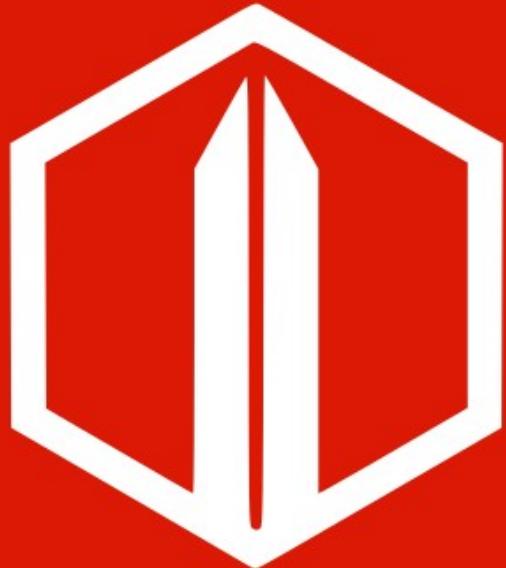




New ODF Toolkit from TDF



Svante Schubert

TIRANA | 11 Sept. 2019

ODF Toolkit? What for?

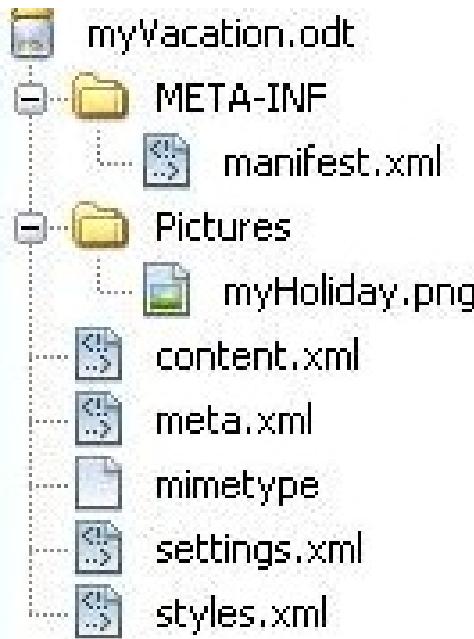


800 pounds sculpture (was stolen) from Healdsburg, Calif.

ODF Toolkit

ODF Basic

- ODF document is a ZIP:



- ODF Package
(part 3)
- ODF XML
(part 1)

- OASIS ODF specification ==
„Blueprint“ or „Cooking Recipe“



ODF Validator

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:

[Browse...](#) list.odt

[Validate](#)

[Reset](#)

This service is provided to you by [The Document Foundation](#)



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.

ODF Toolkit

Use Cases

- Online Validator (or via commandline)
<https://odfvalidator.org/>
- Running XSLT directly on ODF document (no unzipping XML)

ODF Toolkit

Use Cases

- Editing an ODF document (e.g. Cloud)
 - by API without Layout
 - for Data Extraction (e.g. Translation)
 - for Data Insertion (e.g. by Database)
- Collaboration on Documents (ODT)
 - backend for Web Offices (ODT)
(starting with ver 1.0.0)

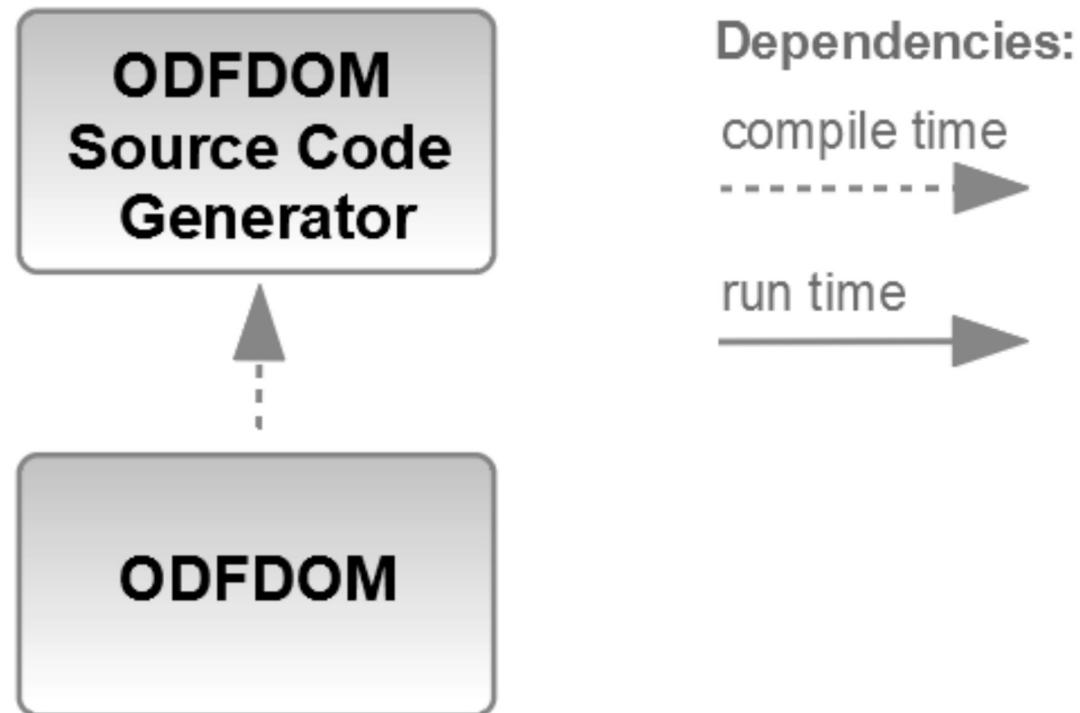
The Architecture of ODF Toolkit



Alcazaba of Almería

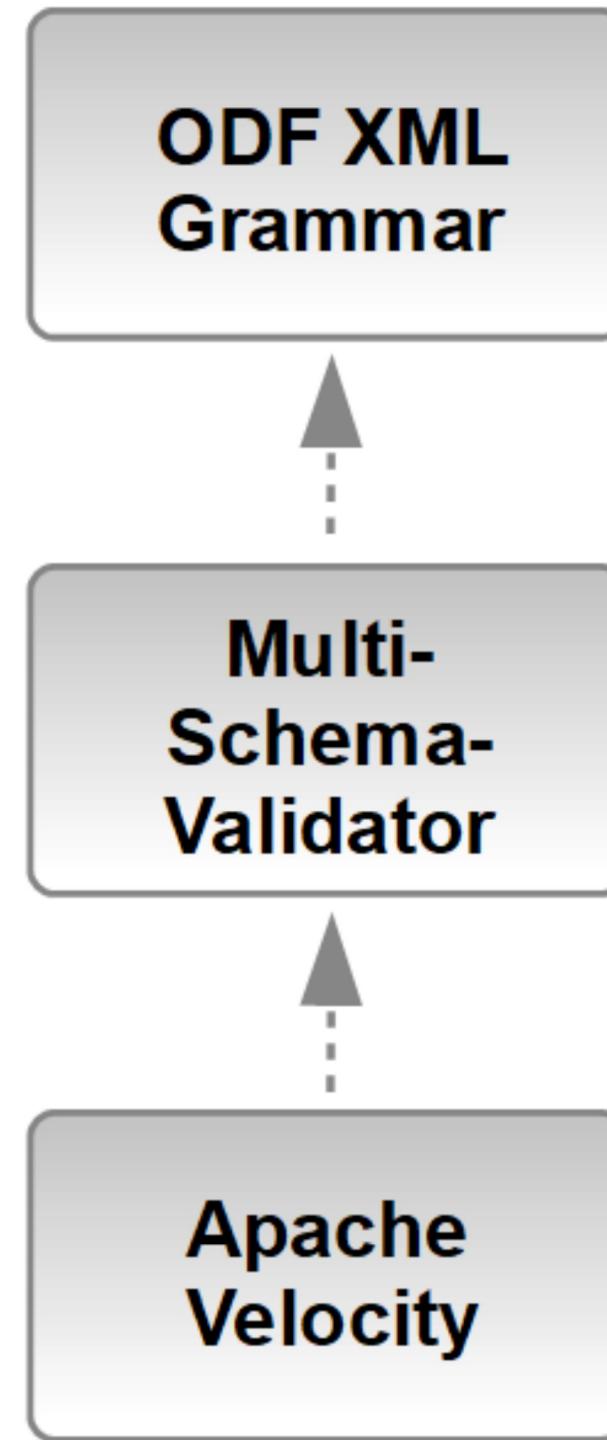
ODF Toolkit

Architecture



ODFDOM Source Code Generator

Architecture



OASIS XML grammar:
~18000 text lines
~600 XML elements
~1200 XML attributes

XML Validator -
reads many
XML grammars

template engine
generating sources
by text templates
having a context
with Java access

ODF GRAMMAR - TEXT

HARD TO ANSWER



Can a
paragraph **<text:p>**
be nested
in a valid document?



ODF 1.2 XML:

- 598 **XML Elements**
 - 1300 **XML Attributes**
- >18k lines

ODF GRAMMAR - TEXT HARD TO READ



```
<define name="table-table">
  <element name="table:table">
    <ref name="table-table-attlist"/>
    <optional>
      <ref name="table-title"/>
    </optional>
    <optional>
      <ref name="table-desc"/>
    </optional>
    <optional>
      <ref name="table-table-source"/>
    </optional>
    <optional>
      <ref name="office-dde-source"/>
    </optional>
    <optional>
      <ref name="table-scenario"/>
    </optional>
    <optional>
      <ref name="office-forms"/>
    </optional>
    <optional>
      <ref name="table-shapes"/>
    </optional>
    <ref name="table-columns-and-groups"/>
    <ref name="table-rows-and-groups"/>
    <optional>
      <ref name="table-named-expressions"/>
    </optional>
  </element>
</define>
<define name="table-columns-and-groups">
  <oneOrMore>
```

ODF 1.2 XML:

- 598 XML Elements
- 1300 XML Attributes
- >18k lines

ODF GRAMMAR - TEXT

HARD TO READ

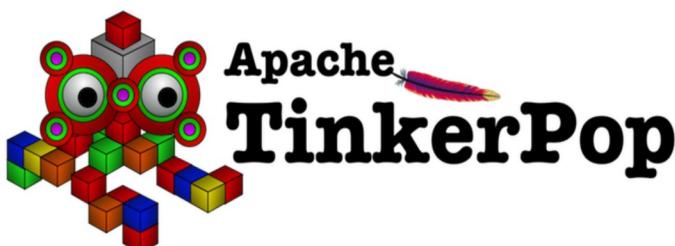
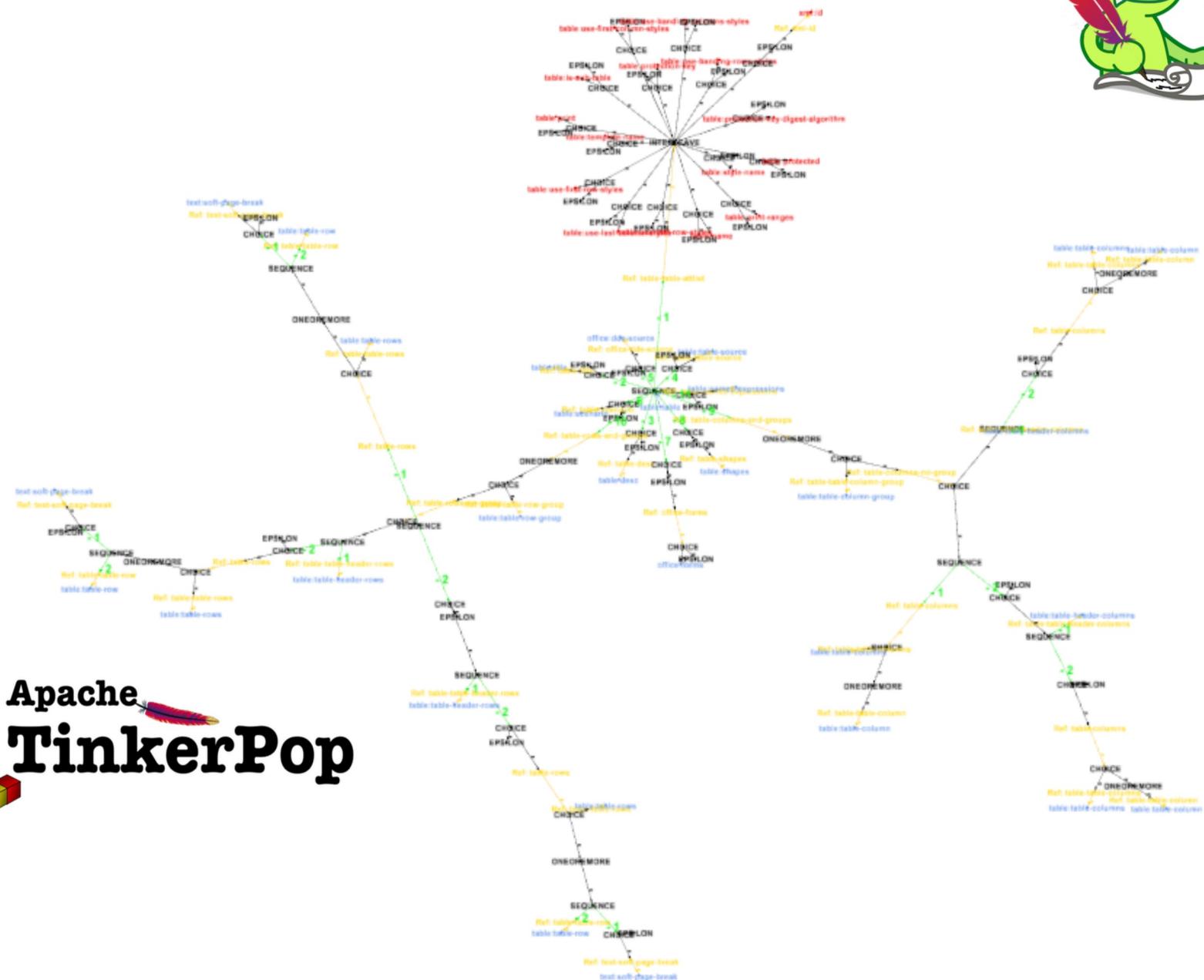


```
<define name="table-table">
  <element name="table:table">
    <ref name="table-table-attlist"/>
    ...
    <optional>
      <ref name="text-soft-page-break"/>
    </optional>
  <ref name="table-table-row"/>
```

- ODF 1.2 XML:**
- **598 XML Elements**
 - **1300 XML Attributes**
- >18k lines

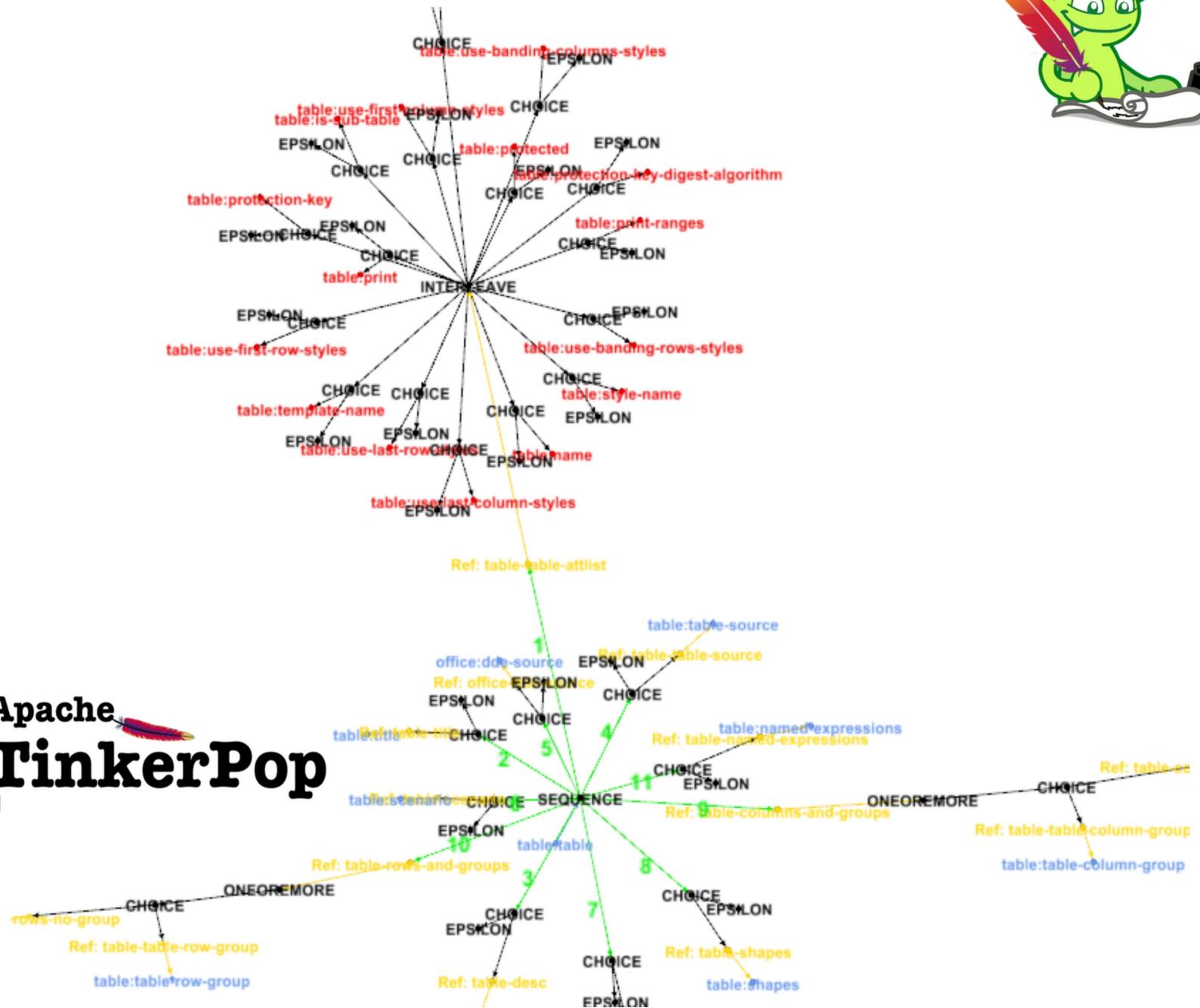
ODF GRAMMAR - GRAPH

TABEL ELEMENT WITH CHILDREN



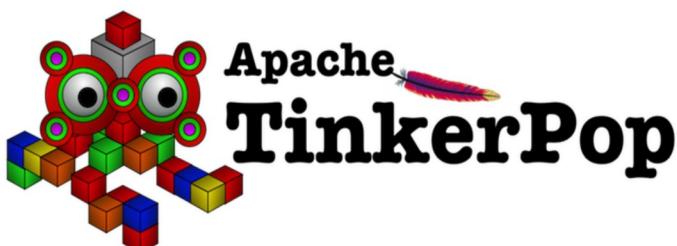
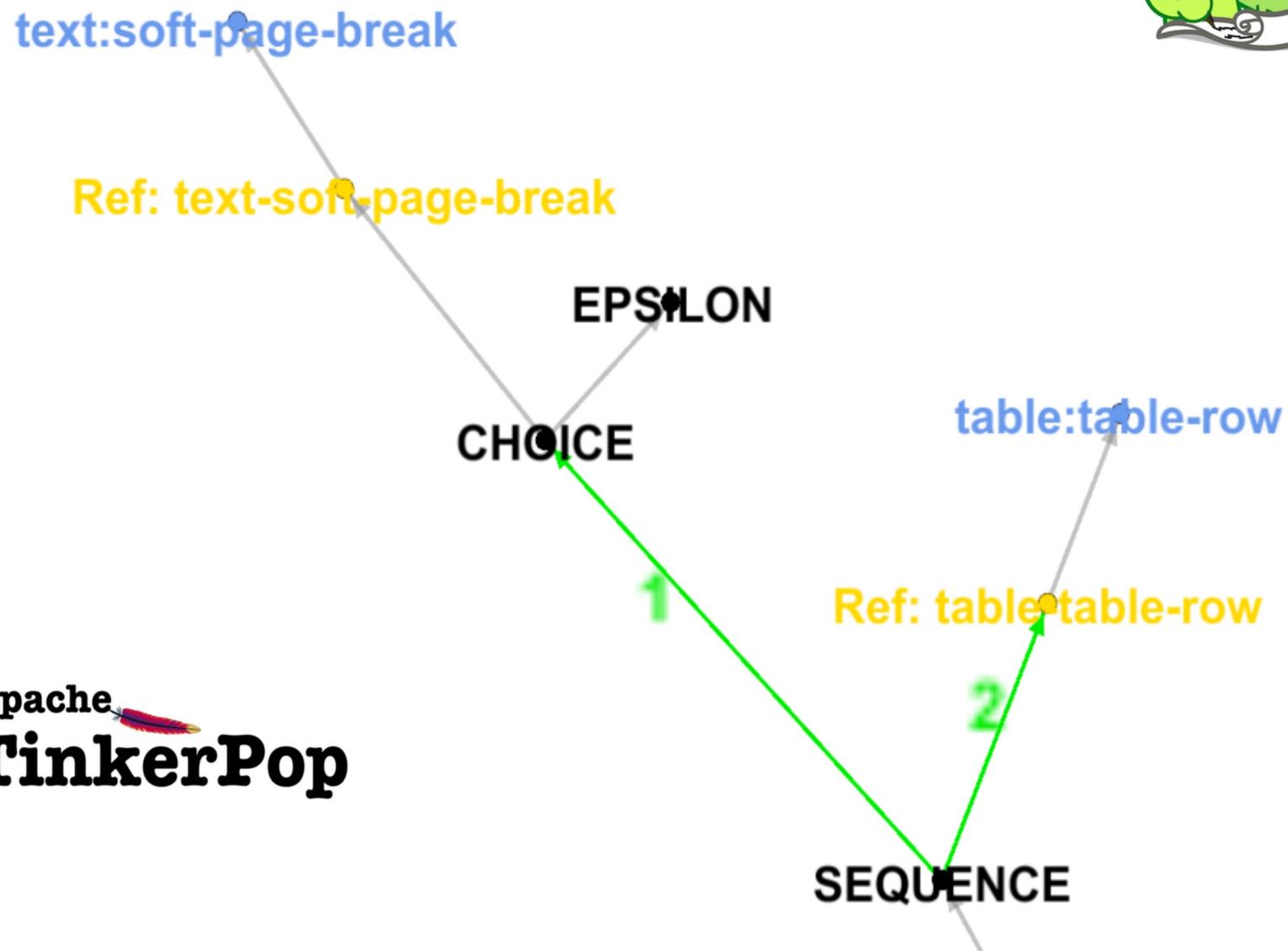
ODF GRAMMAR - GRAPH

TABEL ELEMENT WITH CHILDREN



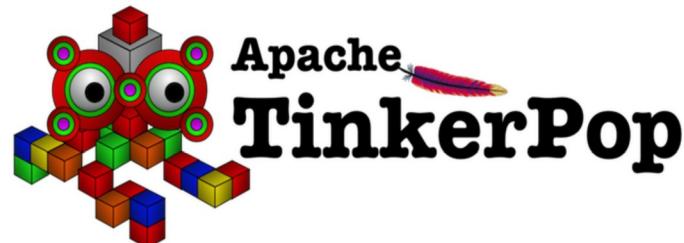
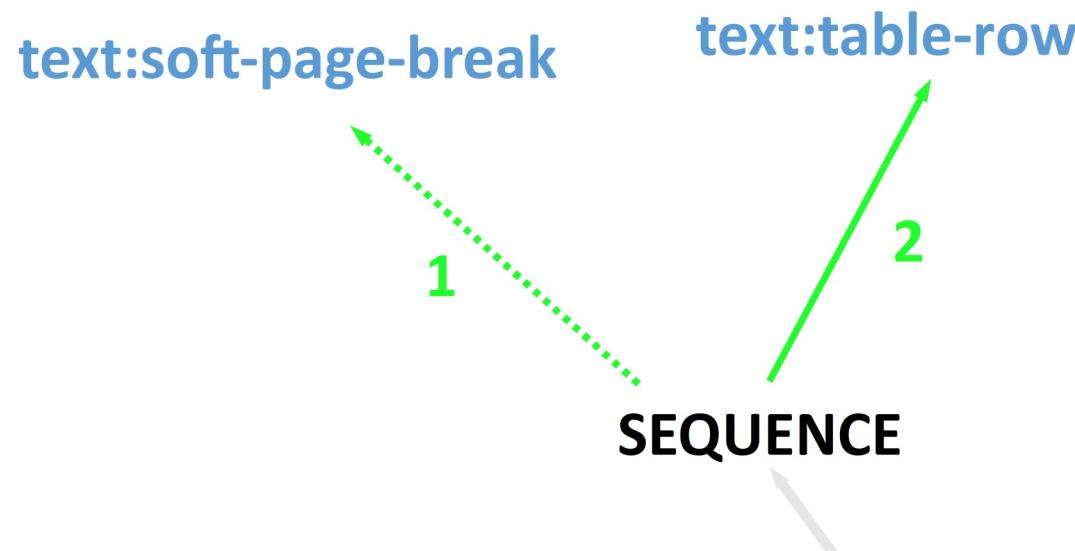
ODF GRAMMAR - GRAPH

HARD TO READ



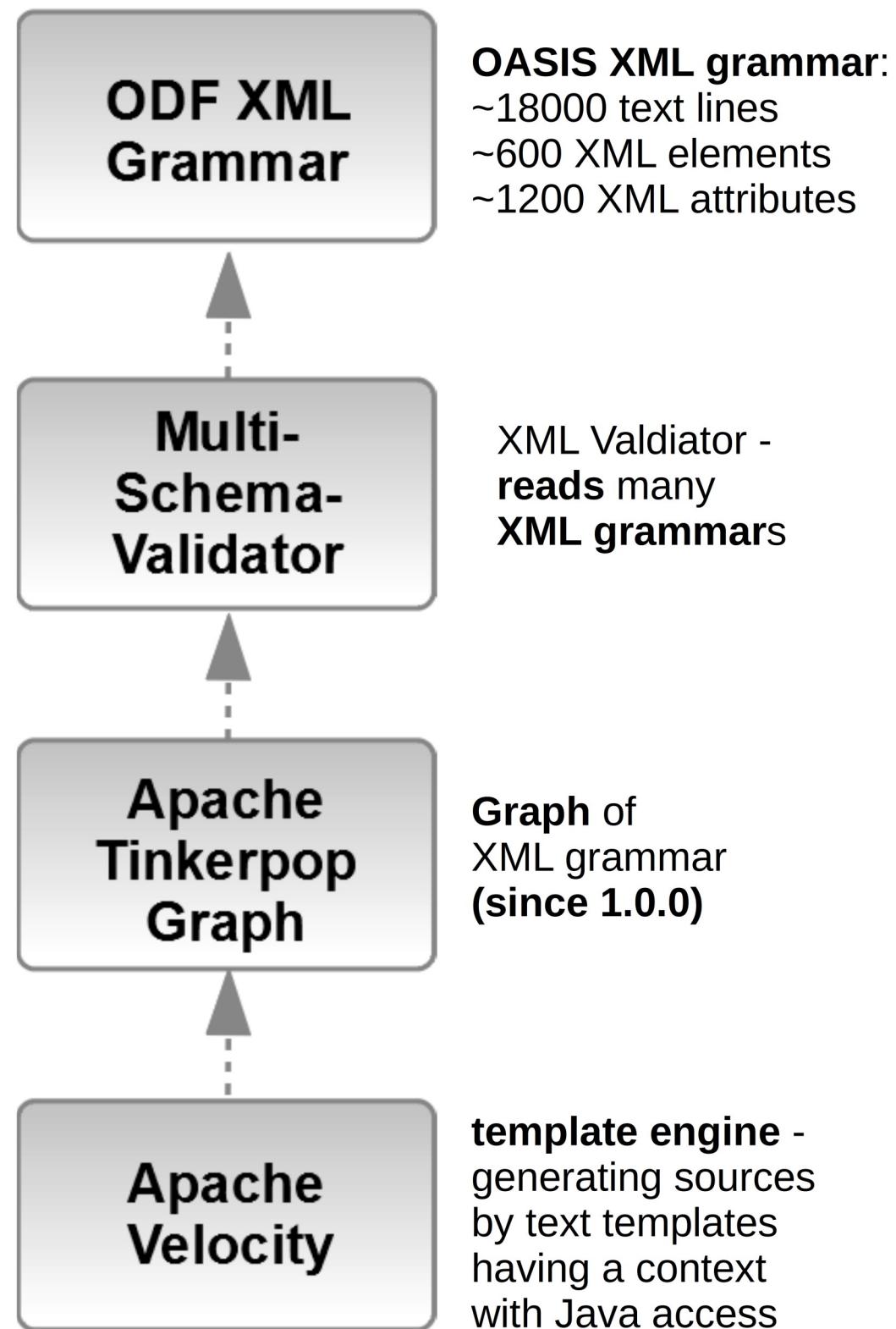
ODF GRAMMAR - GRAPH

SIMPLIFIED



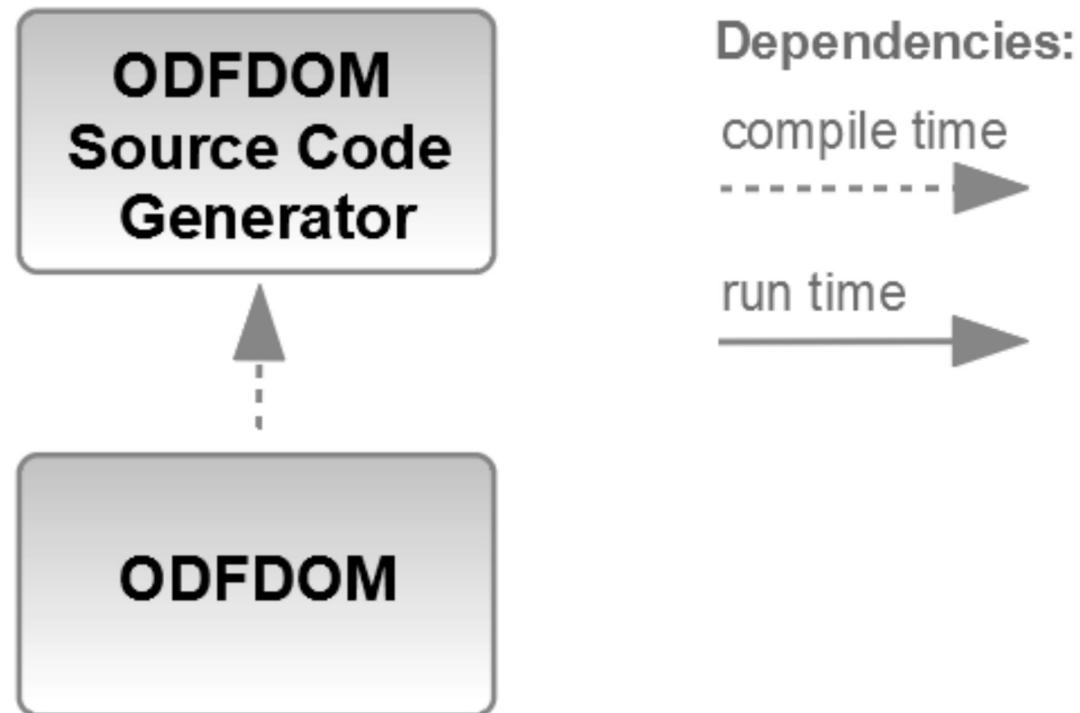
ODFDOM Source Code Generator

Architecture



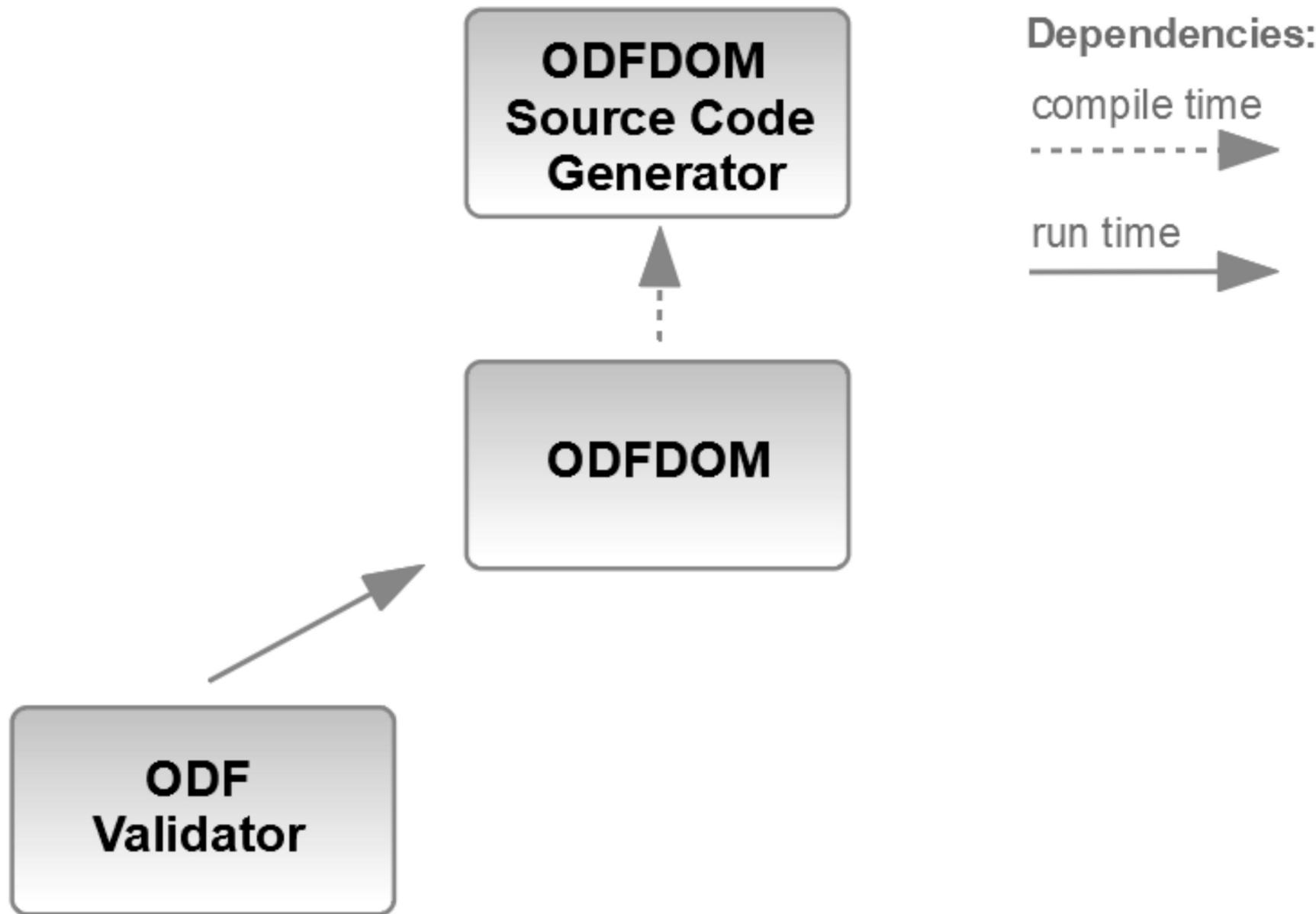
ODF Toolkit

Architecture



ODF Toolkit

Architecture



Dependencies:

compile time

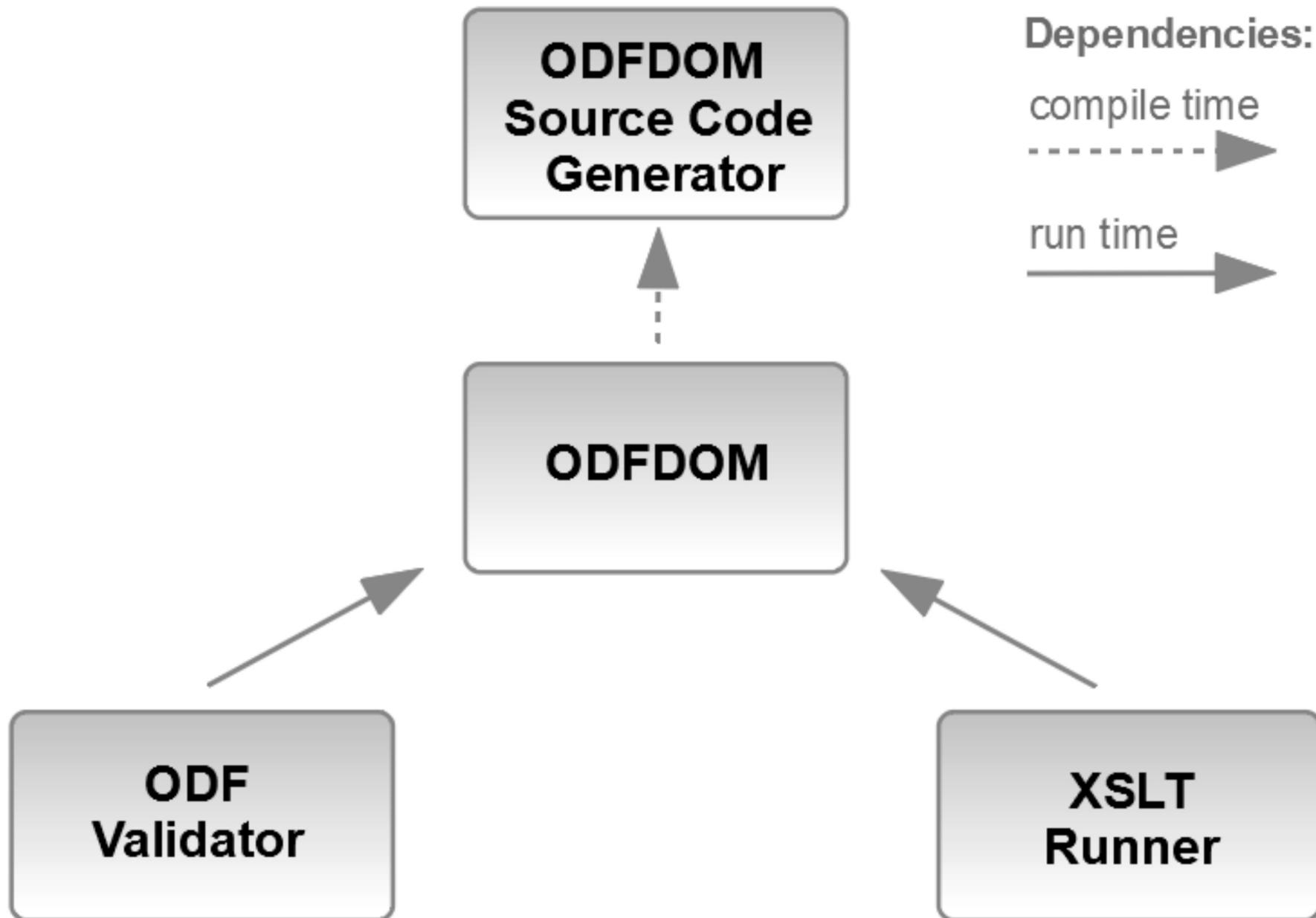


run time



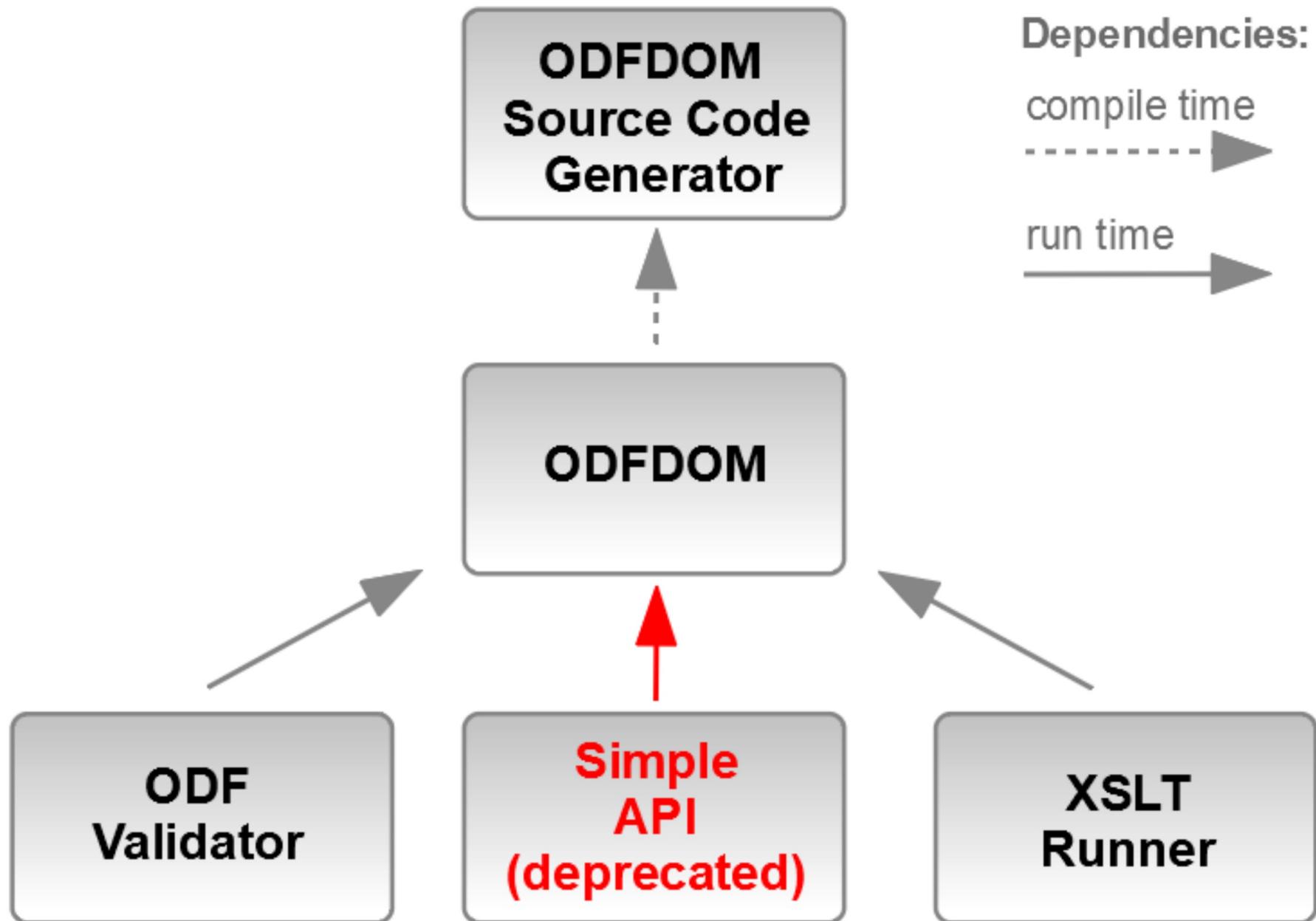
ODF Toolkit

Architecture



ODF Toolkit

Architecture



ODFDOM

Architecture

3.

ODF User API

ODF Semantic Layer

2.

ODF DOM API

ODF XML Layer

1.

ODF Package API

ODF Package Layer

ODFDOM

Architecture (in spe)

3.

ODF User API

public

ODF Semantic Layer

2.

ODF DOM API

private

ODF XML Layer

1.

ODF Package API

ODF Package Layer

Document Collaboration from 80ths

Design based on former Requirements

- In the 80ths: **One person on single machine**
- Exchanging document by **floppy disc or modem**

Document Collaboration Today

New Requirements

- With Smartphones **everyone has multiple machines** (Smartphone & PC/Laptop)
- **Exchanging documents** faster via Internet, Mail, Dropbox, etc. will not solve the merge problem!
- **Key Collaboration Question:**
What have you changed?

Document Collaboration Idea

New Change Design

- Allow **collaboration functionality** similar as software developers have with repositories
- **Exchanging changes (commits)** instead of **documents (repositories)** via Internet, Mail, Dropbox, etc.
- **Solving Key Question:**
What have you changed?

Interoperable Collaboration

Exchanging ODF Changes



ODF Application

ODF™ 2nd paragraph new



ODF Application



Google Docs

ODF Application



Interoperable Collaboration

Exchanging ODF Changes



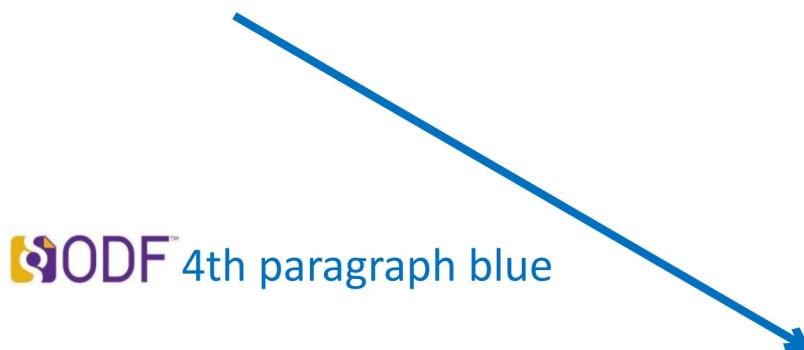
ODF Application



ODF™ 4th paragraph blue



ODF Application



ODF™ 4th paragraph blue

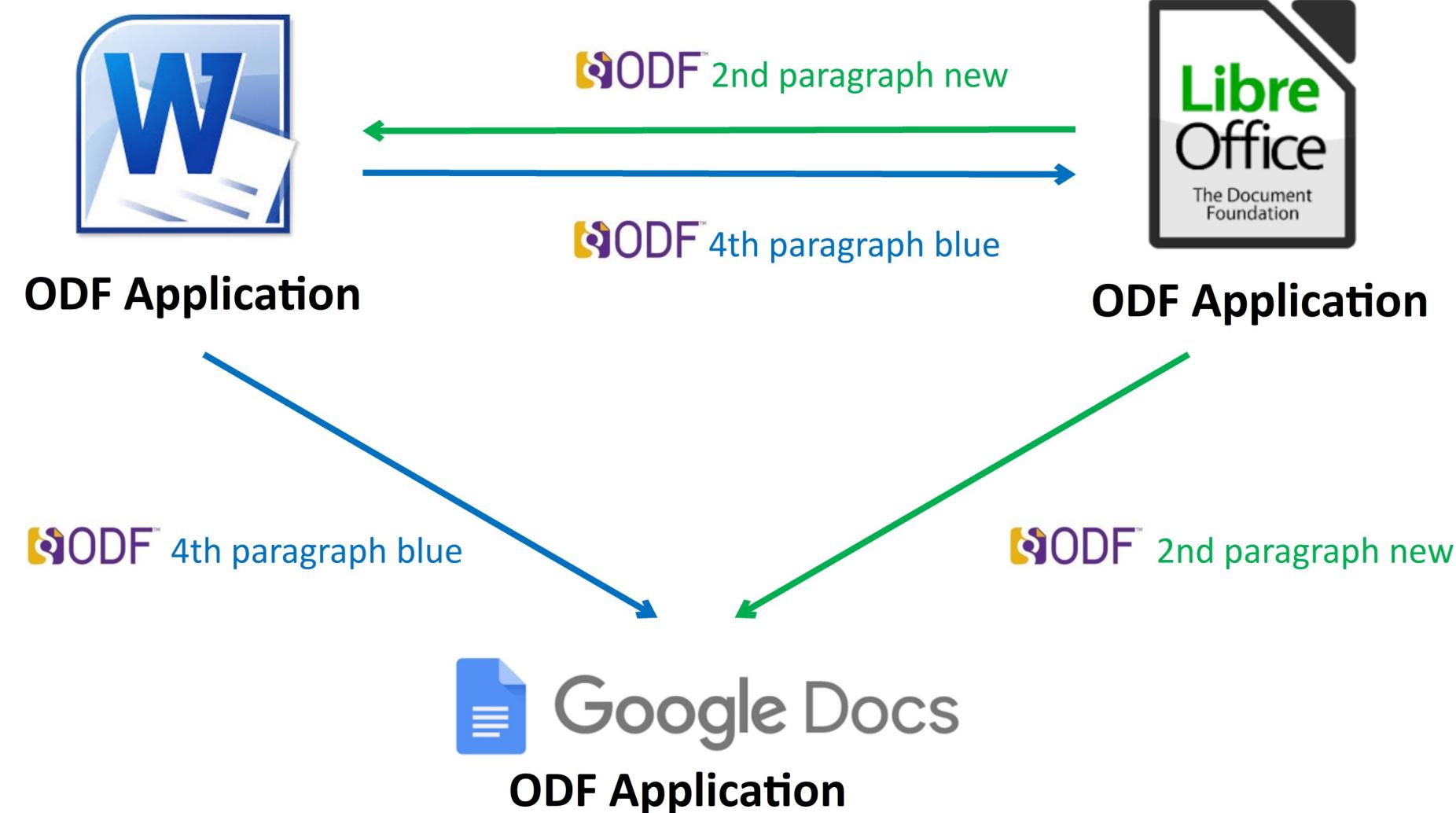


Google Docs

ODF Application

Interoperable Collaboration

Exchanging ODF Changes



ODT ⇄ Changes

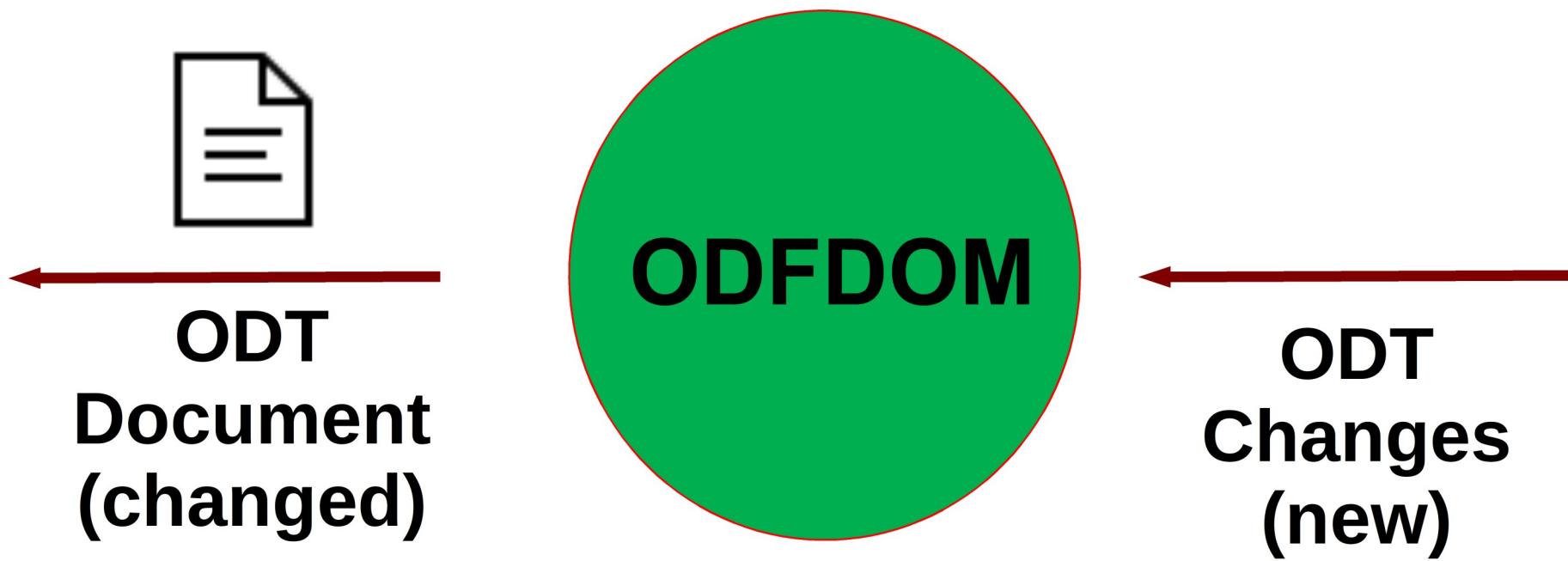
sponsored by PrototypeFund



See <https://github.com/svanteschubert/odftoolkit/tree/odf-changes/>

Soon <https://github.com/tdf/odftoolkit> (1.0.0-beta)

ODT \leftrightarrow **Changes** **sponsored by PrototypeFund**



See <https://github.com/svanteschubert/odftoolkit/tree/odf-changes/>

Soon <https://github.com/tdf/odftoolkit> (1.0.0-beta)

ODF Toolkit - ODFDOM

Upcoming Goals

- **Prototype of Collaboration of Editors based on ODF Changes (ODFDOM)**
- **WYSIWYG Editors with different feature set editing same ODT Document:**
 - LibreOffice (ODT)
 - Emacs (Text)
 - CKEditor 5 (HTML 5)

ODF Toolkit – CKEditor5

Upcoming Work

- Build your CKEditor5 example:

```
git clone -b stable https://github.com/ckeditor/ckeditor5-build-classic.git  
npm install  
npm run build
```

- Open local editor in browser (& add eventlistener from notes)

```
./sample/index.html
```

ODF Toolkit – CKEditor5

Demo results in Chrome console

- enventinfo[object Object] args[{"baseVersion":12,"position":{"root":"main","path":[0,6],"stickiness":"toNone"},"nodes":[{"data":"X"}],"shouldReceiveAttributes":true,"__className":"InsertOperation"}]
- index.html:48 enventinfo[object Object] args[{"baseVersion":13,"range":{"start":{"root":"main","path":[0,3],"stickiness":"toNext"}, "end":{"root":"main","path":[0,7], "stickiness":"toPrevious"}}, "key":"italic", "oldValue":null, "newValue":true, "__className":"AttributeOperation"}]

ODF Toolkit

Resources

- **Website (in progress):**
<https://odftoolkit.org/>
<https://tdf.github.io/odftoolkit/docs/> (latest)
- **Sources:**
<https://github.com/tdf/odftoolkit>
- **Online Validator:**
<https://odfvalidator.org/>
- **ODF Specification**
<http://docs.oasis-open.org/office/v1.2/os/>