

The final report of TG 151

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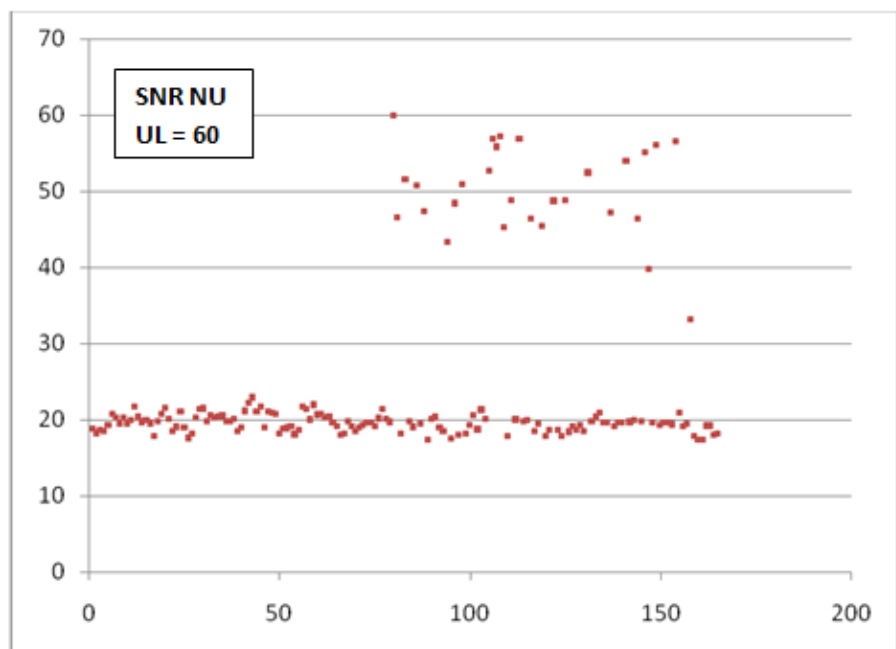
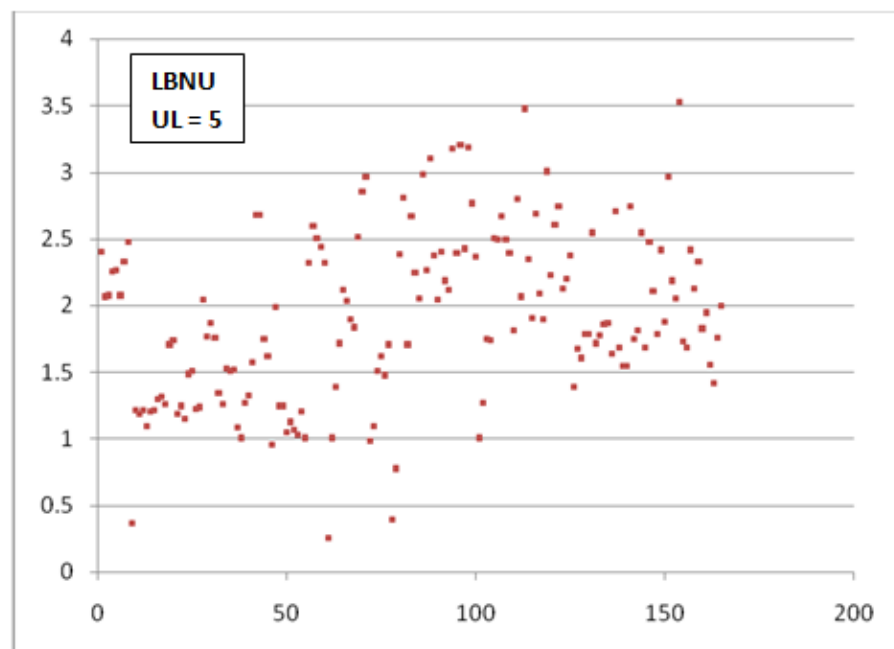
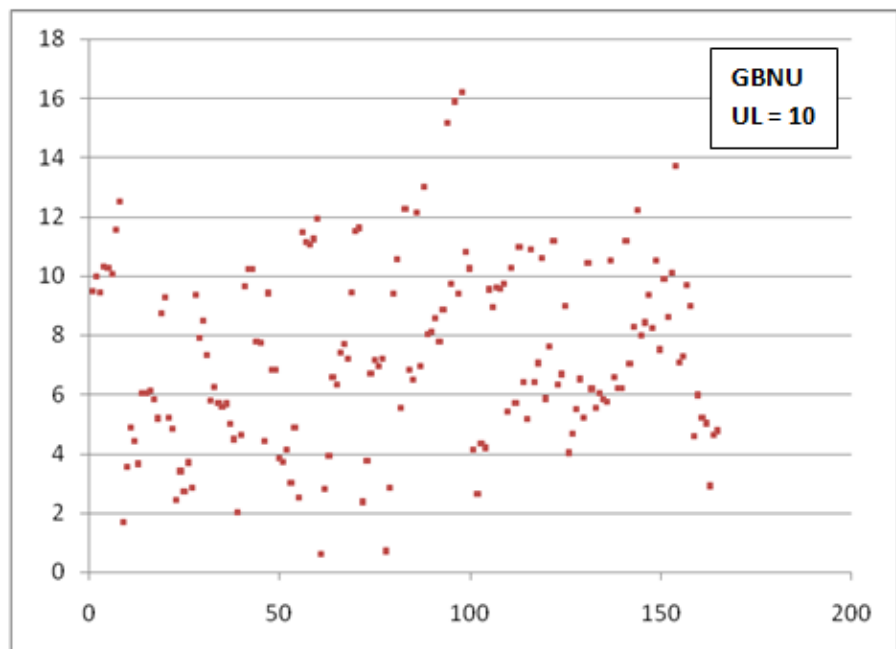
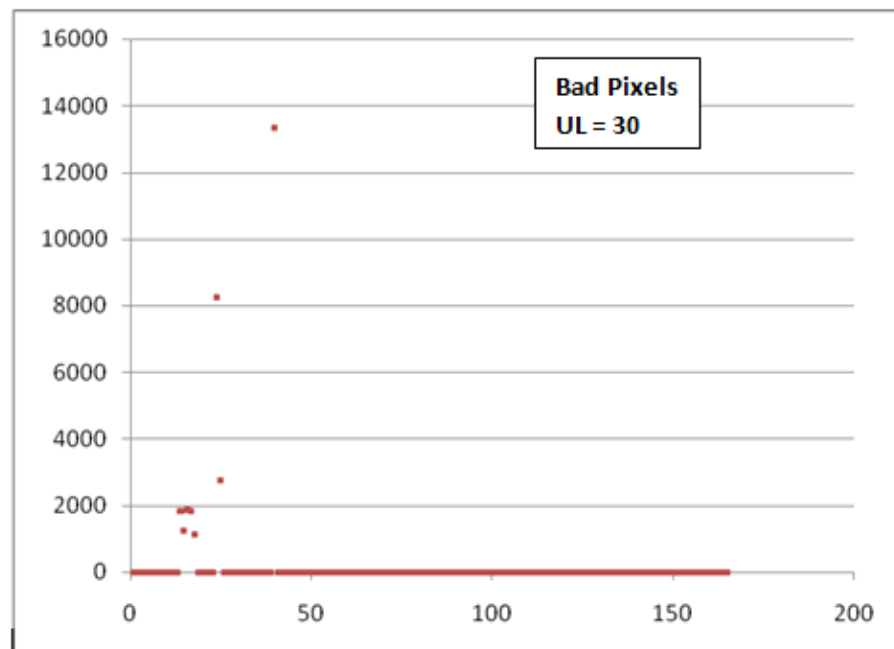
The charge

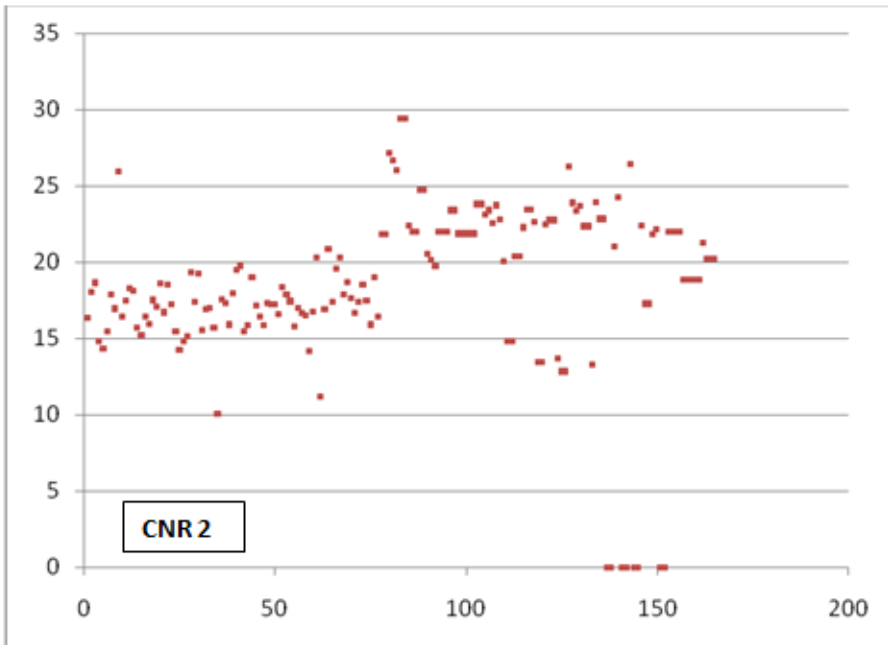
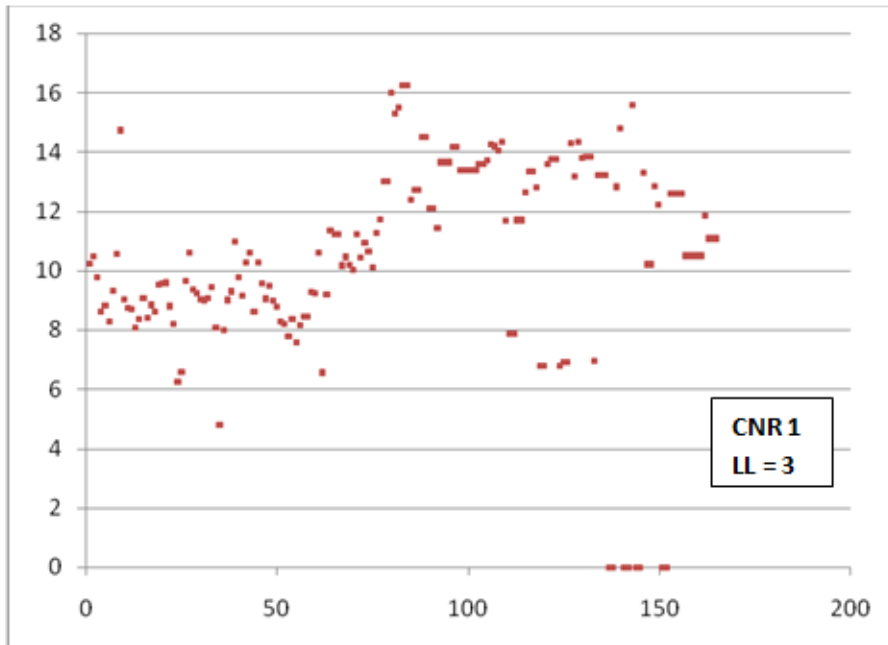
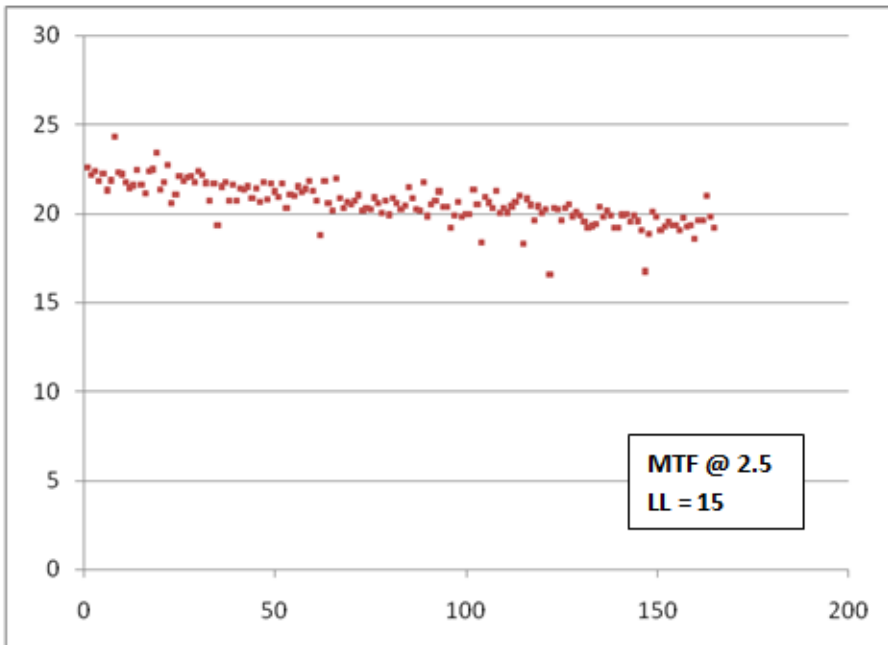
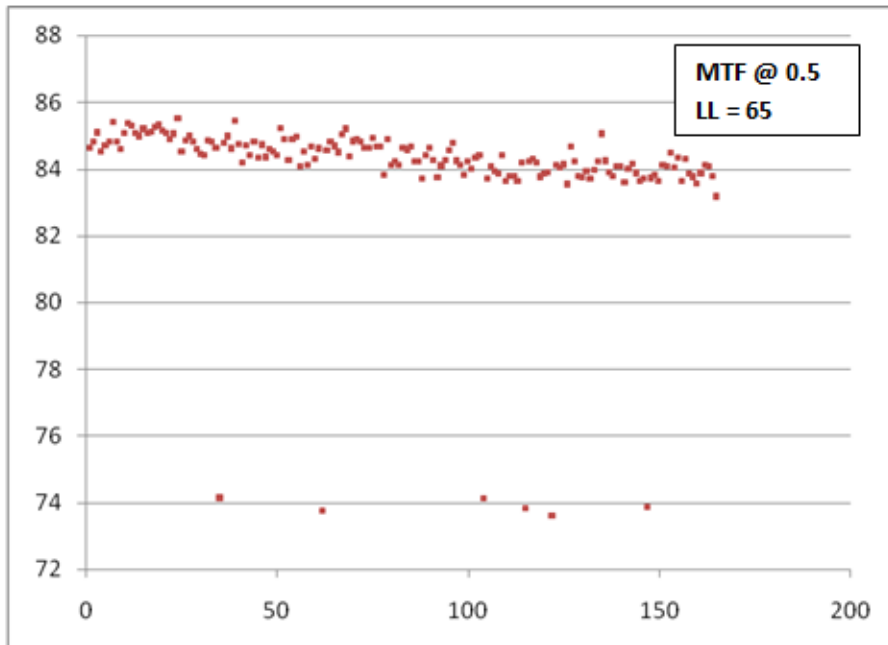
“To recommend consistency tests designed to be performed by a medical physicist, or a radiologic technologist under the direction of a medical physicist, to identify problems with an imaging system that need further evaluation by a medical physicist, including a fault tree to define actions that need to be taken when certain fault conditions are identified.”

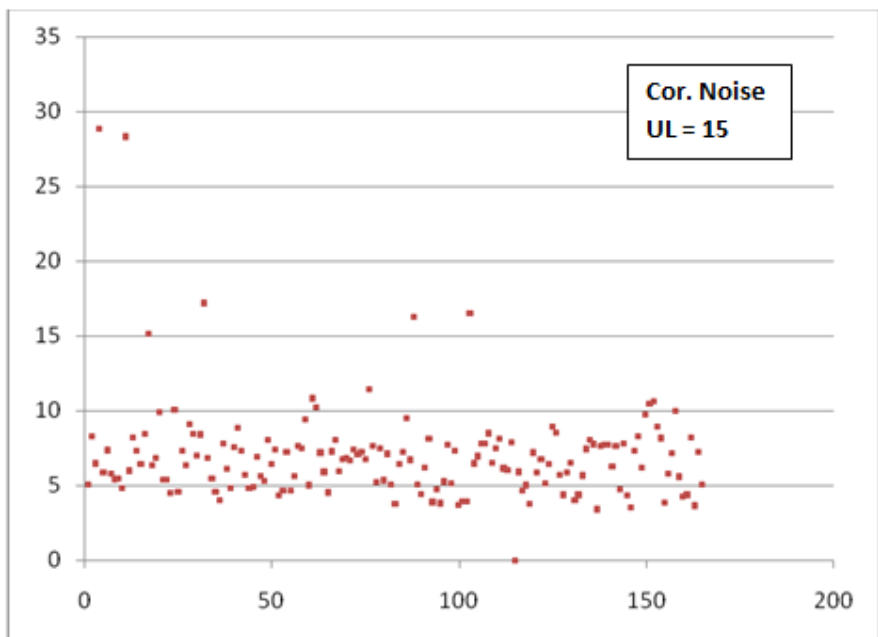
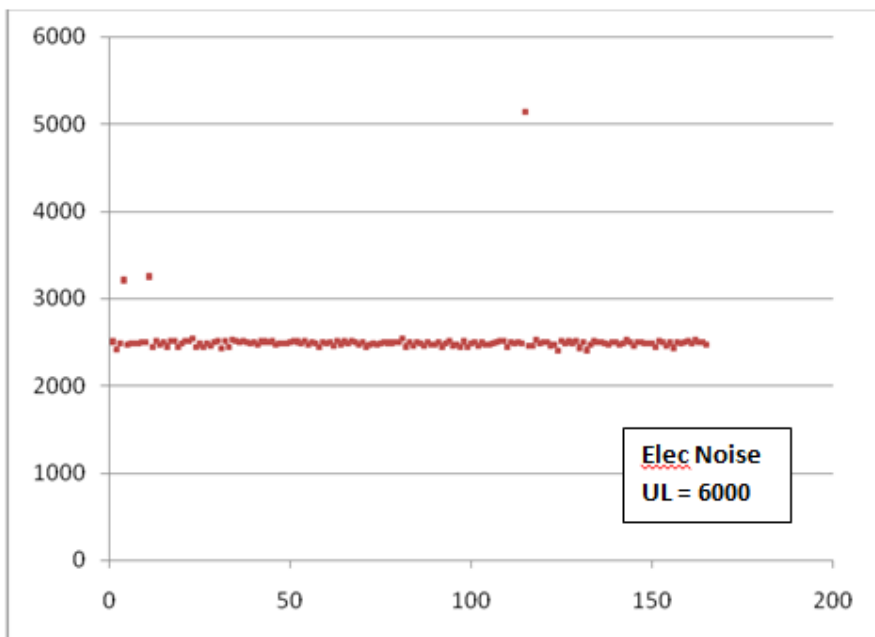
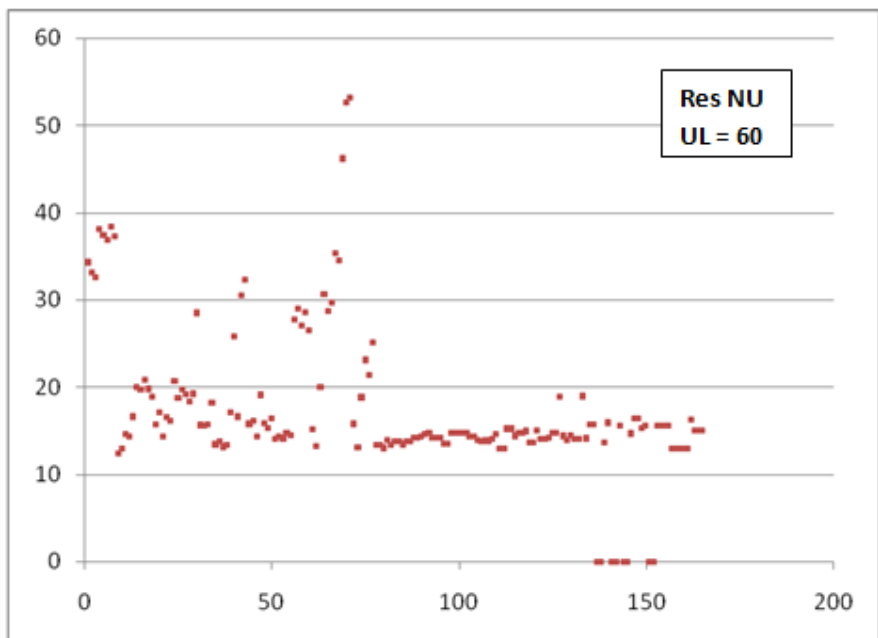
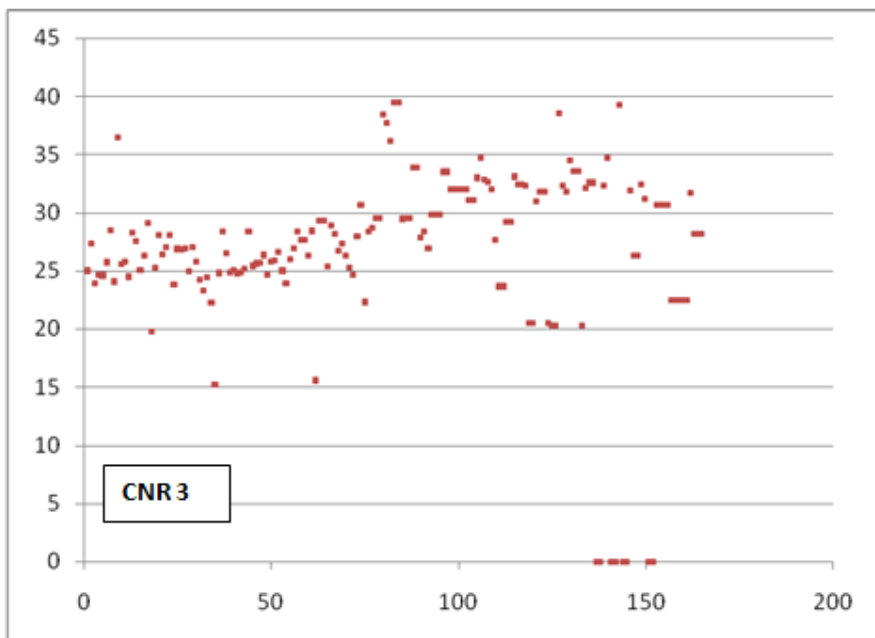
QA and QC

- Quality assurance (QA)*: “The planned and systematic activities implemented in a quality system so that quality requirements for a product or service will be fulfilled.”
- Quality control (QC)*: “The observation techniques and activities used to fulfill requirements for quality.”

*The American Society for Quality

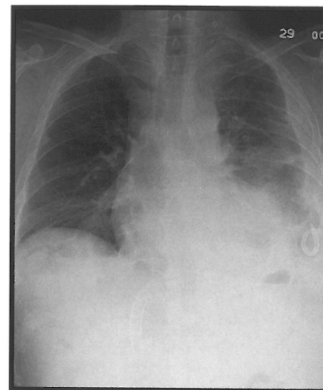




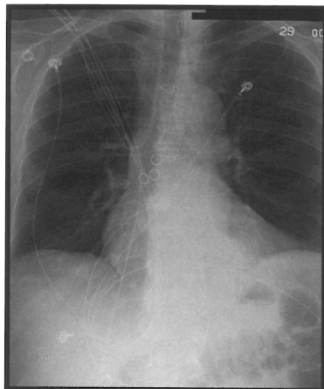




PA Chest – diffuse interstitial



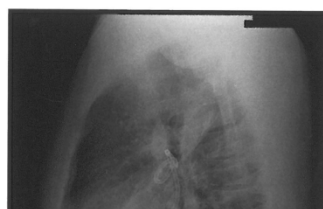
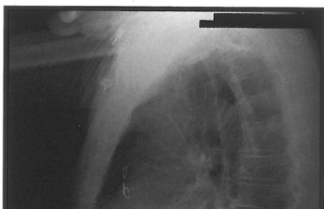
*PA Chest – left plural thickening,
small pneumo*



PA Chest – plural effusion, stent LT



PA Chest – hydro pneumo



Fast, easy image management

Managing image data is currently very time-intensive (and expensive). Digital x-ray technology promises to simplify this process significantly.

As a Revolution XQ/i user, you'll be able to:

- Apply automatic and user-programmable annotation, printing, routing and archiving.
- Store over 800 images on site, before pausing for archiving – enough for a typical week of patient exams.
- Retrieve entire exams in just seconds and transmit them instantly to remote locations.

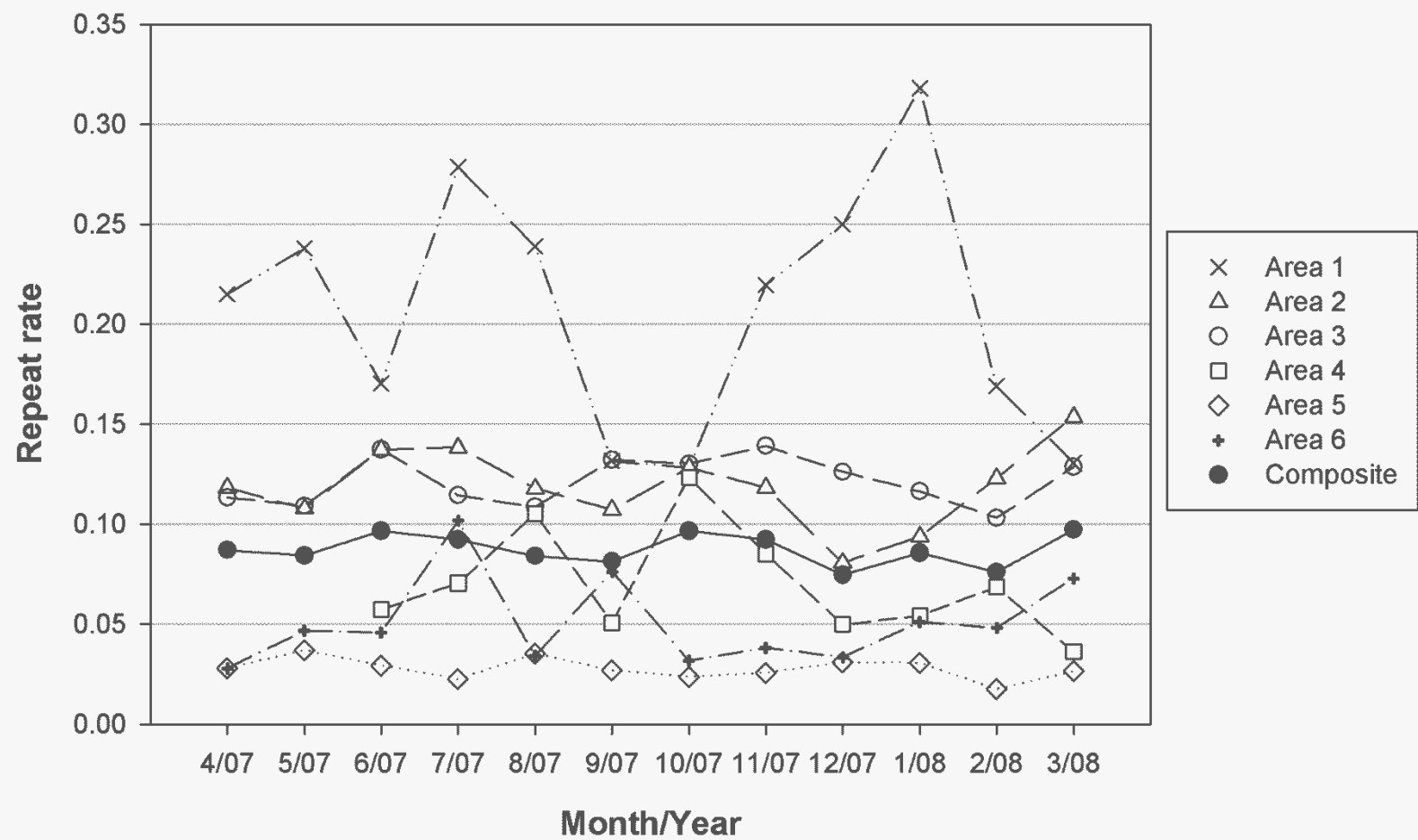
Uptime-maximizing reliability

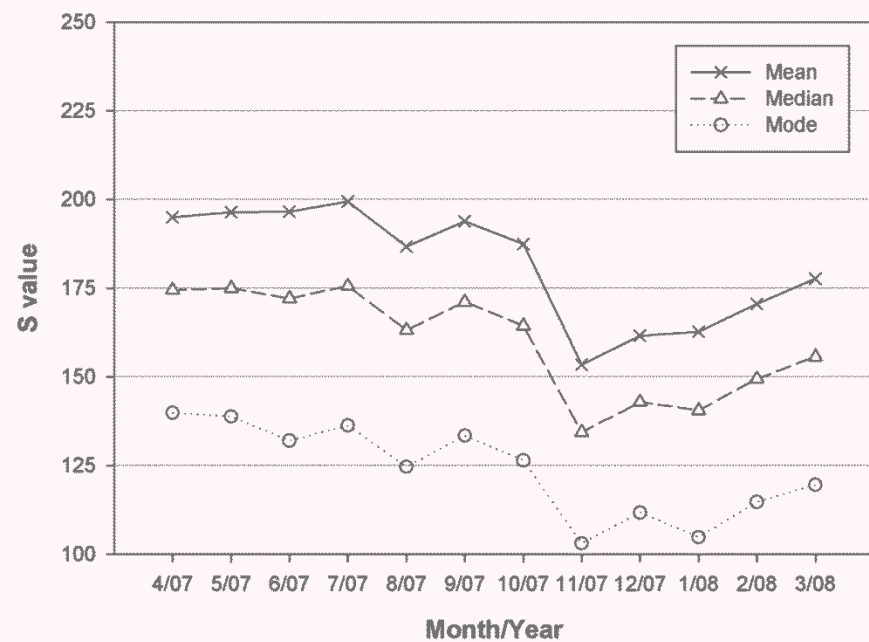
As a product of GE's Six Sigma methodology, the Revolution digital detector was designed for maximum system uptime. But this detector is just one component of a highly dependable imaging chain.

It starts with proven Advantx reliability, backed by GE's InSite™ remote diagnostics, repair and applications-assistance network.

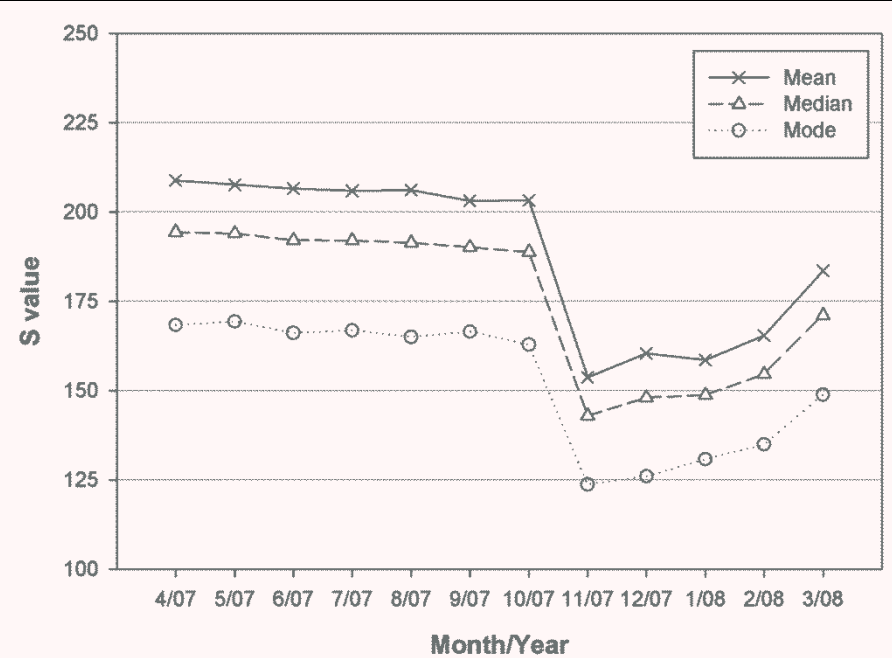
It continues with power-up diagnostics and error alarms to simplify troubleshooting and downtime, plus easy-to-perform image-quality checks that allow you to take corrective action before problems arise.

The net result: A highly automated system designed for high-throughput environments – and the fast, forgiving performance that allows you to generate maximum diagnostic information without the need for retakes or additional views.





AP abdomen



Portable chest

Focus areas

- Rejected image analysis
- Ongoing exposure analysis
- Artifact analysis

- Recommend using manufacturer QC program if available – designed to identify faults common to the specific technology

Roles in the QA program

QMP	QC technologist	Radiologist*
Design	Design	Design
Implementation	Daily operation	Data analysis
Choice of dose metrics	Manage data collection	Implement corrective action
Data analysis	Analyze/keep records	Contact QC technologist/QMP when exceptional cases reach PACS
Suggesting corrective action	QC reasons for rejection	Identify images of inadequate diagnostic quality reach PACS
	Notify QMP and radiologist of anomalies	Provide positive feedback when deserved
	Implement corrective action	

*Ultimately responsible for QA program

A roadblock

- Imaging Physics council review process
- Decision was to not approve unless certain modifications were made
- Add requirement for “artifact shot” after service/detector calibration
- Add requirement for daily exposure
 - Artifacts?
 - EI calibration?