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# ENTERPRISE ODF STATUS QUO AND OUTLOOK

CIB SOFTWARE GMBH  
LIBREOFFE CONFERENCE, 23.09.2015



# SPEAKER



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- > ODF File Format Activist @ OASIS
- > Freelancer

# SUMMARY

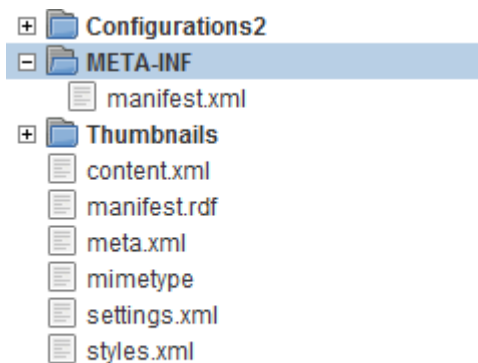
1. ODF GENERATION
2. ODF METADATA
3. ODF COLLABORATION

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# ODF GENERATION

# ODF GENERATION BASICS

- > OASIS & ISO standardized zipped XML files
  - Part 1 – ODF XML Schema
  - Part 2 – ODF OpenFormula
  - Part 3 – ODF Packages
  
- > Example ODF package by LibreOffice



# ODF GENERATION CORRECTNESS

## > Apache ODF Toolkit - Validator (Web Archive)



### ODF Validator

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This service checks conformance of ODF documents based on their OpenDocument Format specification. It does not cover all conformance criteria, yet (see [implementation details](#)).

**ODF Version:**

auto-detect ▼

**Logging:**

verbose ▼

**Choose ODF documents for validation:**

Dateien auswählen Keine ausgewählt

Validate Reset

This service is provided to you by [OpenDoc Society](#)

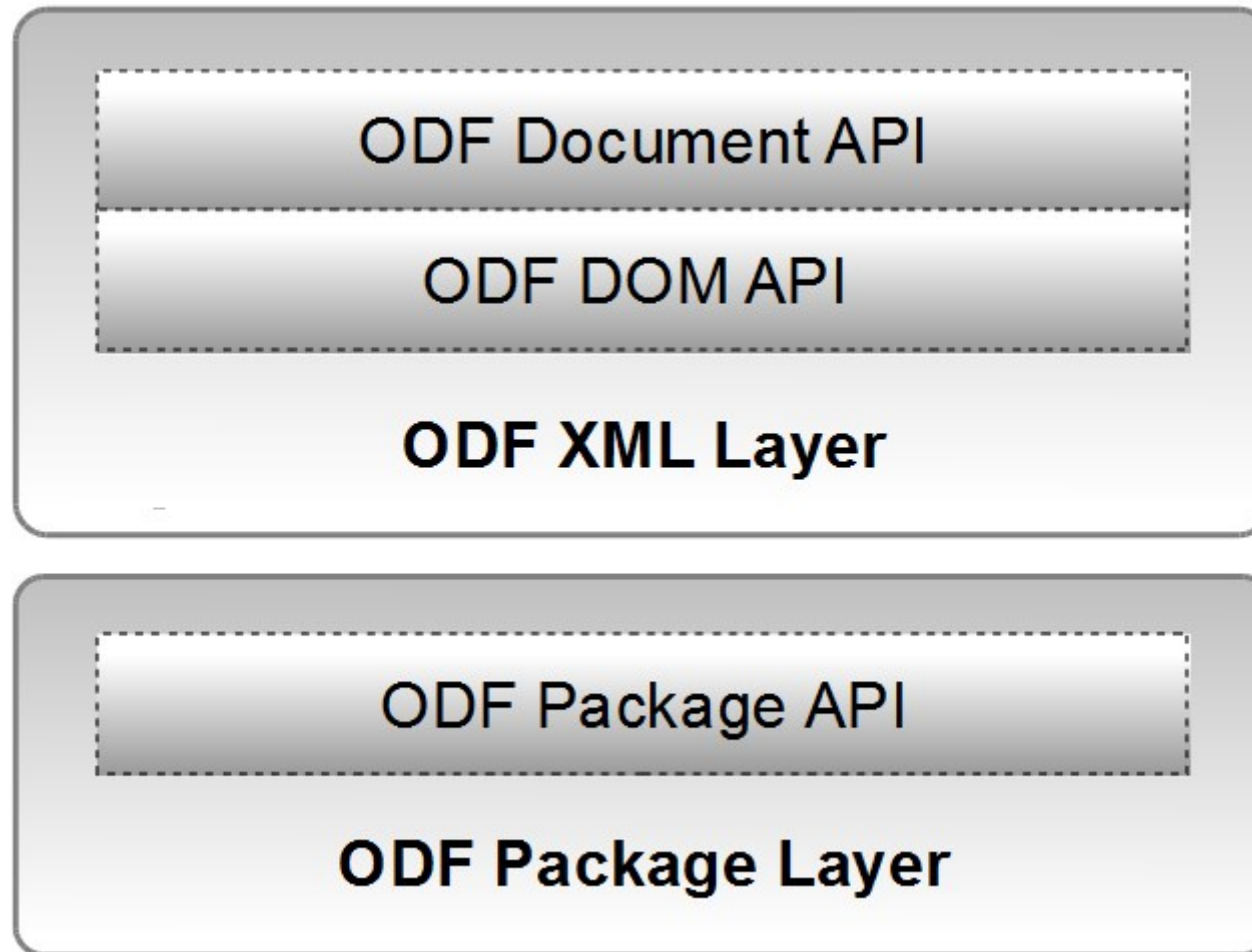


This service does not cover all conformance criteria of the OpenDocument Format specification. It is not applicable for formal validation proof. Problems reported by this service only indicate that a document may not conform to the specification. It must not be concluded from errors that are reported that the document does not conform to the specification without further investigation of the error report, and it must not be concluded from the absence of error reports that the OpenDocument Format document conforms to the OpenDocument Format specification. By

any use of this Website, you agree to be bound by these [Policies and Terms of Use](#).

# ODF GENERATION SERVER-SIDE MODEL

- > Apache ODF Toolkit (Incubator) in Java



# ODF GENERATION DATA DRIVEN VIA MAIL MERGE

- > Mail merge in ODF via fields
  - One document for many different recipients
  - Template derivations depend on external data
  - Can not include arbitrary document parts, e.g. tables



# ODF GENERATION DATA DRIVEN VIA JSMERGE

- > **LibreOffice extension editing** fields allowing JavaScript
  - Combining reusable ODF components
  - User edit JavaScript Fields with LibreOffice extension
- > Performance optimized **java based generator**
  - High Performance / Volume ODF generation on server
- > Future ODF component standard
  - Definition of ODF components & inclusion mechanism
  - Interoperable ODF Generation / Text Programming
  - Provide Safety of Investment

# ODF GENERATION USING TEMPLATES

## > ODF template

- Template = ODF document with special suffix & mimetype
- Best practise: Centralized organization
- Ensure interoperability (with other ODF applications)
  - Avoid macros (no interoperable macro language)
- Ensure accessibility
  - Use template styles instead of hard styles  
(e.g. heading 1-10, footnote, ..)
- Use (RDF) metadata for later content identification

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## ODF METADATA

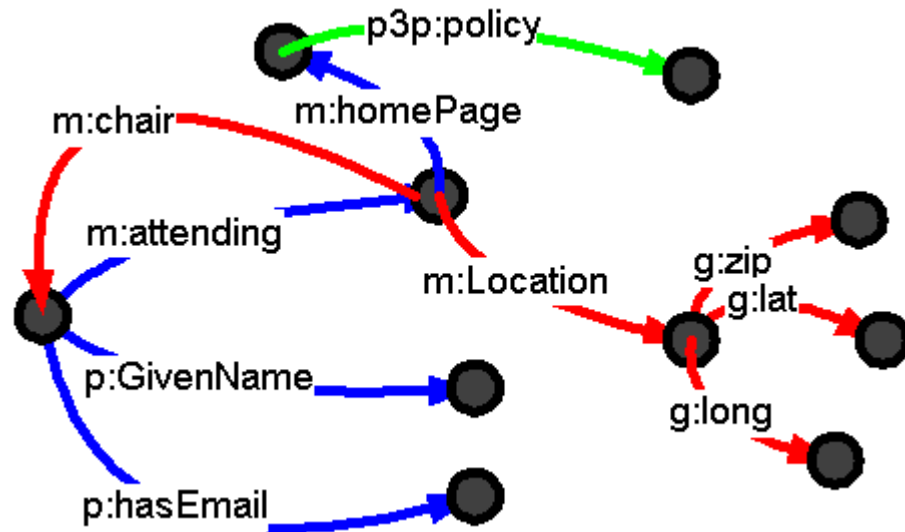
# ODF METADATA PREDEFINED

- > Metadata = Structured data about data
- > Part of the ODF meta.xml file

```
<office:meta>  
  <meta:creation-date>2015-09-21T14:43:57.639000000</meta:creation-date>  
  <dc:date>2015-09-21T14:45:09.603000000</dc:date>  
  <meta:editing-duration>PT1M12S</meta:editing-duration>  
  <meta:editing-cycles>1</meta:editing-cycles>  
  <meta:document-statistic meta:page-count="1" meta:paragraph-count="5" />  
</office:meta>
```

# ODF METADATA USING W3C RDF STANDARD

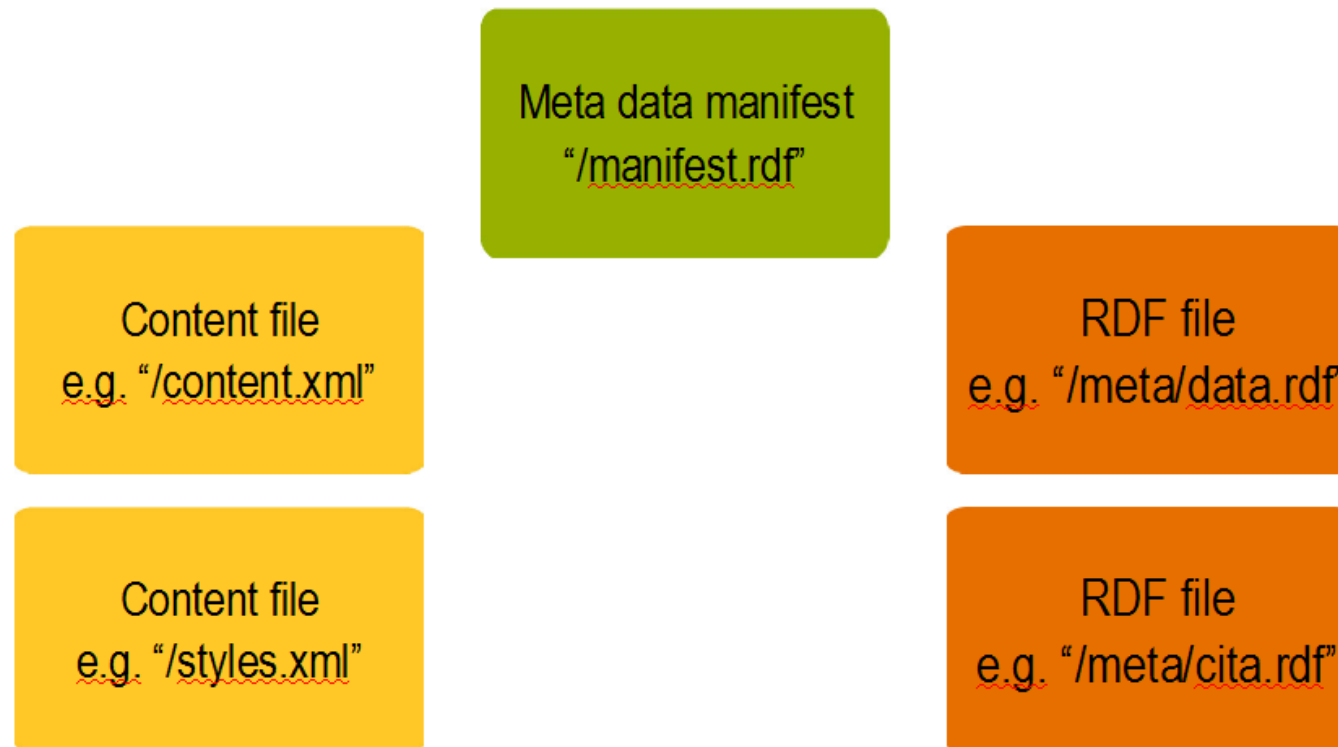
- > W3C Resource Description Framework (RDF)
  - Triples: **subject + predicate + object**



Based on <http://www.w3.org/2000/Talks/1206-xml2k-tbl/slide7-0.html>

# ODF METADATA USING W3C RDF STANDARD

- > W3C Resource Description Framework (RDF)
  - Connecting ODF elements with RDF graphs



# ODF METADATA USING W3C RDF STANDARD

- > W3C Resource Description Framework (RDF)
  - In Content Metadata

Content files  
e.g. "/content.xml"

```
<text:p>The doctor's name was  
<text:meta rdfa:about="http://hospital-DB/doctors/ID116"  
          rdfa:property="http://xmlns.com/foaf/0.1/name">  
Dr. J. Franklin</text:meta>
```

# ODF METADATA USING W3C RDF STANDARD

- > W3C Resource Description Framework (RDF)
  - **Metadata Text Field**  
Within paragraph contains any paragraph content
  - Indicates content in control of plugin (e.g. citation plugin  
“According to [2]”)

```
<text:p>According to  
<text:meta-field xml:id="someID">
```



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## ODF COLLABORATION

# ODF COLLABORATION - REQUIREMENTS

- > Multiple user
- > Different applications
- > Simultaneous changes

# ODF COLLABORATION - DESIGN (SUBOPTIMAL)

- > Exchanging ODF documents
  - merging changes depends on document size
- > Exchanging ODF XML parts
  - most applications do not use XML at run time
  - XML is hard to merge

# ODF COLLABORATION - DESIGN (OPTIMAL)

- > Start thinking in user changes
  - abstraction from ODF applications & Office format
  - abstraction by **logical blocks** changed by users
  - refer to **logical blocks** by their position
  - 3 types of changes: add / delete / modify
  - document is equivalent to sequence of changes

# ODF COLLABORATION

## - FUTURE IMPROVEMENTS

- > ODF application conformance testing
  - Load + save => load + **changes** + save
- > Simplicity
  - merge efficiency
  - abstraction from ODF format & application's model
- > New Features
  - request changes to read-only document (signed contract / e-book)
  - no overwrite of unknown features during saving by merging changes
  - overlapping changes possible
- > Single design possible
  - change-tracking & undo/redo & history

# REFERENCES

- > [ODF Guidance from UK Government](#)
- > [Apache ODF Toolkit Project](#)
- > [OpenDocument Metadata Use Cases and Requirements Document](#)
- > [OASIS ODF SC Advanced Document Collaboration SC](#)
- > [ACM Paper “Interoperable Office Collaboration”, PDF](#)
- > [Change-Tracking Comparison: ODF 1.2 & Office 2013](#)
- > [Example of ODF Document as JSON Changes](#)

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