



Alfresco®



Extensions for Alfresco Content Services & Process Services

Powerful Document Processing &
Blockchain functions



Alfresco's Services approach to ECM makes it unique

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Content Services &
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Alfresco has been around since 2005 and as been recognized, both by Garner and Forester, as the world's leading open source, open standards, ECM (Enterprise Content Management) platform.

Over the years it has build an impressive customer list with over 1,800 companies in 195 countries that rely on Alfresco, including leaders in financial services, healthcare, and the public sector.

We believe that the key for Alfresco's success is its focus on technology and platform, which appeals to IT and application development professionals. Alfresco's open-source-based platform is attractive to technology buyers who want to customize and optimize their ECM implementations in a variety of deployments and cloud implementations.

As a result, Alfresco is supported by a big eco-system with thousands of software developers and partner companies around the world.

And Alfresco's open standards approach offers the best possible integration capabilities for partners and developers, like Sphereon, to further extent Alfresco.

Alfresco is sharply focused on platform expansion, optimization, scalability and extensibility ...

Gartner (October 2016)

From ECM to Content Services

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Content Services

Analyst firm Gartner last year retired the term ECM as a market definition, replacing it with Content Services.

Their reasoning is that achieving all the goals of a full ECM implementation has proven to be too complex and time-consuming.

Gartner states that organizations are better off with a Content Services Platform approach, like Alfresco offers.

Services can be seen as small applications that perform one or more specific functions.

Sphereon delivers powerful Content Services as an standard extension to Alfresco Content and Process Services.

This approach enables us to deliver new functions and functionality quickly: *in minutes, not months!*

Adopt emerging technology and business innovations, such as Blockchain for authentication or Artificial Intelligence for recognition and auto-tagging, quickly as well as cost effective.

Business buyers want quick wins and actual solutions to business problems now, not platforms that will deliver a compromised solution in 6 months time.

Gartner (March 2017)

Sphereon Content Services

Sphereon offers a unique platform that allows you to use Content Services for Information Management and Document Processing.

Content Services to capture and extract data from objects, such as emails, images, photos, posts and documents. Content Services that use Artificial Intelligence to automatically classify these objects.

For example, use our Blockchain service to digitally sign emails, objects and documents. Or to log transactions, data or objects as immutable and independent verifiable records.

And we make it very easy to integrate, without the need of low level programming. This is one of the keys of our success.

Sphereon is very scalable because it is build on an micro-services container architecture that allows for dynamic up- and downscaling depending on the workload.

Sphereon APIs and Content Services

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Sphereon offers several extensions for both Alfresco Content Services and Process Services.

These services integrate at several levels with Alfresco. From no-code, out-of-the-box, Alfresco Share extensions, to tight integration using our Software Development Kits (SDKs) and Application Programming Interfaces (APIs).

Some examples of the growing list of Content Services that Sphereon provides are:

- **Capture** to capture emails with attachments, posts, images, multimedia and scans.
- **Automatic Classification** using AI/Deep Learning to predict the document type
- **Data Extraction** using rules to extract data and tags from unstructured content
- **Barcode Detection and Recognition** to detect if a document has barcodes and extract their values
- **Multi-engine OCR** using multiple OCR engines to get the best OCR results
- **Handwriting Recognition** to recognize and extract handwritten data from documents
- **Vision Recognition** using AI to recognize and auto-tag images, photos and videos

- **Blockchain Authentication** to register and verify data, records and objects on a Blockchain
- **Blockchain Audit Trail** to create, browse and verify transaction audit trails using Blockchain
- **Cloud Storage** provides cloud storage on AWS, Azure, Google cloud
- **Template Processor** to create data files from a JSON data source and a FreeMarker template
- **Mail-merge** to create documents from a data source and a MS Word template
- **PDF/A Conversion** to convert MS Office documents, images, AutoCAD to PDF/A
- **Digital Signature** to digitally sign a PDF with an EIDAS-compatible electronic signature

All Content Services are available through our API Gateway.

Sphereon Content Services Use cases

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One of the main benefits of an API platform approach is that it enables you to choose, use and pay for only the specific APIs that you need. Look at your specific situation and use your creativity and available APIs to create an optimal solution.

And Agility. Content Services and APIs also give you the flexibility you need to quickly adjust to changes. Both in scalability as well as the functionality.

Some examples of use cases are:

- **Proof of Process**

Use Sphereon Content Services for Blockchain to create a complete audit-trail that is tamper-proof and independently verifiable by all stakeholders.

Use cases are Record Management, Compliance and providing Transparency for external stakeholders

- **Proof of Authenticity**

Our Blockchain Service allows you to register any object or document on a Blockchain for independent, tamper-proof, Proof of Authenticity.

Use cases are Certification for digital objects, such as statements, titles, claims, registrations, certificates, diplomas and file transfers.

- **Classification**

Automatically determine the correct Content Type by using our AI-driven, self-learning, automatic classification service.

Use cases are streamlining Human Resources, Student Administration or implementing a Digital Mailroom.

- **Data extraction**

Extract meta-data and tags from documents using our superior OCR, Barcode, QR-code, and handwritten data recognition services.

Use cases are on-boarding, create search-able archives, streamlining document processing and indexing content stores.

- **KYC - On boarding**

Combine capture, classification, data extraction of all kind of documents to quickly and efficiently bring new customers, suppliers, students or employees on board.

- **Digital Preservation**

Convert Microsoft Office documents, emails, AutoCAD, pdfs, text files and images to the ISO-standard PDF/A archive format.

Use cases are Archives, Record Management and Compliance.

Use case for Archiving and Retrieval

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Alfresco is often used as a storage or archiving system for documents. Either straightforward as a Document Management System (DMS) or as a workflow/case management system, where documents are collected, or created, and processed.

Rules and regulations, as well as common sense, requires documents to be kept for certain periods of time and to remain readable.

For many documents these retention periods are relatively short: about 80% of the documents can, or must, be destroyed within 7 years.

However, rapid changes in technology mean that file formats become obsolete quickly and cause problems for your records management and compliance.

Even within just a few years the original software, with which these documents were created, has often changed, migrated or has even become obsolete.

In many cases, newer versions of a program offer support for older versions, but this is certainly not always the case.

For example when an organization switches to another vendor or the vendor is acquired or fails.

This requires a records management strategy that documents and data cannot only be retrieved, but can also be read.

Digital Preservation

Best suited for preservation of documents is converting them to the Portable Document Format (PDF).

To be more precise, the special archival version, PDF/A, which is and has been an ISO standard since 2005.

PDF/A has also been evolving with a version 1, 2 and 3. But it being an ISO standard guarantees backwards compatibility.

For long-term preservation and use of data files, the best choice is converting those data files to eXtensible Markup Language (XML).

XML is a so-called flat text file, where all data is identified (marked) using tags. This format is both human-readable and machine-readable.

Conversion to PDF/A standard

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So, for archiving, a common use case is to enhance Alfresco with functions that allows conversion of documents to the PDF/A format.

This can easily be achieved by installing the Sphereon extension for Alfresco.

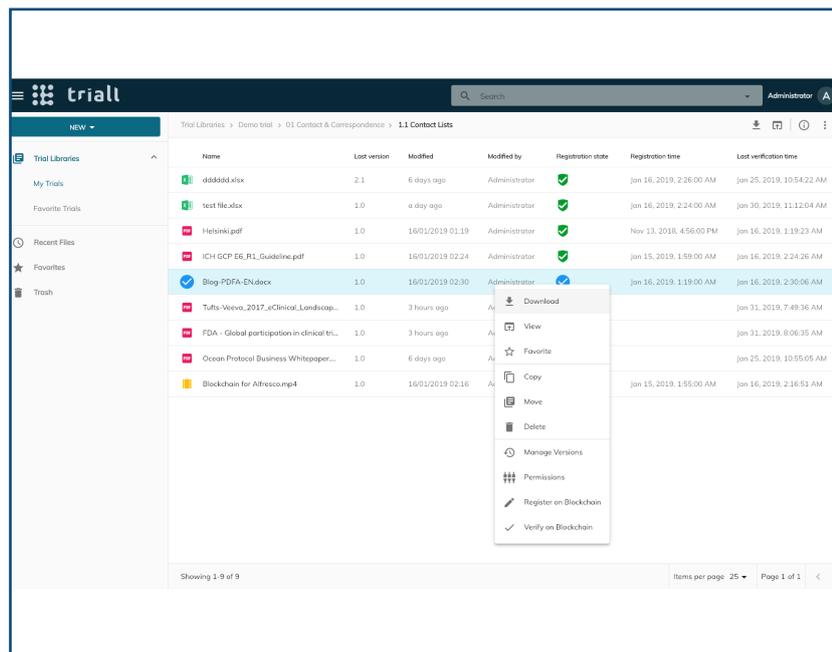
This allows a user to select one or more files in a list and then use the Document Action menu-item for 'Convert document' to convert these files on the fly.

But it makes much more sense to implement this function as part of a workflow.

For example, when a document is uploaded and checked-in, an automatic action can be triggered that automatically converts the document to a PDF/A using the Sphereon PDF API.

Or, when a certain case is completed and must be archived for record management and compliance policies, the last step in the workflow will take all of the attached documents and convert each document to a PDF/A format and migrates the case and documents to the record management sub-system.

At the same time you can certify this document for authentication by registering it on Blockchain.



Digital Signature and Blockchain

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As mentioned, this use case can further be enhanced by using additional Sphereon functions.

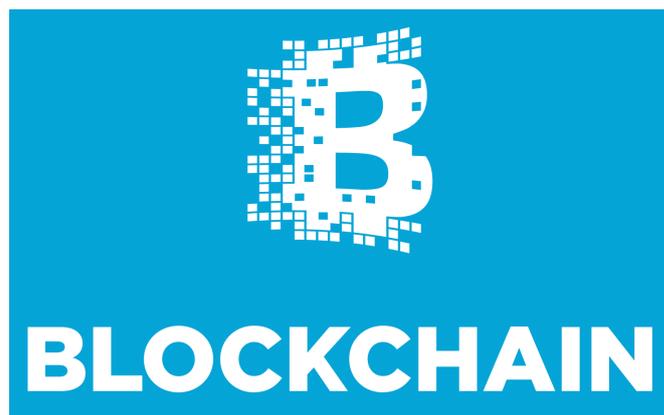
For example, the documents can be digitally signed using our digital PKI signature service.

Or use our Blockchain Service that allows you to certify the documents by registering them on the public Bitcoin Blockchain^(*) for independent, tamper-proof, Proof of Authenticity.

And Blockchain certification can be used for more smart use cases.

Like, in this use case, documents can be combined and registered. Combining the original document with the converted PDF in one registration will provide proof in the future, beyond doubt, that the pdf file and original document are a pair.

Or, when a case file must be transferred to a third party, it offers independent proof, at any future moment, whether the case file still contains all documents that were transferred or documents are missing or have been altered.



(*) More on Blockchain can be found in our whitepaper 'The Future Is Here', which can be downloaded from our website.

From Archiving to First Touch

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And why wait until archiving? There are big benefits to register documents and transactions right from the first moment they touch a process.

Start certifying a document as soon as it is received and enters the system. Then you will always be able to proof the date and time this document was received. And you will also be able to proof that the document is authentic and has not been changed.

The same is true for every document you create and every email you send.

You will always be able to proof the authenticity of the document and the date and time it was send.

Automatically certify your documents and email, at every step in a process, and you will have a complete audit-trail that is tamper-proof and can be independently verified by all stakeholders.



Use case for Tamper-proof Audit Trails

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When you already keep metadata information about documents, like date of registration, why not add user context to the registration?

Any organization that has important documents or makes decisions with a group of people (a board for instance) can easily create a workflow where the decision making, including all the document versions, are recorded on a Blockchain.

This way you create a complete audit trail that is fully tamper-proof and verifiable where you and others can track the whole process.

This allows you to implement your own solutions for compliance checks. Beginning with a simple App that presents where the document currently is in the process (even outside of Alfresco) and is unaltered - or not.

Or take it a little further and retrieve the complete Audit history for the current document.

Proof-of-Existence

Create an unalterable date and time stamp for a specific object – like an email, file, document, phone-call or video.

Proof-of-Authenticity

Create a independently verifiable record to provide proof that an object is the original version that it has not been altered since the first registration.

Proof-of-Process

Create a independently verifiable chain of records to provide proof of all the transactions for a certain case in a specific process.

Sphereon Alfresco integration

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The platform integrates seamlessly into Alfresco Share and the Alfresco Development Framework (ADF).

The Sphereon Alfresco extensions are available for:

- Transformation (action /rules)
- Content Services (interactive Actions)
- Process Services (workflow Actions)

We have added standard Content Transformer and Document Action configuration to convert documents from mime-type A to mime-type B, for example, from MS Office to PDF/A.

But we also integrate more advanced functions, for example, to Register & Verify Documents using Blockchain to guarantee authenticity of documents.

This is a very valuable addition for Record Management and Compliance purposes.

All Actions also available from code, allowing the seamless integration of these functions with Alfresco workflows.

The Sphereon extension source code is available as Open Source under the GNU Lesser General Public License (LGPL).

Alfresco Module Package

The Sphereon integration is delivered as an Alfresco Module Package (AMP) that needs to be installed in your Alfresco environment.

To create the Alfresco Module Package we combine and leverage the Alfresco SDK and our own SDKs to create a seamless integration between Sphereon and Alfresco.

The AMP itself is lean and offloads the workloads to our elastic high performance cloud infrastructure.

Since we are the provider of these document and information APIs and extensions, you are guaranteed that all additional Alfresco functions are battle tested.

All you have to worry about is installation and configuration of the AMP.

About Sphereon

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Sphereon is the leading Content Services Platform for Smart Information and Document Processing.

APIs are a crucial building-block in today's economy. Where it is all about agility and co-creation is the name of the game: Adapt or Die.

Content Services allow us to offer our partners and customers a very close integration with their applications and adapt to their specific needs. And to pay only for what they need and use.

Our success is a result of the solutions we build together with you, our partners.

You have the knowledge and experience in your market domains.

We provide the software platform.

And together we deliver the best possible solution.

It is our mission to help you quickly build specific content-oriented solutions that are relevant to your specific needs.

Adopt, Adapt, Improve.



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