

Velocity Feature Sheet

New features and enhancements in the Velocity™ oncology imaging informatics system v4.0

Feature	New Feature/Enhancement Description
Velocity RapidSphere (Purchasable)	<ul style="list-style-type: none"> • Evaluate Yttrium-90 (Y-90) post-treatment microsphere radioembolization via the SPECT to RT-Dose volume conversion tool • Allows calculation and display of isodose curves/dose volume histogram (DVH) of SPECT by applying local deposition method (LDM) for post-treatment evaluation • Enables accumulation of Y-90 treatment delivery with other radiotherapy dose distributions
Varian Automation & Data Management	<p>Velocity Sync with the ARIA® oncology information system and Eclipse™ treatment planning system</p> <ul style="list-style-type: none"> • Supports customer configurable automatic background synchronization of approved objects from ARIA/Eclipse to Velocity database • Eliminates need to manually transfer data from Eclipse to Velocity
	<p>Velocity ARIA/Eclipse Save</p> <ul style="list-style-type: none"> • Once click save for synchronization of Velocity objects* and edits with the ARIA/Eclipse database • Eliminates the need to utilize the Import Wizard to import data
	<p>Velocity SmartQuery</p> <ul style="list-style-type: none"> • Special patients <ul style="list-style-type: none"> – Automatically find and retrieve data acquired during therapy and/or follow-up for specific patients • SmartTriggers <ul style="list-style-type: none"> – Automatically route DICOM objects between locations based upon configurable "triggers" (e.g., Import of new CT in Velocity, send to Eclipse) – Automatically generate structure set and external body contour during import of volume – Automatic creation and sending of a session message notifying specific users of newly imported data
	<p>Structure DICOM IOD Tags</p> <ul style="list-style-type: none"> • Integration of Eclipse structure IOD tags to efficiently sync data between Varian software
	<p>Database-specific DICOM Listener</p> <ul style="list-style-type: none"> • Database specific file service daemon to manually import RT data

* Exceptions are deformable image registrations and RT-Dose.

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Automated Estimation of Delivered Dose QA	<p>ACTOR (Adaptive Calculation and Tracking for Offline Review)</p> <ul style="list-style-type: none"> • Automatic creation of adaptive CTs (aCT) for high quality dose calculation using daily imaging • Adaptive CTs generate synthetic volume that combines the anatomy of the CBCT with HU values of CTSim
	<p>ACTIVE Dosimetry (Adaptive Calculation and Tracking for In-Vivo Estimation of Dosimetry)</p> <ul style="list-style-type: none"> • Automatic accumulation and evaluation of recalculated daily delivered doses • Qualitatively assess areas of over-dosing and under-dosing due to anatomical changes and imperfect set up • Compare DVH of actual delivered dose to planned delivered dose
Multi-Modality Volume Display	<p>M3i (Multi-Modality Motion Imaging)</p> <ul style="list-style-type: none"> • Supports contouring while concurrently viewing up to 10 multi-modality image data sets, including CT, MRI, PET, SPECT, ultrasound, and 4D cine volumes • Create 4D cine's to view binned phases of breathing or co-registered volumes to visualize anatomical change over time
	<p>Volume Swap</p> <ul style="list-style-type: none"> • Instantaneously switch the primary volume for the secondary volume, and vice versa, while maintaining loaded structures and registrations
Record & Verify	<p>Lesion Tracking</p> <ul style="list-style-type: none"> • Capability to "tag" structures over time, allowing for the review and analysis of the structure volumetric change over various time points • Visualize and monitor volumetric change of tumor growth
	<p>Registration History</p> <ul style="list-style-type: none"> • Records and monitors all edits applied to a registration in Velocity • History is recorded as a DICOM sequence tag embedded within a .dcm file
	<p>Volume Tracking</p> <ul style="list-style-type: none"> • Records and monitors all operations performed to modify/generate volumes in Velocity (e.g., Cumulative dose history, resampling, scaling, etc.) • History is recorded as a DICOM sequence tag embedded within a .dcm file
Velocity SmartReview	<p>Session Improvements</p> <ul style="list-style-type: none"> • Append multiple screenshots to each session • Mark up and annotate feedback on individual screenshots • Comprehensive session details (volume properties, registration, structures, etc.) • Print session reports containing screenshots and annotation data
	<p>Increase ease of multi-disciplinary collaboration between care teams</p> <ul style="list-style-type: none"> • Sessions sent to other users will appear on the Velocity home screen for quick review
	<p>Facilitate shared decision-making between physician and patient</p>
Velocity SmartSecurity	<p>Improvements to the client to server communication and encrypted data storage to bring Velocity in line with Varian toolchain hardening</p>
	<p>Redesigned homescreen provides improvements to login security</p>

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Developer Mode	<p>API – Research mode only (non-clinical)</p> <ul style="list-style-type: none"> • Available in Python or C+ • Perform data analytics on patient population • Integration with Eclipse scripting community
User Interface Improvements	<p>Registration Workflow</p> <ul style="list-style-type: none"> • Registrations created will be natively in a published state to allow efficient export of registrations • Distinguish between Velocity and externally created registrations • Versioning of registrations to track changes
	<p>Structure Set Workflow</p> <ul style="list-style-type: none"> • All volumes will contain a default structure set • Distinguish between Velocity and externally created structure sets • Versioning of structure sets to track edits
	<p>Halcyon™ system implementation for plan review</p>
	<p>Contour scripting supports rename function for structures</p>
	<p>Patient orientation model/display</p> <ul style="list-style-type: none"> • Introduction of Cosmo as visual cue • Visualization of patient orientation matches Eclipse

Specifications and prerequisites are subject to change without notice. Not all features or products are available in all markets.

Intended Use Summary

Velocity™ is a software package that provides the physicians a means for comparison of medical data including imaging data that is DICOM compliant. It allows the display, annotation, volume operation, volume rendering, registration, and fusion of medical images as an aid during use by diagnostic radiology, oncology, radiation therapy planning and other medical specialties. Velocity is not intended for mammography.

Important Safety Information

Velocity solutions present data and images using approximations for imaging and treatment planning data visualization and are to be used solely for informational purposes.

Medical Advice Disclaimer

Varian as a medical device manufacturer cannot and does not recommend specific treatment approaches. Individual treatment results may vary.