

# WHITEPAPER

# LAGO CORE

Bringing everything together - our main module

**The heart of LAGO is our CORE license which brings everything together in our PIM module, our WORKFLOW module, our LAGO FS file system and our LAGO MAM module. These modules form the main backbone of any LAGO implementation.**

## **Product Information Management**

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**LAGO PIM is a central component which includes aggregating all product and non-product related content necessary to feed all channels of your multichannel strategy. Besides traditional PIM functionality like product enrichment, LAGO PIM offers a unique variant model that allows to distinguish data on any level from a global to a local view.**

### **Central product data repository**

The centralized data repository of LAGO allows to store all product and non-product related content. The product data structure is configurable by a graphical user interface in LAGO Admin and allows to create your own product types, attributes, prices, article references and catchwords.

Product attributes allow different data types including standard types like string, integer or float as well as menus, which can be closed, open or hierarchical. For more details, product attributes can have attributes themselves. Attributes can be structured within categories and restricted in visibility by user group for every category if needed. In case the data is being imported from an upstream system, read only attributes are available allowing you to only view and use data within LAGO.

To find data, LAGO PIM offers a powerful search engine which allows to either perform a quick full-text search or a configurable search by combining multiple search attributes. Search attributes can be a combination of product metadata as well as campaign information. To browse data, search filters can be configured which also provide threading of products by metadata fields.

### **Global or local – The unique and fully flexible LAGO variant model**

A unique feature of LAGO PIM is the fully flexible LAGO variant model. As an example, the variant model allows to differentiate the values of each attribute for each variant individually. A variant can be used and configured flexibly to represent a country version, a language version, a regional version, a store version or a customer group version. Since the variants of LAGO are generic, any form of segmentation is possible including combinations.

By using LAGO variants, it is possible to define regional names for products, customer group specific content or just simple translations of content.

### **Distributed data pools for output**

To distribute data among various output channels, LAGO PIM can create additional data pools for each output

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channel into which products are copied and referenced to allow a reduced view of data for users working only in specific channels (e.g. a product manager wanting to only view and maintain product information for a specific web shop).

To keep data aligned between various data pools an automatic data synchronization can be used to define for each attribute individually whether a change within the centralized data pool should be automatically synchronized into other data pools. The data synchronization allows different levels of synchronization to either synchronize data among different pools but only for the same language or only within a specific data pool to allow output specific values for attributes.

### **Direct integration of data into Adobe InDesign**

In case the LAGO InDesign plugin is used, data stored within LAGO PIM can be directly accessed by a graphic designer within Adobe InDesign allowing automatic updates of product information or pricing. The interface between Adobe InDesign and LAGO PIM is bi-directional, meaning that changes being performed in InDesign can be pushed back into the centralized PIM data repository. Which data is being pushed back can be configured for each attribute individually.

### **Features**

- Centralized product data repository
- Categorization of products with multi-level classification
- Configurable data structure for product types and product metadata
- Product type specific attributes
- Attribute type inheritance
- Categorization of product attributes
- Product attributes with closed menus, open menus, menus with multi selection or hierarchical menus
- Scripted product attributes for calculations and handling of business logic
- Attributes within product attributes
- Product keywords
- Unique and fully flexible LAGO variant model allowing to distinguish content like attributes by country, language, region or store level
- Additional product repositories for output structures including data synchronization configured as detailed as attribute level
- Configurable product filters including threading by attribute
- Flexible search engine including full text search
- User access restriction on product attribute level
- Configurable directional or bi-directional product references
- Automatic creation of product references based on rules

- Grouping of products into promotions
- Grouping of promotion into group promotion
- Non-product related content objects
- Product preview based on HTML templates
- Free configurable product workflows by using LAGO Workflow
- Direct link between products and assets by using LAGO MAM
- Direct usage of product data within LAGO Whiteboard
- Bi-directional integration of PIM data into Adobe InDesign by using LAGO InDesign plugin

## **LAGO WORKFLOW - Bring it all together**

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**LAGO Workflow is the backbone of every LAGO production. It allows to connect users or user groups as well as internal or external departments and stakeholders together within a production process. LAGO Workflow allows you to streamline processes and ensure that tasks are finished on time while also structuring the communications and adding transparency.**

### **Workflows, time plans, statuses and tasks**

LAGO Workflow allows the creation of multiple individual workflows. The creation itself is done with an easy to understand graphical user interface within LAGO Admin. Every workflow can have an unlimited number of statuses representing stages and milestones within your production workflow.

Each status within a workflow can have one or multiple tasks assigned to it. The recipient of a task can be a single user, a user group or a role. Each task itself can have a status assigned to it that defines which status the object will move to when the task has been finished. Moreover, detail descriptions can be added to a task to help users in their daily work. Once all tasks of a status are marked as done by users, the workflow engine will automatically move to the following status.

To ensure that users of different departments do not interfere with each other's work, one or multiple roles can be assigned to each workflow status resulting in only users which have that role(s) being able to perform actions.

Besides statuses and tasks, each workflow within LAGO can have one or multiple time plans associated to it. A time plan defines the allotted time for each status within the workflow. Based on the time plan, LAGO will automatically calculate due dates for every status of a workflow once it has been assigned to an object.

### **One engine, multiple ranges of application**

LAGO Workflow can be used for different objects within the system. For a PIM based workflow which focuses on each product individually, a product workflow can be configured. For a MAM workflow, an asset workflow can be configured. To ensure a flawless production of digital or printed flyers, circulars or catalogs, a document workflow can be configured.

Each of the available workflow types follow the same generic structure of workflows, time plans, statuses and tasks

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while having special functionality available depending on the object type used.

### Automatic event triggering

If a status within the LAGO Workflow is reached or complete, a wide range of automatic events can be triggered. It could be an automatic export of product data to a webshop system once a product has been approved, or the automatic prefetch of files from a centralized LAGO FS instance to an external satellite, or the export of a PDF document ready for print in a document workflow, LAGO Workflow will help you to automate these tasks.

### Combine with LAGO Reports for higher transparency

By streamlining the production process with LAGO Workflow and ensuring that one way of communicating and resolving tasks is being used, a variety of options for reporting is opened up. To add transparency to complicated production processes LAGO Workflow can be combined with LAGO Reports to give more insight on resources allocated and time spent.

Example reports may include answers to the questions of how many proofing cycles were used in the production of digital or printed flyers, circulars or catalogs with a drill down to individual pages or departments. If adding the module LAGO Proof to the mix, reports are possible showing how many annotations per page and department in relation to each proofing cycle were added and resolved.

### Features

- Easy configuration of multiple and individual workflows by graphical user interface within LAGO Admin
- Time plans for scheduling and usage of due dates
- Assignment of roles to statuses to ensure no interference of different departments
- Sequential or parallel tasks assigned to single users or user groups
- Optional external notification by email
- Counting of loops for reporting
- Product Workflows, Asset Workflows and Document Workflows
- Automatic event triggering like verification check runs or export tasks
- Combination with LAGO Reports for higher transparency

## LAGO File System

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**LAGO FS (LFS) is the built-in intelligent file storage system of LAGO. LAGO FS stores files such as assets, InDesign documents or e-proofs in an optimized structure that allows physical separation of the database and the file storage (e.g. on a NAS/SAN). All LAGO applications handling files are working (indirectly) with LAGO FS. Communication between the applications and LAGO FS is encrypted and requires authentication and authorization.**

### Centralized storage

LAGO FS is a part of the LAGO Application Server (LAS) which requires no administrative tasks once installed and configured. The storage itself can be physically located at a different location than the LAS.

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When working with LAGO and importing or changing files such as assets or InDesign documents, all LAGO applications ensure that the files are always written back into the centralized LAGO storage allowing for centralized backups of all data.

## Distributed storage for multi-site environments

In case of multi-site environments (e.g. a headquarter with multiple subsidiaries using LAGO or connecting external production agencies to LAGO) LAGO FS is capable of using multiple storage locations which work as satellites for the centralized storage. Each location can have its own LAGO FS instance which is connected to the centralized LAGO FS instance.

When using multiple instances, LAGO FS can automatically synchronize files either immediately or on a scheduled basis between different locations. All files imported or changed on a satellite LAGO FS will always flow back to the centralized storage. From there it can be distributed to other satellites if needed. In case a LAGO user at a satellite location requests a file not currently available in the satellite, LAGO FS will pull the file from the centralized storage.

To ensure that external locations have all data available in the local LAGO FS instance, LAGO FS allows a prefetching of files (e.g. once users are done with planning at headquarters triggering an external agency to start their work, a prefetch can be configured to transfer data to the external agencies location as soon as the tasks are finished at headquarters).

## Features

- Centralized and encrypted file storage
- Physical separation of database and file storage
- Distributed file storage with master and slave logic for external locations

## **LAGO MAM - Built in Media Asset Management for easy access throughout your production**

**LAGO MAM provides digital media asset management fully embedded into the LAGO production suite. Every application of LAGO has direct access to LAGO MAM to either import or export assets, modify the asset or its metadata, utilize an asset workflow of LAGO Workflow or to assign assets to other objects in the system such as products or documents.**

## **Structured for production – Asset types, asset metadata and keywords**

To ensure a smooth production and high-quality output to downstream systems, LAGO MAM allows to structure assets by using asset types (e.g. "Product Images" and "Logos") and metadata. Each asset type can have an unlimited number of attributes configured allowing to further distinguish single assets within a type. By adding keywords from a general pool, finding assets within LAGO becomes easier as well as enhancing searches in downstream systems.

## **Connecting the dots – Assign assets to other objects**

Once assets are imported into LAGO MAM and available, they can be assigned to other objects such as products or documents. Assigning assets to products, for example, is done by a simple drag and drop action either for single products/assets or a bulk selection.

If assets should be assigned based on rules or attributes, LAGO MAM offers a configurable engine for automatic asset assignment. Examples would be assigning a “2 year warranty” logo to every product that has an attribute saying that this product has a 2 year warranty or assigning an asset showing multiple products to all single products by using an article identifier like an article number or GTIN.

If multiple assets are assigned to an object, the priority of assets can be changed by defining an object specific asset assignment order.

## **Full integration into LAGO applications**

The LAGO MAM is fully integrated into every LAGO application that either deals with product or asset data. Product managers within the LAGO PIM can see assets which are assigned to a product and from there, directly see all asset details. Graphic designers working in Adobe InDesign with the LAGO InDesign plugin can directly place imagery on a document without having to mount external volumes or use other applications.

## **Define access, visibility and usability restrictions**

Having different departments and users connected within the LAGO production environment that allows direct access to LAGO MAM can result in users being able to see or use imagery that may be restricted in visibility, editability or usability.

To prevent assets being used that are not yet approved, are no longer valid or restricted to specific departments, LAGO MAM offers a wide range of restriction access to assets. While the usage of an asset can be restricted by validity dates, the visibility and editability can be adjusted by assigning single users or user groups to an asset.

## **Powerful search engine**

The search engine of LAGO MAM allows a wide range from either a simple full text search to a combination of search criteria. When using search criteria, users can combine information that describes the physical file of an asset (e.g. “file size” or “file format”), any kind of metadata (e.g. “asset type” or “workflow status”) or information that is not directly related to an asset but to a product to which an asset is assigned.

In addition, information of an asset that is being used within production can also be combined such as the placement of an image within a specific print publication or the assignment of an asset to a specific shop category.

## **Easy access for external users**

Having all of your assets stored within LAGO MAM will lead to external users who are not part of the production process within LAGO requesting imagery. To allow easy access to assets, a web-based application is available that uses the powerful LAGO MAM search engine to find assets.

Once a user has found assets that are needed for external purposes, the required assets can be placed into a shop-

ping cart for download. Depending on user rights, a user may download an original file or only a preview of it.

## Access LAGO MAM by using the LAGO API

Asset files and asset metadata being stored within LAGO MAM is accessible by using the LAGO API. Up- or downstream systems have access to same powerful search engine by using the LAGO API as well as being able to request asset metadata or the file itself.

### Features

- Fully integrated digital media asset management
- Manage asset files and asset metadata
- Access to assets from every LAGO application including the LAGO InDesign plugin for easy access
- Creation of download carts for external access by using the LAGO web client
- Powerful search engine allowing the combination of asset and product metadata
- Full text search within metadata
- Access to LAGO MAM by using the LAGO API
- Assign assets to objects within the system such as articles or documents
- Manage assets in structured asset types
- Configure additional metadata attributes for each asset type
- Assignment of keywords to assets
- Restriction of the visibility and editability of assets on user and user group level
- Restriction of usability by validity dates
- Combine with LAGO Workflow for asset approval workflows
- Automatic quality check during asset import
- Bulk import by using hotfolders or XML tickets
- Direct check-out/check-in to Adobe Photoshop, Illustrator or other applications
- Automatic creation of derivatives upon export to downstream systems
- Automatic creation of low-resolution derivatives for internal usage such as layout images or preview files
- Support of XMP/EXIF metadata
- Support of all relevant image formats for media production
- Support of Office documents
- Support of audio and video files