

AdaptCHECK™

Fast Online Patient-Specific QA for Adaptive Radiotherapy

AdaptCHECK™ represents an advancement in independent plan verification designed for Varian Medical Systems® Ethos™ online adaptive radiotherapy. Integrated into the SunCHECK® Platform, AdaptCHECK provides fast, highly-accurate secondary dose verification for daily treatment plans using daily anatomical data to support informed clinical decision-making in time-critical adaptive workflows.

Seamless Integration

Operating within the SunCHECK Patient workflow, AdaptCHECK reduces manual steps and streamlines QA review in a single connected environment.

- DICOM data transfers automatically from Varian Medical Systems® Ethos™ to SunCHECK.
- Results are displayed within patient dashboards and consolidated into a single timeline for the reference treatment plan.
- QA results are sent to the ARIA® Oncology Information System (OIS) to support documentation and record tracking.



Fast Verification for Adaptive Workflows

AdaptCHECK independent QA review meets the pace of online adaptive radiotherapy workflows:

- Typical calculation times of 90 seconds or less for simultaneous evaluation of adapted and scheduled plans (based on testing for a 9-field IMRT plan)
- Supports timely QA review to help maintain treatment schedules
- Ensures the current adapted plan calculation is completed and available for review prior to delivery

Adaptive QA Capabilities

Using high-accuracy secondary dose calculations, AdaptCHECK delivers comprehensive QA capabilities for adaptive treatments.

- Independent secondary dose verification of adapted plans can be calculated on daily CBCT-based synthetic CT, or Hypersight™ CBCT images, to accurately reflect current patient anatomy.
- QA results can be generated for both adapted and scheduled plan datasets.
- Plan-of-the-day dose calculations support real-time treatment decision-making.
- Results and metrics are presented in a clear, centralized view within SunCHECK.
- Automated controls pause in-process calculations when newer adapted plans are received during a treatment session, preventing unnecessary processing and helping avoid calculation bottlenecks.

High-Performance System Architecture

AdaptCHECK operates within a SunCHECK server architecture optimized for adaptive QA. A dedicated GPU-enabled job server manages calculations using the Collapsed Cone Convolution/Superposition (CCCS) dose calculation algorithm, with required imaging and treatment data retrieved automatically.

When adaptive workflows move fast, independent QA must keep up—supporting confident treatment decisions without slowing patient throughput

Technical Specifications

The AdaptCHECK Job/App Server Minimum Specifications are as follows:

Two (2) 10-Core Intel Xeon 2.2 GHz or equivalent

128 GB RAM

200 GB storage

Two (2) NVIDIA Datacenter GPUs (see GPU Additional Details for more information)

Minimum 1600-watt power supply

Supported operating systems:

- Microsoft Windows Server 2019 x64
- Microsoft Windows Server 2022 (Recommended)

Network: 1.0 Gbps network

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