



## Creating Next-Gen Enterprise Imaging Apps Using AI and Clinical Data

The prevalence of chronic disease is growing, and so too is the volume of medical imaging — more than 30% per year — to assist diagnosis. Yet a study in the *Journal of Digital Imaging* suggests that nearly 60% of radiology orders have no mention of important chronic conditions, calling it “an alarming lack of communication” that “may negatively impact interpretation quality.” Hospitals, radiology groups, and clinicians are looking for a new generation of advanced enterprise imaging solutions to help handle this volume, and to:

- Improve reads with contextual medical record information presented within diagnostic imaging workflow
- Ease workloads and cognitive burdens on radiologists by augmenting imaging machine learning (ML) and artificial intelligence (AI) algorithms with curated clinical data
- Bridge siloed imaging data and disparate PACS that use proprietary technology
- Improve radiologist productivity
- Expedite patient report turnaround time

### Create Smarter, More Powerful Enterprise Imaging Solutions

The InterSystems technology platform combines high-performance, highly reliable, and massively scalable data management, interoperability, analytics, and rapid application development capabilities. It gives enterprise imaging solutions the ability to deliver the clinical histories behind radiology orders, and the clean data required for analytics, artificial intelligence, and machine learning algorithms.

## The Future of PACS and Imaging Solutions in Healthcare

**Interoperability. Clinical Context. Machine Learning. Artificial Intelligence. Workflow.**

No other vendor has more experience working with health data than InterSystems. Companies such as Epic, GE Healthcare, 3M Health Care, INFINITT, Guerbet, Ricoh, Cannon Medical, and Roche Diagnostics have made a strategic commitment to InterSystems. InterSystems technology powers leading health information networks such as Healthix and Manifest MedEx, which aggregate clinical data for more than 36 million people in New York and California.

**MORE THAN 1 BILLION  
HEALTH RECORDS  
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INTERSYSTEMS  
TECHNOLOGY**

### Achieve Interoperability Faster

InterSystems deep support for healthcare standards and protocols, including FHIR, HL7 V2, and HIE, ensures interoperability and improved workflow across care facilities and settings. Comprehensive REST application programming interfaces make granular data available for SMART on FHIR and other FHIR applications.

- Connect siloed imaging data for radiology groups, diagnostic imaging centers, and imaging departments in hospitals
- Simplify information flow across all sources, modern and legacy PACS
- Eliminate the need for complex searches in the electronic medical record (EMR) with FHIR-based queries to fetch specific patient data, such as the presence of an iodinated contrast allergy
- Mine clinical information from the EMR and integrate it with other clinical systems used by the radiologist

### Present Contextually Relevant Patient Information using FHIR and NLP

With an imaging solution built on the InterSystems platform, clinicians can have an accurate presentation of existing diagnoses, doctor's notes, wearables data, and even genomic information prior to reading a study. InterSystems FHIR and natural language processing (NLP) capabilities, plus an extensive set of connectivity adapters, makes quick work of accessing and delivering relevant patient information as needed.

At the same time, you can benefit from easier, more streamlined deployments of your applications, the ability to rapidly evolve and extend the solution, and the increased system reliability, performance, and scalability expected from solutions built on InterSystems technology.

## Improve Speed and Accuracy with AI-Powered Medical Imaging Systems

Radiologists need help making the most out of the growing volumes of ever higher-resolution output from imaging scanners. Artificial intelligence (AI) powered medical imaging systems can produce scans and help radiologists identify patterns and treat patients with emergent or serious conditions sooner.

AI and ML algorithms require access to curated, clean data from the medical record, in addition to scan data, to perform properly. The InterSystems platform handles data access, management, integration, text analytics, and transaction processing. It uses its FHIR Repository and standard FHIR API or SQL to deliver curated data without having to establish an expensive extract, transform, and load process.

InterSystems provides the fastest route to all of the data you need so you can:

- Integrate ML and AI into new or existing diagnostic imaging applications
- Improve radiologist workflow and productivity, using your AI technology to detect and segment irregularities in imaging data and enhance diagnostic accuracy
- Accelerate time to value for complex, data-intensive diagnostic imaging applications

## InterSystems Customers Enhancing Diagnostic Imaging, Empowering Clinicians, Improving Care

### Guerbet

Contrast&Care<sup>®</sup> Guerbet's contrast media injection management solution, is built on the InterSystems health data management product, IRIS for Health. Guerbet uses IRIS for Health to integrate Contrast&Care with hospital information systems and provide additional data to enhance patient care and follow-up.

### INFINITT awarded 2019 Best in KLAS for Community Hospital PACS

INFINITT uses InterSystems technology to overcome workflow obstacles clinicians face when reading studies from disparate PACS and multiple healthcare facilities.



## IMSI, a provider of RIS and other solutions

“The InterSystems platform simplified much of the work involved in integrating disparate systems, connecting to EMRs, using DICOM and HL7, managing the data, supporting workflows, and enabling event detection and alerting. It enabled us to focus our development effort on incorporating our radiology process and workflow expertise into the solution.”

*John Mazur, President*

## Charlotte Radiology, one of the largest radiology groups in the U.S.

“From a business perspective, going with InterSystems opened up new opportunities for Charlotte Radiology by minimizing the costs of connecting to other healthcare organizations.”

*Mark Jensen, Chief Executive Officer*

Charlotte Radiology now has a median turnaround time of 11 minutes for Emergency Department studies. Over 90% of studies performed at hospitals and outpatient imaging sites receive a final report in the electronic health record in less than an hour.

## Greensboro Radiology Group

“More important for sustainability, and to keep us relevant and integral to healthcare enterprises, [a solution based on InterSystems technology] has allowed us to be better radiologists, to provide a higher level of imaging value to our hospital partners that are taking care of the patients in our region.”

*Dr. Eric Mansell, President*

## Health Information Exchange

“I needed a system that was going to make sense of all of the chaos and that was going to empower our staff to build bridges between our different systems in a scalable, reliable, and fiscally responsible way.”

*HIE Director quoted in KLAS Performance Report, “Interoperability Platforms 2019: Shifting Away from Traditional HIE”, October 2019.*

## Learn More

Whether your organization is a healthcare startup, a Fortune 500 company, or a healthcare system developing new solutions, InterSystems can deliver the technology, knowledge, and support to help you bring your vision to life. Contact us to learn how:

- [info@InterSystems.com](mailto:info@InterSystems.com)
- **1-800-753-2571 or +1-617-621-0600**

Visit [InterSystems.com/contact](https://InterSystems.com/contact) for a link to the number of your