**Laboratory Quality assurance and exercises on an x-ray image intensifier system**

**Location**
X-ray room 476:08:010 at Department of Medical Physics, O-house, entrance 34, level 08, elevator A, University Hospital, County of Östergötland, LINKÖPING

**Task**
Your task is to perform a annual quality assurance test-measurement on an x-ray image intensifier system using the methods commonly used at Linköping University hospital.

**Methods**
The documented methods (in Swedish) are enclosed and comprise
- Mätning av känslighet hos bildförstärkare (*sensitivity of image intensifier*)
- HVL-mätning (*half value layer*)
- kV-mätning (*tube voltage*)
- mAs-linjaritet (*tube charge linearity*)
- Bildkvalitet (*technical image quality*)

**Instruments**
- Solidose 300 (measures air kerma (‘dose’) or air kerma rate.
- PMX (measures tube voltage and exposure time)
- NE DAP-meter (measures kerma-area product, $p_{KA}$)
- 4 Al-sheets 1 mm thick (used to measure HVL)
- NRT test phantom plate with 10 cm Plexiglas (measures image quality)

**Documentation**
An excel spread-sheet is available where you can document your measurement.

**Report**
To pass the laboratory exercise you need to submit a report where you state if the x-ray unit has passed or failed the quality assurance test. If it fails you need to give recommendations or advice to the radiology department in order to make the x-ray system operational again.

The report should be sent to the tutor [ebba.helmrot@lio.se](mailto:ebba.helmrot@lio.se) within 3 weeks of completion of the quality assurance test.