DefectAI
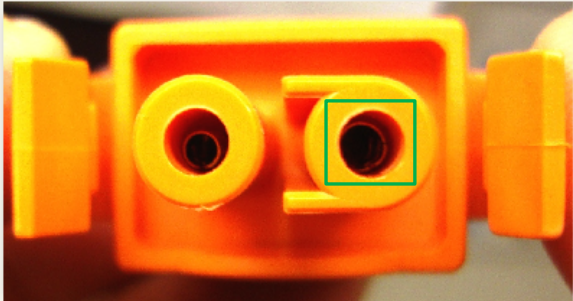## -- *Future of Defect Detection with AI-Powered Solution*

Defect Type: Socket enlarged on the right side

Risk Analysis and Mitigations:

From the image, I can list my risk analysis as:
1. Failure mode: socket enlarged on the right side
2. Hazard: electrical disconnection
3. Hazardous situation: non-contact between connector and mating connector
4. Failure cause: quality inspector uses hard point test lead probe into socket of connector to perform continuity re-inspection. This created an enlargement of the connector socket.

based on above risk assessment, I can list potential risk measures and actions as:

1. all hard point standard test lead probes removed from the line.
2. update work instruction to detail not to use hard point test leads but mating connector only.
3. all stores of finished goods using same connector type shall be reviewed by means of visual inspection.
4. recall goods using same connector.

Companies: Risk driven Quality Consulting Company LLC (RdQCC)

Global Risk Data Inc (GRD)

Founder: Jerry (JinXing) Xiao

Feb 1st , 2025

Who we are

- ## Decades of Experience in Product Defects & Risk Analysis

  Investigate more than 200,000 product failure issues and conducted risk analysis across over 100 product categories including robotic surgery and AI-powered medical devices.

- ## First AI-powered Risk Analysis for Product Defects

  Develop innovative platforms, *www.risk-chat.com, utilized by over 3000 users globally.*

- ## First AI-Powered Defect Detection Using LLMs

  Develop extensive proprietary datasets, including Text-RiskNet and Image-RiskNet, featuring over 13,000 unique failure modes with comprehensive risk analysis. Fine-tuned advanced AI Models leveraging large language models (LLM) to mitigate defects at their root causes and support risk-based decision-making.

- ## Academic Collaboration

  Establish a partnership with Concordia University (ranked #2 in AI research) to develop defect detection algorithms through the NSERC (natural sciences and engineering research council of Canada) grant program.

RDQCC ®

Building Devices Together

What defect problems are:

- ## High Volume Product Recalls and impacted Units in USA (2023)

  For consumer products, 322 recall events, impacting approximately 135.2 million units;
  for medical devices, 975 recall events, affecting 283.44 million units *(source: PR Newswire)*

- ## Serious Product-related Incidents in USA (2023)

  Approximately 12.7 million individuals were treated in emergency departments for injuries
  and over 700 deaths due to consumer product incidents (*Source: Stein Whatley*)

  The FDA receives over two million reports annually of suspected device-associated deaths,
  injuries, and malfunctions. From July 1 to September 30, 2023, FDA received over 7,000 reports
  related to Philips ventilators including 111 patient deaths. (*Source: Fierce Biotech*)

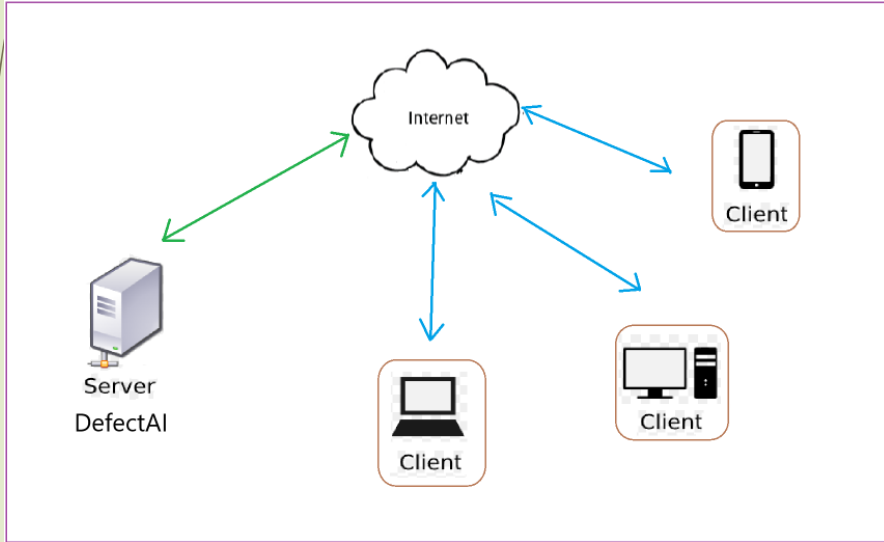- ## High Product Inspection Costs and Investment

  The cost of quality consists of prevention, appraisal, and failure costs, accounts for up to 25% of
  sales for some firms and can reach 40% to 50% in certain cases.

  Most automated inspection systems depend heavily on predefined specifications, target only
  known defects at limited checkpoints, and require significant upfront investments. This makes
  them often unaffordable for small manufacturing companies or companies with low-volume
  production needs.

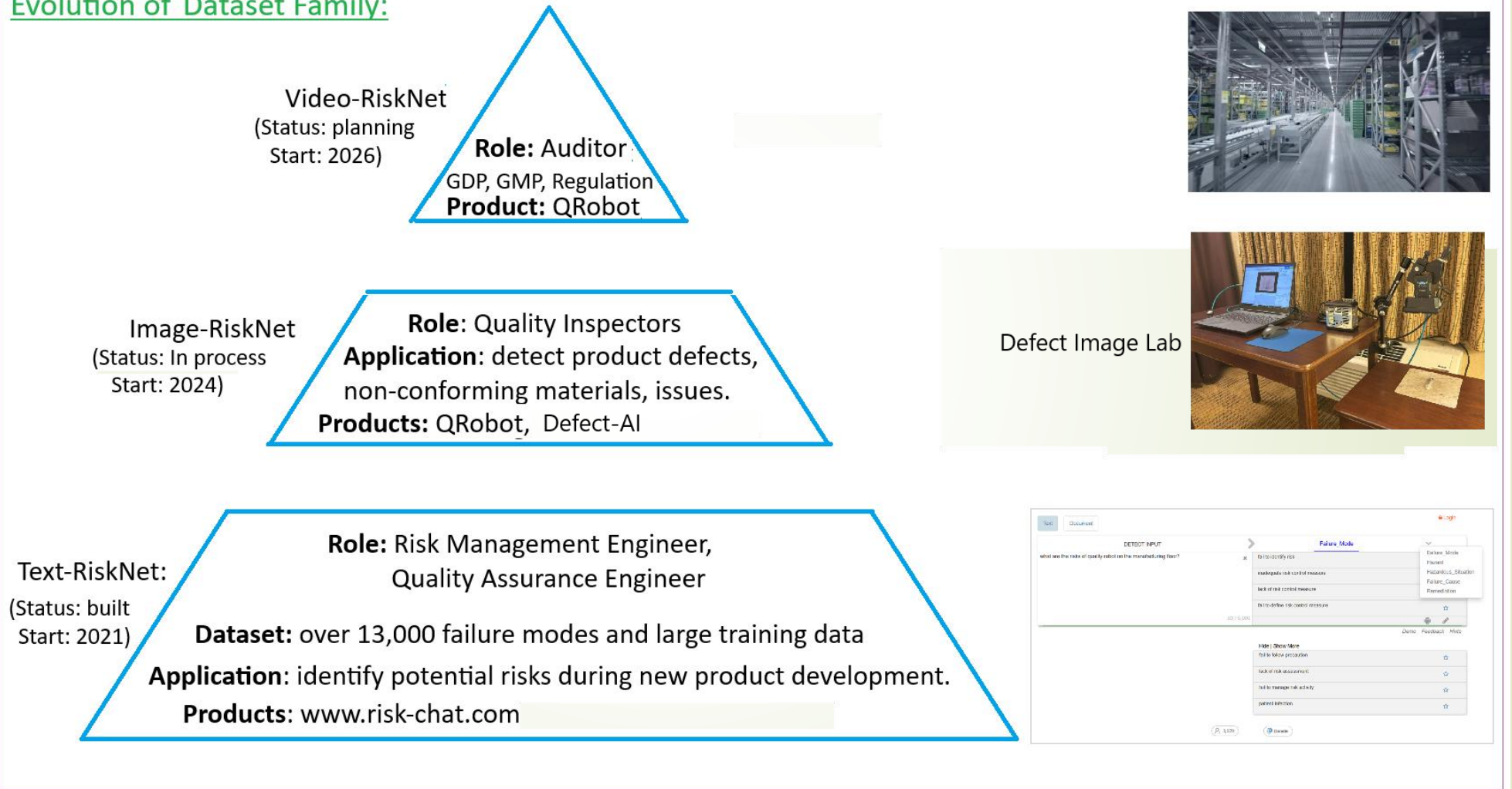FDA RECALL

What Our Solutions Are

DefectAI, AI-powered defect detection solutions, delivers fast and accurate defect detection by leveraging large AI models trained on proprietary image-text defect datasets and comprehensive product risk analysis. it seamlessly and consistently identifies defects and nonconformities across manufacturing floors.

- Defect Image Lab: High-quality defect images
- Maximum Efficiency at Minimum Cost
- One DefectAI for All
  Detect a wide range of defect scales and types.
- AI Bimodal Models
  Built on proprietary Image-RiskNet datasets to identify product defects efficiently and accurately.
- Detailed Risk Analysis
  Deliver failure modes, hazard, hazard situation, failure causes, risk level, risk mitigations, and disposition.

DefectAI Core: Dataset Family and Its AI Models

Evolution of Dataset Family:

Video-RiskNet
(Status: planning
Start: 2026)

Role: Auditor
GDP, GMP, Regulation
Product: QRobot

Image-RiskNet
(Status: In process
Start: 2024)

Role: Quality Inspectors
Application: detect product defects,
non-conforming materials, issues.
Products: QRobot, Defect-AI

Text-RiskNet:
(Status: built
Start: 2021)

Role: Risk Management Engineer,
Quality Assurance Engineer
Dataset: over 13,000 failure modes and large training data
Application: identify potential risks during new product development.
Products: www.risk-chat.com

Defect Image Lab

How we compete with others

Criteria	DefectAI	Traditional Automated Inspection Systems	Market LLMs (e.g., ChatGPT, Claude)
Cost	$100/month subscription ($0.06/hour) - Low costs.	$100,000 upfront investment	$0.06 per 1,000 tokens ($0.02/image) - high costs
Deployment Flexibility	Adaptable with rapid response times	Difficult to adapt to different production lines	Adaptable with moderate response times
Accuracy	Powered by proprietary AI models for superior defect detection and risk-based decision making	Fixed accuracy and no capability for risk analysis	Inconsistent detection and no capability for risk analysis
Scalability	Easily scalable through routine upgrades at minimal cost	Requires significant reinvestment	Difficult to scale due to costly upgrades
Ease of Use	User-friendly with a professional interface, leading to consistent results.	Requires technical expertise	Users may provide varying prompts, leading to inconsistent results.

Summary: DefectAI provides a cost-effective, scalable, and highly accurate solution compared to traditional automated inspection systems and market LLMs. Powered by AI models trained on proprietary image-text datasets and comprehensive product risk analysis, DefectAI offers a flexible subscription model, making it accessible to business of all sizes.

Why we are Qualified to VC

- **Experienced Leadership**: A team with a proven track in big data, Large Language Models (LLMs), machine learning, software development, defect image, risk assessment, failure cause analysis, and risk mitigations.

- **Innovative Technology**: Powered by proprietary product defect datasets and advanced image processing technologies, AI models revolutionize quality inspection for the next generation.

- **Traction**: Since 2021, our proprietary AI text models have achieved global user adoption (www.risk-chat.com). In 2024, we launched the Defect Image Center to continuously produce high-quality defect images with captioned risk analysis. In early of 2025, we will launch www.defect-AI.com, offering web-based services to the public. By late 2025, we plan to integrate DefectAI into robotics, addressing real-time defect detection and risk-based decision making.

- **Strategic Partnerships**: formed a partnership with Concordia University, ranked second in Canada for AI-related publications, to establish the leading brand in risk datasets through the NSERC grant program.

Thank you – Partner with Us to Transform Quality Inspection

- Revolutionizing AI-powered defect detection solution across manufacturing floors.
- Proven risk reasoning engines and proprietary AI bimodal models with strong initial traction.
- Addressing a $13B+ TAM with a scalable subscription model.
- Contact Information:

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Website: www.rdqcc.com

Let's shape the future of quality control together.
Schedule a follow-up meeting to discuss investment opportunities.