Optimizing and Automating Radiology Data De-identification Workflows

EICON REACH

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Current de-identification solutions require a substantial human review component, which is expensive and a constraint on data throughput.

Some default de-identification solutions can be overly aggressive, unnecessarily reducing the utility of the data for secondary use.

Basic needs for

- User-friendly UI with configurability
- Ease of deployment
- Scalable performance (horizontal/vertical)
OUR SOLUTION: EICON REACH DE-ID

- **GOAL**: Highly configurable, extensible platform for automation of the de-identification process and minimization of the need for human review
- Hub-and-spoke architecture
  - Cloud- or Enterprise-based Command/Configuration/Control
  - Execution at the Edge, adjacent to the data
- Combines Rules-based De-ID with AI-based De-ID into configurable workflows/pipelines
  - Rules-based: configurable, template-based
  - AI-based: Modality-specific algos (MR, CT, PT, US, XR, +)
- Automates execution of De-ID pipelines
- Audits all user activity and pipeline execution
- Risk mitigation: AI-based uncertainty quantification to measure success and minimize human review requirement
Centralized Command & Control, Configuration

“Asset” Management & Pipeline Orchestration – algorithms, models, De-ID, QC, routing rules, data curation, etc.

Web UI

Deploy Anywhere (Public Cloud, Customer/Partner VPC, On-Prem)

Receive Assets, Pipelines & Instructions from HUB

Receive Data over DICOM Protocol, API/HTTPS, File System watcher

Execute Pipelines: perform De-ID, data QC, data routing, algorithm execution, etc.

Communicate audit trail, status, etc. to HUB
EICON REACH DE-ID Pipeline
EICON REACH Algo Execution with De-ID

1. Ingest study at the hospital/site → Collect → De-identify → QC
2. Route study to Cloud
3. Orchestrate algorithm execution & route results
4. Return results to hospital/site
5. Post-process and route study for clinical use → Re-identify → Store → Route for Clinical Review
THANK YOU