A Scintillating Fiber Based Beta Detector prototype for Intravascular Brachytherapy using catheter based high dose rate β sources has been developed by the Center for Advanced medical Instrumentation at Hampton University. This first ever built detector of this kind will permit: extracting in real time of accurate dose measurements of the radioactive emitter in 2D or 3D; address the junction/stepping problem in a reliable fashion; allow extraction of information on the (in)homogeneity of the radioactive source (if any); and provide a quick feedback to radio-therapists for a fast re-adjustment of the radiation exposure for patient treatments. It is composed of an array of 3x3 mm^2 scintillating fibers optically coupled to photo-multiplier tubes. During the interaction between electrons and fibers, photons are emitted inside the scintillating material and are then guided until they reach a photo-multiplier tube where the light is converted to an electrical current. The output signals are first sent to an amplifier then split in two: one part goes to a Discriminator and the other is appropriately delayed before being sent to an Analog-to-Digital Converter. Finally, the signals are sent to an OR logic unit from which the output constitutes the gate for the ADCs. Connection with a PC was provided via a GPIB connection to the CAMAC electronic rack A LabView software was written to handle the data acquisition and data analysis. Physics processes were corrected for in the code. The software and results obtained from it will be presented.