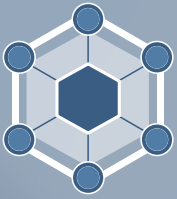# Digital Fax 2023

How Are Advanced Users Moving toward Next-Generation Discrete Data Extraction?

Advanced User Insights Reports

Next-Generation Digital Fax

Advanced User Insights reports are designed to help readers understand what is possible at the cutting edge of a given market segment: in this case, digital fax solutions. **Readers should not approach this study as an introduction to digital fax**, nor should initial purchase decisions about a digital fax solution be made based on the findings in this report.

Rather, this report is intended for organizations that are looking to move from an already mature digital fax solution and approach, with a willingness to devote significant organizational investment, governance, and development efforts in partnership with their vendor. For these organizations, this report shows what their peers are achieving and how the digital fax market has progressed. To gather these perspectives, KLAS interviewed organizations identified by vendors as their most advanced users.

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Executive
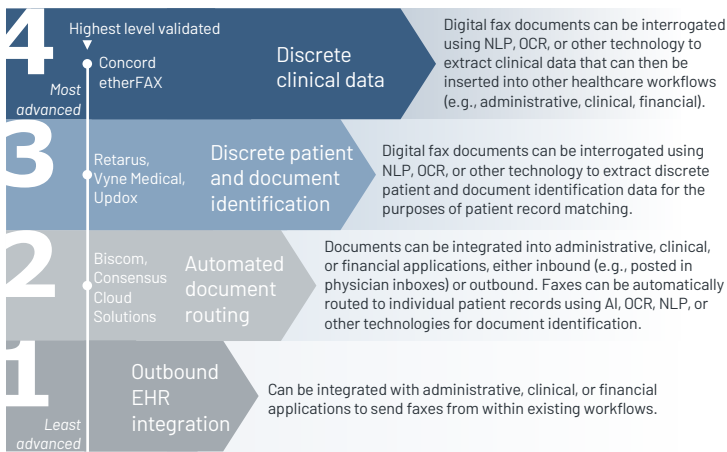# Insights

Digital Fax 2023

How Are Advanced Users Moving toward Next-Generation Discrete Data Extraction?

Despite the healthcare industry's progress with interoperability (HIEs, national record exchanges, Direct Secure Messaging, APIs), healthcare organizations still heavily rely on faxing to exchange data. Faxing technology has evolved to accommodate fully digital processes, but provider organizations are looking for next-generation faxing functionality—like optical character recognition (OCR) and natural language processing (NLP)—to further automate workflows. Drawing from interviews with organizations identified by vendors as their most advanced users, this report follows up on KLAS' 2019 report and validates what next-generation functionality vendors have deployed. It also shares market insights into the organizational effort required to maintain digital faxing and the future viability of digital faxing in healthcare.

The insights in this report are designed to help readers understand what is possible with digital faxing solutions. **This data comes from a small sample of vendors' most advanced users** and should therefore not be interpreted as performance insights, rankings, or a comprehensive view of customers' technological capabilities.

Validating Vendor Capabilities

Digital Fax Maturity Framework

4 Highest level validated
Most advanced
● Concord
● etherFAX
Discrete clinical data — Digital fax documents can be interrogated using NLP, OCR, or other technology to extract clinical data that can then be inserted into other healthcare workflows (e.g., administrative, clinical, financial).

3 Retarus, Vyne Medical, Updox
Discrete patient and document identification — Digital fax documents can be interrogated using NLP, OCR, or other technology to extract discrete patient and document identification data for the purposes of patient record matching.

2 Biscom, Consensus Cloud Solutions
Automated document routing — Documents can be integrated into administrative, clinical, or financial applications, either inbound (e.g., posted in physician inboxes) or outbound. Faxes can be automatically routed to individual patient records using AI, OCR, NLP, or other technologies for document identification.

1 *Least advanced*
Outbound EHR integration — Can be integrated with administrative, clinical, or financial applications to send faxes from within existing workflows.
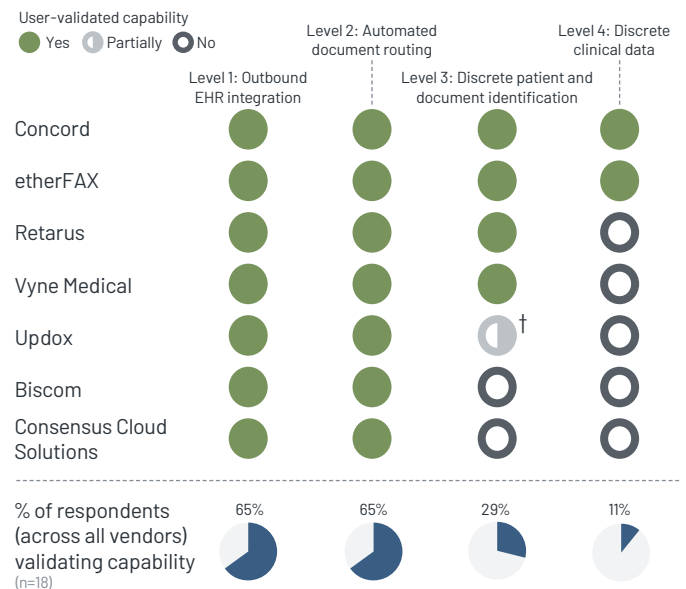
KLAS' Digital Fax Maturity Framework

In our Digital Fax 2019 report, KLAS created a framework to describe the state of digital faxing and show where vendors' most advanced users fell on the spectrum. The framework has since been updated to include only those capabilities that are differentiating in the industry (secure digital fax, which was included as Level 1 in the 2019 framework, is seen by respondents as a non-differentiating feature in the market and is no longer included). This report uses the updated version of the framework to show how solutions' capabilities have progressed over the past few years and what the state of digital faxing looks like today among advanced-user respondents (most vendors have not been validated above Level 3). Further, this framework is intended to help healthcare organizations understand the benefits of strategically leveraging a digital fax solution—while there are many opportunities to streamline processes via digital fax, few organizations are taking full advantage of them.

Concord, etherFAX Surpass Others in Digital Fax Maturity; Retarus, Vyne Medical Close Behind

Most healthcare organizations today haven't yet leveraged the capabilities of digital fax solutions, citing cost, the amount of effort required, and the reliability of data as reasons—and many organizations don't even know this technology exists. However, in recent years, a handful of vendors and provider organizations have collaborated to advance digital fax solutions, hoping to streamline data sharing across the market. Of the vendors in this study, Concord and etherFAX lead the others in KLAS' fax maturity framework. One advanced **Concord** user (midsize outpatient clinic) has worked with Concord to leverage the technology in a way that drives efficiency, enabling the organization to match patient records and pull discrete clinical data fields that can flow into the EHR. Similarly, an advanced **etherFAX** user can automatically route documents to correct patient records, extract specific clinical data from faxes, and use the data to create a longitudinal record for patients. Advanced users of **Retarus** and **Vyne Medical** use their solutions to pull discrete patient-identification information. While these vendors' solutions can use OCR to read all text on a page, no users were validated as identifying clinical fields or routing data to the EHR; this process can be complicated and is a roadblock to customer adoption. **Updox** is validated as identifying patient ID information without being able to extract it. Advanced users of **Biscom** and **Consensus Cloud Solutions** report lower fax maturity levels; none of these respondents were validated by KLAS as adopting Level 3 capabilities, though they say their vendors are willing to collaborate.

Validated Capabilities across Vendors

Vendors ordered by highest maturity level validated, then alphabetically

User-validated capability
● Yes ◐ Partially ○ No

	Level 1: Outbound EHR integration	Level 2: Automated document routing	Level 3: Discrete patient and document identification	Level 4: Discrete clinical data
Concord	●	●	●	●
etherFAX	●	●	●	●
Retarus	●	●	●	○
Vyne Medical	●	●	●	○
Updox	●	●	◐ †	○
Biscom	●	●	○	○
Consensus Cloud Solutions	●	●	○	○
% of respondents (across all vendors) validating capability (n=18)	65%	65%	29%	11%

† See the vendor's validated use cases in the following section for more information on this partial validation.

Use Cases: Vendor-Reported vs. User-Validated

Vendors ordered alphabetically

Vendor-reported/user-validated
● Yes ◑ Partially ○ No

Biscom (n=1)

	Level 1 Outbound EHR integration	Level 2 Automated document routing	Level 3 Discrete patient and document identification	Level 4 Discrete clinical data
Vendor reports they offer capability	●	●	●	○
Capability validated by advanced user(s)	●	●	○	○
Advanced-user description of capability	Vendor offers API integrations to connect to EHR.	Users can route data to a shared file; API integrations with EHR can pull the file and data from location.	*Not validated by advanced user respondent*	*Not validated by advanced user respondent*

"For inbound routing, we move data to a shared folder on the network automatically and drop in the image file as well as the metadata file. So we have both copies of those automatically, and then we can have an EMR record just watch that shared folder and import the records into our medical record system." —IT manager

Concord (n=3)

	Level 1 Outbound EHR integration	Level 2 Automated document routing	Level 3 Discrete patient and document identification	Level 4 Discrete clinical data
Vendor reports they offer capability	●	●	●	●
Capability validated by advanced user(s)	●	●	●	●
Advanced-user description of capability	Vendor offers API integrations to connect to EHR.	Solution helps pick out basic identifiers from the fax and route data to different queues that users can review. API integration allows PDFs to be pulled from those queues and matches patients with data from the EHR.	Solution can identify fields such as phone numbers, names, and DOB and compare against clinical data to match a record to a patient.	Solution pulls discrete clinical information into a JSON file, and specific fields can be placed into the EHR via an API. One customer feels the solution is a significant time-saver, reporting 80% accuracy with matching clinical data.

"The extractions of clinical data are not 100% perfect, and I don't think the extractions will ever be perfect because the information comes in via fax. Not all of the faxes are the same, and they don't come from the same sources. I fully accept and am comfortable with having a level of performance that isn't at 100%. I am happy if things are performing at above 80%. The system makes our call center agents' lives and jobs so much easier and more efficient." —CIO

Consensus Cloud Solutions (n=2)

	Level 1 Outbound EHR integration	Level 2 Automated document routing	Level 3 Discrete patient and document identification	Level 4 Discrete clinical data
Vendor reports they offer capability	●	●	●	●
Capability validated by advanced user(s)	●	●	○	○
Advanced-user description of capability	Solution is interfaced to send a partial record, single document, or group of documents.	Routes data to a shared file, and then a person finishes routing data to the correct patient record.	*Not validated by advanced user respondents*	*Not validated by advanced user respondents*

"When we are on a particular document, we click a button to fax it, and we send the document. The process is pretty simple. We can also open up a separate menu, do a custom send, attach multiple documents, and send those in bulk. If we needed to send an entire chart, not just a piece of a chart, we could do that as well. If we are sending from the system, we do not have the ability to link the fax to an email. If there were an email document as an attachment, we could theoretically do that. We have the ability to send eFaxes out as email attachments separate from the EHR system. But when sending from the EHR system, we just send the document or a grouping of documents." —IT manager

Validated Use Cases among Advanced Users Continued

etherFAX (n=2)

	Level 1 — Outbound EHR integration	Level 2 — Automated document routing	Level 3 — Discrete patient and document identification	Level 4 — Discrete clinical data
Vendor reports they offer capability	Yes	Yes	Yes	Yes
Capability validated by advanced user(s)	Yes	Yes	Yes	Yes
Advanced-user description of capability	Interfaces with EHR so a record can be sent.	Routes data to a shared folder for review. For one advanced user, information automatically flows into a capitation system without a manual review; this occurs when the data reaches a sufficient confidence threshold.	Solution can identify fields such as phone numbers, names, and DOB and compare against clinical data to match a record to a patient.	Solution pulls discrete clinical information into a JSON file, and specific fields can be placed into the receiving system via an API. The one user who validates Level 4 reports that searchable items play an important role in their workflow.

"We make a match with the original record that triggered the fax request, and we ingest it so that it is part of our record for that member. All of those fields—like for the diagnosis and procedure codes—then become searchable items, which are super important to our workflow." —CIO

Retarus (n=3)

	Level 1 — Outbound EHR integration	Level 2 — Automated document routing	Level 3 — Discrete patient and document identification	Level 4 — Discrete clinical data
Vendor reports they offer capability	Yes	Yes	Yes	Yes
Capability validated by advanced user(s)	Yes	Yes	Yes	No
Advanced-user description of capability	Able to send records from EHR and handle requests for release of information.	Routes data to a shared folder that requires a manual check before being moved on.	Solution can pick out patient identifiers and present that data to staff, who then match it to a patient record.	*Not validated by advanced user respondents*

"Today with our integration with our EMR, we are able to manually fax a document from the chart. We also have our release of information functionality tied in with our EMR and Retarus' product to the point where we can easily release documentation to different organizations or individuals." —IT manager

Updox (n=5)

	Level 1 — Outbound EHR integration	Level 2 — Automated document routing	Level 3 — Discrete patient and document identification	Level 4 — Discrete clinical data
Vendor reports they offer capability	Yes	Yes	Yes	Yes
Capability validated by advanced user(s)	Yes	Yes	Partially	No
Advanced-user description of capability	Uses a print driver so that when a clinician prints something, the Updox solution creates a PDF that can be shared.	Solution uses the sender's number to route incoming faxes to different departments, like billing, medical records, or pharmacy.	Solution is able to identify fields but cannot identify the information within those fields (e.g., can identify DOB field but not specific DOB information).	*Not validated by advanced user respondents*

"We use some of the advanced routing features. When we identify a certain fax number that we consistently get faxes from and we know the number is another hospital, pharmacy, or insurance company, we typically can use that information to know where that fax is intended to go across our enterprise, whether the fax is for the insurance and billing department, for the medical records department, or a refill request for the clinic staff. We have the features enabled to have advanced routing based on the phone number so that the faxes go to a separate bucket that doesn't necessarily need as much triaging and sorting."
—Director of medical records

Validated Use Cases among Advanced Users Continued

Vendor-reported/user-validated

🟢 Yes ◐ Partially ⭕ No

Vyne Medical (n=2)

	Level 1 — Outbound EHR integration	Level 2 — Automated document routing	Level 3 — Discrete patient and document identification	Level 4 — Discrete clinical data
Vendor reports they offer capability	🟢	🟢	🟢	🟢
Capability validated by advanced user(s)	🟢	🟢	🟢	⭕
Advanced-user description of capability	Vendor leverages APIs and common fax standards to integrate bidirectionally with EHR vendors	Routes data to a queue where it is manually reviewed before being associated to a patient record.	Solution can identify document type (e.g., order versus authorization) and read basic DOB and name fields.	*Not validated by advanced user respondents*

"When we set up Refyne Cloud Fax, we only programmed our instance to look at the name, date of birth, and type of document. The system knows the difference between a physician order and an authorization order, so the system just pulls the name and date of birth, and then we go and move things. We don't have Refyne Cloud Fax turned on to extract discrete data into our records because that is part of our quality check. Refyne Cloud Fax automatically reads the fax and knows what type of document it is, but then we see which pieces we want to pull in. For example, Refyne Cloud Fax will say who the order belongs to and their date of birth, and then the system pulls up a list with all the account numbers, and we can assign the order to one of those accounts." —Patient access manager

Market Insights

Most Respondents Want Vendors to Make Technology Easier to Roll Out

Most advanced-user respondents say their vendor is a strong, attentive partner who collaborated with them to build the solution and invited them to be alpha or beta testers. Still, respondents report some challenges with rolling out and refining their technology. Those who feel significant effort was required to establish their fax processes say the interfacing was burdensome. Multiple users also struggled to automate data-field extraction for patient identifiers and establish processes that ensure accuracy. Respondents who feel moderate effort was required say there was too much maintenance for their IT department, too much difficulty connecting with other solutions, and too much dependence on their vendor. The minority say little effort was required to refine their fax process, noting that they easily deployed their internet-based solution to replace paper processes. Of note, those who feel significant effort was required also tend to have more advanced workflows, while those who feel little effort was required often have less advanced workflows.

Effort Required to Get Fax Process to Its Current State

■ Significant effort ■ Moderate effort ■ Little effort ■ No effort

6	6	4

0%   100%
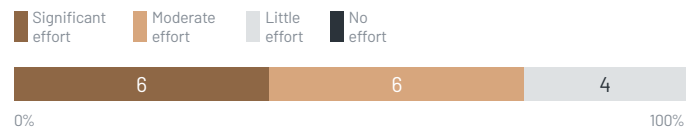
Most Advanced Users See Digital Fax as Integral Part of Their Interoperability Strategy

In general, advanced users believe their organizations will continue to leverage digital fax solutions in the future, since they heavily rely on digital fax to acquire referral data, orders, and bills. Further, they anticipate the digital fax market will grow as more healthcare organizations move from paper fax processes to digital fax solutions. The need for paper faxing is also anticipated to increase, since many organizations heavily rely on its ease of use and security. Respondents who believe digital fax's role will decrease in the long term say FHIR, Direct messaging, and national record exchanges could potentially standardize the exchange of patient referrals between healthcare organizations and critical exchange partners. However, the general sentiment among respondents is that faxing is here to stay; thus, organizations could benefit from deploying tools that help automate and improve faxing workflows.

Role of Digital Fax in Organizations' Short-Term Interoperability Strategy

■ Increasing role ■ Stable role ■ Decreasing role

5	5	3

0%   100%
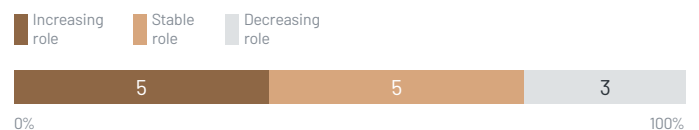
Role of Digital Fax in Organizations' Long-Term Interoperability Strategy

■ Increasing role ■ Stable role ■ Decreasing role

3	6	5

0%   100%

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Report Information

About This Report

This report is designed to help readers understand how the digital fax market has progressed and what it will look like in the future. To gather these perspectives, KLAS asked organizations identified by vendors as their most advanced users to respond to the following:

1. What capabilities are you using from your vendor, and how would you rate those capabilities on a 1–9 scale?
2. How much effort was required from your organization to get your fax process to its current state?
3. What role do you expect digital fax will play in your organization's future interoperability strategy?

Sample Sizes

Unless otherwise noted, sample sizes displayed throughout this report (e.g., n=16) represent the total number of unique customer organizations interviewed for a given vendor or solution. However, it should be noted that to allow for the representation of differing perspectives within any one customer organization, samples may include surveys from different individuals at the same organization. The following table shows the total number of unique organizations interviewed for each vendor or solution as well as the total number of individual respondents.

Some respondents choose not to answer particular questions, meaning the sample size for any given vendor or solution can change from question to question. Note that when a vendor has a low number of reporting sites, the possibility exists for KLAS scores to change significantly as new surveys are collected.

Note: Some organizations may have rated more than one product.	Advanced User Interviews		Estimated Advanced-User Customer Base for Measured Solution
	# of unique organizations	# of individual respondents	
Biscom	1	1	Very small
Concord	3	3	Very small
Consensus Cloud Solutions	2	2	Very small
etherFAX	2	2	Very small
Retarus	3	3	Very small
Updox	5	5	Very small
Vyne Medical	2	3	Very small

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Our Mission
Improving the world's healthcare through collaboration, insights, and transparency.

Vendor
Insights

Vendor-Provided Information

Biscom

Is your solution secure and HIPAA compliant for PHI exchange?
Yes, Biscom solutions are secure and HIPAA complaint. We take security very seriously and have implemented numerous measures to ensure that solutions meet the highest security standards.

What output formats (email, EDI, FTP, Direct messages, etc.) does your solution offer?
We offer a variety of output formats to meet the needs of end users, including email, EDI, FTP, and Direct messages.

Does your digital fax solution allow for certain workflows (markups, signatures, etc.) to be done electronically?
Yes, when organizations use the Biscom Web Fax Client.

Do you have inbound integration where documents can be routed and attached to individual patient files with some mechanism or technology for document identification?
Yes, our solution has inbound routing capabilities. Our fax solution can scan a fax and use OCR technology to extract identifiable information from the received fax. The received fax/file is analyzed to recognize characters and extract important details such as patient names, dates, and other relevant information. This extracted information can then be used to accurately add the fax to the appropriate patient file. This feature significantly enhances document management and searchability.

How is this done?
The process of inbound routing begins with scanning the incoming fax through OCR. Based on predefined rules or criteria, defined conditions determine how incoming faxes should be routed. These rules are based on a number of factors, such as recipient identity, department, keywords in the fax content, or specific sender information. With OCR, the Biscom solution can extract vital information from the fax and then route it accordingly. For instance, incoming faxes can be automatically directed to specific individuals or departments based on predefined rules. This guarantees efficient distribution and processing.

Which EHRs do you have this integration live with today?
Biscom digital fax solutions seamlessly integrate with Epic, Cerner, and athenaPractice to send faxes out. However, it's worth noting that the platform doesn't currently support inbound integration and that this functionality is on the product road map.

Can your solution extract discrete data fields and insert that data into clinical, administrative, or financial workflows?
Yes, the Biscom solution has the features that allow for the extraction of specific data from received faxes and insertion of this data into customized workflows. These workflows can be delivered to EHRs using the EHR API or Biscom's advanced delivery process.

What steps are required for a customer to set this up?
Biscom helps customers configure automated workflows specific to their needs.

Are the tools for this natively developed or from a partnership with a third party?
They are natively developed by Biscom.

How do you address data mapping?
Biscom has the capability to work with the EHR's API and establish an ODBC connection. Each setup is tailored to meet the specific needs of our customers.

What steps are required for end users to go from a fax being sent to your product to having discrete data in the EHR?
End users have the option to download the fax and manually insert it into the workflow. Alternatively, they can employ a third-party document management solution to handle the insertion process.

What types of data can be extracted?
Our system can extract any text and barcodes with precision. However, we do not support recognition of handwriting or checkboxes.

Do you provide an accuracy report for extractions and classifications?
No.

How does your solution handle imperfect data?
Biscom ensures that any extracted data is sent to the end user.

Concord

Is your solution secure and HIPAA compliant for PHI exchange?
Yes. Concord Technologies is also SOC 2 Type 2 compliant, PCI certified, and a member of the DirectTrust alliance.

What output formats (email, EDI, FTP, Direct messages, etc.) does your solution offer?
We support email, FTP, SFTP, FTPS, web services API, HTTP, and HTTPS formats.

Does your digital fax solution allow for certain workflows (markups, signatures, etc.) to be done electronically?
Yes.

Do you have inbound integration where documents can be routed and attached to individual patient files with some mechanism or technology for document identification?
Yes.

How is this done?
Our AI-powered document classification tools identify documents by their type and allow specific workflows to be created. These services scan a fax or PDF, extract relevant data, and create a metadata file that can be connected to a patient record within an EHR. We are currently able to extract information from up to 28 unique fields, including the patient name, DOB, and patient ID/MRN.

Concord's FHIR look-up service uses extracted metadata to query on an EHR and return a patient's ID/MRN. We currently support FHIR lookups on Epic systems and will be extending to more EHRs soon. If FHIR is not configured, a user can manually enter the patient ID/MRN through our product's UI.

Our folder monitor tool can export patient documents to a specified secure network folder where scripts can be written to import and attach the documents to a patient record in the EHR. Our folder monitor tool can also be used to upload PDFs into our system. In this way, documents that are not received via fax can be pushed through all the tools and workflows identified above.

Which EHRs do you have this integration live with today?
Our document-classification and data-extraction capabilities are exposed through public APIs and Concord Folder Monitor for import into any EHR. Data classification and extraction can also be accessed outside of an EHR through our web-based interface. The FHIR lookup is currently only supported within the Epic EHR, with additional systems on the road map.

Can your solution extract discrete data fields and insert that data into clinical, administrative, or financial workflows?
Yes. Customers of Concord Technologies can leverage our AI classification engine to configure any document type that is relevant to them.

What steps are required for a customer to set this up?
General workflows are configured through our administration tool. This tool allows users to set up classification and extraction rules and to specify routing instructions, set up permissions, and configure various types of processing to occur on incoming documents.

Are the tools for this natively developed or from a partnership with a third party?
These tools are native Concord technology powered by Microsoft for OCR.

How do you address data mapping?
Our tools allow users to label fields as appropriate and configure the format of some of these fields (e.g., patient name). Data can be a single string or broken into individual parts.

What steps are required for end users to go from a fax being sent to your product to having discrete data in the EHR?
If a healthcare organization receives a fax through our cloud fax platform, they only need to review information presented through our UI to read, edit, and manage all patient data that has been extracted from fax documents.

What types of data can be extracted?

These are the following data points that we can extract:

- Patient information: Name, DOB, gender, SSN, date of encounter, date of service, order date, discharge date, MRN, patient ID, phone number, email, height, weight
- Provider information: NPI, provider name, healthcare facility name
- Insurance information: Insurance company name, member ID, subscriber ID, account ID, authorization ID, case ID, group ID, group ID full match, member name, subscriber
- Billing information: ICD code, ICD code full match, CPT code, CPT code full match
- Other information: Pharmacy name, page type

Do you provide an accuracy report for extractions and classifications?

We currently do not provide an accuracy report to customers, but we do provide a confidence value for each prediction. This value can be accessed by those with API-level integrations with our tools.

How does your solution handle imperfect data?

Extracted data fields are displayed in our UI along with the ability to see where in a document those values came from. If there are any errors in extraction, the user can correct those errors within our UI before further processing occurs. If there are any values that were not extracted or retrieved via our FHIR interface, those values can also be manually entered though our UI.

Consensus Cloud Solutions

Is your solution secure and HIPAA compliant for PHI exchange?
Our digital cloud fax solution, eFax, is HIPAA compliant, as measured and confirmed by our HITRUST Common Security Framework (CSF) certification. HITRUST CSF performs the most rigorous audits for security and compliance in protecting ePHI data. Consensus' commitment to security and compliance is evident in our continual updates to our certifications as well as our effort to expand security and compliance into other products. Note that full CSF-certified audits are performed by external auditors, in contrast to the lower levels of HITRUST compliance that can involve self-assessment.

What output formats (email, EDI, FTP, Direct messages, etc.) does your solution offer?
Consensus offers a wide array of connectivity options for our customers. We currently support fax delivery via SMTP, API, HTTPS, and Direct Secure Messaging. Additionally, we can enable customers with MFD integration—a secure software framework that allows customers to integrate with applications that sit behind the firewall—and we can enable desktop faxing (send and receive) via our desktop print client.

We also offer data transformation, which is the ability for our customers to exchange data from one format to another (HL7 to FHIR, as an example). Our mapping service supports DSM, FHIR, HL7, X.12, eFax, and custom APIs, and when coupled with Clarity (our data extraction service), faxes can be transformed and delivered into virtually any format needed to empower workflow automation.

Does your digital fax solution allow for certain workflows (markups, signatures, etc.) to be done electronically?
Yes, Consensus enables users to mark up and sign electronic faxes they receive. With our powerful digital eSignature platform, jSign, you can easily send documents to be electronically signed. jSign provides legally binding electronic and digital signatures, so users can be confident that their digital documents will be protected.

Do you have inbound integration where documents can be routed and attached to individual patient files with some mechanism or technology for document identification?
Yes, our Consensus Clarity platform allows our customers to extract discrete data elements, including document type, patient demographics, prescriber information, diagnostic codes, and National Provider Identifier (NPI) numbers. This data can be validated using a FHIR query to the EHR, a public database (like USPS), and/or a custom feed.

How is this done?
Low-resolution combined by a mix of typed fonts and handwriting produces challenges with faxes. Consensus Clarity utilizes AI techniques, including Computer Vision, Machine Learning, and NPL to extract discrete clinical data and patient demographics (typed or handwritten) with high accuracy.

Since our customers cannot control what forms they receive, basic zonal OCR extraction only solves a small percentage of the problem; it's limited to forms and fields and not discrete data. To address this, Clarity is form agnostic; our innovative approach allows us to extract data from any document with little to no machine training required. We support the output formats needed to integrate into existing workflow by creating a compliant ingestible format; providers then process the given format utilizing our API, which delivers a single compressed file that contains the PDF (split into multiple patients if required), OCR text, and individual JSON file(s).

With Clarity Clinical Documentation (Clarity CD), we eliminate the need to have a nurse review a fax, scan it to the EHR, and attach it to the patient record. By utilizing the provider's EHR solution, we route faxes via Direct Secure Message (DSM) utilizing a C-CDA, which can then automatically be matched to the patient record.

Which EHRs do you have this integration live with today?
Consensus' suite of products is integrated with any 2015 ONC-certified EHR. Depending upon our customers' workflows, there are several types of integrations we have in place to support our clients' goals.

Can your solution extract discrete data fields and insert that data into clinical, administrative, or financial workflows?
Yes, Consensus Clarity can create structured, usable data from unstructured documents. Clarity can extract discrete data fields and transform them into a variety of formats, such as HL7, FHIR, Consolidated Clinical Document Architecture (C-CDA), or United States Core Data for Interoperability (USCDI) data sets.

What steps are required for a customer to set this up?
Clarity PA (intended for prior authorizations) and many other healthcare applications are tailored around our customers' specific needs and require implementation and/or configuration. Most of our APIs can be done without significant technology resources or can be supported by our expert team of professional services. We can usually start a proof of concept within just a few days.

Are the tools for this natively developed or from a partnership with a third party?
Consensus Cloud Solutions develops cloud-based software solutions; while all of our solutions are our intellectual property, we do utilize third-party vendors for selected components. The Clarity solution is not just a white-labeled implementation of another company's technology.

How do you address data mapping?
Consensus has a proprietary solution called Conductor that can map virtually any format into any other format. Conductor has achieved ONC-Health IT 2015 Edition Health IT certification. Conductor provides a unique customer experience that allows for direct ingestion of complex data structures.

What steps are required for end users to go from a fax being sent to your product to having discrete data in the EHR?
Our Clarity CD service automatically enables the same behavior as if the document was sent via a DSM by another clinician's office. It is that simple. For advanced applications like Clarity PA, we can pass the data via DSM, HL7, FHIR, or JSON. The customer can then ingest the data however they need to in order to facilitate their automated workflows.

What types of data can be extracted?
The Consensus Clarity solution extracts patient demographics, document identifiers (e.g., form numbers), urgent and priority indicators, unstructured data blobs (e.g., unstructured text), and tabulated or key-value pairs (form fields and their values) that are present in the document. Our data extraction supports C-CDA and USCDI data sets and can extract other data formats as needed by the customer. Additionally, we can extract any other critical fields based on the application needs.

Do you provide an accuracy report for extractions and classifications?
Yes, as part of the data payload from an API query, Clarity provides confidence scores for each discrete data element.

How does your solution handle imperfect data?
We have built innovative techniques to reduce the "imperfect" data problem. In addition to the confidence scoring mechanism mentioned above, for our advanced solutions, we can perform lookups on public databases or from member data, and we can match against diagnostic codes, document types, and NPI numbers.

Because most of our customers already have a workflow process in place that have thousands of trained users, we often get asked to provide our data elements in a way they can continue to present the data to their users; therefore, we provide a wide array of delivery options such as HL7, FHIR, DSM, and JSON. Additionally, we have a feedback loop API that allows our models to be updated without the user having to do any additional training directly into our system.

etherFAX

Is your solution secure and HIPAA compliant for PHI exchange?
Yes. Perhaps the more relevant question is that of third-party attestation of compliance, such as HITRUST certification, PCI certification, and third-party verification—all of which etherFAX has. Ask your vendor whether they are self-certified or whether they offer third-party attestation of compliance.

What output formats (email, EDI, FTP, Direct messages, etc.) does your solution offer?
Email, Direct message, API, EDI, FTP, Teams, Slack, FileDrop (such as Hyland OnBase integration), Epic Print Service faxing, multifunction peripheral device, and desktop.

Does your digital fax solution allow for certain workflows (markups, signatures, etc.) to be done electronically?
Yes, via third-party solutions such as Adobe and DocuSign, faxed documents can allow for workflows that include markups, annotations, and electronic signatures.

Do you have inbound integration where documents can be routed and attached to individual patient files with some mechanism or technology for document identification?
Yes, etherFAX's WEAVE solution suite turns unstructured data locked in images into structured data that can be used to route and automate workflows. Routing workflows can be automated based on sending number, receiving number, document classification, or extracted data elements such as patient demographics and discrete clinical data. etherFAX has demonstrated the capability to "chart" a patient record based on the faxed document across EHRs, practice management solutions, and content management solutions—functionality that others tout but cannot demonstrate.

How is this done?
etherFAX's WEAVE solution suite uses cognitive services to identify a document type. It is powered by both OCR and form-recognizing solutions that can identify the document type and classify the document, allowing for automated routing. The document and the extracted data can be delivered via APIs, email, Teams, FHIR, Direct messaging, and so on. That allows us to meet users where they are and creates infinite possibilities for ingestion, integration, and interoperability.

Which EHRs do you have this integration live with today?
etherFAX believes semantic interoperability should be agnostic and that interoperability needs to extend beyond EHRs. We are EHR agnostic; our solutions enable any platform to ingest extracted data in multiple formats, such as JSON, XML, API, HL7, FHIR, X12, etc. Our Federated Services, along with our software-defined-network, enable any two EHRs to agnostically exchange and interpret structured documents and data. Our solutions have successfully enabled interoperability, ingestion, and integration with solutions from Epic, Cerner, Allscripts, eClinicalWorks, athenahealth, NextGen Healthcare, and others. We are also powering integrations in the areas of revenue cycle (Ensemble Health Partners), pharmacy (PioneerRx), and home health and LTC (Forcura).

Can your solution extract discrete data fields and insert that data into clinical, administrative, or financial workflows?
Yes, etherFAX's WEAVE data extraction solution suite turns unstructured data locked in images into structured data. The data is mapped into fields, such as name, DOB, and MRN. That structured data can then be indexed directly to a patient record, account, visit, claim, and so on. Our name-value-pair field mapping allows users to determine which fields should be inserted into their clinical, administrative, and financial workflows.

What steps are required for a customer to set this up?
There is no one-size-fits-all approach. Some partners integrate directly via APIs; some partners integrate directly via the Epic App Orchard. Some hospital integrations and workflow automations are powered by our partners, such as Hyland and Vyne Medical. Some teams within hospitals, such as the registration team, create workflows using our Microsoft Teams–DirectFax integration and have documents delivered to their Teams channels. Some clinical care teams utilize our Direct messaging and email-faxing solutions. Many hospitals take advantage of our firmware-level integration with Lexmark to eliminate expensive on-premises fax servers and related annual maintenance fees. Each setup is also dependent on how the user wants to receive data and in what format. etherFAX supports many inputs, making ingestion and integration extremely flexible.

Are the tools for this natively developed or from a partnership with a third party?
Both. etherFAX is agnostic, meeting the user where they are, and provides many avenues to create the off-ramp from fax and the on-ramp to interoperability.

How do you address data mapping?
Mapping is achieved via our WEAVE Extract solution, allowing users to map to their existing fields for an easy and seamless user experience. etherFAX will map to any existing workflows and data elements, including FHIR.

What steps are required for end users to go from a fax being sent to your product to having discrete data in the EHR?
The steps required are workflow dependent and vary based on each scenario. Any two clinical care teams exchanging patient data and documents will have a vastly different workflow from patient registration teams, and both of those workflows will be vastly different from that of the claims team. etherFAX does not ask users to change workflows, switch between apps, or log in to multiple systems. Rather, we enable seamless integration using existing workflows and options that are transparent to end users. It just works!

What types of data can be extracted?
etherFAX's WEAVE data extraction solution suite allows us to extract any type of data from any type of document. We are also able to identify and classify any document type for workflow automation. That goes beyond clinical data and workflows and extends to data and workflows for the pharmacy and revenue cycle, and the system helps us close the loop on referral workflows. We support data extraction and transformation for fields such as C-CDA, FHIR, HL7, and any customer specific fields.

Do you provide an accuracy report for extractions and classifications?
Yes, we provide F1 scores based on recall and precision with each name-value pair extracted data field.

How does your solution handle imperfect data?
Error exception and handling is end-user specific. Each application can determine its own set of rules and workflow processes around imperfect data, determining when to invoke human intervention.

Retarus

Is your solution secure and HIPAA compliant for PHI exchange?

Yes, Retarus Cloud Fax Services ensure secure and HIPAA-compliant fax transmissions. With a HIPAA-compliant cloud fax provider like Retarus, healthcare companies can actually improve their compliance position—with better controls, encryption, and auditing functionality. Retarus' solution provides a number of benefits over traditional fax, including lower costs, easy scalability, and data storage. Retarus Cloud Fax Services take full advantage of Retarus Messaging Platform and owned data centers to provide enterprise-level quality for healthcare companies of all sizes. With Retarus' solution, healthcare providers can control costs, improve service, and reduce risk of exposure to HIPAA and other regulatory violations.

Cloud Fax represents a significant improvement over traditional fax when it comes to HIPAA compliance. These improvements include:
- Transmission security
- Data encryption
- Access controls
- Secure archiving
- Audit controls

What output formats (email, EDI, FTP, Direct messages, etc.) does your solution offer?

Retarus' innovative Cloud Fax Services enable healthcare providers to digitize analog business processes easily and optimize sustainable workflows.

Fax inbound services:
- Receive faxes into any applications or via web services (HTTPS)
- Receive faxes with FTP server (FTP)
- Receive faxes into any email client (via email, SMTP)
- Receive faxes with document capture (OCR/ICR/IDR/EDI)
- Receive faxes to multifunctional devices (MFDs)

Fax outbound services:
- Sending faxes with any applications or APIs (SMTP, SFTP, HTTPS, SOAP, REST)
- Sending faxes with SAP via Retarus' SAP-certified Cloud Fax Services
- Scan and send faxes from MFDs through PaperCut (SMTP or Connector API)
- Sending faxes from ActFax via connector API
- Sending faxes from any email clients or email cloud service via SMTP
- Sending faxes with Windows applications via SMTP
- Sending faxes with a web browser via Retarus WebExpress

Does your digital fax solution allow for certain workflows (markups, signatures, etc.) to be done electronically?

Retarus' Cloud Fax solution allows certain workflows to be done electronically. Cloud Fax provides extremely high-performing and secure document transmission. This highly scalable solution ensures the highest availability and deliverability worldwide via best-in-class routing through multi-carrier aggregation. Of course, Retarus' Cloud Fax solution also delivers fax documents (including markups, signatures, etc.), which is done within the respective EHR system. Alternatively, markups or signatures could be done within healthcare providers' workflow via a common PDF application. Incoming faxes can be encrypted if they exist as PDF files. AES 256-bit encryption is used. PGP or X.509 encryption is available for Fax2FTP and Fax2Applications.

Do you have inbound integration where documents can be routed and attached to individual patient files with some mechanism or technology for document identification?

Yes, via standard APIs and with Retarus Smart Routing options. The healthcare provider defines which document lands on which desk via the recipient number or sender number or based on the document's information, which is read by OCR and barcode recognition. There is no need for manual digitization, pre-sorting, classification, and distribution. The documents are available in digitized form upon receipt in exactly the right place—where healthcare organizations' employees process them.

The Retarus solution captures incoming fax documents and extracts related data while delivering best-in-class recognition accuracy rates. Fax documents and data will be automatically routed and attached to individual patient files, empowering full workflow integration and process automation for healthcare providers.

How is this done?
Inbound fax communication provides standard APIs for seamless integration into any healthcare system or application. Intelligent document capture capabilities are delivered by multiple OCR engines, intelligent document recognition (IDR) capabilities, automated sorting, classification and splitting of captured documents, AI- and machine learning–assisted data validation, ensuring unmatched data extraction quality.

Which EHRs do you have this integration live with today?
Retarus integrates with every common system and application via standard APIs. Retarus Cloud Fax Services connect to a large scale of healthcare systems, like Epic, SAP Solutions for Healthcare, and any open (via easy-to-implement APIs) EHR systems for healthcare players.

With a certified Epic integration for Retarus Fax Services, EHR users can send faxes directly from the user interface of their Epic system without needing any additional software or hardware. This allows for the streamlined, secure transmission of PHI, which boosts employee productivity and substantially improves regulatory compliance. Retarus Faxolution for Epic includes a variety of functionalities that further enable document-handling automation. For example, Epic metadata can be applied directly to cover sheets and personalized barcodes.

Can your solution extract discrete data fields and insert that data into clinical, administrative, or financial workflows?
Yes, Retarus offers these capabilities as part of Retarus Intelligent Capture Services. Retarus Intelligent Capture Services can be integrated seamlessly into existing systems and process landscapes. Healthcare providers benefit from fully automated conversion and direct delivery of captured healthcare data to healthcare providers' systems and applications. This high-performing solution is capable of capturing fax documents and emails used in multiple business-critical use cases, like healthcare and financial transactions.

For healthcare providers receiving fax documents, Retarus can either assign a new fax number or use an existing connection for forwarding to the Retarus cloud platform. Once the Retarus data center receives the fax, an IDR engine reads the documents, capturing not only the plain text but also the layout of the form and other elements of the document. Retarus then forwards the validated data in the required format and the original document to the healthcare provider's system. Retarus Intelligent Capture Services support all common interfaces and file formats to enable workflow automation.

Additionally, Retarus provides managed services that can be integrated with content management and workflow systems. Retarus delivers the captured data into all common ERP, CMS, and CRM systems, along with any required workflow systems (includes connectivity for EHR systems).

What steps are required for a customer to set this up?
As an enterprise-level solution provider, Retarus provides highly scalable cloud-based solutions combined with managed services. For seamless integration, Retarus takes care of all complex tasks. Customer and healthcare providers just have to provide document samples and declare their specific needs within the integration project. Retarus ensures fast integration (within four weeks of signing contract) with customers' systems and applications. A proof of concept and testing phase is available upon request, ensuring seamless transition into streamlined business operations.

Are the tools for this natively developed or from a partnership with a third party?
Retarus Intelligent Capture Services combine Retarus' native core technologies and partner solutions' integration, leveraging technical synergies and delivering strong performance, enterprise-level reliability, and unparalleled customer experience. Retarus leverages technology partnerships to add AI and ML capabilities, which leads to unique levels of recognition accuracy and accelerated automation.

How do you address data mapping?
The Retarus Enterprise Cloud provides a wide range of high-performing conversion engines to transform unstructured or semi-structured data into structured data. Conversion engines are developed and maintained by experienced in-house experts.

What steps are required for end users to go from a fax being sent to your product to having discrete data in the EHR?
Faxed document data is extracted automatically and directly pushed into the EHR system (or any application) using agreed-upon formats that the healthcare provider has requested. For users, manual intervention is no longer needed, thus saving time and workforce capacity and accelerating process and workflow automation.

What types of data can be extracted?
Multiple OCR engines and IDR capabilities ensure automated recognition and extraction of text, figures, any type of data, and information on documents, including barcode recognition for automated routing. Retarus Intelligent Capture Solution delivers powerful data extraction capabilities while ensuring the highest data recognition rate (95% accuracy), thus accelerating workflow automation for healthcare providers. For partially recognized data, Retarus closes the gap by providing manual capture options (human-in-the-loop).

Do you provide an accuracy report for extractions and classifications?
Yes, Retarus Intelligent Capture Solution provides accuracy reports as well as comprehensive fax reporting capabilities within the web-based Enterprise Administration Services (EAS) portal. In addition, Retarus provides a recognition accuracy report when proof of concept and testing phases are complete, delivering a 95% recognition accuracy rate (on average).

How does your solution handle imperfect data?
Retarus customers can handle imperfectly captured data via the front end. Documents with imperfect or partially captured data are delivered directly to the customers' front end or as a file. Alternatively, imperfect data can be handled via manual capture options provided by a Retarus technology partner to achieve full data recognition.

Updox

Is your solution secure and HIPAA compliant for PHI exchange?
Yes, Updox supplies a HIPAA-compliant version. Updox also has accreditation through EHNAC. See here for more details.

What output formats (email, EDI, FTP, Direct messages, etc.) does your solution offer?
Faxes (and other documents) can be imported into EHRs, sent to patient portals, saved out as PDFs or TIFFs, sent over email or via Direct messages, and then faxed out.

Does your digital fax solution allow for certain workflows (markups, signatures, etc.) to be done electronically?
Yes, Updox offers a robust set of document-editing tools that allow users to split, combine, mark up, and redact information and add signatures to faxes (along with other documents).

Do you have inbound integration where documents can be routed and attached to individual patient files with some mechanism or technology for document identification?
Updox has established API integrations with certain EHRs that allow end users leveraging our eFax product to import documents directly from Updox's user interface into the patient's chart/record. The process is not automated; the user must take manual steps inside the Updox application.

How is this done?
The end users have the ability to search for the related patient in the Updox user interface and select an option to import the document/fax into the patient's chart.

Which EHRs do you have this integration live with today?
Allscripts, Amazing Charts, CyberMed, DrChrono, eMDs, Greenway Health (Intergy, Prime Suite), MacPractice, PointClickCare, Practice Fusion, PracticeSuite

Can your solution extract discrete data fields and insert that data into clinical, administrative, or financial workflows?
We do not support OCR today with faxing. This functionality is currently under evaluation and on the road map for 2023.

What steps are required for a customer to set this up?
N/A

Are the tools for this natively developed or from a partnership with a third party?
N/A

How do you address data mapping?
N/A

What steps are required for end users to go from a fax being sent to your product to having discrete data in the EHR?
N/A

What types of data can be extracted?
N/A

Do you provide an accuracy report for extractions and classifications?
N/A

How does your solution handle imperfect data?
N/A

Vyne Medical

Is your solution secure and HIPAA compliant for PHI exchange?
Yes, Trace is a HITRUST Common Security Framework certified application. Trace uses the most comprehensive security standards in the industry.

What output formats (email, EDI, FTP, Direct messages, etc.) does your solution offer?
With our customizable integration engine, we can integrate email, EDI, FTP, Direct messaging, HL7, FIHR, and even customized web services.

Does your digital fax solution allow for certain workflows (markups, signatures, etc.) to be done electronically?
Yes, we support annotation, stamps, redaction, and all the standard imaging tool sets.

Do you have inbound integration where documents can be routed and attached to individual patient files with some mechanism or technology for document identification?
Yes, Vyne Medical has integrated our automatic data extraction technology into our Trace solution to automatically populate fax data into our indexing fields to streamline and automate the client's manual fax-based workflows, including fax data interoperability and auto-upload to the EMR, EDM, and other systems.

How is this done?
Machine learning and AI technology is leveraged by our internal forms training team to turn simple faxes into smart forms that can automatically extract data. Our automation includes document identification, data extraction, auto-indexing to a patient, and uploading the record to the patient record in the EMR and other systems.

Which EHRs do you have this integration live with today?
Cerner, Epic, Allscripts, MEDITECH, and athenahealth. Due to our extensive integration capabilities, it is unlikely that there is a third-party system we cannot integrate with.

Can your solution extract discrete data fields and insert that data into clinical, administrative, or financial workflows?
Yes, with our automatic data extraction technology, we can extract data from faxes and bring automation and improved workflows to our healthcare clients, including automated data extraction, auto-indexing, and bidirectional interoperability with the EMR, EDM, clinical systems, and other systems as needed to improve workflow.

What steps are required for a customer to set this up?
Customers simply click a button in the web-based user interface to tag a form as needing to be trained for automatic indexing. Fax/form training can begin once our team has 10 unique copies of a form.

Are the tools for this natively developed or from a partnership with a third party?
Both—our form recognizer is our own developed application, and we leverage several cloud-based tools to handle data extraction.

How do you address data mapping?
We work closely with clients to determine which fields they want from each form and then create mapping on our side on behalf of each client.

What steps are required for end users to go from a fax being sent to your product to having discrete data in the EHR?
Typically, users complete a simple validation step in the UI to ensure that the data is mapped correctly, and there is a simple approval or reconciliation process to associate a record with a specific visit or encounter within the EHR.

What types of data can be extracted?
All types of data can be extracted. From orders forms, Rx refill requests, financial data, patient identifiers, and even insurance correspondence, all faxes can have data extracted from them.

Do you provide an accuracy report for extractions and classifications?
We do. We currently have an accuracy rate between 97.5% and 98%. Inaccuracies are typically not because of a failure of the technology. That 2% of failure can simply be caused by poorly faxed images.

How does your solution handle imperfect data?
The system automatically handles skewing and data being slightly off in location, and it even handles poor-quality, 200-DPI images without issue.