New ODF Toolkit
from
the Document Foundation

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LibreOffice Asia
Conference 2019 Tokyo

ODF Toolkit?
What for?

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

https://odfvalidator.org

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

LibreOffice
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.

Impressum (Legal Info) | Privacy Policy

ODF Toolkit

Use Cases

- Online Validator (or via commandline)
  https://odfvalidator.org/

- Running XSLT directly on ODF document

- Editing an ODF document in the Cloud
  - By API without Layout
  - For Data Extraction (e.g. Translation)
  - For Data Insertion (e.g. by Database)

- Collaboration on Documents (ODT)
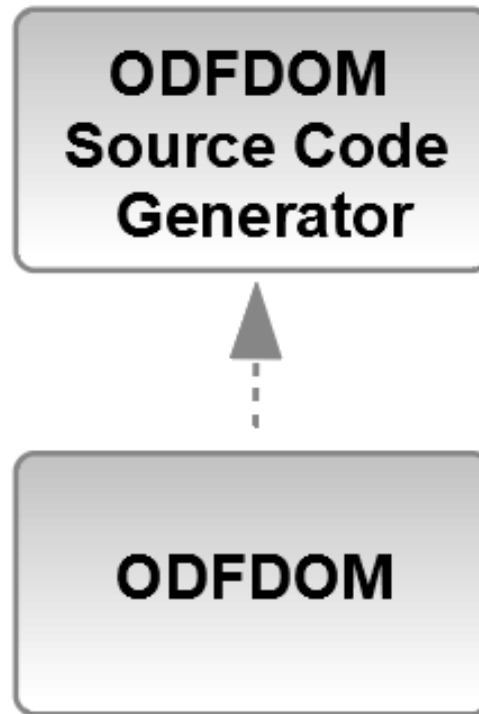 - Backend for Web Offices (ODT)

The Architecture of ODF Toolkit

Tōshōdai-Tempel (Tōshōdai-ji) in Nara
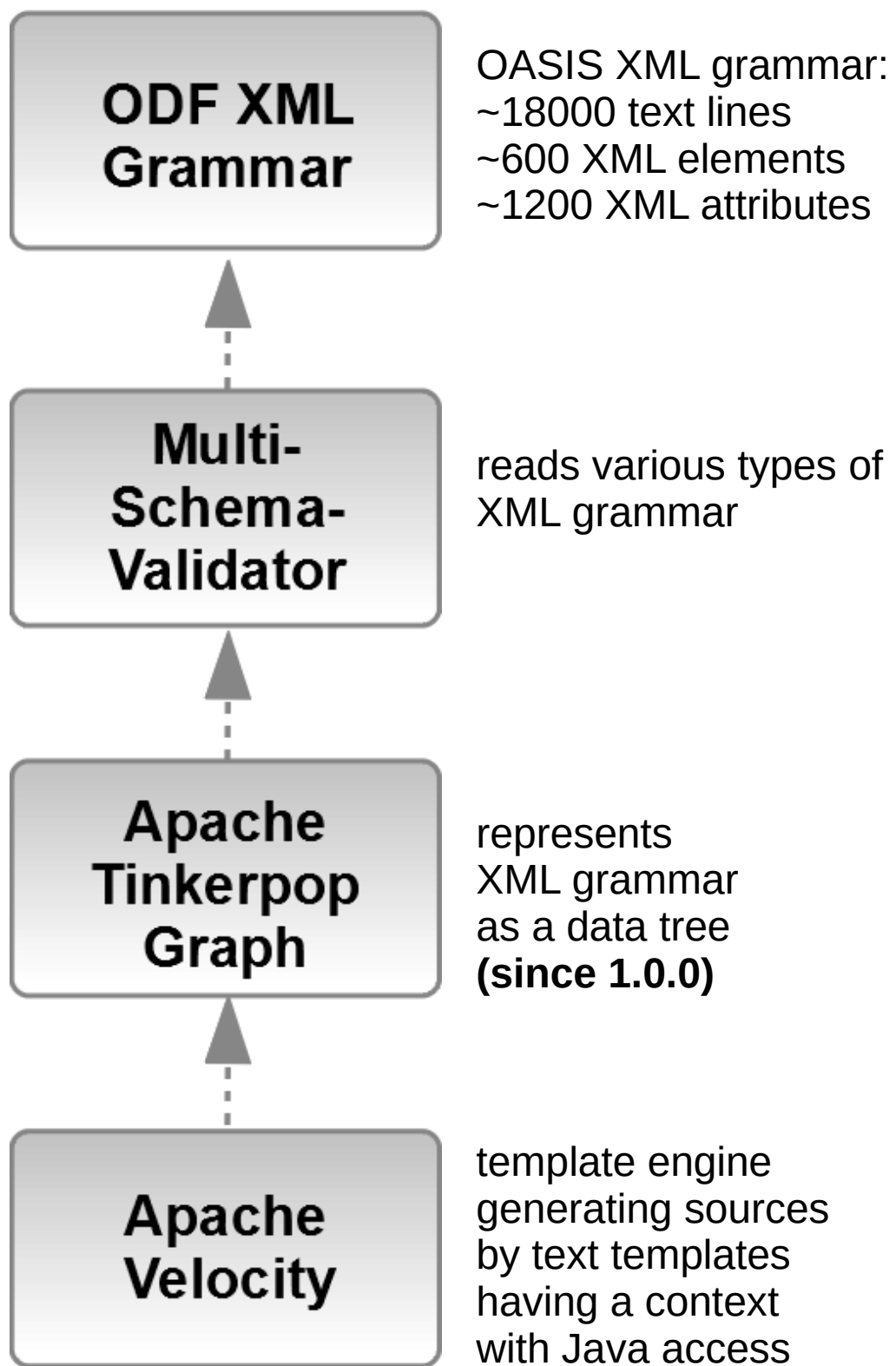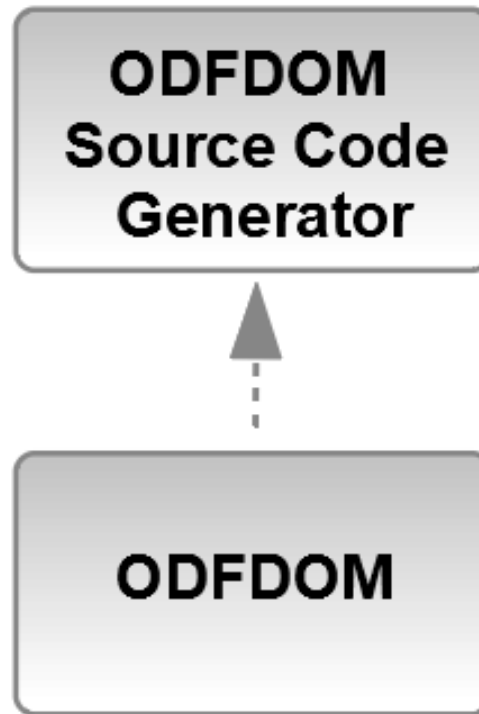
ODF Toolkit
Architecture

Generator
Architecture

ODF XML Grammar

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

Multi-Schema-Validator

reads various types of XML grammar

Apache Tinkerpop Graph

represents
XML grammar
as a data tree
(since 1.0.0)

Apache Velocity

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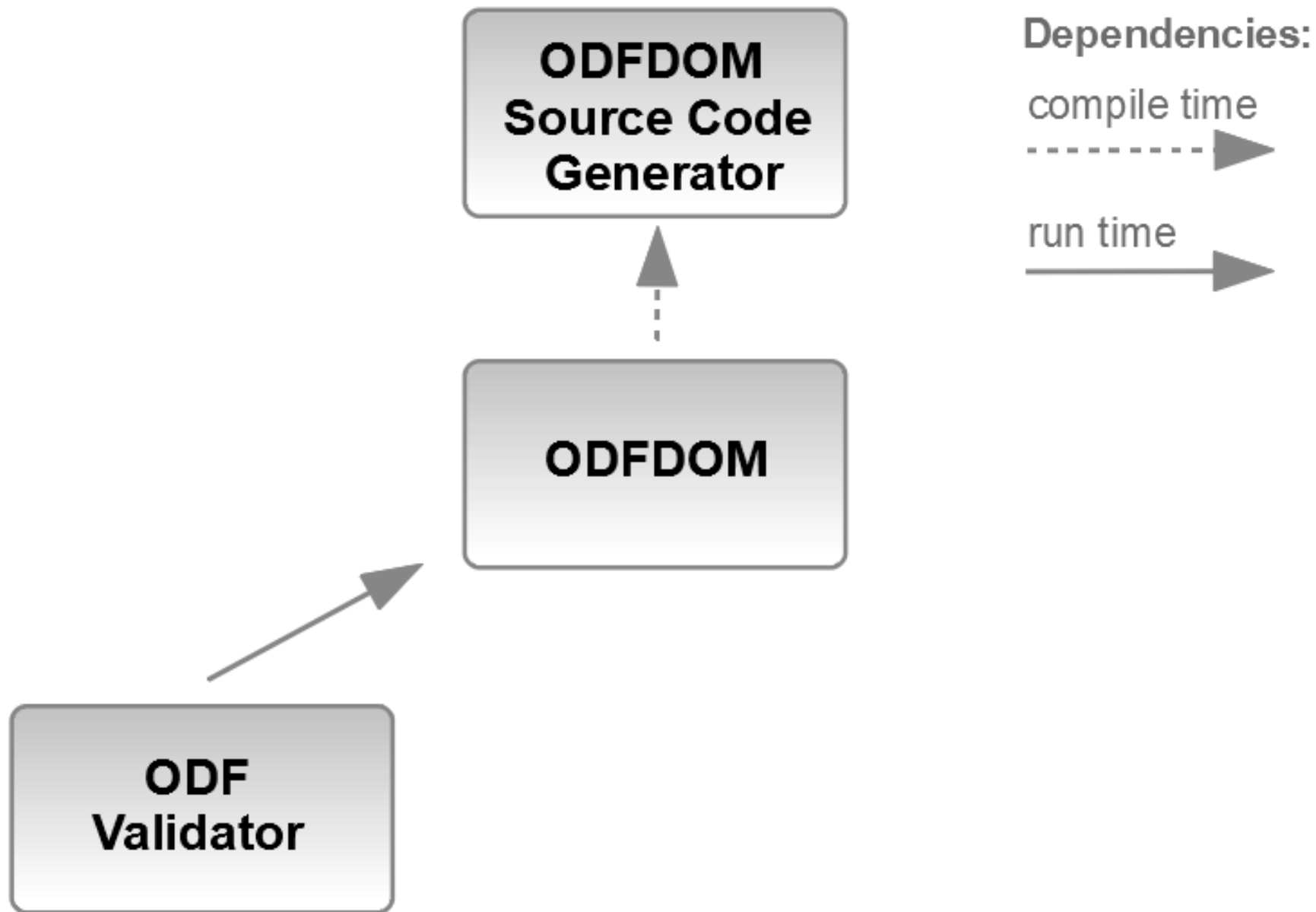generating sources
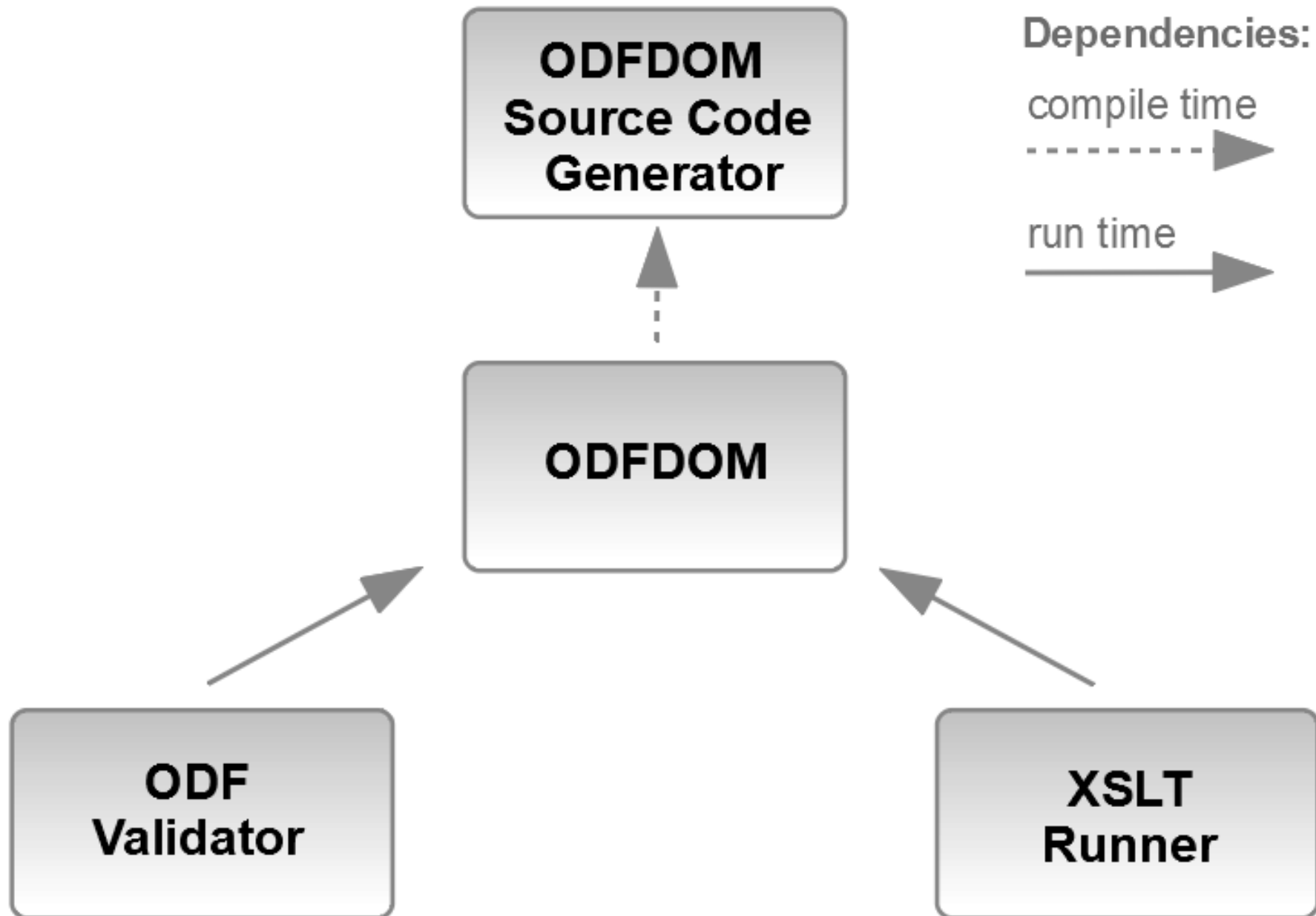by text templates
having a context
with Java access

ODF Toolkit
Architecture

ODF Toolkit
Architecture

ODF Toolkit
Architecture

ODFDOM
Source Code
Generator

ODFDOM

ODF
Validator

XSLT
Runner

Dependencies:
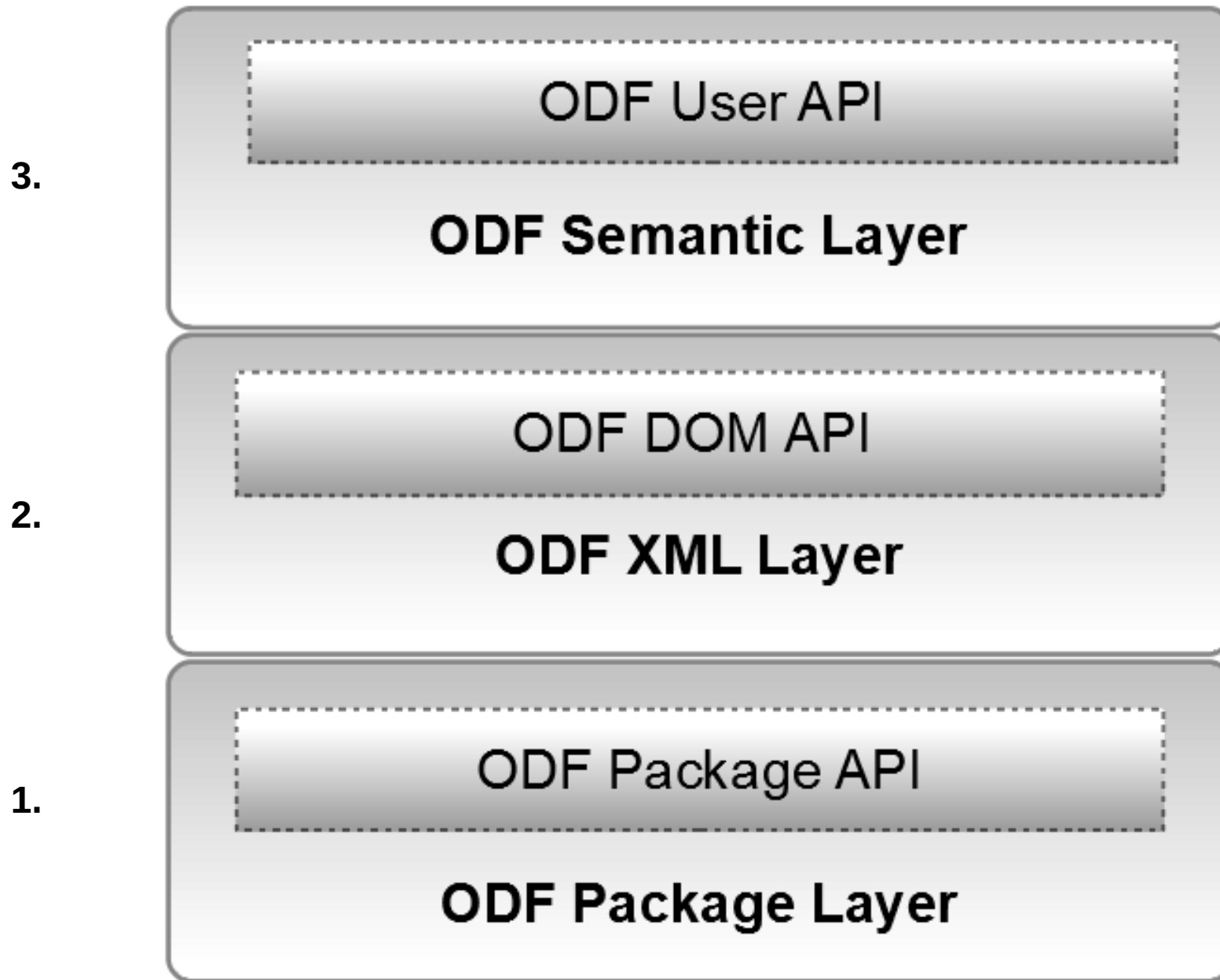
compile time

run time
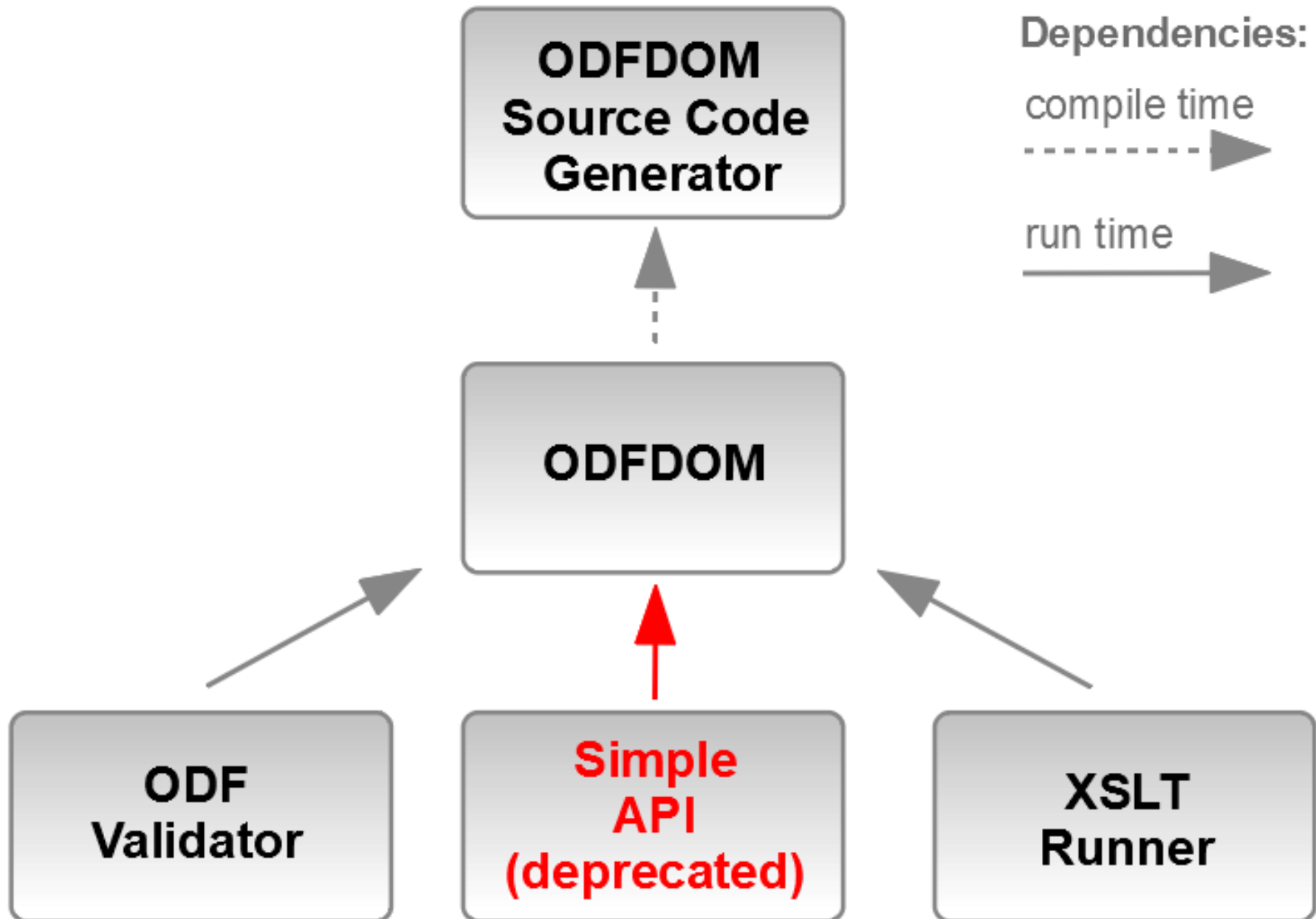
ODF Toolkit
Architecture

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 — ODF Semantic Layer | **public**

2. | ODF DOM API — ODF XML Layer | **private**

1. | ODF Package API — ODF Package Layer |
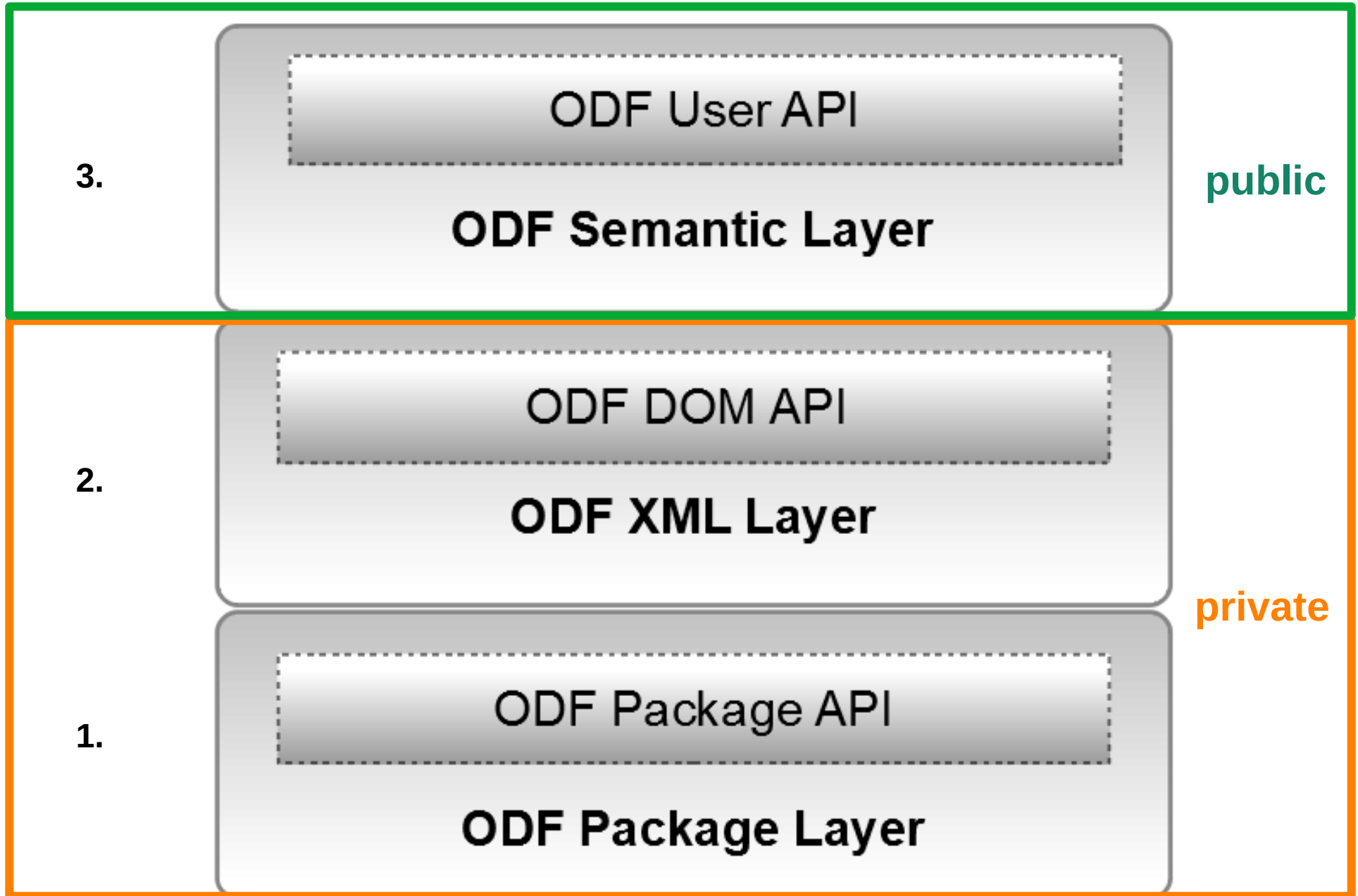
Document Collaboration from 80ths
Design based on former Requirements

- 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.

- **<u>Solving Key Question</u>**: What have you changed?

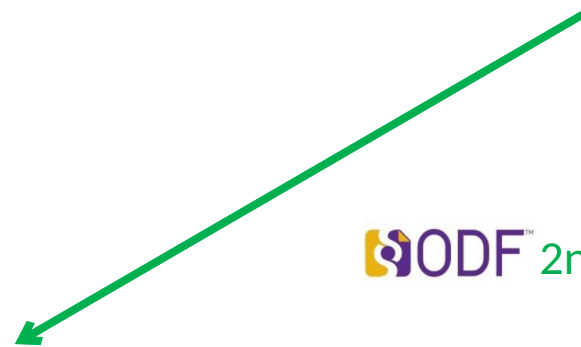# Interoperable Collaboration

Exchanging ODF Changes

ODF Application

ODF 2nd paragraph new

ODF Application

ODF 2nd paragraph new

ODF Application

Interoperable Collaboration
Exchanging ODF Changes

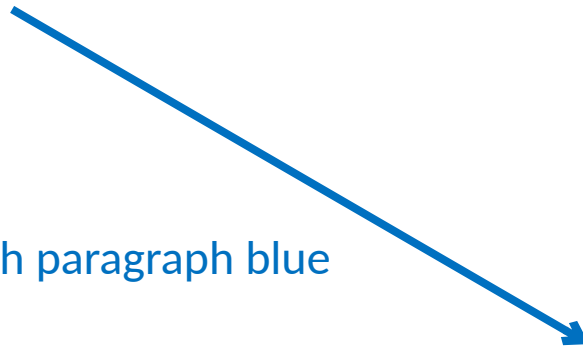**ODF Application**

ODF 4th paragraph blue
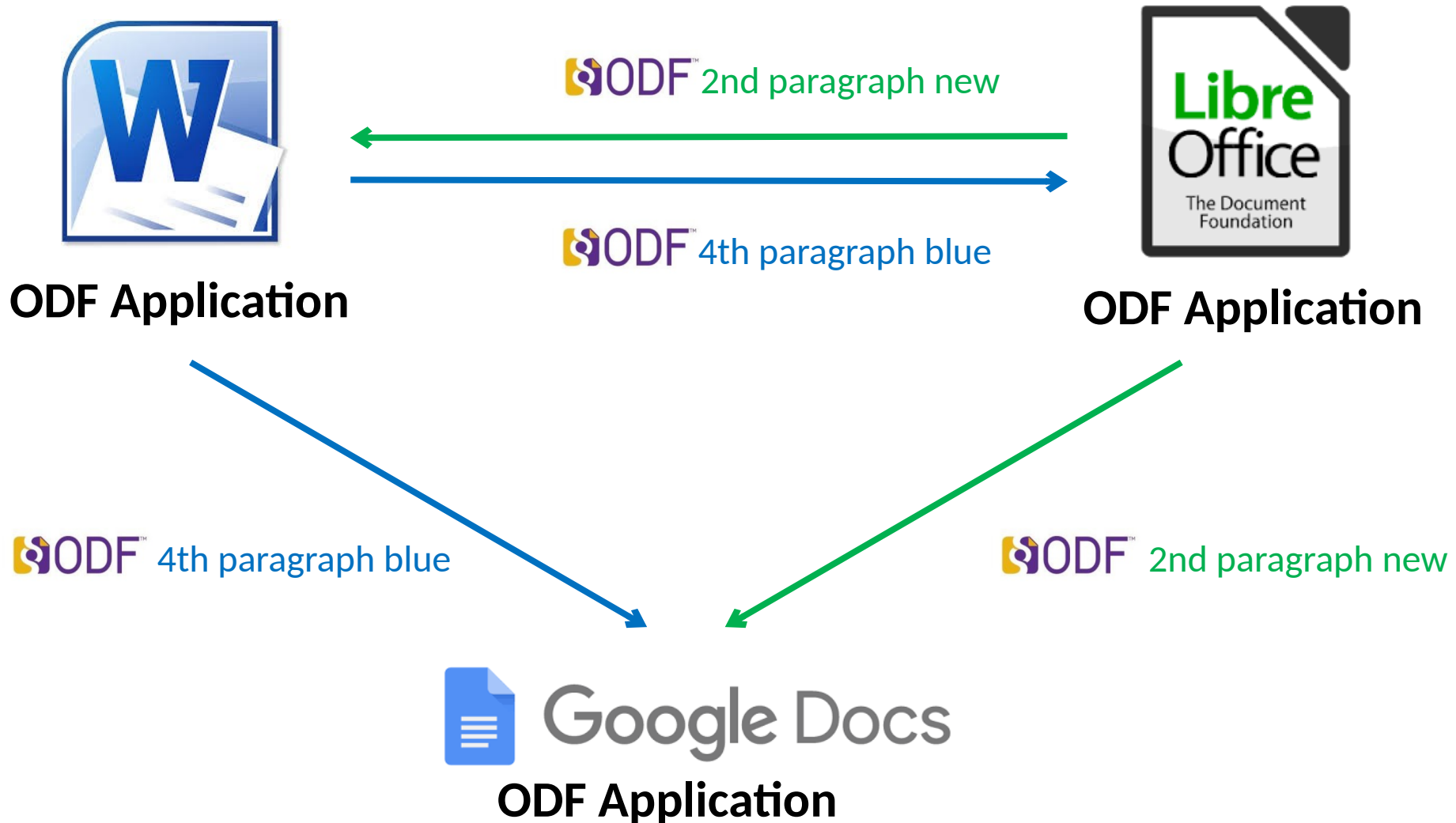
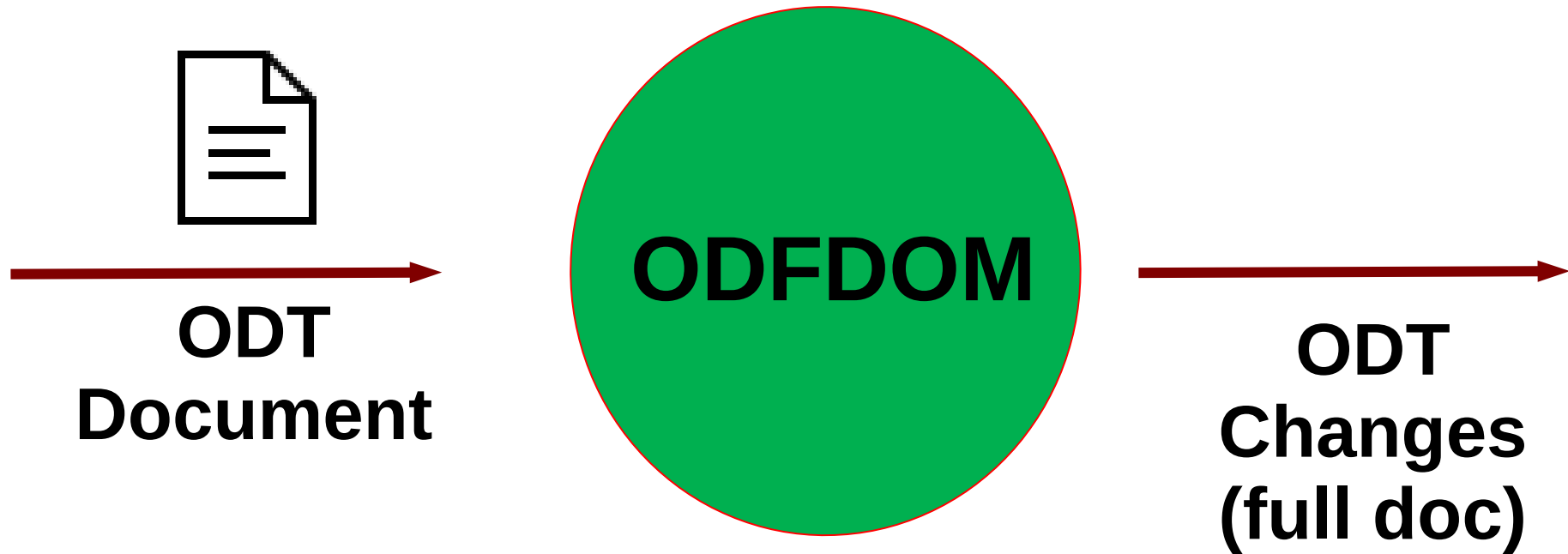**ODF Application**

ODF 4th paragraph blue

ODF Application
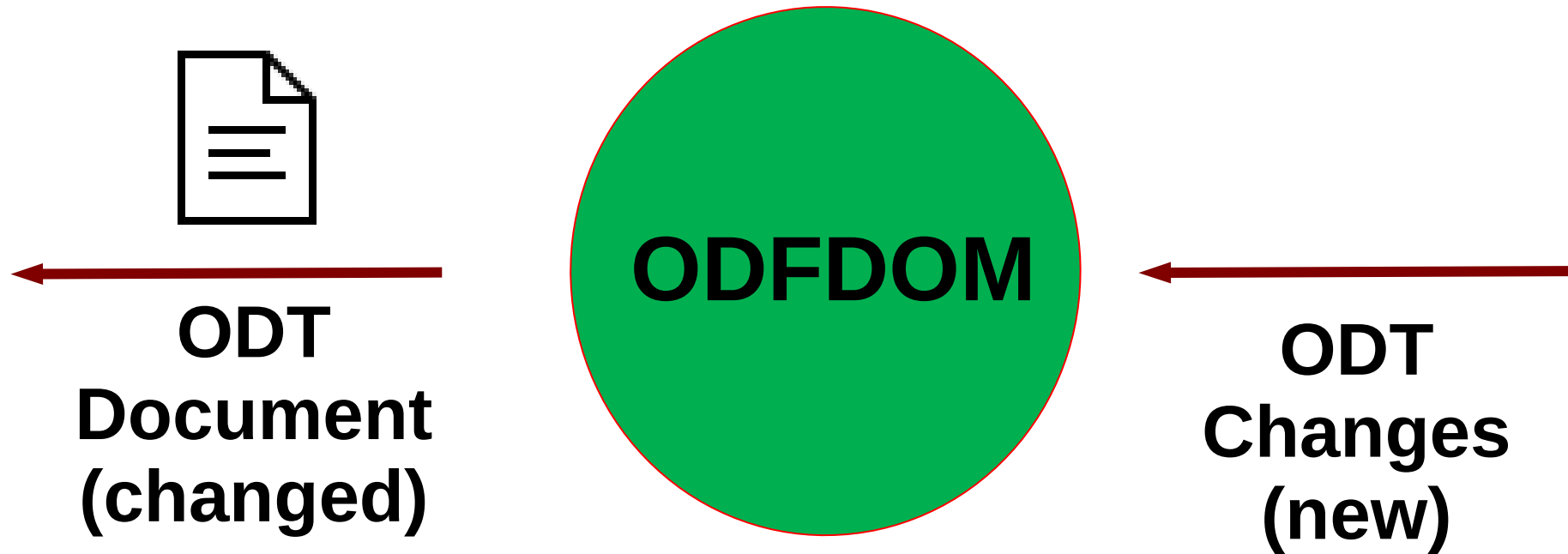
Interoperable Collaboration

Exchanging ODF Changes

ODF 2nd paragraph new

ODF 4th paragraph blue

ODF Application

ODF Application

ODF 4th paragraph blue

ODF 2nd paragraph new

ODF Application

ODT ⇔ Changes
sponsored by PrototypeFund

ODT
Document

ODFDOM

ODT
Changes
(full doc)

ODT ⇔ Changes
sponsored by PrototypeFund

ODFDOM

ODT Document (changed)

ODT Changes (new)

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
Resources

- **Website (in progress):**
  https://odftoolkit.org/

- **Sources**:
  https://github.com/tdf/odftoolkit

- **Online Validator:**
  https://odfvalidator.org/