs.) to attach Marker Spheres to patients skin
- 1 package of ET Adhesive Pads (500 pcs.) for ET Marker Sockets

EXACTRAC CT BODY MARKER SPHERES (8 PCS)

Body Markers for attachment to the disposable sockets:

- Aluminium core for automatic detection in CT scan data

EXACTRAC INFRARED BODY MARKER SPHERES (8 PCS)

Body Markers for attachment to the disposable sockets:

- Reflective coating for infrared tracking in Linac room
- Not suitable for localization in CT scan data

EXACTRAC 6.0 PRODUCT DOCUMENTATION

- ExacTrac 6.0 User Guide rev. 1.3
- Country specific accessories

EXACTRAC 6.0 X-RAY SOFTWARE

- Multiple 6D DRR calculation from CT data in different planes to identify rotational error
- Automatic and manual fusion of DRR to x-ray
- Calculation of positioning deviation in 6 degrees of freedom
- Patient CT data import using Dicom RT or Brainlab format
- Software control of radiographic imaging settings (kV & mAs)
- Supports definition of volumes of interest for improved image registration
- Automatic export of set-up images, pre-registration and post-registration DRR's in DICOM RT format (Requires ARiA version 10.0 or MOSAIQ. If above requirements not met by R&V System, alternative data push of PDF document containing all relevant patient specific IGRT data for storage in ARiA/ MOSAIQ/Multi Access/Lantis (Import Capacity for PDF document needs to be available within R&V Environment)) Please note that CBCT data will always only be exported in PDF format.
- Positioning protocol for treatment documentation

EXACTRAC 6.0 FLAT PANEL DETECTOR SYSTEM (2UNITS)

2 amorphous silicon detectors, 20 x 20 cm, 512 x 512 pixel

- Ceiling mounting and covers
- Cabling

EXACTRAC 6.0 DUAL X-RAY GENERATOR & TUBES (2UNITS)

- 2 Varian X-ray tubes
- 2 X-ray collimators
- 2 X-ray generators and control system
- Brainlab user console for control room (remote system activation functionality)
- Cabling

| ET X-RAY CALIBRATION PHANTOM

- For calibration of ExacTrac X-Ray Positioning System

ET POSITIONING ARRAY

Positioning Array for providing faster set-up without the need to attach body markers

- U-shaped reflective marker array for couch movement using ExacTrac X-Ray
- Attaches to table mounted Positioning Array Holder (separate item)
- Carbon-fibre sandwich for optimal radiontranslucence

- Extended range in cranial direction
- Highly recommended for Adaptive Gating Module

| ET POSITIONING ARRAY HOLDER

Allows the flexible mounting of the ET Positioning Array to different couch types:

- Varian Couch with side rail height of 24-27.5mm
- Siemens / Elekta Couch with side rail height of 24-27.5mm
- Varian Couch with ergonomic side rail
- Brainlab Robotics or side rail with a height of 28-29mm

19 | | **EXACTRAC 6.0 AUTOPOSITIONING FOR TRUEBEAM**

- Automatic software for controlled couch movement in xyz planes allowing automatic patient set-up.
- Minimum requirements are Varian TrueBeam couch, ExacTrac Software Version 6.0 and ExacTrac Hardware Platform 6.0

20 | | **EXACTRAC 6.0 FRAMELESS SRS PACKAGE**

Non-invasive stereotactic patient set-up for frameless SRS and SRT utilizing x-ray verification and robotic patient set-up:

- Includes all hardware parts required for angiographic localization and treatment
- Requires ExacTrac Robotics
- Requires Imaging Couch Top Frameless Couch Extension (Please note: For Elekta iBeam Evo, Frameless Extension must be purchased from Elekta.)
- Requires ExacTrac Software 6.0 or higher
- Requires iPlan RT Image version 4.1. or higher
- Requires iPlan RT Dose version 4.1.1 or higher
- Requires Art.No. 21221 for usage of Angio/ X-ray localization feature
- Only for use with Brainlab Treatment Planning System

| FRAMELESS RADIOSURGERY IMAGING SUPPORT

Frameless Radiosurgery Imaging Support for Base Plate fixation during Imaging:

- Attaches to flat CT table with 2 lateral clamps
- 125 x 53cm, 10mm thick

| FRAMELESS SRS CT/ ANGIO LOCALIZER & TARGET POSITIONER

Combined CT localizer & patient set-up box for the attachment of computer generated print-sheets for the laser alignment: Shoulder level elongated design

- Attachable to the Frameless SRS mask base
- Safe and fast transfer of planned isocenter coordinates
- Lesion outline for all orthogonal and beams eye projections
- Easy attachment of prints
- Verification of treatment set-up with lightfield projection
- Direct documentation of isocenter positions
- Only for use with Brainlab Treatment Planning Software
- Allows angiographic localization and treatment. Requires herefore frameless SRS mask base and frameless SRS mask base angio localizer insert
- Requires iPlan RT software 4.1 or higher for angiographical localization and treatment
- It is recommended to use this device only in combination with ExacTrac X-Ray 6D

| FRAMELESS SRS MASK BASE

Radio-translucent hollow carbon base plate:

- Supports the Frameless SRS Mask System to accurate patient positioning and fixation
- Connects to the Patient Tray
- Allows angiographic localization and treatment. Requires herefore Frameless SRS mask base localizer insert and frameless SRS CT/Angio localizer and target positioner
- Requires iPlan RT 4.1 software of higher for angiographical localization and treatments

| FRAMELESS SRS MASK BASE ANGIO LOCALIZER INSERT

Attaches to SRS mask base

- Allows angiographical localization and treatment
- Requires Frameless SRS mask base and Frameless SRS CT/Angio localizer and target positioner
- Requires iPlan RT software 4.1 or higher

FRAMELESS RADIOSURGERY POSITIONING ARRAY

FRAMELESS SRS MASK SET EXTENDED (1.PAT)

Complete set with additional shoulder fixation for one patient, including:

- Sheet with handles for the occipital mold
- Strips for additional immobilization of the patient's face
- Large patient head & shoulder sheet for the upper mold
- Pellets for molding the impression of the nasal bridge
- Mesh for molding in the water bath

| FRAMELESS SRS MASK SET CRANIAL (1 PAT.)

Complete set for molding the Frameless SRS Mask cranial, including:

- Sheets with handles for the occipital and frontal mold
- Strips for additional immobilization of the patient's face
- Pellets for molding the impression of the nasal bridge
- Mesh for molding in the water bath

| FRAMELESS SRS MASK ACCESSORIES TRAY

| FRAMELESS SRS MASK CLIP KIT

Set of Frameless SRS Mask clips (5x 6 sizes)

| FRAMELESS SRS MASK SPACER KIT

Set of Frameless SRS Mask spacers

| FRAMELESS SRS MASK BASE CONNECTOR KIT

Contains all screws and pins for a rigid fixation of the Frameless SRS Mask Base or H&N Baseplate.

| FRAMELESS SRS MASK SUPPORT CUSHION

Cushion to support the head during molding of mask

| EXACTRAC INFRARED BODY MARKER SPHERES (8 PCS)

Body Markers for attachment to the disposable sockets:

- Reflective coating for infrared tracking in Linac room
- Not suitable for localization in CT scan data

| USER MANUAL PATIENT SUPPORT SYSTEM

| EXACTRAC 6.0 FRAMELESS SOFTWARE

- Allows use of ExacTrac Frameless SRS with ExacTrac Software 6.0

| FRAMELESS SRS TARGET POINTER

- Winston Lutz test equipment for ExacTrac Frameless System
- Hooks onto FRAMELESS SRS MASK BASE
- Comes with X-Ray and Lightfield Pointer
- No Filmholder included

21 | IMAGING COUCH TOP INCL. FRAMELESS EXTENSION

Compatible with Varian Exact Treatment Couch

Compatible with VERO Treatment Couch

Low density Carbon Fiber Imaging Couch Top for greater x- ray image quality

Permanent attachment to existing Couch Frame

size: 200cm x 53cm

Maximum load 185kg

Removable low density carbon fiber 43cm Couch Extension for Frameless

Radiosurgery

Removable low density carbon fiber 23cm Couch Extension

Thickness of Couch Extensions: 20mm

Rapid & easy set-up of extensions

Includes removable connector for Brainlab Varian Exact Couch Mount / Novalis Couchmount

Includes 3 removable connectors fully compatible with the Med-Tec two-pin table fixation system

Includes Couch Calibration Bar as reference for calibration purpose

Aluminium Side Rails and Indexing System

Attenuation and dose build-up must be considered during treatment planning

Attenuation of Couchtop at 6MV: 3,1% ($\pm 0.2\%$); at 16MV: 2,5% ($\pm 0.2\%$)

Water equivalent thickness of Couchtop (50mm): 12mm, Extensions (20mm): 5mm

Couchtop deflection (w/o couch pedestal) with a load of 135kg (297.6lbs) distributed evenly: 3,6mm at cranial end

For Varian TrueBeam only compatible with Robotics

22 | ROBOTICS 2.0

Independent module allowing fast robotic tilt adjustment of treatment table top for most precise patient set-up:

- Integrates with Varian Exact and TrueBeam Couch
- Permanent attachment between Varian Exact /TrueBeam couch and Brainlab Imaging Couch Top
- Provides longitudinal and lateral tilt for patient set-up
- Battery powered cordless design, incl. Charger; Bluetooth controlled
- Integrated electrical and mechanical safety system
- Integrated brake in case of power failure
- Manual override to initial position always possible

- Dimensions: Weight: 68 kg / 149.9 lbs; Height: 15 cm / 5.9"; Width: 55.7 cm / 21.9"; Length: 85.5 cm / 33.7"
- Maximum load: 159kg / 350.5 lbs fully operating (weight limited by Varian Exact/TrueBeam Couch)
- Max. tilt angles: Lateral (Pitch): $\pm 2,7^\circ$; Longitudinal (Roll): $\pm 4^\circ$
- Includes 49680 Anti-Skid Mat for improved patient comfort during table tilt
- Minimum requirements are:
 - Brainlab Imaging Couch Top
 - ExacTrac 6.0 software and hardware platform or higher
 - Laser guard collision detection system (for TrueBeam)
 - Access to Varian Truebeam ADI interface (for TrueBeam)

23 | EXACTRAC VERIFICATION PHANTOM

- Pelvic Phantom for Quality Assurance and Therapist Training
- Bone equivalent pelvic bones inset into tissue equivalent material
- Ca. 27cm x 34cm x 24cm
- 16kg

24 | EXACTRAC CEILING MOUNTED MONITOR ARM

- Flexible Ceiling Arm for easy adjustment of in-room touchscreen monitor
- Rigid mounting in Linac Room
- Pre-requisite is ExacTrac Infrared Tracking Platform 4.x

25 | EXACTRAC 6.0 INTRA-FRACTION 6D SNAP VERIFICATION AND CORRECTION

- Enables immediate stereoscopic patient position verification during treatment delivery
- Allows to quickly identify intra-fraction tumor motion
- Immediate output of required correction shift (supports non-coplanar fields)
- Imaging available for any couch and gantry angle to accommodate verification needs of advanced SBRT treatments
- Switch to monoscopic mode when one field of view is blocked by gantry
- High quality x-ray verification imaging also possible during beam-on
- Enables intra-fraction compensation of detected misalignments with advanced couch integration
- Requires ExacTrac platform software 6.0 or higher and dual generator hardware

26 | EXACTRAC 6.0 REVIEW AND APPROVAL SOFTWARE

Streamlines physician review and approval of IGRT setup right before start of treatment or retrospectively

- Password protected approval by the responsible physician
- Convenient physician review and approval of IGRT setup reports of previous fractions
- One license for installation at one clinical ExacTrac console workstation, license includes one additional free installation at the ExacTrac IGRT prep and review workstation.
- When quoting more than one ExacTrac system, second IGRT REVIEW AND APPROVAL SOFTWARE is free of charge
- Requires ExacTrac Software 6.0

27 | EXACTRAC 6.0 IMPLANTED MARKER REGISTRATION SOFTWARE

- Automatic detection of internal markers
- Automatic detection of urethral stent marker

28 | | FRAMELESS SRS 3RD PARTY TPS SUPPORT

Allows import of localized datasets from a third party treatment planning system. Without this feature, localized datasets which have been planned in a third party treatment planning system cannot be imported into ExacTrac.

Please note that iPlan RT Image & Dose are still required for this workflow.

Other Pre-requisite: ARIA® and Brainlab Frameless SRS Localizer

29 | | EXACTRAC 6.0 CBCT IMPORT & ALIGNMENT SOFTWARE

Import of volumetric kV CBCT Data Set into ExacTrac IGRT Platform to enable Patient Positioning in 6D

- Storing of Patient Position with Infrared Camera for creating reference position
- Automatic Image Fusion of CT Data Set to CBCT Image Set and calculation & display of patient shift in 6D

Pre-Requisites:

- OBI: 1.4 or higher
- ARIA 10
- ExacTrac Hardware Platform 5.5 or higher
- iPlan Users: iPlan RT Dose 4.5.1 & iPlan RT Image 4.1.1
- Novalis or Varian TrueBeam or all Varian high energy clinacs except 600C, 6EX, Unique
- For Varian Silhouete or 21/23EX please contact product management for clarification

30 | | EXACTRAC 6.0 PRE INSTALLATION KIT INFRARED / X-RAY

Complete set of all components required for pre-installation of ExacTrac X-Ray System:

- Ceiling Mount for Infrared Cameras
- Ceiling Mounts for Flat Panel Detectors
- Data, Power and Grounding Cabling
- Wall Mount or Ceiling Arm for Monitor preparation

31 | | EXACTRAC X-RAY FLOOR CASING 12"

Set of two casing units for pre-installation of ExacTrac X-Ray

System:

- Fitted into Linac floor during room construction
- Includes stable top cover level with Linac room floor

32 | | INSTALLATION EXACTRAC ROBOTICS/ TRUEBEAM-COUCH RECALIBRATION

Recalibration of the Varian TrueBeam couch to support Brainlab Robotics.

Service is provided by Varian.

TREATMENT HARDWARE

33 | STEREOTACTIC HEADRING

Invasive patient immobilization with highest positioning accuracy for single fraction treatments, including:

- Extra long carbon fiber posts with adjustable length / angle
- 2 Torque wrenches for consistent torque of fixation pins
- Velcro belt for support of headring during attachment
- Set of re-usable, artifact-free quick fixation pins
- Exchangeable intubation frontpiece
- Only for use with Brainlab Treatment Planning Software

34 | CT/X-RAY LOCALIZER & SUPPORT

CT/X-ray reference system for stereotactic target localization:

- Fiducials for CT localization and gantry tilt compensation
- Removable fiducial arrays for X-ray/DSA localization
- Maximum vertical range (185 mm) for deep seated lesions
- Patient immobilization board compatible to all CT couches
- Mounts onto the Stereotactic Headring and Mask System
- Only for use with Brainlab Treatment Planning Software

35 | STEREOTACTIC TARGET POSITIONER

- Reference box for precise stereotactic patient set-up
- Lightweight aluminium design
- Locking mechanism to Headring and Mask system
- Safe and fast transfer of planned isocenter coordinates through laser alignment of computer generated printouts
- Direct documentation of the isocenter position
- Attachment of patient-specific printouts onto individual Target Positioner Carrier Plates
- Four sets of coded target positioner carrier plates
- Fast and safe magnetic attachment of carrier plates
- Visual treatment setup verification by lightfield projection
- Lesion outline projection of orthogonal & beams eye views
- Design featuring auto. isocenter position transfer & positioning for optimized patient set-up w/o manual scale adjustment minimizing human errors
- System design reduces manual steps, resulting in reduced human error possibilities and optimized patient setup
- Additional marker for verification & compensation after table rotation
- Only for use with Brainlab Treatment Planning Software

36 | COUCHMOUNT FOR IMAGING COUCHTOPS

- Fast and accurate attachment to the treatment couch
- Micro adjustment for AP, lateral, and vertical movement
- Calibration of tilt to compensate for table declination
- Locks for micro adjustments to ensure stability
- Automatic locking mechanism to the treatment couch
- Full 360° range of gantry rotation
- Compatibility verified for following couchtops:
 - iBEAM Couch Top with iBEAM Couch Adapter; Manufacturer: Medical Intelligence

- iBEAM evo Couch Top with iBEAM evo Couch Adapter
- kVue IGRT Couch Top with kVue Universal Tip Extension Base;
Manufacturer: WFR-Aquaplast/Q-Fix Systems, New Jersey, USA
- Quantum Couch Top with Quantum Universal Tip Extension Base;
Manufacturer: WFR-Aquaplast/Q-Fix Systems, New Jersey, USA
- Siemens TT-M Tabletop (also named CIVCO MTIL3015) Revision Nov. 2010 or later
- CIVCO MTIL3010 and MTIL3005 (used for Siemens ZXT Pedestal)
Revision Nov. 2010 or later
- CIVCO MTIL6610 and MTIL6667 (Universal Couch Top Varian Interface)
Revision Nov. 2010 or later
- CIVCO MTIL6612 (Universal Couch Top One Piece Varian Interface) Revision Nov. 2010 or later; Manufacturer: CIVCO Medical Systems, Kalona, USA
- Varian Exact Couch Top

37 | | COUCHMOUNT ADAPTER BRAINLAB HEADRING

Removable adapter to attach the Brainlab headring to the couchmount

38 | | COLLIMATOR MOUNT VARIAN WITH MLC

- Collimator Mount for Varian Linacs with Type III Accessory System (incl. Novalis Tx and TrueBeam STx):
- Quick mounting through use of the gantry tray slot
- Locks to secure the mount in a tight position
- Adjustment of the central axis of collimator
- Primary anti-scatter collimator of brass
- Fast mounting of collimators with no additional tools
One of the following R&V systems is required if used in combination with Brainlab Conical Collimators:
- Varian Aria 8.8 or higher
- Elekta Impac Mosaic 2.41 or higher
Brainlab requires that Brainlab Conical Collimators on Varian LINACs are used only in combination with a cone verification system or process (e.g. Varian BCCV).

39 | | CONICAL COLLIMATOR SET FOR MLC 120

Set of 6 lead collimators for beam shaping:

- Includes sizes 7.5, 10.0, 12.5, 15.0, 17.5 and 20.0 mm
- Conical aperture to address beam diversion
- Bayonet mount for quick and safe attachment to the Brainlab Collimator Mount (for Varian devices only)
One of the following R&V systems is required:
- Varian Aria 8.8 or higher
- Elekta Impac Mosaic 2.41 or higher
Brainlab requires that Brainlab Conical Collimators on Varian LINACs are used only in combination with a cone verification system or process (e.g. Varian BCCV).

| CONICAL COLLIMATOR 7.5 MM

Lead collimator for beam shaping (size 7.5 mm):

- Conical aperture to address beam diversion
- Bayonet mount for quick and safe attachment to the Brainlab Collimator Mount (for Varian devices only)

One of the following R&V systems is required:

- Varian Aria 8.8 or higher
- Elekta Impac Mosaic 2.41 or higher

Brainlab requires that Brainlab Conical Collimators on Varian LINACs are used only in combination with a cone verification system or process (e.g. Varian BCCV).

| CONICAL COLLIMATOR 10 MM

- Lead collimator for beam shaping (size 10.0 mm):
- Conical aperture to address beam diversion
- Bayonet mount for quick and safe attachment to the Brainlab Collimator Mount (for Varian devices only)

One of the following R&V systems is required:

- Varian Aria 8.8 or higher
- Elekta Impac Mosaic 2.41 or higher

Brainlab requires that Brainlab Conical Collimators on Varian LINACs are used only in combination with a cone verification system or process (e.g. Varian BCCV).

| CONICAL COLLIMATOR 12.5 MM

- Lead collimator for beam shaping (size 12.5 mm):
- Conical aperture to address beam diversion
- Bayonet mount for quick and safe attachment to the Brainlab Collimator Mount (for Varian devices only)

One of the following R&V systems is required:

- Varian Aria 8.8 or higher
- Elekta Impac Mosaic 2.41 or higher

Brainlab requires that Brainlab Conical Collimators on Varian LINACs are used only in combination with a cone verification system or process (e.g. Varian BCCV).

| CONICAL COLLIMATOR 15 MM

- Lead collimator for beam shaping (size 15.0 mm):
- Conical aperture to address beam diversion
- Bayonet mount for quick and safe attachment to the Brainlab Collimator Mount (for Varian devices only)

One of the following R&V systems is required:

- Varian Aria 8.8 or higher
- Elekta Impac Mosaic 2.41 or higher

Brainlab requires that Brainlab Conical Collimators on Varian LINACs are used only in combination with a cone verification system or process (e.g. Varian BCCV).

| CONICAL COLLIMATOR 17.5 MM

- Lead collimator for beam shaping (size 17.5 mm):
- Conical aperture to address beam diversion
- Bayonet mount for quick and safe attachment to the Brainlab Collimator Mount (for Varian devices only)

One of the following R&V systems is required:

- Varian Aria 8.8 or higher
- Elekta Impac Mosaic 2.41 or higher

Brainlab requires that Brainlab Conical Collimators on Varian LINACs are used only in combination with a cone verification system or process (e.g. Varian BCCV).

| CONICAL COLLIMATOR 20 MM

Lead collimator for beam shaping (size 20.0 mm):

- Conical aperture to address beam diversion
- Bayonet mount for quick and safe attachment to the Brainlab Collimator Mount (for Varian devices only)

One of the following R&V systems is required:

- Varian Aria 8.8 or higher
- Elekta Impac Mosaic 2.41 or higher

Brainlab requires that Brainlab Conical Collimators on Varian LINACs are used only in combination with a cone verification system or process (e.g. Varian BCCV).

40 | QUALITY ASSURANCE KIT SRS WITH CONICAL COLL. (BL HEADRING)

Package including film holder and Phantom Pointer.

| FILM HOLDER VARIAN WITH MLC

- Film Holder with attachment to the Collimator Mount
- Clamp mechanism for film fixation in the collimator beam

| PHANTOM POINTER (FOR BRAINLAB HEADRING)

Phantom pointer for performing QA tests (Winston Lutz) in conjunction with film holder.

- Attachment to the Brainlab couchmount adapter
- Verification of reference lasers and isocenter consistency
- Verification of the mechanical accuracy of the linac
- Maximum freedom of gantry and couch rotation
- Embossed lines for easy alignment with the laser isocenter
- Integrated 5mm tungsten sphere for center marking of the irradiated film

41 | IMRS/IMRT VERIFICATION PHANTOM

- 30 x 30 cm phantom with acrylic plates
- Inlay for film (252 x 302 mm)
- Drilling for PTW 0.125 cm³ chamber type 31002

42 | CONICAL COLLIMATOR 5.0 MM

Lead collimator for beam shaping (size 5.0 mm):

- Conical aperture to address beam diversion
- Bayonet mount for quick and safe attachment to the Brainlab Collimator Mount (for Varian devices only)

One of the following R&V systems is required:

- Varian Aria 8.8 or higher
- Elekta Impac Mosaic 2.41 or higher

Brainlab requires that Brainlab Conical Collimators on Varian LINACs are used only in combination with a cone verification system or process (e.g. Varian BCCV).

BRAINLAB ACADEMY RT

43 | | BLA: TREATMENT PLANNING AND PHYSICS (1 PERSON/ 5 DAYS)

Five-day course designed to teach new Brainlab users the intricacies of Brainlab's treatment planning system - iPlan® RT. Participants will obtain the necessary knowledge for starting the clinical usage of Brainlab's stereotactic radiotherapy and radiosurgery system. This classroom training includes the following:

- iPlan RT training sessions conducted by skilled Brainlab Application Trainer including details on all the steps required to generate treatment plans from beginning to end using iPlan RT. Various patient examples will be used to discuss treatment planning for different indications and treatment modalities and to demonstrate all features of iPlan RT software.
- A presentation by a clinical guest speaker on stereotactic radiosurgery and radiotherapy and specialized patient treatment plans.
- A talk by a medical physicist providing an insight into related physics, commissioning as well as quality assurance procedures as it pertains to the Brainlab platform.
- A clinical site visit to a Novalis facility where participants can combine the theoretical aspects of the treatment planning applications with the practical knowledge of an experienced Brainlab user. During the site visit an introduction to Brainlab's stereotactic hardware and the ExacTrac® Patient Positioning System will also be given.
- The course has been designed for Medical Physicists and Radiation Oncologists primarily. All other staff members involved in stereotactic radiotherapy/ radiosurgery treatments and interested in a deep insight of treatment planning would benefit from this classroom training as well.
- For US/ Canadian customers: course is IACET/CAMPEP accredited
- Successful completion of the course warrants a maximum of:
- 3.5 CEU Category B credit provided through the International Association of Continuing Education and Training (IACET)

NOTE: 1 CEU is equivalent to 10 CEs

- 34.75 MPCEC (Medical Physics Continuing Education Credit) provided through the Commission on Accreditation of Medical Physics Educational Programs, Inc. (CAMPEP, approval pending)
- Includes tuition, course materials and supplies, including applicable supplemental materials, travel (intercontinental up to US\$1000, all others up to US\$500), accommodation (max. of 6 nights), and meals outlined on the course agenda. Course or supplemental materials can change without notice.
- Training in small groups
- Customers will go to the classroom training facility depending on their geographic affiliation, i.e. customers from USA and Canada will be trained at the Chicago facility. Japanese customers will be trained in Japan, customers from all other regions in the world will receive training in Germany.
- For training dates, please see www.brainlabacademy.com
- Brainlab reserves the right to cancel any class if the minimum number of attendee enrollment is not met by the registration deadline.

44 | | BLA: TREATMENT PLANNING FOR CLINICIANS (1 PERSON/ 3 DAYS)

Three-day course designed to provide physicians with an introduction to the iPlan® RT treatment planning platform and its applications within radiosurgery. Academy participants can obtain the necessary knowledge for starting clinical use of the iPlan platform. The academy includes the following:

- Nine hours of in-house iPlan training provided by a skilled Brainlab Application Trainer. Training focuses on pre-planning including localization, image fusion, and object creation, as well as treatment plan evaluation, utilizing patient examples to simulate potential clinical workflows.
- Nine hours of clinical guest speaker presentations provided by a panel of senior Brainlab users.
- Optional half-day site visit to a Novalis facility where participants can combine the theoretical aspects of the treatment planning applications with the practical knowledge of a senior Brainlab user. An introduction to the Brainlab stereotactic hardware and the ExacTrac® Patient Positioning System will also be given.
- For US/ Canadian customers: course is IACET accredited
Successful completion of the course warrants a maximum of:
- 1.8 CEU Category B credit provided through the International Association of Continuing Education and Training (IACET)

NOTE: 1 CEU is equivalent to 10 CEs

- Includes tuition, course materials and supplies, including applicable supplemental materials, travel, accommodation and meals outlined on the course agenda. Course or supplemental materials can change without notice.
- Training in small groups
- Customers will go to the classroom training facility depending on their geographic affiliation, i.e. customers from USA and Canada will be trained at the Chicago facility. Customers from all other regions in the world will receive training in Germany.
- For training dates, please see www.brainlabacademy.com
- Brainlab reserves the right to cancel any class if the minimum number of attendee enrolment is not met by the registration deadline.

45 | | BLA OAT: STEREOTACTIC HARDWARE (2 DAYS)

Two-day on-site clinical course for new users and other members of a clinical team who utilize Brainlab Stereotactic Hardware taught by skilled Brainlab Application Trainer:

- Designed to develop proficiency in Brainlab RT technology including benefits of stereotaxy and general hardware stereotaxy equipment components for radiosurgery and radiotherapy
- Participant will perform stereotaxy equipment component cleaning and sterilization, perform stereotaxy quality assurance techniques, perform SRT mask molding and SRS ring placement, utilize frameless patient positioning in conjunction with ExacTrac® and learn about extracranial patient immobilization systems (optional).
- For US/ Canadian customers: course is IACET/ASRT accredited
Successful completion of the course warrants a maximum of:
- 1.33 CEU Category B credit provided through the International Association of Continuing Education and Training (IACET)

NOTE: 1 CEU is equivalent to 10 CEs.

- 8 CEs Category A credit provided through the American Society of Radiology Technologists (ASRT)
- Includes tuition, course materials and supplies, including applicable supplemental materials, travel & accommodation for the instructor. Course or supplemental materials can change without notice.
- A maximum of three people allowed per course
- Requires minimum four weeks prior notice to enable scheduling.

46 | | BLA OAT: EXACTRAC 6.X (3 DAYS)

Three-day (4 hours per day) on-site clinical course for new users and other members of a clinical team who utilize ExacTrac® 6.x taught by skilled Brainlab Application Trainer:

- Designed to develop proficiency in Brainlab RT technology including general hardware and room set-up, software and system calibration, patient transfer, patient pre-positioning, patient positioning, verification of patient position utilizing KV imaging, and common troubleshooting techniques
- For US/ Canadian customers: course is IACET/ASRT accredited
- Successful completion of the course warrants a maximum of:
 - 1 CEU Category B credit provided through the International Association of Continuing Education and Training (IACET)

NOTE: 1 CEU is equivalent to 10 CEs

- 4,75 CEs Category A credit provided through the American Society of Radiologic Technologists (ASRT)
- Includes tuition, course materials and supplies, including applicable supplemental materials, travel & accommodation for the instructor. Course or supplemental materials can change without notice.
- A maximum of three people allowed per course
- Requires minimum four weeks prior notice to enable scheduling

47 | | BLA CC: CASE COVERAGE (1 DAY BL APPL.TRAINER)

On-site case coverage with a skilled Brainlab Application Trainer to provide detailed training in SRS / SRT / Patient Positioning:

- Includes tuition, course materials and supplies, including applicable supplemental materials, travel & accommodation for the instructor. Course or supplemental materials can change without notice.
- Requires minimum four weeks prior notice to enable scheduling.

RT SERVICES

48 | | SERVICE ON-SITE BY SUPPORT SPECIALIST/TECHNICIAN (1 WEEK)

On-site service through a qualified and trained Support Specialist/Technician, including travel cost and time.

Please note: Service on-site 1 week packages are sold as consecutive time frames and cannot be separated into individual days.

49 | | PRE-INSTALLATION VISIT

Meeting with qualified Brainlab engineer to plan and coordinate Brainlab system installation

50 | | iPLAN WORKSTATION CONFIGURATION

Complete software installation of one Brainlab Workstation for Radiosurgery / IMRT:

- Workstation hardware assembly and software pre-installation off-site

51 | | MONTE CARLO INDIVIDUAL BASE DATA GENERATION (PER MLC AND ENERGY)

- Generation of a customer-specific virtual model of the linac head and MLC for precise iPlan Monte Carlo dose simulation
- Virtual model based on technical linac parameters (position of target and flattening filter, MLC geometry etc.) and on-site specific measurements provided by the customer (dose profiles and output factors in air, depth dose distributions in water)
- Adjustment of the energy spectrum parameters of the virtual linac head model using the depth dose table and the measured depth dose curve in water
- Verification of virtual linac head model

52 | | EXACTRAC X-RAY 6D INSTALLATION

Set-up of complete ExacTrac X-ray system on-site:

- On-site pre-installation meeting
- Workstation hardware assembly and software pre-installation off-site
- Installation on-site during normal business hours
- Assembly of all hardware & computer hardware-components and adjustment to the LINAC
- Adjustment and calibration of the x-ray system
- Testing & verification of data transfer by scanning a test-phantom and simulation of the data processing chain
- Acceptance protocol according to the Quality System Phantom test procedure
- Verification of completeness, function, precision and operational condition of all software and hardware components
- Hands-on training simulating patient treatments using a phantom
- Pre-Installation Cost not covered

53 | | HARDWARE INSTALLATION CIRCULAR SRS

Complete installation of Brainlab stereotactic hardware with Conical Collimators:

- Fitting and central beam fine adjustment of Collimator Mount
- Winston Lutz quality assurance check of geometrical accuracy of linac gantry and collimator
- Fitting and fine adjustment of Couch Mount and Adapter
- Verification of completeness and functionality of all system functions and components
- Acceptance protocol according to Brainlab's certified quality system
Brainlab requires that Brainlab Conical Collimators on Varian LINACs are used only in combination with a cone verification system or process (e.g. Varian BCCV).

54 | | FREIGHT, INSURANCE AND FEES