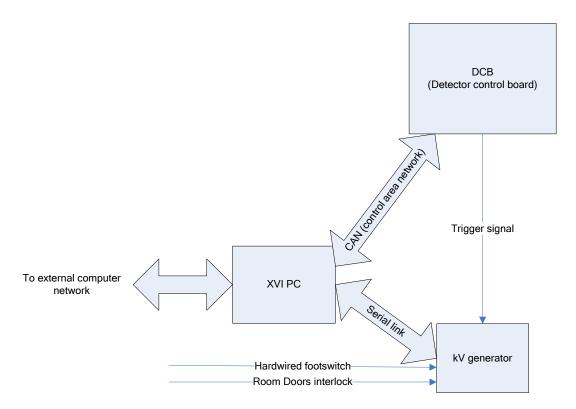
## **Statement on Virus Vulnerability of XVI Systems**

XVI has an architecture that makes mis-delivery of kV radiation due to virus attack very unlikely.



## kV Radiation Delivery System

kV radiation can only be delivered when the user presses a hard wired footswitch. **Software alone cannot initiate radiation.** 

Control of kV radiation is via a kV X-ray generator that is controlled via a serial link from the XVI PC. The kV generator is a hardware component and thus will not be affected by a computer virus.

The x-ray settings reported by the generator are checked by the XVI software prior to allowing radiation to start. This interface is proprietary and not published.

It is extremely unlikely that a virus would attack the system in some way as to inject a fault into the setting and read back of these values.

The generator will not allow the generator settings (kV, mA, ms) to be changed while it is in a radiating state. Additionally the kV presets which are stored on the XVI PC are validated prior to treatment against a check summed list of rules.

During radiation the XVI software must send a keep-alive signal to the Detector Control Board (DCB). The DCB is a hardware device and therefore will not be affected by computer viruses. If the DCB did not receive the keep-alive signal then it will stop triggering kV radiation pulses.

Additionally XVI sends a keep alive signal to the kV generator.

If a virus infected the XVI PC in such a way that the software hung then the keep-alive signals would not be sent and hence kV radiation would terminate.

## Operating System Safeguards

Under normal operation XVI does not run in with an account with Administrative privileges. Only the parts of the Operating System necessary to the running of XVI are installed. Items such as Internet Explorer are explicitly excluded from the system installation. All releases of XVI utilize the Windows XP firewall which is configured to restrict and control access to the XVI PC.

Only software provided by Elekta is ever installed on the XVI PC.