



Advanced features of OpenCms 6

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OpenCms 6 technical overview

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- OpenCms has a strict 3-tier architecture
 - Workplace / Website front-end
 - OpenCms Core “middleware” logic
 - Database access layer separated in “drivers”
- Shell access to the OpenCms database if no web GUI is available
- Module API for pluggable extensions
- Content is stored in XML structures
- Flexible, file based data repository (VFS)



OpenCms 6 technical overview (2)



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- OpenCms leverages the power of many proven OSS components
 - Lucene (search engine)
 - Dom4J (XML API)
 - Jtidy (HTML parser)
 - Doomdark JUG (UID Generator)
 - Log4j (Log file handler)
 - Digester (XML Configuration reader)
 - Commons DBCP/Pool (DB Connection)
 - Quartz (Scheduler)
 - Junit (Unit testing)
 - ...



Creating OpenCms templates with taglibs



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- OpenCms Templates are simple JSP pages
 - Taglib for accessing OpenCms functions
 - Can be combined with other taglibs (e.g. JSTL)
 - All taglib functions are also available in scriptlet API
- Templates are simple resources in the OpenCms VFS, this means they
 - are version controlled
 - are workflow enabled (online / offline)
 - can be distributed in modules



Creating OpenCms templates with taglibs (2)



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- Templates can have multiple sub-elements, for example:
 - Navigation element
 - Ad banner element
 - Article list element
- A template usually formats / displays the content of one `xmlpage/xmlcontent`
 - However, content can also be used on multiple locations
- The same templates can also be used to format the output of other JSP pages



Creating OpenCms templates with taglibs (3)



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Simple template example:

```
<%@ taglib prefix="cms" uri="http://www.opencms.org/taglib/cms"%>
```

```
<html>
```

```
<head>
```

```
<title>
```

```
OpenCms - <cms:property name="Title" escapeHtml="true" />
```

```
</title>
```

```
</head>
```

```
<body>
```

```
<cms:include element="body" />
```

```
</body>
```

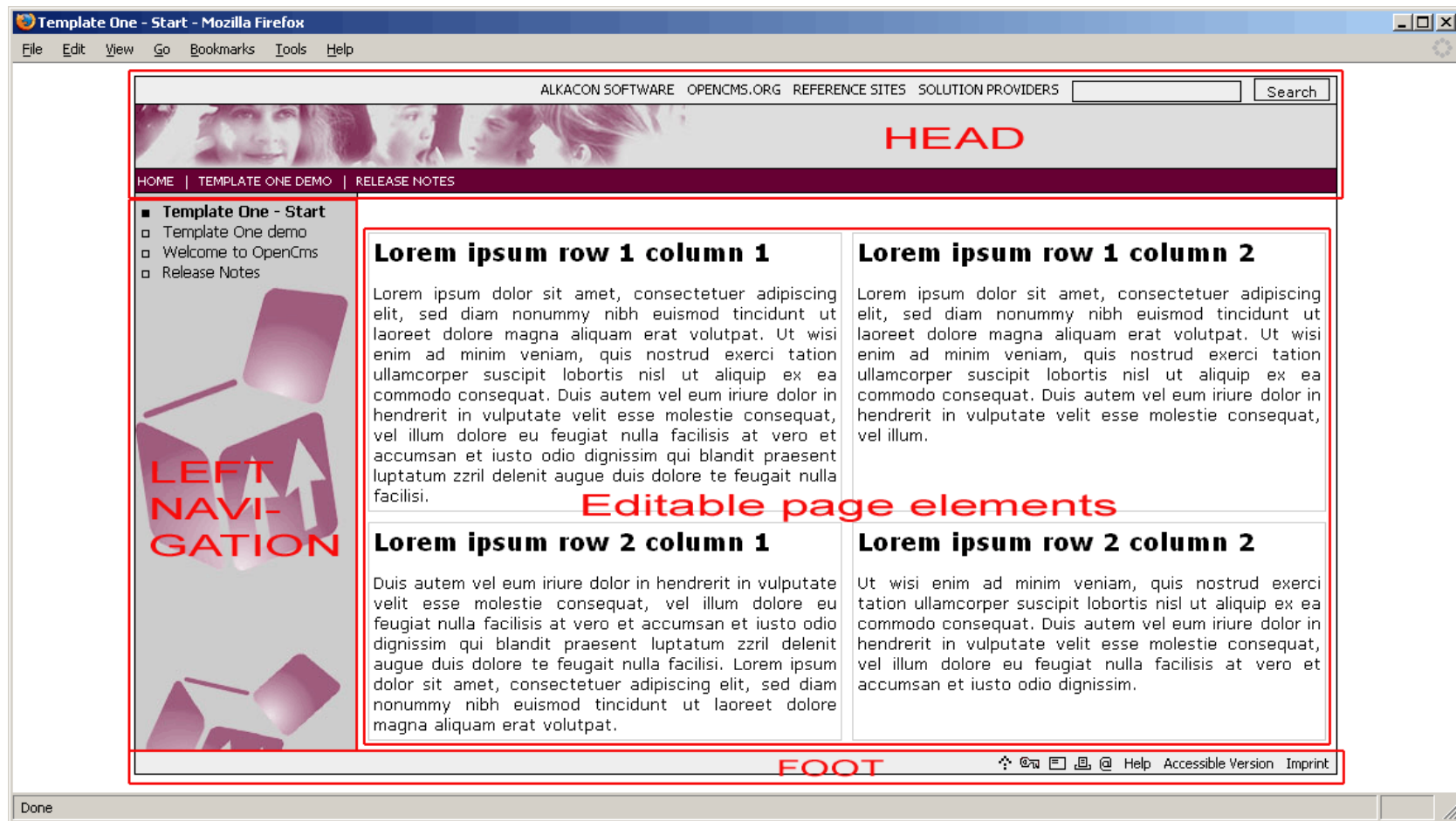
```
</html>
```



Demo Screenshot: A sample template



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Using and configuring the full text search engine



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- OpenCms integrates the powerful Lucene full text search engine
- Creation of multiple indices is supported
 - Example: One index per language
- Included are extractors for various commonly used document types
 - E.g. Word, Excel, PDF, XML, TXT, Html...
- All searched content is also permission controlled, i.e. users will only see the results where they are allowed to “read”



Using and configuring the full text search engine (2)



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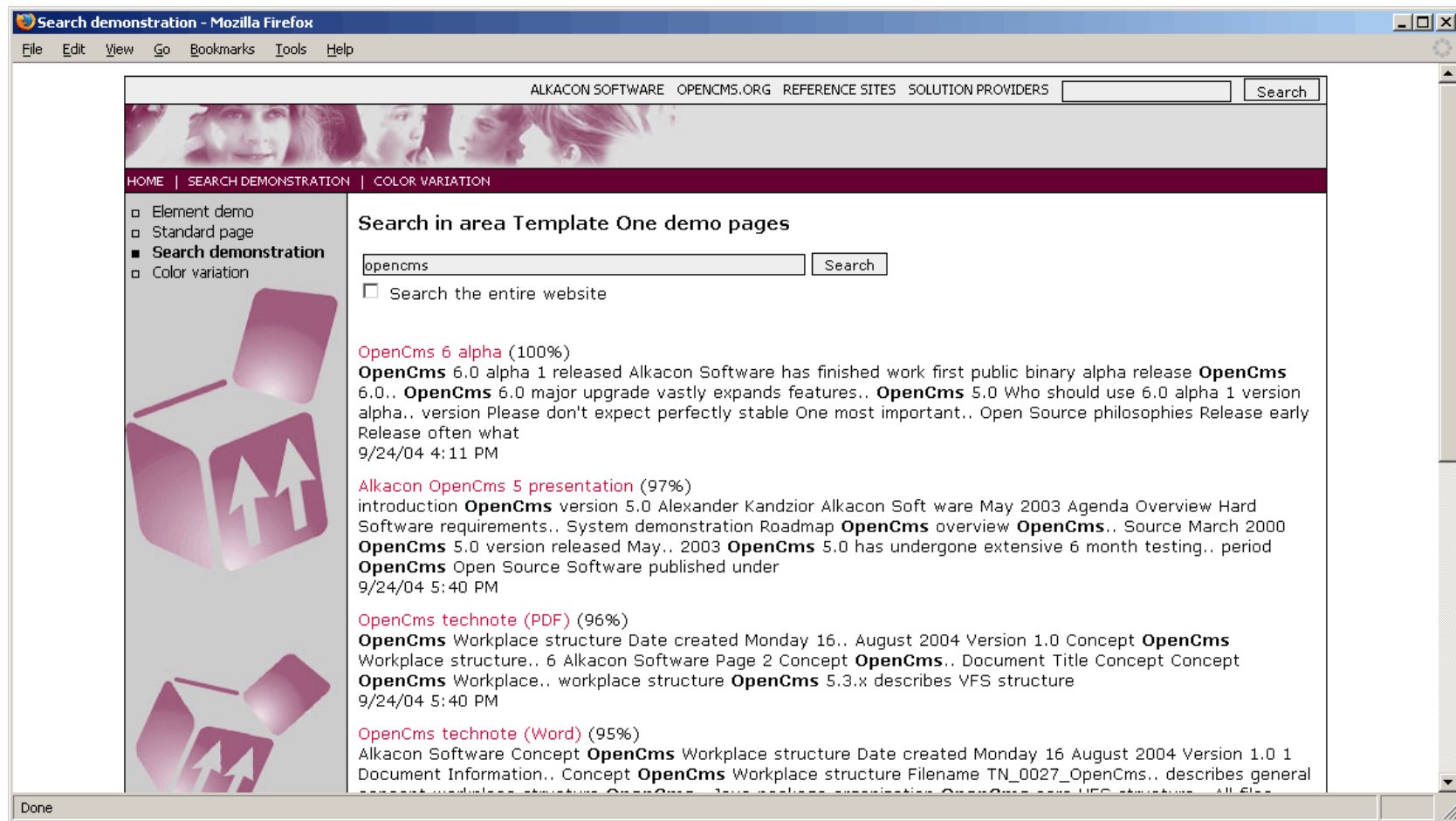
- Configuration is done in the file **opencms-search.xml**
- Full control over the output layout, default layout shows a Google-like ranking with highlighted search terms
 - Highlight function can also be configured
- Also searches in properties (meta information)
- Restricted searches to subtrees of the VFS possible
 - E.g. for "search only in this department"



Demo Screenshot: Full text search output



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Managing multilingual websites

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- OpenCms 6 editable content is mainly composed of two types
 - xmlpage (unstructured, WYSIWYG content)
 - xmlcontent (structured with XML schema)
- Both types have a common XML structure to allow creation of content in multiple languages
- The selected language is controlled by the configured *locale handler*
 - default: configure locale property on folder
 - alternative: use browser locale



Managing multilingual websites (2)

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Sample XML Page structure:

```
<?xml version="1.0" encoding="UTF-8"?>

<pages
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation=
    "http://www.opencms.org/dtd/6.0/xmlpage.xsd">
  <page language="de">
    <element name="text1">
      <links/>
      <content><![CDATA[<H1>Dieser Text ist in Deutsch</H1>]]></content>
    </element>
  </page>
  <page language="en">
    <element name="text1">
      <links/>
      <content><![CDATA[<H1>This text is in English</H1>]]></content>
    </element>
  </page>
</pages>
```



Managing multilingual websites (3)

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Sample XML Content structure:

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<Articles
```

```
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation=
    "opencms://sites/default/xmlcontent/article.xsd">
```

```
  <Article language="en">
```

```
    <Title><![CDATA[Sample Article 1]]></Title>
```

```
    <Teaser><![CDATA[This is the first sample article.]]></Teaser>
```

```
    <Text name="element0">
```

```
      <links/>
```

```
      <content><![CDATA[<p>This is the article 1 text</p>content]>
```

```
    </Text>
```

```
  </Article>
```

```
</Articles>
```



Managing multilingual websites (4)

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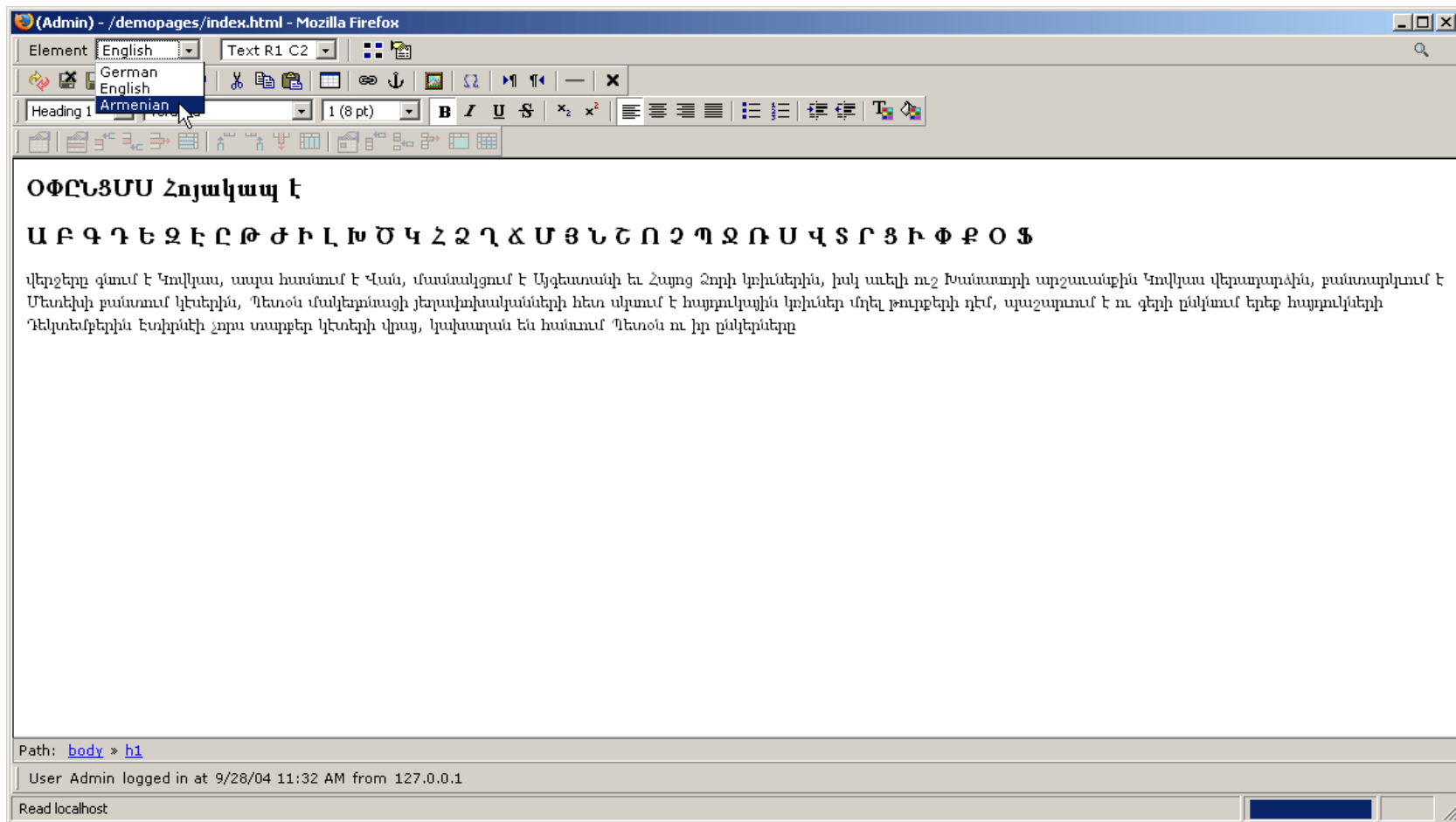
- Content in OpenCms can be created in any charset encoding supported by Java
 - UTF-8 is the default in version 6
- Different encodings can be mixed in one installation
 - One page could be using ISO-8859-1 while the others on the site use UTF-8
- The WYSIWYG editor supports automatic conversion of “unknown” chars to HTML entities (and vice-versa)
 - E.g. `€` for “€” symbol in ISO-8859-1



Demo Screenshot: Multilingual editing in UTF-8



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Defining structured content using XML schema

- XML content is one of the most powerful features of OpenCms 6
- This allows simple creation of “Structured content” according to a w3c XML schema
 - The XML schema used must itself follow another XML schema for xmlcontents
- The XML schema used is also managed in the OpenCms VFS
- An editor for the xmlcontent is automatically created using the schema



Defining structured content using XML schema (2)

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Sample XML Content schema:

```
<?xml version="1.0" encoding="UTF-8"?>

<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">

  <xsd:include schemaLocation="opencms://opencms-xmlcontent.xsd"/>

  <xsd:element name="Articles" type="OpenCmsArticles"/>
  <xsd:complexType name="OpenCmsArticles">
    <xsd:sequence>
      <xsd:element name="Article" type="OpenCmsArticle" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="OpenCmsArticle">
    <xsd:sequence>
      <xsd:element name="Title" type="OpenCmsString" />
      <xsd:element name="Teaser" type="OpenCmsString" />
      <xsd:element name="Text" type="OpenCmsHtml" />
    </xsd:sequence>
    <xsd:attribute name="language" type="OpenCmsLocale" use="required"/>
  </xsd:complexType>
  <xsd:annotation>
    <xsd:appinfo>
      <mapping element="Title" mapto="property:Title" />
    </xsd:appinfo>
  </xsd:annotation>
</xsd:schema>
```



Defining structured content using XML schema (3)

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Sample XML Content structure:

```
<?xml version="1.0" encoding="UTF-8"?>

<Articles
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation=
    "opencms://sites/default/xmlcontent/article.xsd">

  <Article language="en">
    <Title><![CDATA[Sample Article 1]]></Title>
    <Teaser><![CDATA[This is the first sample article.]]></Teaser>
    <Text name="element0">
      <links/>
      <content><![CDATA[<p>This is the article 1 text</p>content]>
    </Text>
  </Article>
</Articles>
```



Defining structured content using XML schema (4)

- XML content can also be mapped to corresponding VFS properties or attributes
 - E.g. “Title” field to “Title” property
- Some XML content types are predefined in OpenCms
 - Work currently in progress
 - Predefined content types can be extended through an open API / configuration
- A taglib API is available to access XML content in lists, detail pages etc.



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```
<cms:include property="template" element="head" />
```

Demo Screenshot: Structured content in XML Schema



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(Admin) - Editing - Microsoft Internet Explorer

Sprache: Englisch

Titel: Sample article 1

Zusammenfassung: This is the teaser or the first sample article.

Text:

This is the article 1 text

Duis autem vel eum *iriure dolor* in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue dui dolore te **feugait nulla facilisi**.

1. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.
2. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.
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Veröffentlichungsdatum: 1.2.2005 20:00

Autor: Alkacon Software GmbH

Benutzer Admin angemeldet am 23.03.06 09:41 von 127.0.0.1

Lokales Intranet

Integrating "Direct Edit" functionality

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- "Direct edit" allows for access to the editor through the website "front end"
- All access is permission/lock controlled
 - No access if no "write" permission
 - Access disabled if file is currently locked
- "Direct edit" is available only in the Offline project, not on the published Online site
- Integration is very simple with just some additional tags
 - HTML inserted can optionally be selected



Integrating "Direct Edit" functionality (2)



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"Direct edit" for a template example:

```
<%@ taglib prefix="cms" uri="http://www.opencms.org/taglib/cms"%>
```

```
<html>
```

```
<head>
```

```
<title>
```

```
OpenCms - <cms:property name="Title" escapeHtml="true" />
```

```
</title>
```

```
<cms:editable />
```

```
</head>
```

```
<body>
```

```
<cms:include element="body" editable="true" />
```

```
</body>
```

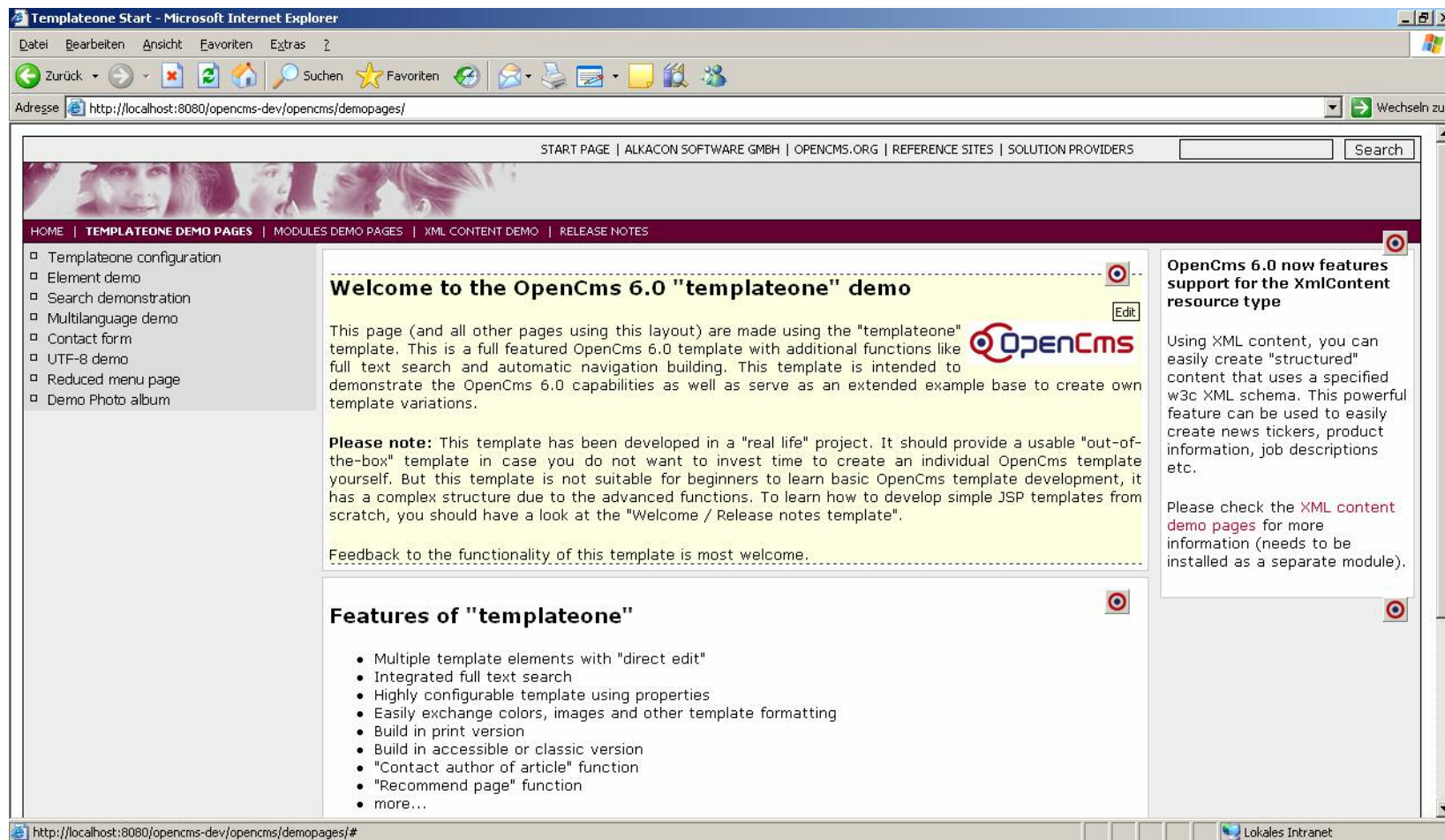
```
</html>
```



Demo Screenshot: Direct edit from the website



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Integrating "Direct Edit" functionality (3)



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"Direct edit" on a XML content example:

```
<%@ taglib prefix="cms" uri="http://www.opencms.org/taglib/cms"%>
```

...

```
<cms:contentload collector="singleFile" param="${opencms.uri}"  
    editable="true">
```

```
<h1><cms:contentshow element="Title" /></h1>
```

```
<p>
```

```
<cms:contentshow element="Text" />
```

```
</p>
```

```
</cms:contentload>
```

...



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