Varian Treatment
Streamlined Treatment Delivery Management Application

Varian Treatment (VTx) provides verification of treatment parameters for a wide variety of radiation therapy treatments with linear accelerators manufactured by Siemens and Elekta. By unifying plan and delivery information into a single workspace, users can easily verify treatment set-ups for patients.

**Key Functionality**

- Provides uniformity to the treatment delivery process
- Uses a standard DICOM-RT interface to exchange patient data with Varian’s ARIA® oncology information system
- Combines patient, plan, and treatment parameters into a single workspace
- Provides validation checks of treatment parameters to ensure safe and accurate treatment delivery with each patient session
- Accelerates the treatment process with plan validation and helps reduce the potential for random errors by automating data entry
- Sends treatment data (e.g., records and acquired images) to the Varian system database where it is recorded to the patient’s chart

**Specifications**

**General Use**

- Radiation therapy treatment delivery with medical linear accelerators

**Treatment Techniques**

Varian Treatment supports the following external beam radiation therapy:

- 2-D conventional
- 3-D conformal
- Arc therapy
- Intensity modulated radiation therapy (IMRT)
- Volumetric modulated arc therapy (VMAT)
- Stereotactic radiation therapy (SRT)
 Specifications  |  Varian Treatment – Streamlined Treatment Delivery Management Application  

**Treatment Tasks**

Varian Treatment is a treatment delivery management application that provides verify-and-record functions for supported medical linear accelerators. The user-centric interface intuitively enables therapists to visualize and carry out treatment tasks with confidence and increased efficiency. With Varian Treatment, users are able to easily verify the actual setup against the approved prescription and are prevented from proceeding if the two do not match or are out of tolerance. Upon completion of treatment, Varian Treatment sends the treatment history and acquired images back to the Varian system database where clinical staff can view the information from nearly any area of the department using the ARIA client applications.

- **Parameter Verification**
  Varian Treatment verifies the following treatment parameters against the machine parameters including operating limits during set-up:
  - Technique
  - Energy
  - Monitor Units (MU)
  - Patient support (couch): vertical, lateral, longitudinal, rotation
  - Gantry angle, stop angle, start angle, direction
  - Multileaf collimator
  - Jaws
  - Accessories
    - Trays, Blocks, Compensators
    - Custom
      - Blocks, Bolus
  - Physical and dynamic wedges
  - Electron applicators
  - Fitments
- **Treatment Tasks**
  - Standard treatment
    For standard treatments, Varian Treatment:
    - Loads approved plans and reference images from the ARIA oncology information system
    - Verifies patient-specific accessories
    - Allows for field reordering
    - Allows users to acquire machine parameters
    - Allows users to edit treatment plan parameters
    - Allows treatment resumption of a partially treated plan
  - Provides support for single and multiple isocenter plans
  - Provides auto field sequencing support
  - Records treatment data (e.g., treatment records and acquired images) to the Varian System database once the patient plan is closed.
  - Records dose to the reference point that is associated with the treatment plan
  - Allows users to complete quality assurance measurements with a verification plan or via File mode (e.g., DICOM-RT mode)
  - Allows users to create and to deliver an emergency treatment plan from the Varian Treatment application.
  - Overrides
    - Varian Treatment allows users with appropriate rights to override the following:
      - Treatment machine
        - Switch of patient plans between dosimetric equivalent machines of the same manufacturer
      - Machine parameter
        - Couch orientation: vertical, lateral, longitudinal, rotation
        - Collimator (e.g., Jaws)
        - Gantry angle
        - Dose Limit
      All overrides are recorded to the patient’s chart for auditing purposes.
  - Imaging
    Varian Treatment allows imaging of set-up and treatment fields using scheduled or ad-hoc image sequence templates for MV port films or electronic portal images.
    - Add accessory during port film/image acquisition
    - Acquired image data is sent to ARIA where it is available for review.
    - Supports manual or automated DICOM-RT image retrieval from Elekta’s iViewGT™ R3.4 or higher.
    - Supports manual DICOM-RT image retrieval from Siemens COHERENCE® v2.3.
  - Patient Set-up
    - View patient demographics, fraction and plan information, actual versus planned parameters, setup photos (2 per treatment field) and patient setup notes for the loaded field from the In-Room Monitor while setting up the patient.

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1 Supported machines listed on page 4
2 Requires manual verification and authorization
3 Allows only minor edits of couch translational values for approved treatment plans
4 Single isocenter plans are restricted with Siemens COHERENCE
• Network independence
  – Download entire treatment plan
  – Treatment session can be completed without interruption if network connectivity is lost
  – Patient treatment data is saved back to the Varian system database once connectivity is restored

System Components
• Charge Capture records the appropriate codes for treatment and imaging activities to the Varian system database for auditing and billing purposes
• Patient and Accessory Verification (licensed option) uses barcode technology to identify patients and verify accessories prior to treatment delivery:
  – Electronic patient selection from queue
  – Patient identification verification from the treatment room
  – Beam interlock until patient and accessories are verified
  – Verification of custom blocks and compensators
  – Includes 2 barcode scanners, software and label printer
• Queue loads the list of scheduled patients to the Varian Treatment. Queue provides the following functionality:
  – Patient selection via barcode scanner
  – Patient check in
  – Session management – add/remove patients from daily treatment schedule
  – Display of current day’s schedule per treatment machine
  – Audit tracking (user, date, time and location) of patient check in

Administration
Varian Treatment Administration, the administration application for Varian Treatment, manages the following:
• Machine characterization and parameter configuration
• Machine operating limits
• Ad-hoc image sequence templates
• Independent user management of users, groups, and rights with audit tracking
• Back-up and restoration of the above information to/from a user-specified location

Import/Export Interface
• Supports DICOM RT (Digital Imaging and Communications in Medicine for Radiotherapy).
Reference the DICOM conformance statements here: http://www.varian.com/us/oncology/services_and_support/resources/dicom_statements.html

Connectivity and Communication with Varian Treatment

Hardware Requirements
• Hardware for the Varian Treatment system must be supplied by Varian Medical Systems.
  – The Varian Treatment hardware consists of a single workstation, two 27-inch monitors, mouse, keyboard, in-room keypad, MICAP, and cables (e.g., network, serial, and fiber).

Software Requirements
• Varian Treatment v11.0 is compatible with ARIA versions 8.8/8.9, 10.0, and 11.0
  – National language support: English, French, German, Italian, Spanish, and Brazilian Portuguese
• Machine Models supported
  – Varian Treatment v11.0 supports machines manufactured by Elekta and Siemens.
  – Varian Treatment supports treatment control systems, interfaces, and protocols as per the below table.
  • Elekta’s iCOM™ interface must be enabled on the linac. Interfaces and licenses must be purchased from Elekta.
  • Siemens Digital Mevatron Interface Protocol (DMIP) must be enabled on the linac. Interfaces and licenses can be purchased from Siemens.
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<thead>
<tr>
<th>Linac Vendor</th>
<th>Interfaces / Protocols</th>
<th>Machines / Models</th>
<th>MLC Supported</th>
<th>Dynamic Wedge Supported</th>
<th>IMRT Supported</th>
<th>Advanced Treatment</th>
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<tr>
<td>Elekta</td>
<td>RTD with iCOM: R4.2 (SP3), R5.0 (SP3), R5.1 (SP3), R7.01 (SP3) - (v12.09) Integrity® with iCOM: Integrity™ R1.1 - (v12.09)</td>
<td>SLi Series SLi Plus Series (SL20, SL15, etc.) Precise Series Synergy and Synergy S Infinity Axxesse</td>
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5 Varian Treatment supports Elekta treatment control system R5.0 and later with language customizations and selections.
6 Varian Treatment supports Elekta advanced treatment techniques (OmniWedge®, Dynamic, Dynamic Arc, and VMAT).
7 Elekta treatment control system must be properly licensed by Elekta AB to delivery these treatment techniques.
<table>
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<th>Region</th>
<th>Address</th>
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<tr>
<td>USA, Corporate Headquarters and Manufacturer</td>
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<td>Varian Medical Systems Inc.</td>
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<td></td>
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<td>USA Regional Offices</td>
<td>California</td>
<td>Varian Medical Systems</td>
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<td>Varian Medical Systems International AG Zug, Switzerland</td>
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<td>Varian Medical Systems International India Pvt. Ltd., Mumbai, India</td>
<td>Tel: 91.22.687.2252</td>
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<td>Tel: 31.3.0.63.05.06</td>
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<td>Russia</td>
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<td>United Kingdom / Ireland</td>
<td>Authorized Representative in the EU Varian Medical Systems UK Ltd. Crawley, UK</td>
<td>Tel: 44.1293.60.12.00</td>
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