3	Specifications Required for Radiotherapy Treatment planning system			

1	1 – Scope	Comply	Not Comply	Fill Your Specifications
	Requirement			
1.1	3D Treatment Planning System capable of radiotherapy treatment planning for teletherapy (Photon & Electron beam).			
1.2	This system should have capability of integration with Simulators, CT scanner/ MRI, Cobalt 60 & Linear Accelerators of any vendor.			
1.3	The TPS should be capable of 3D treatment planning with independent work station for virtual simulation.			
1.4	The TPS should have latest state of art hardware & software with following features as described in Technical specifications.			
1.5	The equipment offered provided by a recognized supplier shall prove that the service, spares and application support is available in Sudan to maintain the system in peak operating performance.			
1.6	A list of users around the world where the equipment offered is currently in clinical use shall be provided, indicating the current models and equipment configuration per site.			
1.7	The system offered shall comply or exceed the minimum performance specifications as indicated below for the various sub-components, supported by factory-supplied product specifications / brochures.			
1.8	The system should perform all modes of Cobalt treatment at the RICK Sudan.			
1.9	The bidder applying for the tender must be the manufacturer or the official representative agent of the manufacturer. Original documents must be provided (photocopy or computer print will not be accepted).			
1.1	Technical specifications and invoices must be provided by the manufacturer. Documents must be supported by original manufacturer brochure and product catalogue (photocopy or computer print will not be accepted).			
2	Technical Specifications			
2.1	Software			
	• Patient registration, record and file management should be user friendly.			
	• Patient Data Acquisition through film scanners, digitizer, DICOM 3.0 import facility from CT Scanners/ MRI & Simulator of any vendor.			
	• Advanced Contouring tools with patient identity information should be available. Auto segmentation/contouring based on electron density values for different organs should be included & follow ICRU-50 Volume definitions.			
	• System should also be capable of showing the combined dose distribution to the target volume resulting from whole treatment received by teletherapy (photon, electron, photon + electron) and brachytherapy.			
	•System must have facility of treatment planning for Photon & Electron beam of all energies in the therapeutic range.			
	• The system must be capable of calculating mixed beam treatment with photon and electron radiation.			
	• System must have facility of machine data acquisition through RFA/scanner, etc.			
	• The system must support regular & irregular fields for all types of beam modifiers such as Bolus, Blocks, MLCs, tissue compensator, wedges, dynamic wedge, asymmetric beams, etc.			
	• System must be capable of conformal radiotherapy planning and multiple isocentre calculations.			

	• System should be capable of making tissue in homogeneity correction (as per electron density), irregular point dose calculations and auto-contouring as per CT data. Accuracy of dose calculations must be as per TG-23 Bench Mark Tests.			
	• Facility of advanced comprehensive plan and display tools, drawing and margining tools, multiplan comparison and summation.			
	• Provision of 3-D display of entire anatomical volume with sources, dose points, different body organs, isodose distribution with different color coding.			
	• Display of dose to any defined point or volume. Isodose display in percentage as well as in cGy			
	• System should be able to store all unit and source data separately.			
	• Facility of creating user's defined templates for various situations.			
	• It should have capability of Virtual Simulation feature and multi-planar reconstruction in sagittal, coronal and oblique planes from CT data set.			
	• TPS should show DVH, Beam's Eye View at any depth, shielding area, etc.			
	• It should have capability of importing image from CT, CT simulator, MRI, and Gamma camera via networking (DICOM compatible).			
	•Specify the algorithm (pencil beam/collapsed cone convolution/Monte Carlo) used for calculations in the TPS.			
	• System should have image registration and fusion facility for the images acquired from different imaging modalities.			
	•System should have separate password for physics area, clinical area and system administrator.			
2.2	**Hardware**			
	Latest high end PC available at the time of supply with DVD Writer of latest technology, Hard Disk, USB Pen Drive, external hard disk, A3 size Flat Bed Color Film Scanner for CT / MRI and X-Ray Radiographs, 19"/21" LCD Color Display Unit, Laser Printer A4 size and Color Inkjet Printer of A3 size. The model, dpi and the make of scanner should be mentioned.			
	Complete installation of the system and interior of the TPS room to the user's satisfaction.			