

*QIW XVII: Metrology and Quality Assurance Perspective: What are the Challenges and Hurdles Hindering the Validation and Regulatory Approval of AI Algorithms for CT Screening?*

## Technical Challenges

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### **Technologies**

Image AI: (Machine Learning, Deep Learning)

Image Measurement Science (Formal Models)

- Evolving technologies
- Symbiotic technologies
- Requirement: documented datasets

# Technical Challenges for AI success

## Challenges: Image Quality

1. **Image Data** (quantity)
2. Quality Image **data**
3. Quality image **data** documentation
4. Quality image **data** acquisition

Image quality: precision, calibration, accuracy of reporting, convenience/speed, dose, radiologist preferences and regulatory compliance.

# Technical Challenges for AI success

## **Measurement Science (and AI) Challenge:**

### **CT image quality :**

1. Convince a CT manufacturer to provide a precision reconstruction
2. Convince physicians to acquire reconstructions for computer analysis

## **AI (and Measurement Science) Challenge:**

### **Datasets:**

1. Make available a high-quality evaluation dataset that is representative of the task
2. Make available documented training datasets