

# CONTENS 5

## New and Improved Features

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**Version** CONTENS 5.0.1 – CONTENS 5.6.9

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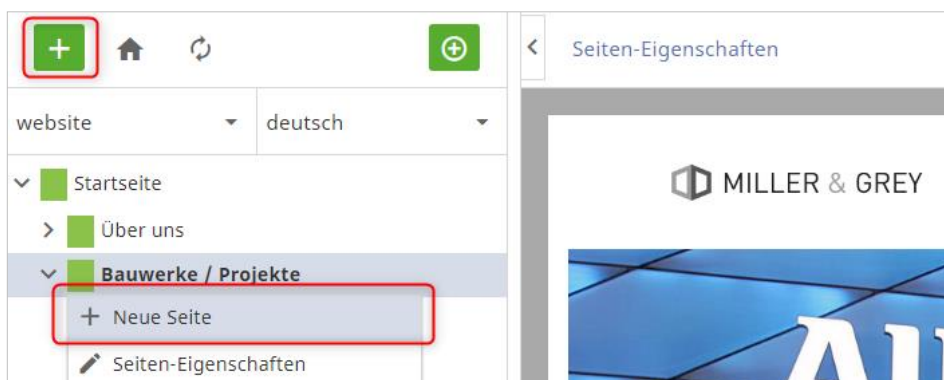
# 1 Introduction

What's new? What has been improved? This document tells you what has changed in the Content Management System CONTENS 5 compared to the previous version.

## 2 New Features

### 2.1 For Editors

#### 2.1.1 Quickly create new pages



One click on the green plus button above the Page Tree opens the menu to create a new page at a chosen point in the Navigation Tree. The "New Page" function in the page context menu creates a new page at the selected point in the Page Tree, just as before. Once a page is given a title it is saved.

Using the context menu function "Rename page" a page can be renamed directly in the Page Tree without opening the page properties.

#### 2.1.2 Create new objects by Drag & Drop

Editors can create new objects on a page using drag & drop. The object classes permitted on this page can be dragged from the new sidebar to the webpage, including the desired format template. The system display indicates where an object class is allowed and where it is not. If the selected item is allowed at this point, the object window opens for editing.



## 2.1.3 Automatic translation

In the translation view of an object, content can be translated automatically using the arrow icons. The translation may be carried out one line at a time by clicking on the respective arrow icon for that line, or all at once with a click on the arrow icon for all contents.

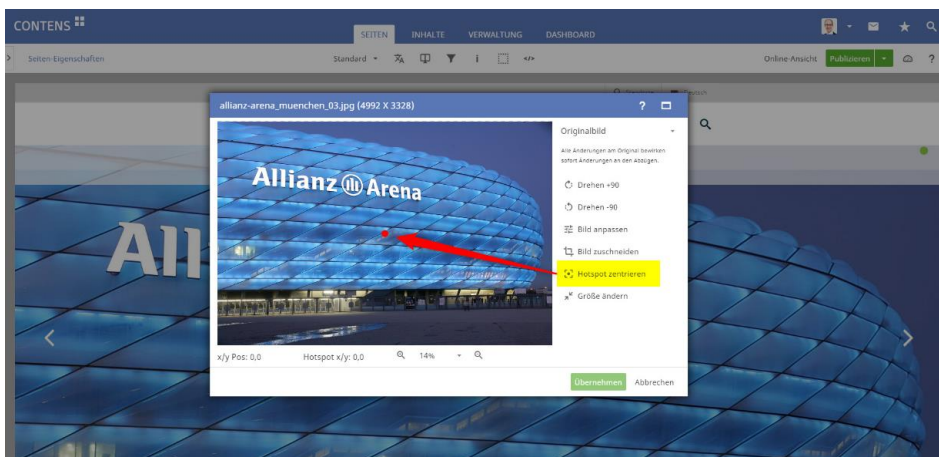
This also works in all forms with mandatory multilingual fields, where the entered text is automatically transferred into the incomplete language versions. The text module wizard has been completely revised to properly integrate the translation service.



Currently supported services are AWS, DeepL and Google Cloud (API keys or tokens required, services partly charged by the provider).

## 2.1.4 Mark important image contents as a HotSpot

The most important part of an image may be marked as a HotSpot. When images are automatically cropped to correspond with predetermined aspect ratios, the marked part of the image is then recognized and centered.

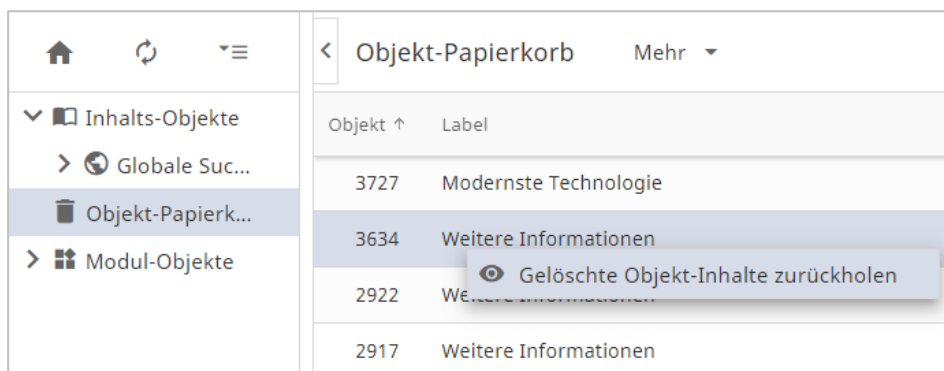


### 2.1.5 Face recognition

With the help of AWS Face Recognition (API key required) CONTENTS can automatically recognize faces on image files and use them as a HotSpot.

### 2.1.6 Restore deleted contents from the Object Recycling Bin

The object recycle bin lists all objects that have been deleted on pages or in the object library. These objects may be re-opened, edited, and restored.



### 2.1.7 Edit Richtext-Objects in the Correction View

Objects that utilize the Richtext Editor and do not contain a subobject may be edited in the Correction View.

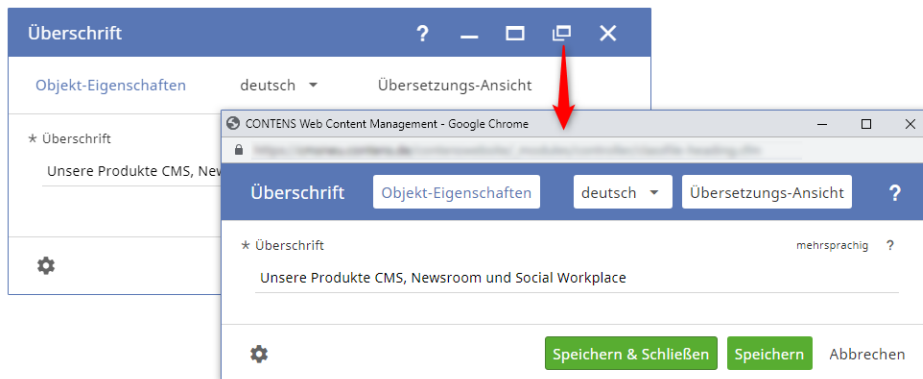
### 2.1.8 Open Object from Correction View

When in the Correction View, content can be edited directly on the page, but sometimes it is necessary to open the object. This is now possible with a click on the pencil icon.



## 2.1.9 Undocking

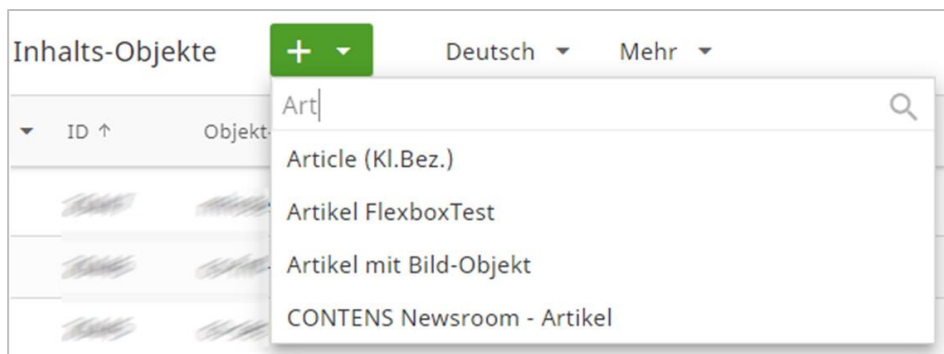
The undocking function allows you to decouple an object from the current browser window and edit it in an external window. This is useful for editors who work with multiple monitors.



In addition to the object windows, the Info center can also be undocked, making it easier to keep an eye on tasks.














## 2.1.10 Search-as-you-type in Dropdowns

The new search field with search-as-you-type function ensures faster filtering of extensive selection dropdowns. After each entry, the selection field is filtered accordingly and the number of options is reduced.



## 2.1.11 Internal and external short links

Short links turn cryptic URLs into easily readable links, e.g. [www.firma.de/jobs](http://www.firma.de/jobs). They may be created for pages managed within CONTENS as well as for external websites. Clicking on the gear symbol will generate a random code as short link.

Seiten-Eigenschaften					
Standard         Online-Ansicht  Publizieren 					
Beschreibung	Publikation	Templates	Informationen	Variablen	Kurzlinks
CFM		pub			jobs  <a href="https://www.contens.de/jobs">https://www.contens.de/jobs</a>
CFM		pub			karriere  <a href="https://www.contens.de/karriere">https://www.contens.de/karriere</a>
CFM		pub			job  <a href="https://www.contens.de/job">https://www.contens.de/job</a>
CFM		pub			

External short links are simpler links that redirect to external pages with difficult to remember URLs. They can be set up under Administration | System | Short Links.

Interner Kurzlink	Externer Kurzlink
<p><b>Erforderliche Angaben</b></p> <p>* Site  <input type="text" value="website"/></p> <p>* Externer Link  <small>Erlaubter Wert: Gültige URL. Beispiel: "http://www.domain.com/filename.html" oder "https://www.domain.com:8500/path/filename.html"</small>  <input type="text" value="https://g.page/CONTENS/review?rc"/></p> <p>* Kurzlink  <input type="text" value="bewerten"/> ?</p>	

## 2.1.12 Links to content in the Content Library

To open and proof a specific item in the library, editors can send a link to the data by email. The link takes a logged-in editor to the content library and opens the chosen piece of content.

Link-Generator

Link Generator

Ihr Link für Datensatz 'Bessere User Experience mit Elasticsearch' ist:

 <https://www.contens.de/contens/objects/co-objects?id=3256>

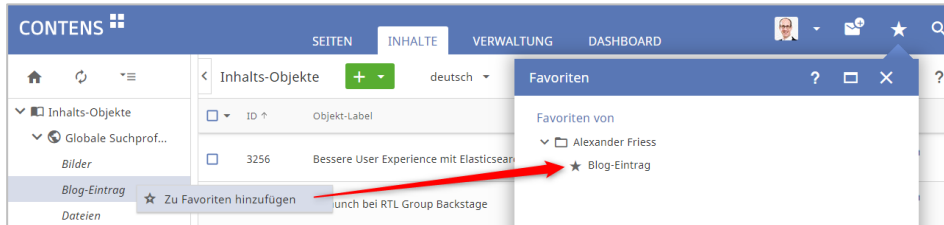
 [Link in E-Mail übernehmen](#)

Abbrechen

## 2.1.13 Favorites for menu entries

Logged-in CONTENS users can select menu entries in the Contents and Administration areas as personal favorites. This also applies to saved search profiles.

Individual pages may also be selected, just as before. A click on the star icon in the upper menu bar opens the personal favorites.



## 2.1.14 Default output type for each page area

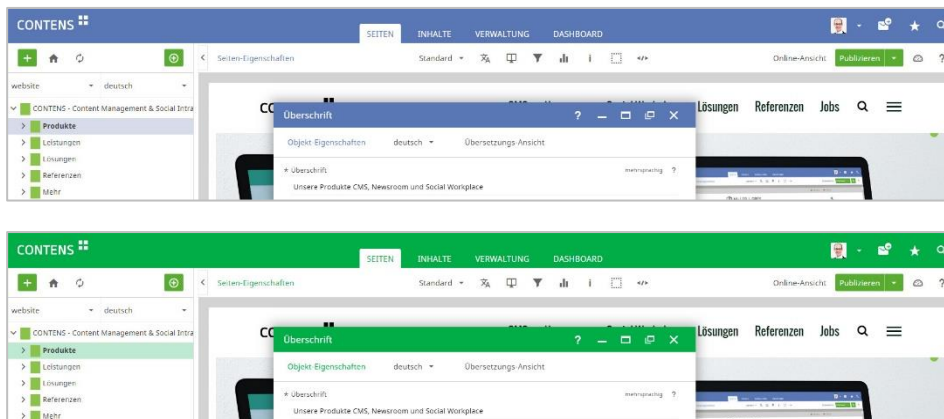
A default output type can be defined for each object class in each page area, to be used when a new object is created. This makes creating new content in a particular design quicker, while display flexibility is maintained.

## 2.1.15 Relative date format

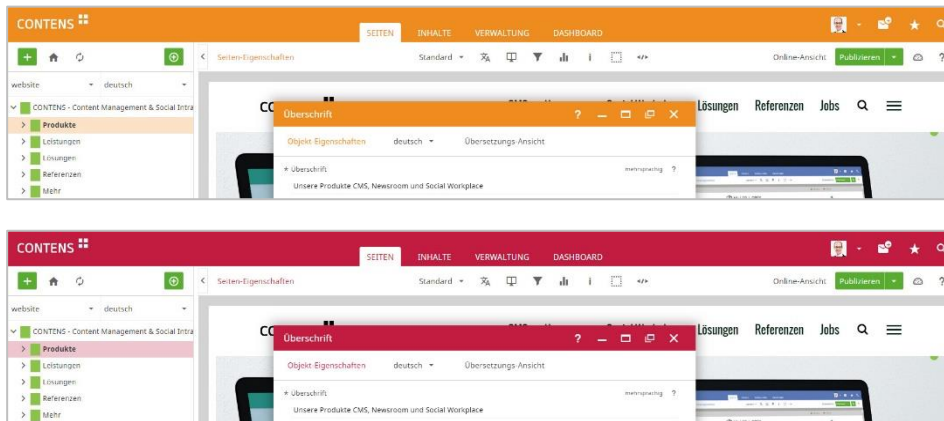
The option "Date format: Relative" shows recent times as "4 hours ago" or "yesterday at 14:31", and less recent times in the format "dd.mm.yy". Editors may select this date format in the user profile under Appearance.

## 2.1.16 Customizable color profiles

Four color profiles (blue, green, orange, and red) are available for the individual design of the user interface. Editors who edit different installations can use this to better distinguish between them (e.g. stage in green, live in blue). In addition, they can individually adjust frame thickness and color to better differentiate the CMS and the website being managed.

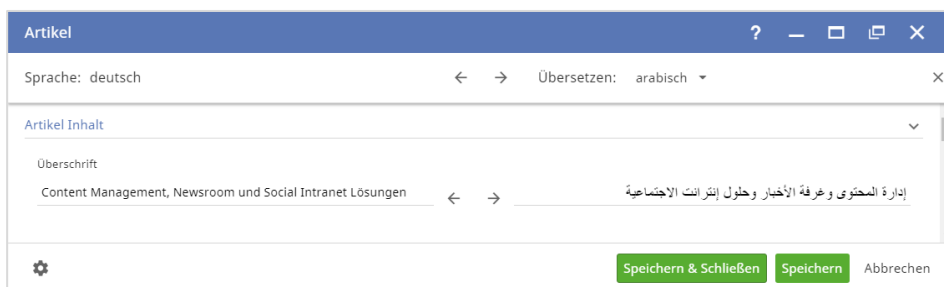






## 2.1.17 Support for languages reading right to left

Languages reading right to left such as Arabic or Hebrew are included in the input fields and in the Page Tree (RTL = right to left).



## 2.1.18 Usage overview in the object report

In the "Usage" tab of the object report it is shown where an object is being used as subobject. References to possible instances are also given for the main objects listed. A context menu can be opened by right-clicking to view the instance properties, which can be used to quickly switch to the corresponding page.

The same context menu is also available in the Instances tab.

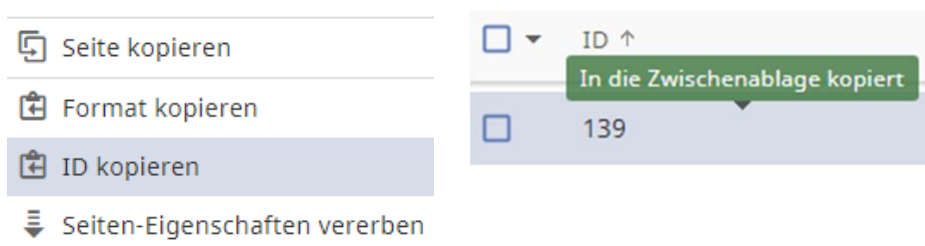
Objekt-Report - elchtest.jpg (Image, ID: 12361) ? □ ×					
Instanzen	Subobjekte	Verwendung	Derivate	Historie	
Alle Verwendungen als Subobjekt in Objekten					
Objekt-ID	Objekt-Label	Objektklasse	Erstellt am	Publiziert am	
12384	Bildgalerie - elchtest.jpg	◇ Bildergalerie	18.03.2019 16:06	19.03.2019 15:00	
12380	Artikel für DHCG	◇ Artikel für DHCG	18.03.2019 16:04	19.03.2019 15:00	
12364	Bildobjekt	Bildobjekt	07.03.2019 14:53		
12355	Teaser GLNO	⚙ Instanz-Eigenschaften	19.02.2019 14:11	20.02.2019 10:15	
12349	Teaser GLNO	◇ Teaser GLNO	19.02.2019 14:11	08.05.2019 18:56	
Seite 1 von 1   5 Treffer					

### 2.1.19 Category structuring elements

The new category option "selectable yes/no" specifies that an element can actually be assigned to an object as a primary or secondary category (yes), or whether it only serves to structure the category tree, i.e. cannot be assigned (no).

### 2.1.20 Function for copying IDs can be activated

For easier use of page or object IDs, the additional function "Copy ID" can be displayed in the context menu. This means that IDs can be copied with one click and easily used for other applications.



### 2.1.21 Image Formats with Aspect Ratio

The format definitions have been significantly extended compared to CONTENTS 4. As before, automatic image scaling can be achieved by specifying the maximum width or height. In addition, it is now possible to define formats with an aspect ratio, e.g. 16:9, which will adjust images in order to fit the specified ratio.



Since the center of an image is not always the key element, the relevant part of the image may be marked with a HotSpot (see. 2.1.4, pg. 4).

In addition to an aspect ratio, each format can be given a name displayed during image processing and the checkbox "Allow manual cropping" can be used to determine whether the automatic formatting may be changed by the editor or not.

When assigning formats, a format can be defined as standard for each object class. This means that the format template will be used instead of the original image as an image tag.

## 2.1.22 Object copy mode at class level

A setting can be used to globally specify whether subobjects are only referenced when the main object is duplicated (same subobject) or duplicated as well (new subobject). It is also possible to control this at the object class level and to specify a default setting there. The copy mode can then be set separately for each object class to "Reference" or "Duplicate". This makes sense if subobjects of certain classes are to be reused (e.g. images, social media etc.), but not others.

## 2.1.23 Sort categories alphabetically

If a lot of primary/secondary object categories are used in an installation, it is easy to lose track if they are not sorted alphabetically. The included plugin "categories-alpha-sort" shows how to automatically sort all or some branches of the category tree alphabetically with simple code.

## 2.2 For Administrators and Developers

### 2.2.1 Web pages without file extensions

Published CONTENTS pages can be displayed without file extensions (e.g. .html, .cfm). All links in these pages (e.g. in the navigation or in Link Rowtypes) can be displayed without extension. Under Administration | System | SEO URL Settings the file extensions defined in the output channels may be added or removed. In Apache and IIS the web server rule can be automatically generated, in Nginx it must be configured manually.

### 2.2.2 Simple exchange of data between forms and tables

Developers can more easily exchange and versionize form and table data between different systems (e.g. Stage and Live). After successful tests on a stage system, new object classes can be quickly and easily transferred to the live environment.



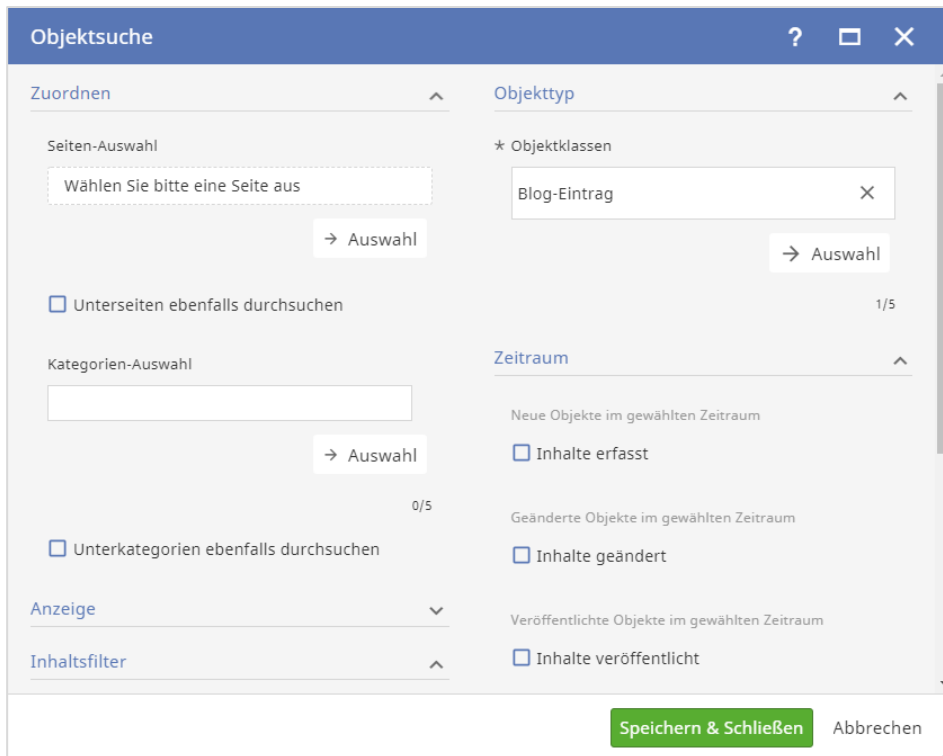
### 2.2.3 New Full Text Search






The full text search has been completely redesigned. Published objects are automatically indexed in external elastic collections. There is a new external object repository for Elasticsearch and a new application "Object Search" as well as new search settings, plugins and decorators for faster and more precise search results.

## 2.2.4 Automatic output of objects with the Object search

The new object search allows the automatic and flexible output of objects on pages. Published content that corresponds to adjustable criteria (e.g. class, category, etc.) can be automatically displayed at one or more places. The object search replaces the previous "active location".



When using the object search, three buttons are available in the workspace:

	Add (plus icon): With this, new objects for the object search can be created directly in the workspace (alternatively, new objects can also be created in the content library). All object classes that are permitted as object type in the object search are available for selection.
	Edit (pencil icon): Opens the object search to make changes to the settings. For example, you can define which object types or categories should be considered and how much content should be displayed.
	Contents (book icon): Opens the content library (in the "Contents" tab) and activates some of the filters set in the wizard, including object class. This gives you an overview of all active and inactive contents of this object search and allows to use mass functions upon the objects.

A CFML application for displaying object search results, which runs independently of the editorial server on the live server, is included.

In order not to send search queries directly to Elasticsearch, you can also use the CONTENTS publicApi on the live server.

### **2.2.5 Automatic distribution of objects**

The new object search allows the automatic and flexible distribution of objects on pages. Content that meets adjustable criteria (e.g. class, categories, etc.) can be automatically exported to one or more destinations. The object search replaces the previous "Active Location".

### **2.2.6 Automatic distribution of pages**

The page search has been designed as analogous to the object search. It enables information about published pages to be read and displayed with high performance via applications on websites or an API (e.g. for mobile apps).

The data of published pages is stored in Elasticsearch and is available for search functions on the website. The content of the search index can be customized for specific projects using decorator code.

### **2.2.7 Object categories available for output types**

If the categories assigned to an object are relevant to the output, they can be made available in output types via two settings. This applies to rights or primary categories as well as topic or secondary categories. This makes categories easier to use for distribution.

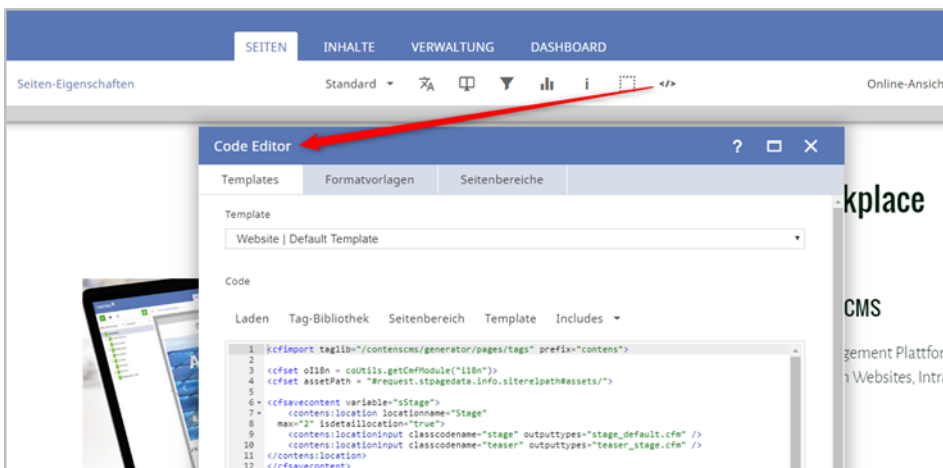
### **2.2.8 Links to records**

Record links can be set to virtually any record within the Contents and Administration tab. Via the context menu, editors can send a record link, for example, as a reference for a specific object in the library or for a specific data record in administration (e.g. editors, pages, roles, templates, object classes, etc.) in an email. The recipient is led directly to the referenced object or data record in CONTENTS via this link and can make changes there.



## 2.2.9 Easy adaption of output types and templates

The code editor makes it possible to quickly and easily adapt output types and templates directly in the workspace. Additionally, the assignment of object classes to page areas may be edited, along with output types.



## 2.2.10 Distributing files of free objects

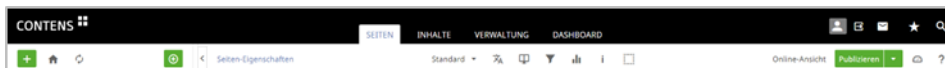
In CONTENTS you can now determine that files of free objects are no longer distributed to all sites. Instead, the sites of those editor groups that are assigned to the primary object categories can be used. This reduces the distribution especially when categories are used for a specific site.

## 2.2.11 Module Import/Export

Using the Module Import/Export complete modules consisting of webpage applications, backend forms, table definitions, SQL scripts, etc... can be exchanged between the source and target systems, e.g. between the stage/test and the live system.

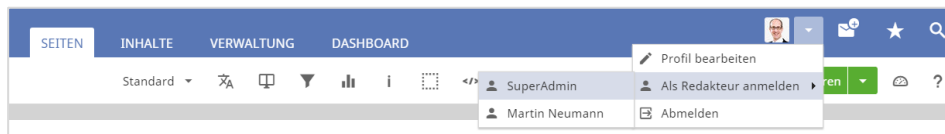
## 2.2.12 Simulate editors

Editors with system administration rights can simulate active editor access. This may be used to test whether the assigned rights configurations have been entered correctly. In simulation mode, the background color of the CONTENS header area is always black.



## 2.2.13 Assign additional editor accounts

In the editor management, additional editor accounts can be assigned to an editor, enabling the editor to quickly switch to them via an entry in the profile menu. The editor thus has different contexts in which he can work in a shielded manner, e.g. to perform different roles (activate content, manage editors) or to work on different sites (Internet, Intranet, etc...).



## 2.2.14 Configuring maintenance mode

During the implementation of necessary technical operations in the CMS (e.g. update, ...) editorial activities might only possible to a limited extent.

To prevent editorial activities for a period of time, the maintenance mode can be activated via Administration | System | Maintenance Mode. When maintenance mode is active, the CMS border is displayed in red and only system administrators can work. All other active users are logged off and redirected to the login.

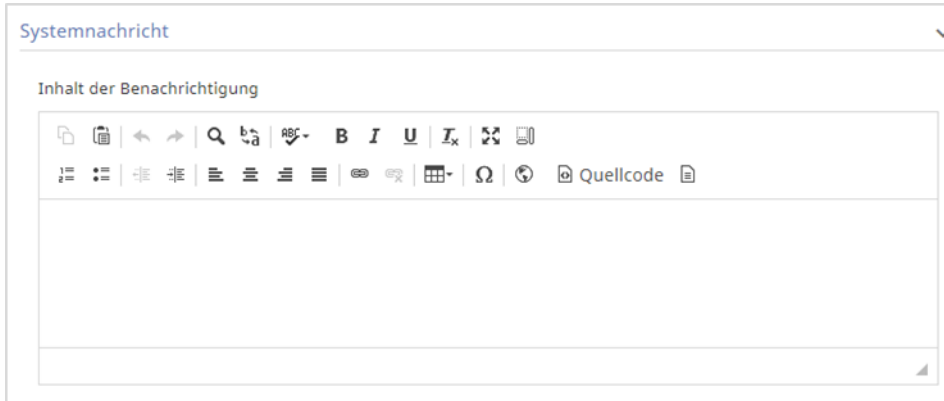


## 2.2.15 Create system message

To announce a maintenance mode or to alert all editors, a notification can be created via Administration | Services | System Message. This system message



will then be displayed to all logged-in users. To create a system message this function must first have been enabled.



## 2.2.16 Optimized server mapping

If numerous sites are to be distributed among just a few servers, this can be configured in the site administration (Administration | System | Sites) by assigning a specific server in the tab "Transfer Data".

## 2.2.17 Online and offline API

The project folder contains the dashboard of a REST API. Custom components can be used here, as well as those based on object classes. With the first request, an API token is generated with which all API queries are secured (entry in the request header is required).

Under data classes, you can generate CRUD functions for offline data (draft) or queries for online data (published) in the Objectstore. The generated components for the selected object class are automatically made available to the CONTENS API. For online data the selection is limited to Objectstore classes. The list functions offer full text search, various filters, sorting and pagination options.

## 2.2.18 Newsroom integration

This optional CONTENS component enables the central administration of content and its efficient distribution across different channels.

## 2.2.19 Includes

The Includes feature now makes it easier for developers to easily create navigations and embed code within pages. In older CONTENS releases, the creation of navigation Includes was more time consuming. Usually pages were created in

the normal page tree and published manually. In addition, it was not possible to simply embed shared HTML into the pages via this system.

For each output channel, you can define how the Include code is deployed.

## 2.2.20 Dashboard and Widgets



The screenshot shows the CONTENS Dashboard interface. The top navigation bar includes 'SEITEN', 'INHALTE', 'VERWALTUNG', and 'DASHBOARD'. The dashboard is divided into three main sections:

- Systemprüfung (System Check):** Contains HTTP Tests, Session Tests, and Filesystem Tests. HTTP tests show 'Trying to access https://...' and 'Trying to access external CONTENTS update URL (https://w...)' both with '200 OK' status. Session tests show 'Original ID:' and 'Endpoint ID:' with checkmarks. Filesystem tests show 'Write in /home/' and 'Delete in /home/' with checkmarks.
- Kürzlich erstellte Seiten (Recently created pages):** A table with columns 'ID', 'Titel in der Navigationsstruktur', 'Geändert', and 'Erstellt'. It lists several pages with their respective IDs and timestamps.
- Zuletzt geänderte Seiten (Recently changed pages):** A table with columns 'ID', 'Titel in der Navigationsstruktur', 'Geändert', and 'Erstellt'. It lists several pages with their respective IDs and timestamps.

In the new, customizable dashboard, widgets show information about the CMS. Select existing widgets for editors or administrators in the dashboard bar and arrange them on the dashboard using drag & drop, e.g.

- System check (to check system integrity)
- Overview of all CMS settings
- Environmental data such as memory, Java version, etc...
- Recently created objects
- Recently changed pages, etc...

Customer-specific widgets for displaying external data can also be created and integrated.

## 2.2.21 Logviewer

The log files of the Application Server (ColdFusion, Lucee) may be called up in the Administration | Reports | Internal | Logviewer area.

```

application.log
1 [INFO], "http-nio-8081-exec-7", "05/22/2019", "13:54:37", "OSGi", "add bundle:/opt/lucee/server/cms/lucee-server/lucee-server/bundles
2 /lucee.image.extension-1.0.0.24-SNAPSHOT.jar"
3 [INFO], "http-nio-8081-exec-7", "05/22/2019", "13:54:37", "OSGi", "start bundle:lucee.image.extension:1.0.0.24-SNAPSHOT"
4 [INFO], "http-nio-8081-exec-7", "05/22/2019", "13:54:37", "OSGi", "add bundle:/opt/lucee/server/cms/lucee-server/lucee-server/bundles
5 /org.apache.commons.image-1.0.0.R1534292.jar"
6 [INFO], "http-nio-8081-exec-7", "05/22/2019", "13:54:37", "OSGi", "start bundle:org.apache.commons.image:1.0.0.R1534292"
7 [INFO], "http-nio-8081-exec-7", "05/22/2019", "13:54:37", "OSGi", "add bundle:/opt/lucee/server/cms/lucee-server/lucee-server/bundles
8 /metadata.extractor-2.8.1.0002L.jar"
9 [INFO], "http-nio-8081-exec-7", "05/22/2019", "13:54:37", "OSGi", "start bundle:metadata.extractor:2.8.1.0002L"
10 [INFO], "http-nio-8081-exec-7", "05/22/2019", "13:54:37", "OSGi", "add bundle:/opt/lucee/server/cms/lucee-server/lucee-server/bundles
11 /sun.jai.codec-1.1.2.0003L.jar"
12 [INFO], "http-nio-8081-exec-7", "05/22/2019", "13:54:37", "OSGi", "start bundle:sun.jai.codec:1.1.2.0003L"
13 [INFO], "http-nio-8081-exec-7", "05/22/2019", "13:54:37", "OSGi", "add bundle:/opt/lucee/server/cms/lucee-server/lucee-server/bundles
14 /sun.jai.core-1.2.1.0003L.jar"
15 [INFO], "http-nio-8081-exec-7", "05/22/2019", "13:54:37", "OSGi", "start bundle:sun.jai.core:1.2.1.0003L"
16 [INFO], "http-nio-8081-exec-7", "05/22/2019", "13:54:37", "OSGi", "add bundle:/opt/lucee/server/cms/lucee-server/lucee-server/bundles
17 /org.lucee.imgscalr-4.2.0.jar"
18 [INFO], "http-nio-8081-exec-7", "05/22/2019", "13:54:37", "OSGi", "start bundle:org.lucee.imgscalr:4.2.0"
19 [WARN], "Thread-55121", "05/22/2019", "14:15:53", "lucee.runtime.engine.Controller", "check size of directory [/opt/lucee/server/cms
20 /lucee-web/cms/temp]"
21 [WARN], "Thread-55121", "05/22/2019", "14:15:53", "lucee.runtime.engine.Controller", "- current size [0]"
22 [WARN], "Thread-55121", "05/22/2019", "14:15:53", "lucee.runtime.engine.Controller", "- max size [1073741824]"
23 [WARN], "Thread-55121", "05/22/2019", "14:15:53", "lucee.runtime.engine.Controller", "check size of directory [/opt/lucee/server/cms
24 /lucee-web/cms/cache]"
25 [WARN], "Thread-55121", "05/22/2019", "14:15:53", "lucee.runtime.engine.Controller", "- current size [0]"
26 [WARN], "Thread-55121", "05/22/2019", "14:15:53", "lucee.runtime.engine.Controller", "- max size [104857600]"
27 [WARN], "Thread-56215", "05/22/2019", "15:15:53", "lucee.runtime.engine.Controller", "check size of directory [/opt/lucee/server/cms
28 /lucee-web/cms/temp]"

```

Schließen

## 2.2.22 Key/Value form row

In this new form row option, there are two input fields that are arranged next to each other. A separate title can be specified for both. "Key/value" can be defined multilingual and multiple used. This form row is useful, for example, to display JSON code.

## 2.2.23 Label Correction

Relevant elements of an object class can be used as labels, to be shown in the object library. The "Update Label" function from the context menu can be used to update the label settings of an existing object class.

## 2.2.24 AWS S3 for file distribution

AWS S3 is now also available for file distribution. This is useful, for example, when delivering static pages via S3 or via AWS Cloudfront. FTP, SFTP and SCP can also be selected as connection types. In the overview of the connection manager the respective connection type is now also displayed.

## 2.2.25 Site variables

In addition to the page variables, site variables (global) are also possible. They apply to every site and are edited under a separate tab in the site administration. The set values are available when rendering a page and can be retrieved via the request-Scope (request.stPagedata.sitevariables).

The desired form fields are defined via XML file similarly simple as page or instance variables. The registration is done by the multi-option "Import site variables" in the site administration.

## **2.2.26 Cloud Hosting / Dockerization**

CONTENS 5 can be installed directly on a server or in a DOCKER container, and the CMS may also be hosted by cloud service providers (Amazon Web Services, etc...).

## **2.2.27 Collected Settings**

All CMS settings, such as imaging, cache, or queue, have been combined and grouped in one file. They are stored in a file in the project folder called "settings.cfm". Therefore, the menu item "Basic settings" has been removed.

For each setting there are defaults (visible in the file con-tens/settings.default.cfm), which do not have to be specified completely thanks to an inheritance mechanism, but can also be overwritten for individual keys.

The settings.cfm format is json-compatible and can contain a "global" entry as well as sections for different servers that can adapt global settings locally so that the same settings.cfm can be used on the Development, Stage and Live systems.

## **2.2.28 Upgrade support for CONTENS 4**

The data of a CONTENS 4 installation is completely transferred by scripts and automatically converted if necessary.

The code for custom forms / object classes as well as model files and plugin code is compatible except for a few documented exceptions.

An upgrade tool has been created for Settings, which largely automates the transfer and merging into the new format (see above).

## **2.2.29 Upload Pipeline / Upload Events**

Through new events that are executed during the upload, uploaded files can be automatically checked or converted.

It is possible to call virus scanners, image processing, video transcoding, convert texts into certain formats (e.g. PDF), etc.

# CONTENS

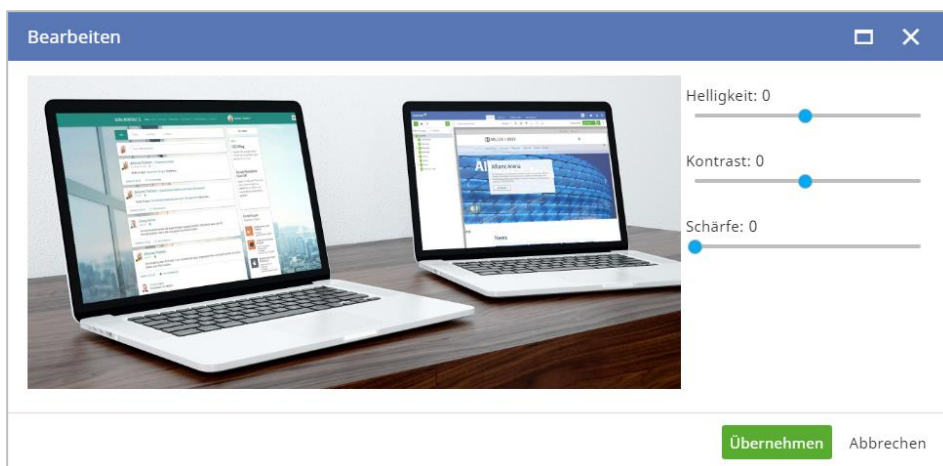
The included plugin "uploadpipeline" performs a CMYK-to-RGB conversion for images, optimizes (compression with low quality loss) and improves (sharpens, denoises) them.

## 3 Improvements

### 3.1 For Editors

#### 3.1.1 Advanced image editing

The image editing has been completely redesigned, is clearer and offers more features. Brightness, contrast and sharpness may be adjusted.



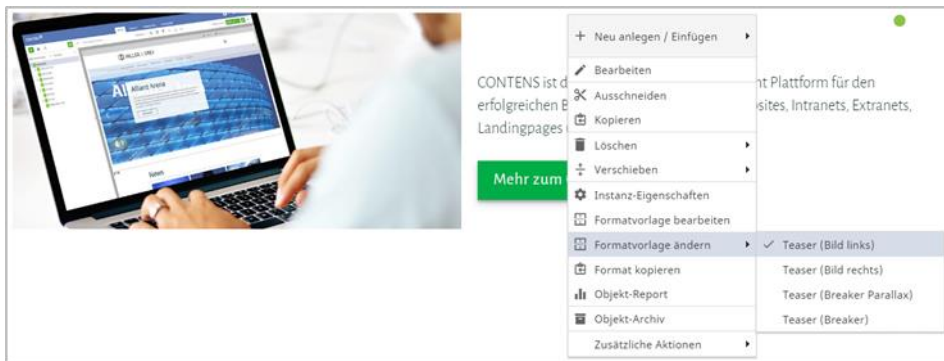
In addition to cropping or resizing, an image can be rotated 90°. The improved Canvas Editor, zoom functions, and the display of x/y coordinates also help editors choose the right selection for image formats.

A new action can be used to explicitly grant image editing rights to any editor.

GraphicsMagick as well as ImageMagick may be used as an image processing library (Image Engine).

#### 3.1.2 Select output types more quickly

If more than one style is allowed for an object class in a page area, it can be assigned directly via the object context menu. This is easier and faster than using the "Instance Properties" dialog.



### 3.1.3 Improved MSWord import

The new plugin allows you to copy and paste content from Microsoft Office Word into the rich text editor. Desirable formatting may be defined and retained, unwanted formatting from Microsoft Word and Excel is prevented.

### 3.1.4 Simplified table creation

A new plug-in in the Richtext editor simplifies the creation of tables.

### 3.1.5 Copy formats

Editors can copy the format of an instance via the context menu and assign it to other instances of the same object class using "Copy Format".

The templates assigned to a page can also be added to the page tree using "Copy Format" in the context menu and assigned using "Transfer format", which accelerates the redesign of similar pages.

### 3.1.6 Transfer format while copying objects

In the workspace, the object context menu item "Copy" no longer only copies the object to the clipboard, but also the combination of "Object and format". If the object is pasted at another position, the same format is reassigned to the object, provided this is permitted at the new position.

### 3.1.7 Create subobjects using drag & drop

If you drag and drop a picture or file into an object line, the window for the relevant subobject class opens so that you can save the picture or file and any additional data. The image or file is automatically assigned to the upload input field,

which accelerates the creation of subobjects. This functionality can be adjusted individually via the new menu item "Mime type Class Allocation".

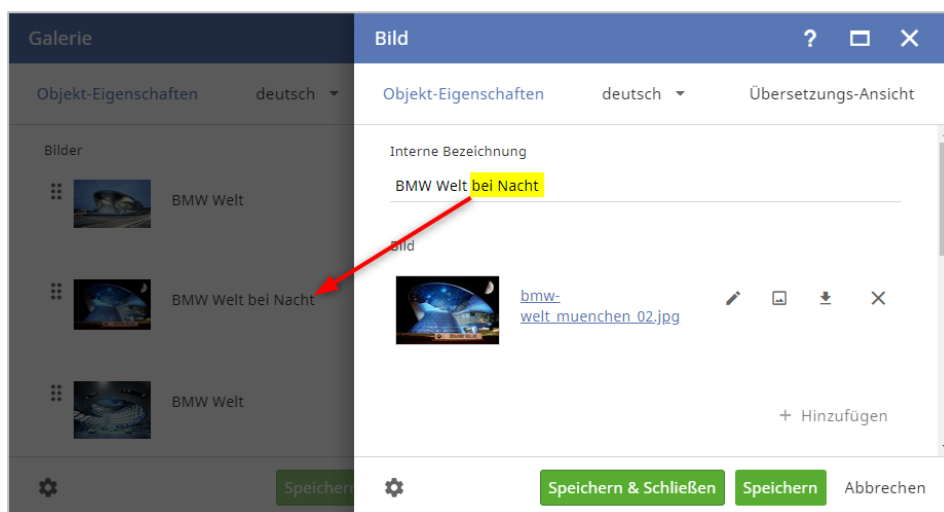
### 3.1.8 Object frame for subobjects in the Richtext element

A subobject (e.g. an image) that is inserted in a Richtext element (e.g. in the text of an article object) can be displayed with the appropriate code in its output type in the workspace with its own object frame.

The object frame becomes visible when you mouseover, the context menu when you right-click in the frame. The subobject can be opened for editing with a double click without having to open the main object.

### 3.1.9 Update of subobjects in the main object

The label of a subobject is automatically updated in the main object after saving. The faster update improves the overview for editors, especially when using several subobjects in one main object (e.g. images in a image gallery).



### 3.1.10 Faster internal search with Elasticsearch

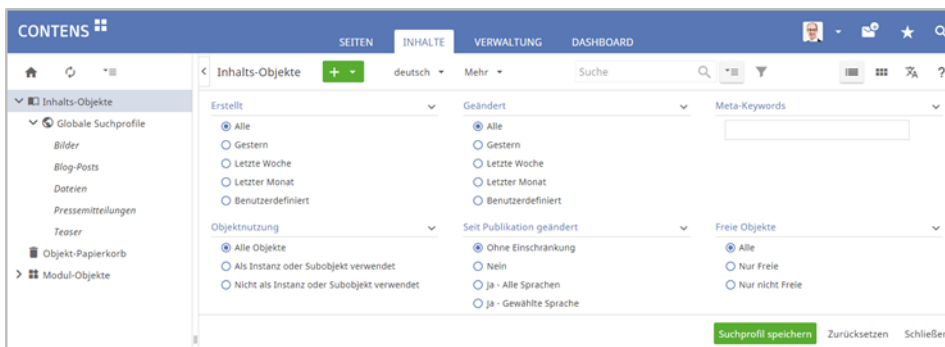


CONTENS now supports Elasticsearch version 5.x to 6.62 and 7 to 7.5. Through this the search becomes faster and requires less resources. In particular, the display in the content library and the internal object search have become faster. The CMS manages differences in the implementation independently, as it automatically determines the version by querying the Elastic server.



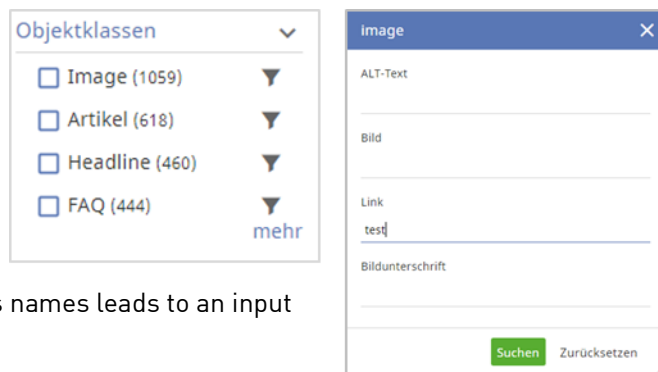
## 3.1.11 Advanced search improved

The advanced search in the content library offers the filter "Meta-Keywords" with SAYT search (Search-as-you-type) as well as date filters for the time "Created" and "Changed". Search filters and facets that do not meet the search criteria remain at the corresponding position in the search form and display the message "No results found".



The category selection has been extended by a display of the tree structure, which is shown when you move the mouse over the category names. Categories with the same names in different branches are easier to distinguish, e.g. with 3 "Service" categories: "Cologne \ Service", "Munich \ AACG \ Service", "Munich \ PSVJ \ Service".

In addition to a global full text search, a detailed search for the contents of a specific object class is also possible. The funnel symbol next to the class names leads to an input form, e.g. for Image:



This allows you to search more precisely for a specific value in a specific field.

## 3.1.12 Precise search with parameters

In the library, search queries may be performed with the following search parameters:

- Title (title:test)
- Object-ID (object\_id:)
- Category-ID (category\_id:)
- Class-ID (class\_id:)
- Editor-ID (editor\_id:)

### 3.1.13 Easier data set selection

In all lists, data sets can be selected by left-clicking in the line. It is no longer necessary to click on the checkbox.

Records

<input type="checkbox"/>	ID ↑	Objekt-Label
<input type="checkbox"/>	3279	Elasticsearch Logo,Elasticsearch Logo
<input checked="" type="checkbox"/>	3925	Technisches Spektrum
<input type="checkbox"/>	3924	Einsatz modernster Technologie

### 3.1.14 Form fields more recognizable

Teaser Inhalt

Überschrift

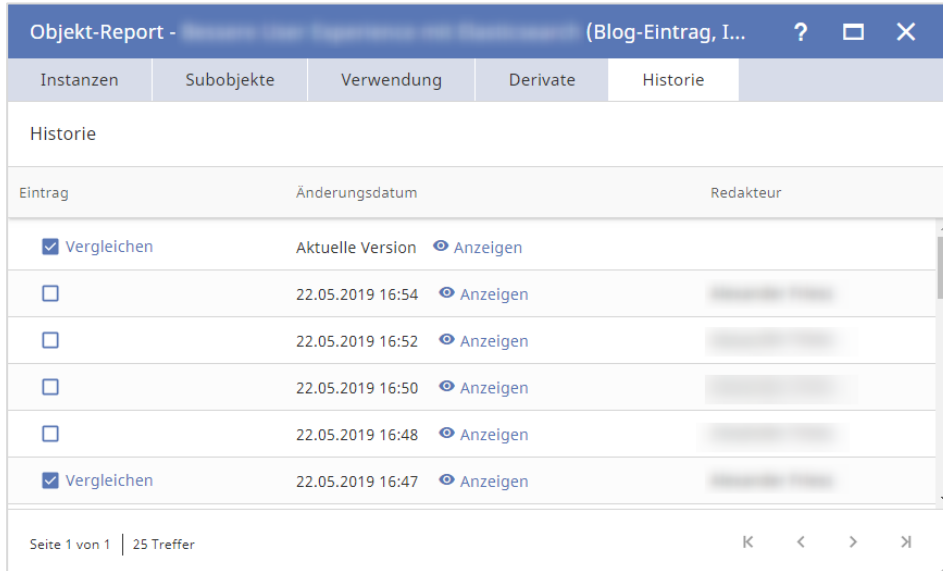
mehrsprachig

Unterüberschrift

mehrsprachig

In order to make input fields easier to recognize in forms, the background color of the fields is now darkened. During mouseover the form element is given an even darker color.

### 3.1.15 Optimized object archive



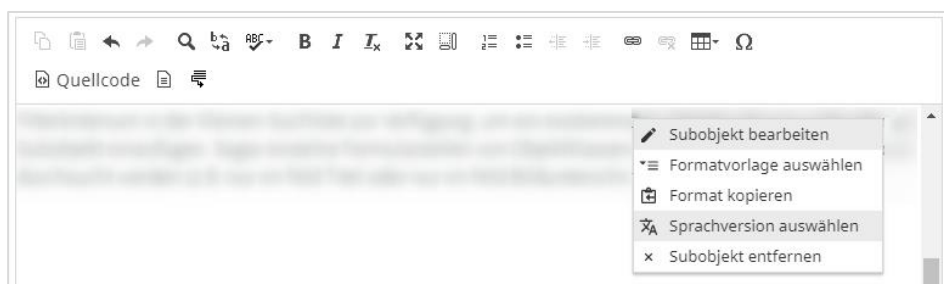
Eintrag	Änderungsdatum	Redakteur
<input checked="" type="checkbox"/> Vergleichen	Aktuelle Version	<a href="#">Anzeigen</a>
<input type="checkbox"/>	22.05.2019 16:54	<a href="#">Anzeigen</a>
<input type="checkbox"/>	22.05.2019 16:52	<a href="#">Anzeigen</a>
<input type="checkbox"/>	22.05.2019 16:50	<a href="#">Anzeigen</a>
<input type="checkbox"/>	22.05.2019 16:48	<a href="#">Anzeigen</a>
<input checked="" type="checkbox"/> Vergleichen	22.05.2019 16:47	<a href="#">Anzeigen</a>

Seite 1 von 1 | 25 Treffer

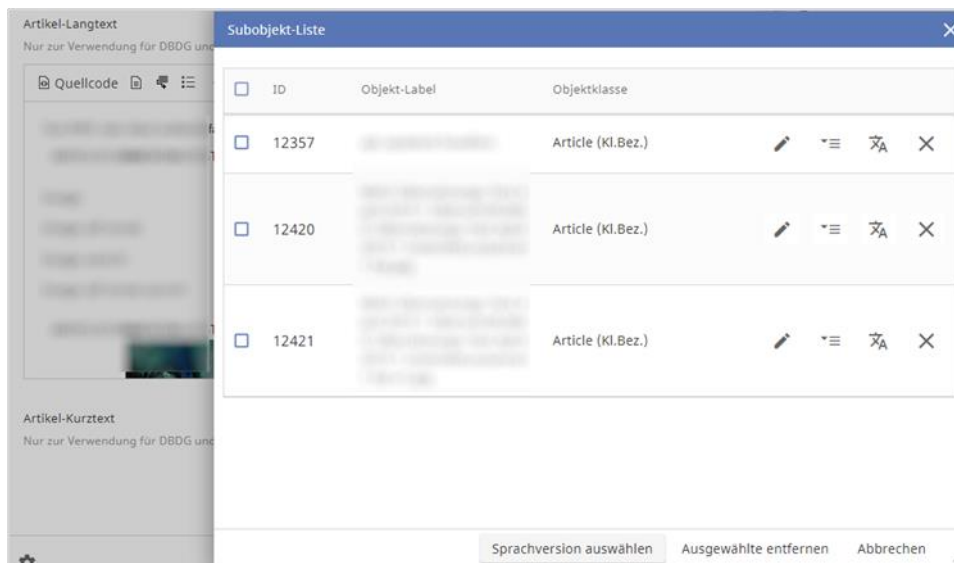
You can use the context menu to access earlier versions of content in the object archive. There you may compare two versions with each other or view one version in the object window and restore it if necessary.

### 3.1.16 Define Language Versions for subobjects in Richtext

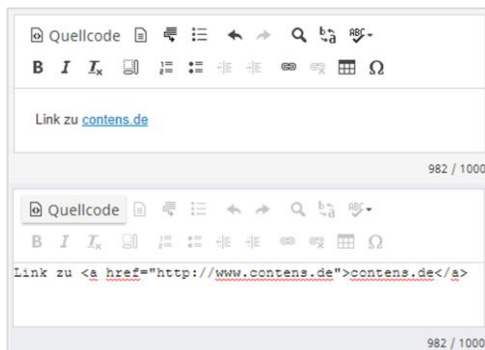
In the Rowtype Richtext, you can use the context menu for subobjects to specify the language version of the subobject.



In the subobject list of the Rowtype Richtext, a new language version can be assigned to several subobjects simultaneously by selecting the checkbox. The list can be used to remove several subobjects at the same time, and the style can be changed for each individual subobject.



### 3.1.17 Optimized calculation of the number of characters



The character counter in the Rich-text editor takes into account the characters visible in the text. HTML tags and attributes in the source code are no longer counted. This enables editors to better estimate the actual character length which can be used when formulating texts.

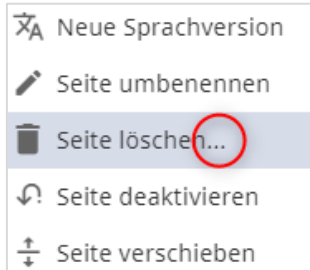
### 3.1.18 Individual elements may be time controlled

Individual parts of an object (e.g. Teaser) and integrated subobjects (e.g. Image Gallery) can be timed independently of the respective object. For example, an object can be published at time T1, while certain contents (e.g. Image Gallery) are published later at time T2. Active time periods are displayed with a green clock icon, elapsed time periods with a red clock icon. The function may be activated with a setting.

### 3.1.19 Delete language versions of an object

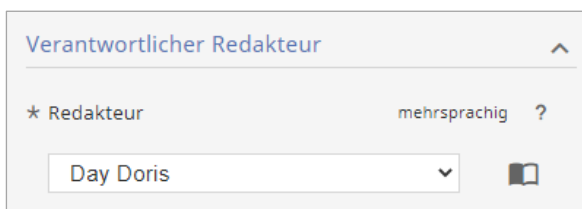
In the save options of an object, a selection menu may be used to delete a language version.

## 3.1.20 More security when deleting



When deleting pages and objects via the context menu, an ellipsis (...) indicates an additional dialog. This lets editors know that a click does not execute the delete action immediately, but that a dialog will be displayed in which the deletion can be confirmed or cancelled.

## 3.1.21 Filter out inactive editors

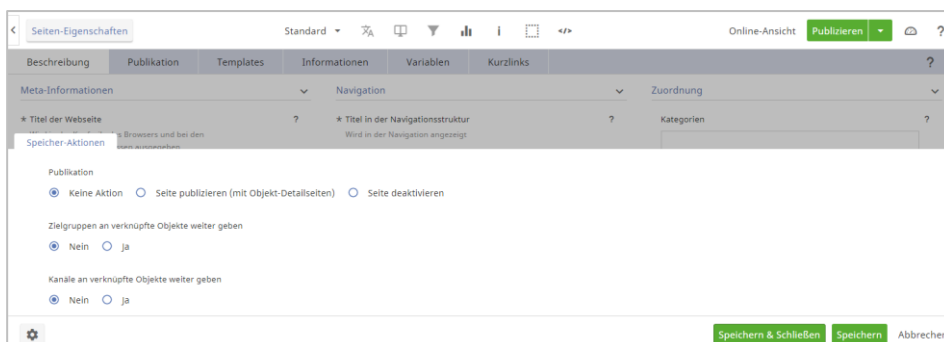


The selection "Responsible editor" for pages and objects automatically hides inactive editors.

Since inactive editors are necessary for the correct display of data in archives, statistics and logging etc., they often cannot be removed and could lead to confusion when selecting them. An already assigned editor is always visible, whether inactive or not.

## 3.1.22 Publish objects and pages when saving

In the save options of objects and pages, you can specify that they are to be published at the same time as they are saved. For example, when saving pages certain settings can be inherited by all objects on a page. The save options are displayed with a gear icon. For objects they are located in the save bar, for pages in the save bar of the page properties.



### 3.1.23 Start times for instance publication

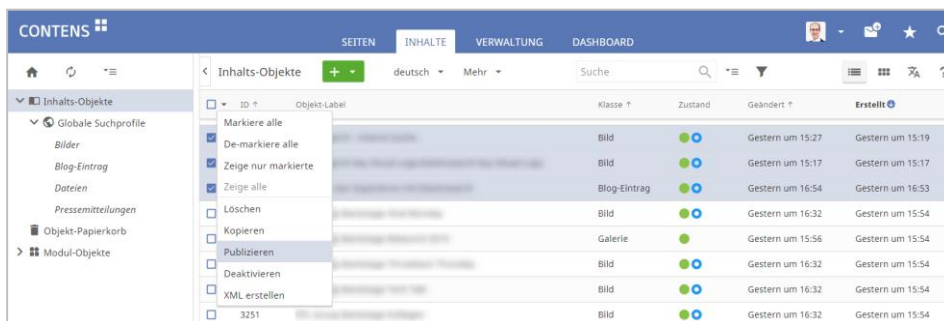
Since objects can be published automatically at certain times, it is important to specify that the instances should also go online. The option "At start time" in the publication settings of an object enables the corresponding publication setting.

### 3.1.24 Optimized thumbnails in the Gallery Rowtype

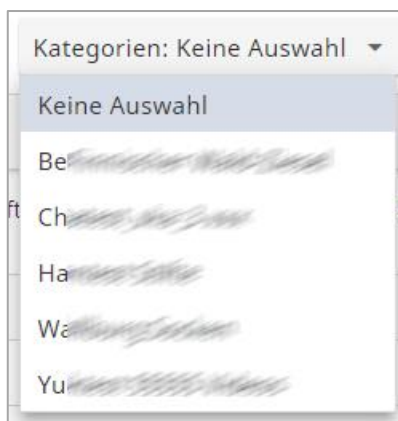
The Gallery rowtype uses optimized thumbnail views of images to speed up loading times.

### 3.1.25 Mass publication or deactivation in the object library

In the object library, editors can publish and deactivate several individual objects simultaneously using the mass function checkboxes.



### 3.1.26 Filtering category selection for specific editors



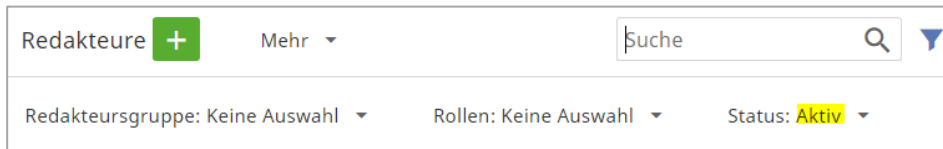
The display of the category tree can be adjusted via an editor-specific setting.

Besides the regular tree structure, an alphabetical sorting as well as an alphabetical sorting with path indication are available.

The latter is particularly suitable when using categories with the same name in different areas of the category tree.

## 3.1.27 Active filter bar is opened

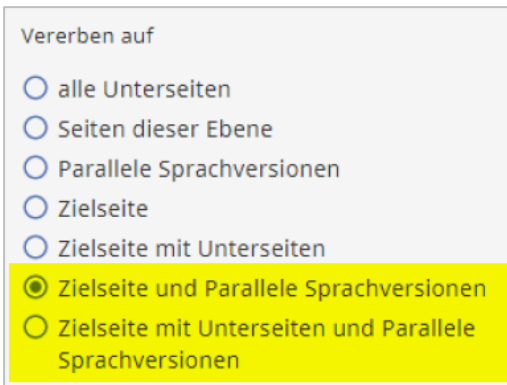
The initial list view after clicking on a menu item may already be actively filtered. In order to make this fact clearer, the filter bar is initially displayed opened in such cases.



## 3.1.28 Delete parallel language versions

The option "Delete parallel language instances" also deletes the instances of the object in parallel language versions. The maintenance of international sites in numerous languages is noticeably simplified in this way.

## 3.1.29 New variants for inheriting page properties



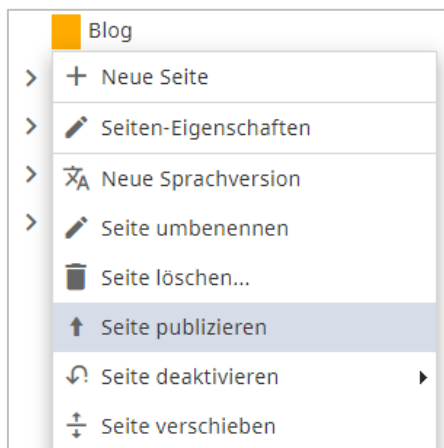
In the wizard "Inherit page properties" there are two new options: "Target page and parallel language versions" and "Target page with subpages and parallel language versions".

### 3.1.30 Publication Wizard

The status of the current page and the parallel language versions is displayed in color to the right of the page title in the Publish dialog.



### 3.1.31 Publish a page from the context menu



A page can now also be published directly in the page tree via the context menu of the respective page.

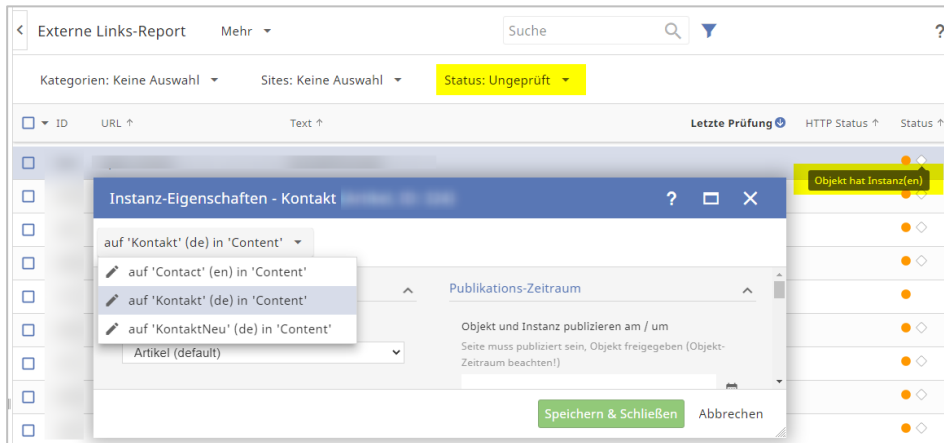
### 3.1.32 Improvements of External Links Report

The link status has been extended by the display "unchecked", which is shown in the list entry with a yellow status icon. In addition, the context menu actions have been optimized.

Instead of an internal link ID, the object ID to which the link belongs is now displayed in the overview. In the column "Status" you can now also see whether an



object has instances. With a right click on the icon the instance properties can be opened to edit them.



In addition, a setting can be used to determine how many threads should be used when checking links.

### 3.1.33 Delete language versions

When deleting a page via the context menu in the page tree, the checkbox "All languages" can be used to delete all language versions at once. Individual languages may also be selected for deletion in this way.

### 3.1.34 Rowtype improvements

A double-click on the label opens a window for the Rowtypes object, object container, image object and file object in which the linked subobject can be edited.

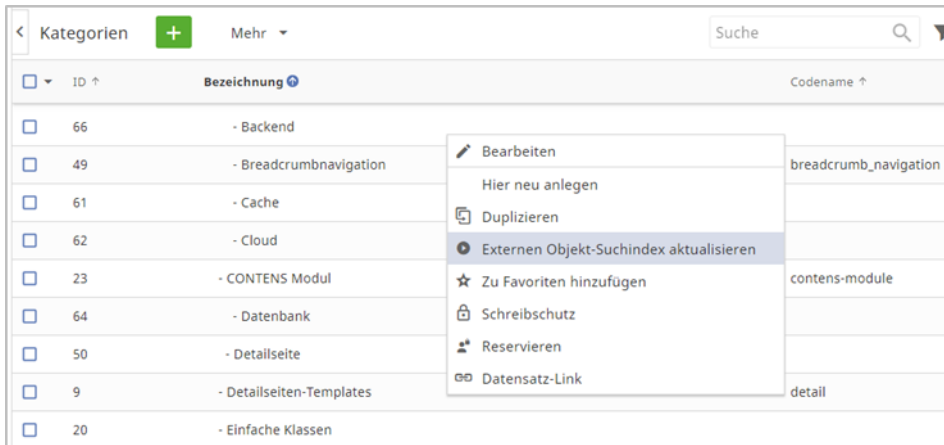
### 3.1.35 Object publication with feedback

If an object is published via the context menu item "Publish object" or "Publish language version" of the content library, the editor receives direct feedback: While the process is running, an animated "Please wait" icon appears in the line instead of the checkbox. When the publication is finished, the line is highlighted for a short time.

### 3.1.36 Category management improved

The category list now contains the filter selection "Parent category" to limit the result set to elements in the branch below.

The "External object search index" for the automatic output of objects can be completely updated via the More button or via the context menu for each category.



In the detail form, an editor with the appropriate access rights can assign editor groups to each category, which was previously only possible via the menu item "Category rights".

### 3.1.37 Restrict secondary object category

The secondary category, which may optionally be defined in the object class, can be assigned directly to new objects of the class as before.

With a new setting, it is possible to restrict the selection in the object window to only the category branch below the selected category. If a more content or type oriented categorization is desired instead of a more global one, this feature may be used for specific or all classes.

### 3.1.38 Language versions in the List View

In the workspace List View, a button for switching to the language view is offered in a similar fashion to the content library, so that an overview of different language versions of the object instances can be created quickly.



## 3.1.39 Browser extension

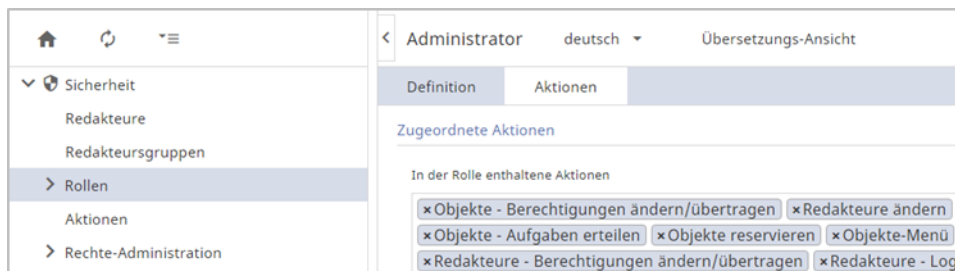
The CMS browser extension, which allows you to jump directly from the live page to the displayed page, has been updated for the Firefox (Link) and Chrome (Link) browsers.



## 3.2 For Administrators and Developers

### 3.2.1 Assign actions directly to a role

Actions can now also be assigned to roles decentral in each action's menu. The central assignment of roles to actions under Administration | Security | Roles | Role Actions Rights is retained.



### 3.2.2 Use one email address for multiple editors

Different editors can be assigned the same email address if they have different user names. Among other things, this allows several users in the same department to share a common mail address (e.g. „First name Last name“ <info@company.de> ).

### 3.2.3 Generate multiple Classes / Forms simultaneously

Developers can select several object classes or forms in the respective menu items to generate and distribute simultaneously with a single click. This helps after changing several custom codes or the like.



### 3.2.4 Template management

When using the context menu items "Refresh location code" and "Register template", additional dialogs are displayed. This prevents unwanted code or certain

files from being changed and keeps problems from occurring when rendering the pages.

## 3.2.5 Absolute paths for object caching

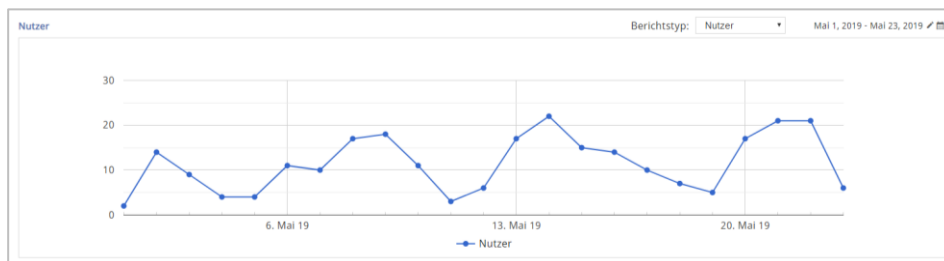
With a page generator setting, absolute paths can be set, e.g.

`http://www.domain.de/_files/jpg2/schild-achtung.jpg`

When using the object cache, absolute paths can be very helpful, because relative paths lead to incorrect links if the output is on several pages in different levels of the site tree structure.

## 3.2.6 Interfaces for Google Analytics and Webtrekk

Interfaces for Google Analytics and Webtrekk have been integrated for the tracking and statistics of external pages. To activate this interface, a Google Analytics license file with the API access data must be available.



## 3.2.7 Performance

With the help of database sequences, speed and reliability when inserting new data records could be increased enormously.

## 3.2.8 Rowtype and usability improvements

Checkboxes can now also be arranged horizontally and not just vertically.

Rowtypes with selection options are clickable along the entire row, not just the + icon. If no further options are available, the selection field is deactivated.

Many Rowtypes were completely or partially revised, e.g. password, timepicker and all upload Rowtypes. Search-as-you-type is now built into the data list.

## **3.2.9 Absolute positioning with wrappers**

The display of internal object frames and icons in the workspace is now done with absolute positioning of wrappers. This ensures that certain CSS definitions are no longer overwritten. Published pages no longer contain any CMS code except for an ID.

## **3.2.10 Improved settings for moving pages**

A setting can be used to inherit categories and templates from the new parent page when moving pages across sites. This makes the manual assignment of new categories and templates for moved pages unnecessary.

## **3.2.11 More flexible deactivation of free objects**

A publication setting can be used to control whether free objects are also deactivated when a page on which they are linked is deactivated.

While free objects are not affected by the deactivation of a page in the standard setting (and are therefore still available for other uses), the setting can be configured in such a way that when a page is deactivated, a free object linked to it is also deactivated, provided that it has no other instances on online pages.

## **3.2.12 Optimized re-indexing for search indexes**

To ensure that the external search is still available as usual during the re-indexing of ElasticSearch Collections, it now uses an alias. After re-indexing ElasticSearch Collections, the external search index is exchanged with the updated collection. Thanks to the version number of the updated search index, this alias exchange can take place as often as necessary.

## **3.2.13 Remaining tasks are carried out**


Scheduled tasks, such as publishing or deactivating a page at a point in the future, cannot be performed if the server is not available at the scheduled time for maintenance reasons. The updated publisher process now retroactively takes into account tasks that have been suspended for up to one day or aborted due to errors and executes them again.

### 3.2.14 Improved display and output in the object search

The CONTENTS object search enables the high-performance output of content of published objects via applications on the website or via the API (e.g. for mobile apps).

The format in which the data is stored in ElasticSearch is now easily customizable and the standard is more readable. The entire functionality has been optimized to read and process only the desired data, not all of it.

### 3.2.15 Tool for translating GUI texts



classfile-blog.cfm

D:\projekte\_cf\contents\contents5\contentsshowcase\\_customcodes\uniform\formdefinitions\classfile-blog.cfm

Save All Changes

ID / Label	English	German	French
form:1.main.classdescstext_idtxt	Blog-Eintrag	Blog-Eintrag	Blog-Eintrag
formrow:12.propertystorage.subtitle	Geben Sie hier bitte das Datum an.	Geben Sie hier bitte das Datum an.	Geben Sie hier bitte das Datum an.

When configuring classes and application input forms in CONTENTS, not all texts are always immediately available in the three GUI languages. With a new i18n tool, these texts can now be edited and translated subsequently in a clearly arranged interface.

### 3.2.16 Improvements in the Updater

The Updater tool for updating specific data in the customer folder has been improved.

The new option "Update customer files" updates application files in the client folder. The existing version of the files is backed up to a folder. This means that a backup copy is retained in the event that a manually adjusted file has been overwritten. Files with project-specific settings are highlighted and not automatically updated.

### 3.2.17 Support for displaying Responsive Images

If images are output in format templates, the SRCSET attribute can be derived from the existing formats using a new function. It is also possible to generate an entire IMG or PICTURE tag.

### **3.2.18 Faster image editing**

Performance when editing images has been improved by optimizations of the image processing operations and the elimination of an intermediate service.

### **3.2.19 Faster indexing**

The indexing of internal and external data has been optimized by new mass selection functions.

### **3.2.20 New Databank versions**

The following are supported: MySQL 5.7, PostgreSQL 10, MariaDB 10.2, Oracle 12, MSSQL 2016, Microsoft Server 2017 (Linux Support)

### **3.2.21 Websockets**

Here various performance improvements and new functions such as proxy support have been achieved.

### **3.2.22 Server Sent Events (SSE)**

Server Sent Events can be used as a replacement for Websockets because they are easier to configure.

### **3.2.23 Caching Engines**

CONTENS supports new, modern caching services such as Redis and EH-Cache in their latest versions.

### **3.2.24 Further updates**

CONTENS 5.6.4 includes updates from Angular to version 7.2.4, Webpack to version 4.29.3 and Node.js to version 10.15.1

### **3.2.25 Object Class structure properties**

The properties of form lines have been split for more clarity. In the immediately visible section "Properties" there are frequently used settings with which the form lines can already be configured. Below this, in the initially closed section



"Advanced Settings", specific and less frequently used settings have been placed.

## 3.2.26 Improved editor management

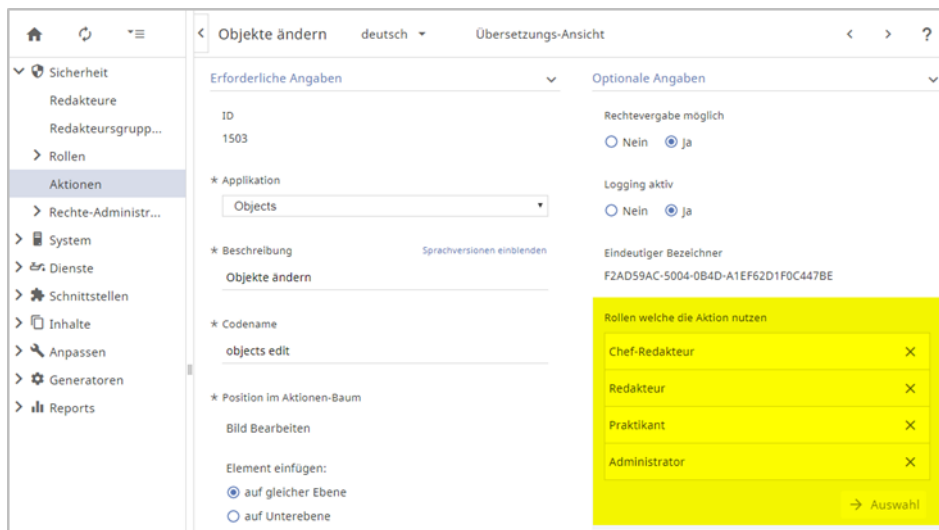
The editor list is started with a filter to "active" editors, which can be switched to "inactive" via a pulldown. To enable sorting, the columns First Name and Last Name were separated and "System Administrator" was added.

In the form the upload of a profile picture has been added, which can also be used to differentiate between different accounts (see 2.2.9, pg. 13). Alternatively, "Gravatars" can also be used, which are assigned via the mail addresses.

With "Primary category defaults", categories may be entered that are immediately assigned to editors when new objects are created.

## 3.2.27 Assigning roles to actions

In the detail form of an action, you can select the roles to which they should belong, which was previously only possible using the menu items "Roles" or "Role-action rights".



## 3.2.28 Object Class Elements for Format Template Code

The fields for each class can be called up individually in the style sheet code editor via the selection menu "Definitions", which simplifies the creation or amendment of the codes.

### **3.2.29 Automatically clean up logbooks**

Logbooks provide an overview of important changes in content, but at the same time take up more and more storage space. With the time-controlled process "CleanUp logs" you can set up to how many days retrospectively log entries should be saved and the period in which older log entries should be automatically deleted.

### **3.2.30 Automatically clean up upload files**

Editorially uploaded files are cached in a secured temp folder. If an operation (for example, saving an object) cannot be completed, for example, due to validation rules, these cached files are retained. A new, time-controlled process automatically deletes these files after a set period of time (e.g. after 30 days).

### **3.2.31 Automatically clean up scheduled jobs**

Scheduled tasks are automatically deleted after they are completed. In rare cases, it may happen that individual tasks are not deleted, regardless of whether they have been performed or not. A new function now removes all scheduled tasks from the application server that are older than two days.

### **3.2.32 Better CMS performance through parallelization**

Editorial tasks in the CMS, such as publishing pages, deactivating content or distributing files, are now carried out more quickly through parallelization using Rabbit MQ. Depending on the extend and intensity of use, a significant performance improvement can be achieved in comparison to the sequential processing of editorial tasks

### **3.2.33 New tools for checking and repairing page trees**

There are new tools for checking and repairing page trees that have been optimized for installations with numerous sites. Individual sites can now be specifically checked. The check of all sites has been split into individual steps to improve performance. There are useful scripts that can be executed on demand to assist in specific situations.

### 3.2.34 Easier data exchange between Stage and Live

In order to simplify data exchange between stage and live systems, the mass function "Create XML" was included in numerous lists, e.g. for objects, editors, actions, sites, target groups, channels, workflows and categories.

### 3.2.35 Technical

Modern technologies and concepts are used in the development of CONTENTS 5 and the Service Packs:

- The styling is done via SaSS with Stylelint-Checker using Flexbox with Webfonts and SVG-Icons, whereby finished CSS is reworked and mini-fied with Gulp.
- The user interface for CONTENTS 5 is based on Material Design (<https://material.io/design/>) and also supports mobile devices (e.g. Longtouch instead of Doubleclick). Usability has been improved in many areas.
- Client-side code is written in Typescript and ES6 using the jQuery and Angular frameworks, checked via TSLint/ESLint, tested with JsUnit tests (Karma / Jasmine) and merged and compressed via Webpack, so that the browser only has to load files of smaller size.
- The jsTree used for tree representations was virtualized to version 3, which enables custom icons for customer projects. By using the Browser Local Storage as cache for data, some UI actions are accelerated. The Richtext Editor and Filemanager have also been updated to their latest version.
- Functionality and presentation of the CMS UI is ensured in different browsers by Nightwatch tests.
- Server-side code is checked via CFLint. Specially created test box unit tests ensure high code quality.
- The search engine libraries for Lucene have been virtualized to version 6.4.1. A RabbitMQ can be used to cushion peak loads during publication and file distribution. Various performance optimizations, including templating, object rights and page rendering as well as direct caching modules, ensure better response times. If required, a dynamic image delivery is also available on the live server, which is particularly suitable for responsive images, while static images can be stored in a new SEO-compliant structure.
- Navicat is used to manage the various DB schemas for MSQQL, MySQL, Mari-aDB, Oracle and Postgres. The primary keys were all converted to

AutoSequences. A new Flyway database migration tool helps with the transfer between the systems, especially to keep the test server databases up to date.

- A new infrastructure was created to test code changes to a limited extent immediately and at night completely in changing configurations. Controlled by Jenkins, all code changes are tested with various combinations of DBMS, application servers, search engines, image engines, browsers, etc. to cover the most common customer installations.