



Collabora Productivity

# Level 3 support case studies

By Andras Timar  
Collabora Productivity

@CollaboraOffice +Libreoffice-from-collabora

# About Collabora

## **Collabora Ltd.**

- Leading Open Source Consultancy
- 10 years of experience. 90+ People.

## **Collabora Productivity Ltd.**

- Dedicated to Enterprise LibreOffice (Collabora Office)
- Provides Level-3 support (code issues)
- Architects of LibreOffice Online

# Technical support levels

- Level 1 support – basic support and troubleshooting
- Level 2 support – power user level, configuration issues

**Outsourced to Partner or handled internally by the Customer**

- Level 3 support – resolution of the issue requires fix at the source code level, PTF (program temporary fix) build provided

**Collabora Productivity Ltd.**



# L3 issue life cycle

- Confirmation, first evaluation
  - Depending on SLA, typically within 24h
- Fix in source code, PTF build provided
  - Depending on complexity and urgency, few days or weeks
- Fix in next **Collabora Office** release for all **Collabora customers**
  - Up to 1 month
- Fix in upstream LibreOffice release for everyone
  - **Up to 6 months!**



Collabora Productivity

# Collabora Office in SEHSCT\*

\* South Eastern Health and Social Care Trust



# Project goals and expectations

# Project background



- In 2014/15 the HSC agreed a new Enterprise Agreement with Microsoft for all Trusts which covered a range of software but largely excluded Microsoft Office
- Due for renewal in 2018 and spend estimated up to £60m for HSC
- Microsoft license per user is £145 per year

## Cost saving

- In June 2015 Crown Commercial Services agreed an MOU with Collabora Productivity Ltd. permitting all UK public sector organisations to install Collabora GovOffice
- Annual subscription for Collabora GovOffice: £39,000 for 6,500 users
- Annual Level 3 Code Support Contract: £20,000
- Total cost: **£59,000**

### Compare to:


- MS licence per year:  $£145 \times 6,500 \text{ users} = \text{£}942,500$ 
  - Without Level 3 Code Support Contract

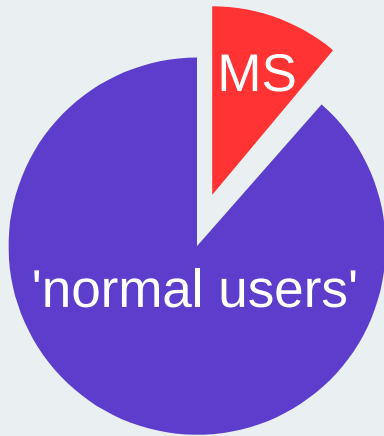


# Collabora GovOffice – reducing risk


- Backed by a reputable UK company – Collabora
- Largest Group of Certified LibreOffice Developers anywhere
- Long term support
- Helpdesk / OTRS issue tracker / SLA
  - Issues are acknowledged and fixed in a timely manner
- Product management interaction
  - Weekly calls to co-ordinate
  - New features:
    - SharePoint lists, Watermarks, Writer as Mail Merge Data Source, etc.

# Our migration advice: *If you only remember one thing ...*

Segment the users 



This can cause a disconnection between areas within an organization.

Everyone installs Collabora Office / GovOffice, to build in compatibility and interoperability. 



Step down the use of proprietary licenses as any enterprise agreement allows.

Crucially, from day 1, all proprietary users set **ODF** as their default save setting and any proprietary format anomalies are handled as part of the migration plan.

## Unfortunately – stuck with MS formats ...

**Reading these recommendation:  
is recommended**

“Migrating to LibreOffice for Enterprises and Public Administrations”

[https://wiki.documentfoundation.org/images/3/3c/EN\\_Migration.pdf](https://wiki.documentfoundation.org/images/3/3c/EN_Migration.pdf)

“LibreOffice Migration Protocol”

<https://www.documentfoundation.org/assets/Certification/tdf-migrationprotocol.pdf>

# Case study

- Written by Collabora
- Available at request at <https://www.collaboraoffice.com/case-studies/>
- We have encountered a few technical challenges, however, these are routine in any migration on this scale.
- We are solving these challenges as they are reported, and what is emerging is a highly functional system at a small fraction of the cost of similar services using Microsoft Office.

# Feasibility study – Final report

Written by Julie Murphy, PM, SEHSCT

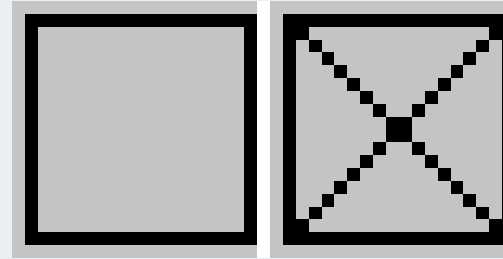
## Conclusions

- at least 60% of staff will migrate by the end of March 2019
- extremely good working partnership has been built up between SET and Collabora
- Word vs. Writer: outstanding issue with the compatibility of some tables (e.g. floating tables)
- Excel vs. Calc: there are very few issues with regard to the compatibility between Excel and Calc
- PowerPoint vs. Impress: some of the more sophisticated animations available in PowerPoint may have to be adjusted

**In your migration you will have trouble,  
don't worry- Collabora will defeat  
them with you**

**Interoperability  
corner cases you  
can find if you try.**

## Copy and paste check boxes



The legacy MS Office form controls, such as check boxes, are still sometimes useful to have (although newer controls are available in menu Insert→Form Control), and have been ~always available in LibreOffice/GovOffice. Though, copy to clipboard of such control was broken, as demonstrated by sample document. So we fixed it.



# Import ActiveX form controls from DOCX / export form controls as ActiveX form controls to DOCX

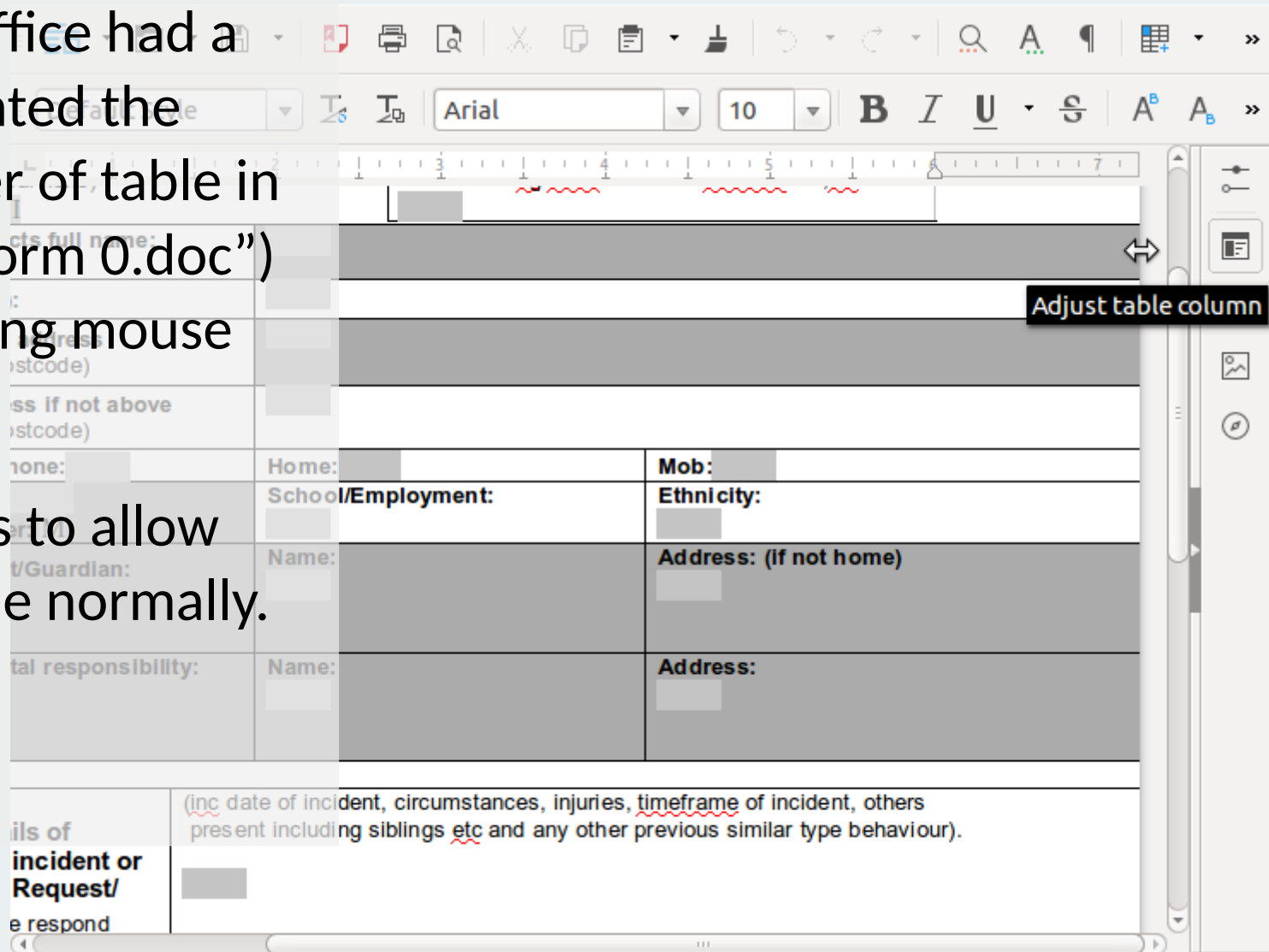
The title says all...

- Better interoperability with MS Word form controls
  - Previously rendering these as EMF previews not controls
  - ...
- Found the whole ActiveX control area broken:
  - Fixed – works for Impress too, unit tested → job done:
- LO form controls can be loaded and saved to DOCX format without loss of functionality

# Editing (moving) borders of cells

Collabora GovOffice had a flaw that prevented the rightmost border of table in example file ("Form 0.doc") to be moved using mouse drag.

We resolved this to allow resizing this table normally.



The screenshot shows a document editor interface with a table. The table has several rows and columns. A tooltip with the text "Adjust table column" is positioned over the right border of the table, indicating that the border can now be moved. The table content includes fields for "Home:", "School/Employment:", "Mob:", "Ethnicity:", "Name:", "Address: (if not home)", and "Address:". The bottom row contains a note: "(Inc date of incident, circumstances, injuries, timeframe of incident, others present including siblings etc and any other previous similar type behaviour).". The editor's toolbar at the top shows various icons for editing and formatting, including font style, size, bold, italic, underline, and strikethrough.

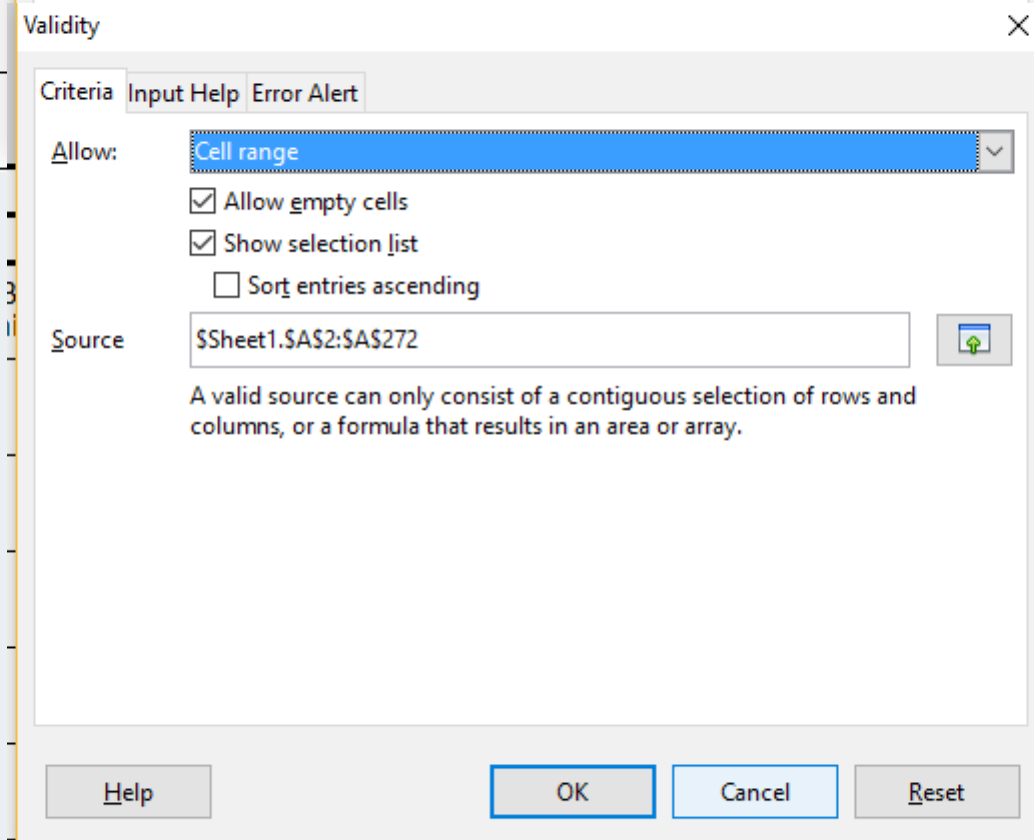
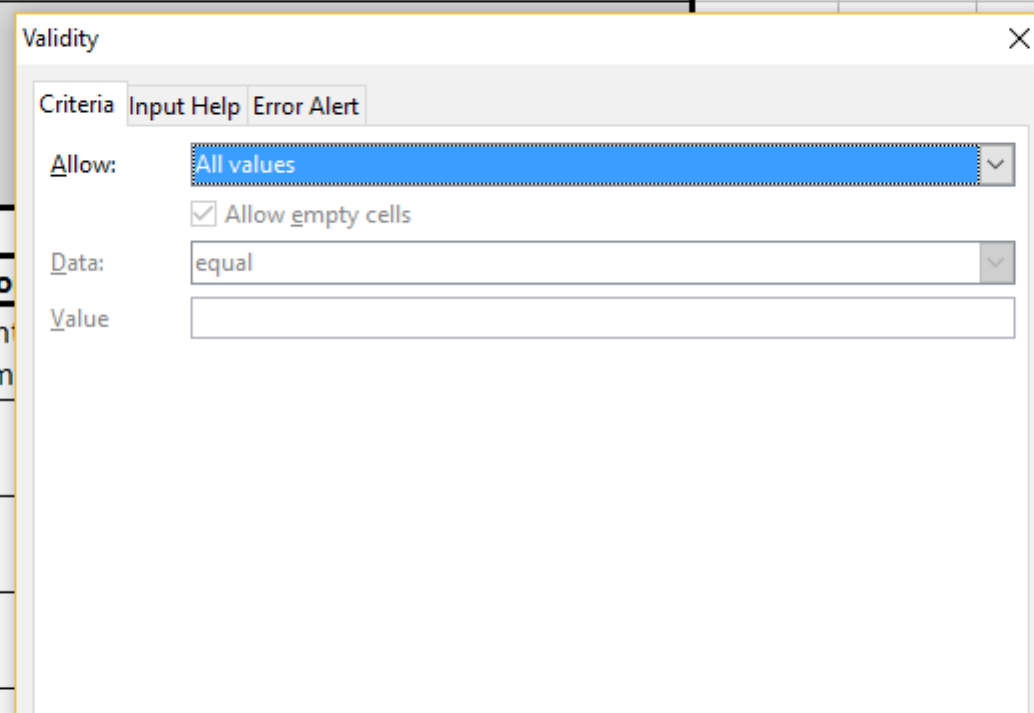
# Excel Validation Sheet drop-down cells

The test document supplied to us used a rare syntax for a feature that we already had: data validity.

Amazing generated files from some internal system: fun !

Using a deprecated pre-ISO / OOXML standardization XML syntax for this.

Now it imports with all required validity criteria information and properly filled drop-down list.  
(bottom)



# Cross-page table re-flow

The test document contained a table with a cell whose **minimum** height was **greater** than **page** height.

Collabora GovOffice's response - was to do the 'obvious' thing - which is ?  
Now behaves in an interoperable way.

Informatics Programme - Directory Capacity Report - Nursing Primary Care and Older People

Nursing Primary Care and Older People - Current Use of ICT Capacity 11/11

In-Progress-Projects - (Sorted-By-Priority)

| Project Name                               | Project Description   | Project Priority | Rank Order | ICT Scope | Latest High/Low Status Report  | Date of Status | Project RAG |
|--|---|------------------|------------|-----------|--|----------------|-------------|
| ICT_PMO_e-NISAT Roll-Out                   | Electronic version of NISAT forms PM - Julie Murphy   | 1                | 1          | 2         | <p><b>Key Achievements</b></p> <ul style="list-style-type: none"> <li>v8 testing completed and submitted to BSO</li> <li>A Survey Monkey type questionnaire will be set up for Practitioners and Managers to gain feedback on eNISAT engagement. Tony is to promote this and encourage completion of the survey among staff and managers in the Trust between mid-October and end November 2016.</li> <li>A Focus Group with Trust TIGs to identify Benefits and Dis-Benefits realized from the project. This is to take place around the end of September though Tony has not had a confirmed date for this at present.</li> <li>A possible forth strand comprises a repeat of the quality audit of eNISAT assessments carried out in 2015. Sarah suggested that this would be beneficial at Trust level with SEI if not required as part of the Post Project Evaluation. Tony to take this forward.</li> <li>Next eNISAT Steering group scheduled for 15th November. Status to be updated after this date and arrangements made for project closure.</li> </ul> <p><b>Achievements Planned not completed</b></p> <p><b>Focus Next Period</b></p> <p>Project due to close at end of November 2016. -- v8 go live on 28th November 2016. --</p> <p><b>Reasoning for RAG Status</b></p> | 11 Nov 2016    | Green       |
| ICT_PMO_CCG Integration with LCD Scheduler | HSCB IS EXPECTING AHP GP REFERRALS TO BE RECEIVED BY TRUST ELECTRONICALLY VIA CCG. CHANGES ARE REQUIRED TO LCD/ SCHEDULER. TO | 1                | 1          | 2         | <p><b>Key Achievements</b></p> <p>Agreed live implementation date with BSO and Yara - 1st November 2016. --</p>  | 31 Oct 2016    | Green       |

Before: nothing

Informatics Programme - Directory Capacity Report - Nursing Primary Care and Older People

Nursing Primary Care and Older People - Current Use of ICT Capacity 11/11

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| ALLOW THIS TO HARREN Requestor - Margaret Moorehead PM - Joanne Beattie |   |                  |            |           | <p>Have confirmed process for the receipt &amp; processing of referrals for each Service with practice and CBO. CBO staff trained and factheet for professional staff has been developed. Advice Sheet for each AHP Service developed and forwarded to CCG team.</p>   |                | Green       |

After: ...

# Weekly Timesheet Testing - South Eastern Trust

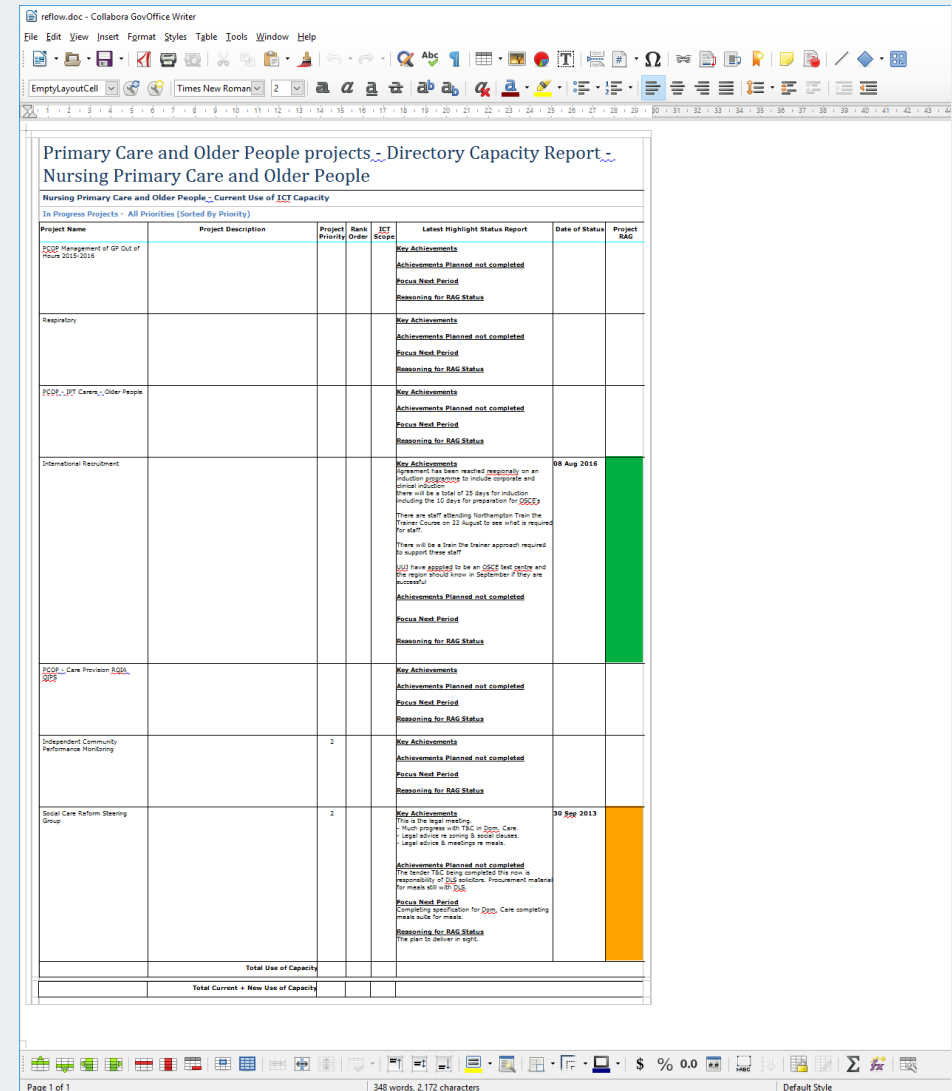
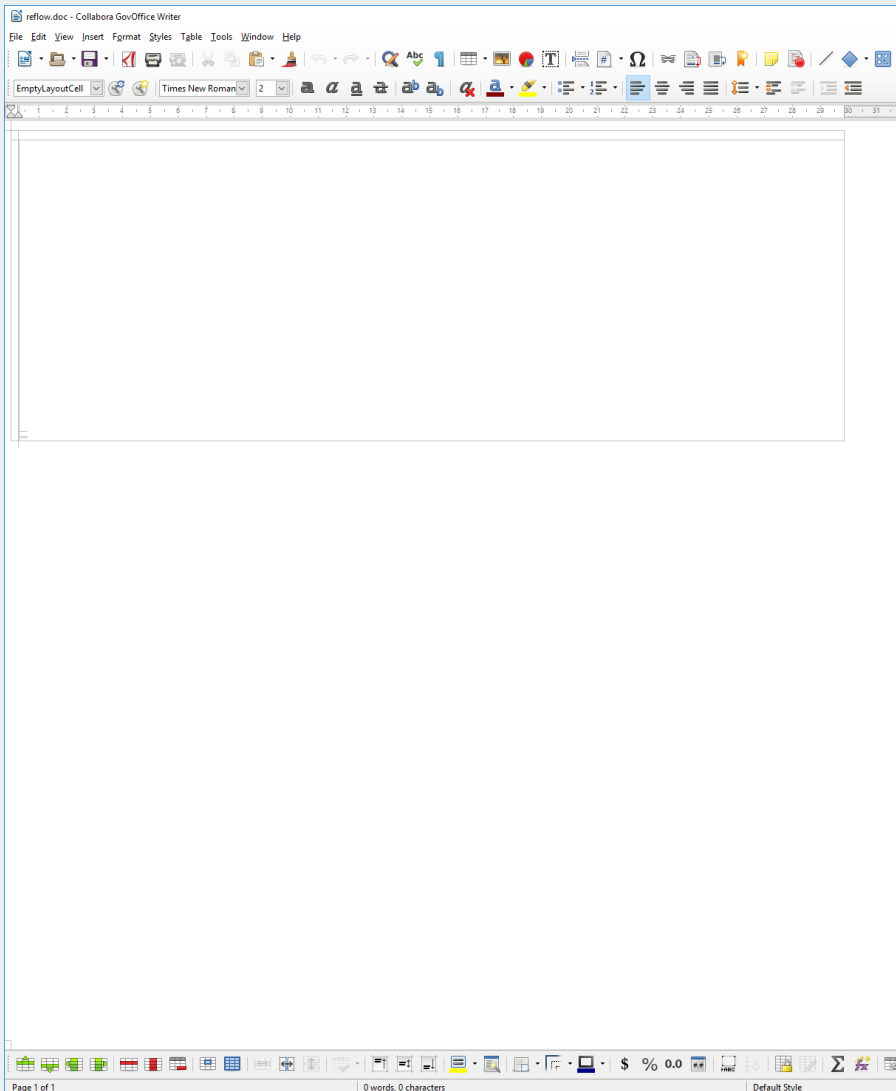
The XLS file produced by Collabora GovOffice was examined with Microsoft BFFValidator Tool. BFFValidator identified a few issues, the XLS file produced by Collabora GovOffice deviated from the file format specification. After fixing these issues, the XLS file produced by Collabora GovOffice could be opened in Excel without warning, and the VBS script opened it without error.

# Tolerate broken OOXML – like MS Word.

3<sup>rd</sup> party application generated a DOCX file, which was invalid OOXML (but Word somehow handled it)

- Practical definition of OOXML – is MS Word’s behaviour.
- Use Carlito (Calibri) as default font when default font is not specified
- Accept “pt” as measurement unit in <w:sz> element of <w:rPr> which should be interpreted as integer only (size in half-points)
- Tolerate multiple final sectPr instances (should be only one)
- Accept <w:br> element as a child of <w:body>
- Tolerate CRLF in OOXML text (convert to space on import)

# Some .DOC and .DOCX with floating tables were imported incorrectly



## Merging empty cells confirmation dialog

UI change was requested, because the original message was confusing.

Now:

“Should the contents of the cells be moved into the first cell?”

## Crash at the end of slideshow or previews in Impress

In VDI environment Impress crashed frequently.

Before, if the device lacked Direct3D capabilities, VclPtr handling became compromised, and caused a crash. This was particularly a problem in virtualized/remote desktop connections in Windows.

Now mpWindow instance is disposed of right away if DX device creation fails.



# Embedded DOC/DOCX/XLS/XLSX documents in DOC/DOCX documents

Handling of different embedded document types was inconsistent. Solution:

- Open in new window or edit in place, depending on “Display as icon” was checked when the object was embedded
- On Windows use Word/Excel if they are installed, use Collabora GovOffice for editing otherwise

# Pivot tables

Ongoing work, two goals

## 1) Performance

- Done: Pivot cache loading optimization, 60% win
- Planned: parallelization of loading

## 2) Better interoperability

- Done: many XLS/XLSX import and export fixes
- Planned: implement compact form view

**Product Management**  
**interaction:**  
**some fruit ...**  
*“where is the roadmap” ...*

# Time - sheet / spreadsheet issue.

## Extended sheet protections UI

- What a micro-feature !
- We round-tripped this stuff silently

### But ...

- This protected (time) sheet filled by hundreds of users
- Consumed by a financial system with no sense of humour ...
  - **You must delete blank rows!**
- Good for staff to get paid ...

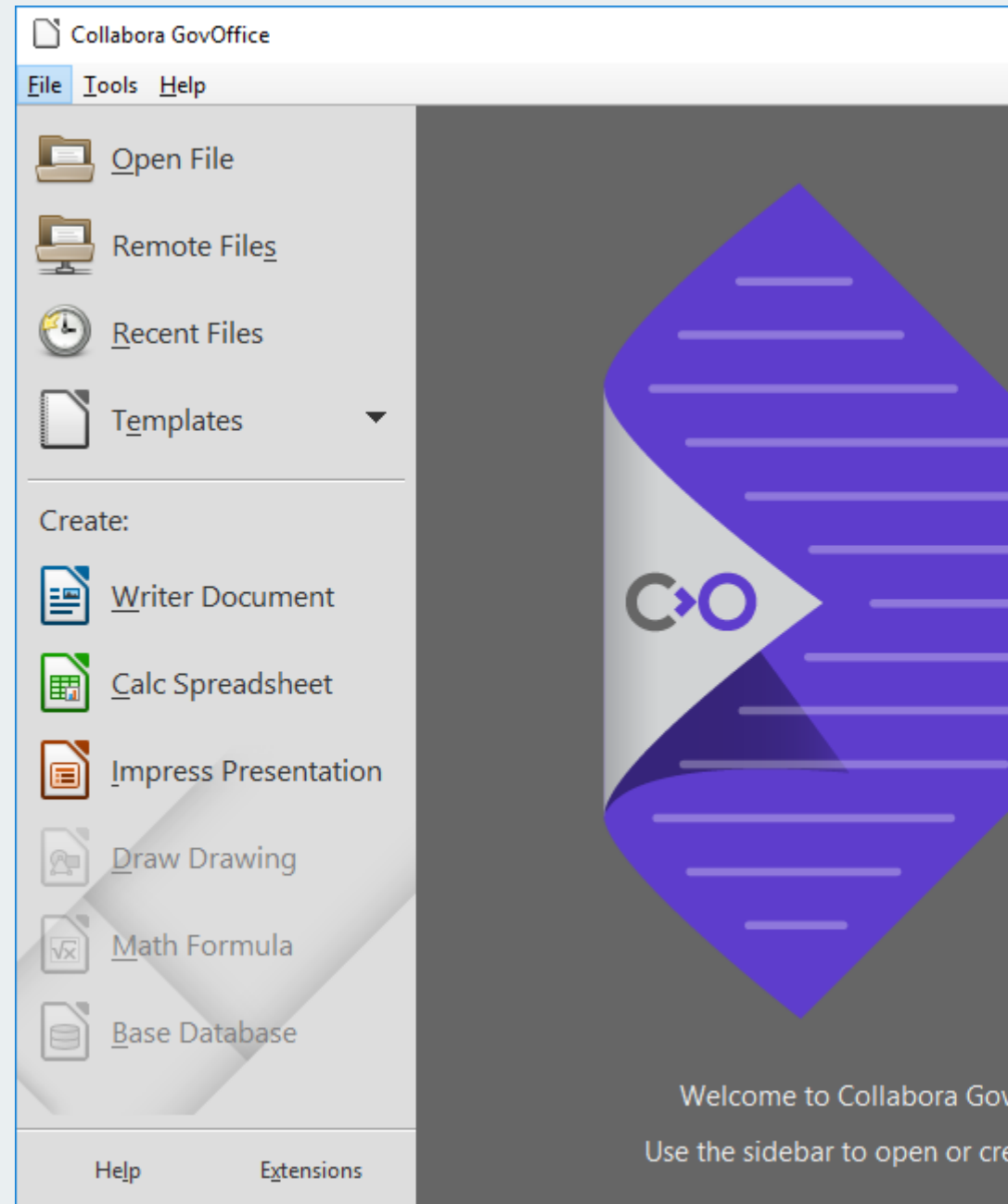
Added UI options - and UI enforcement.

- ODF extension too ...



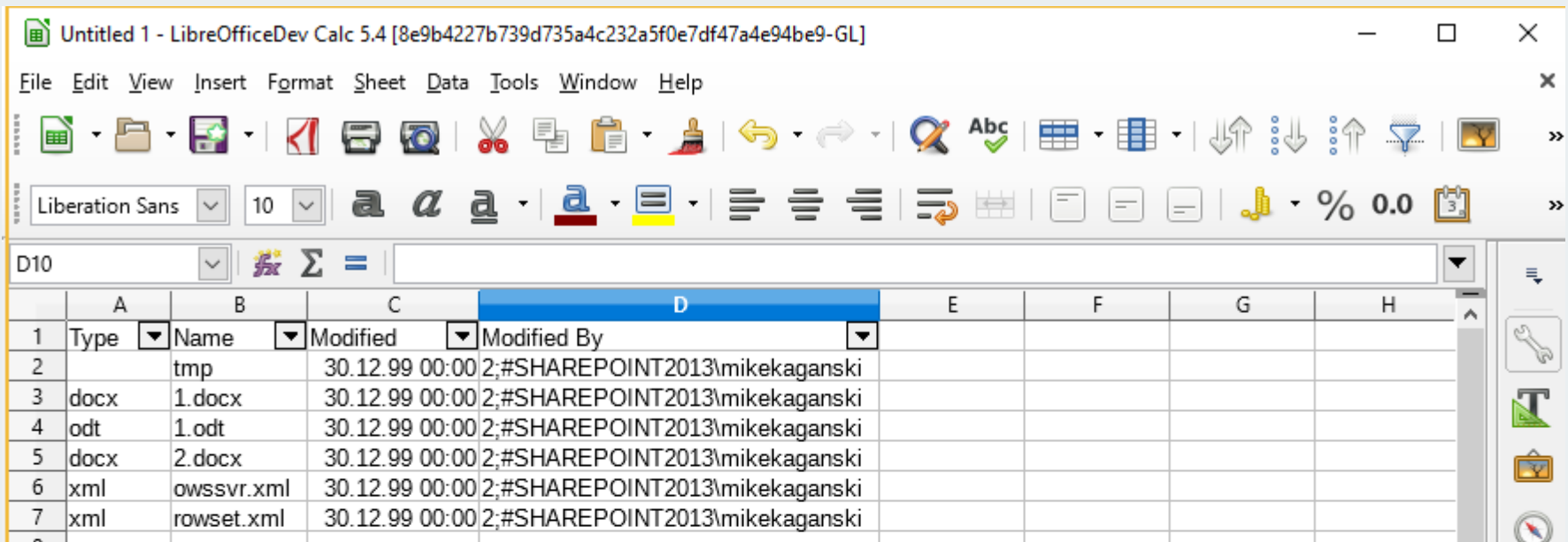
# Customize Windows installer

- Disable Base, Draw, Math without losing functionality in Writer, Calc, Impress
- Collabora provided MST (Microsoft Installer Transform) files that disable Base, Draw, Math user interface.



# Exporting Sharepoint Lists to Calc

- Collabora GovOffice is handler of .iqy files
- Collabora GovOffice opens the actual link inside the .iqy file
- The MS ADO recordset is opened by an XSLT filter that generates spreadsheet with one sheet with data and autofilters.



Untitled 1 - LibreOfficeDev Calc 5.4 [8e9b4227b739d735a4c232a5f0e7df47a4e94be9-GL]

File Edit View Insert Format Sheet Data Tools Window Help

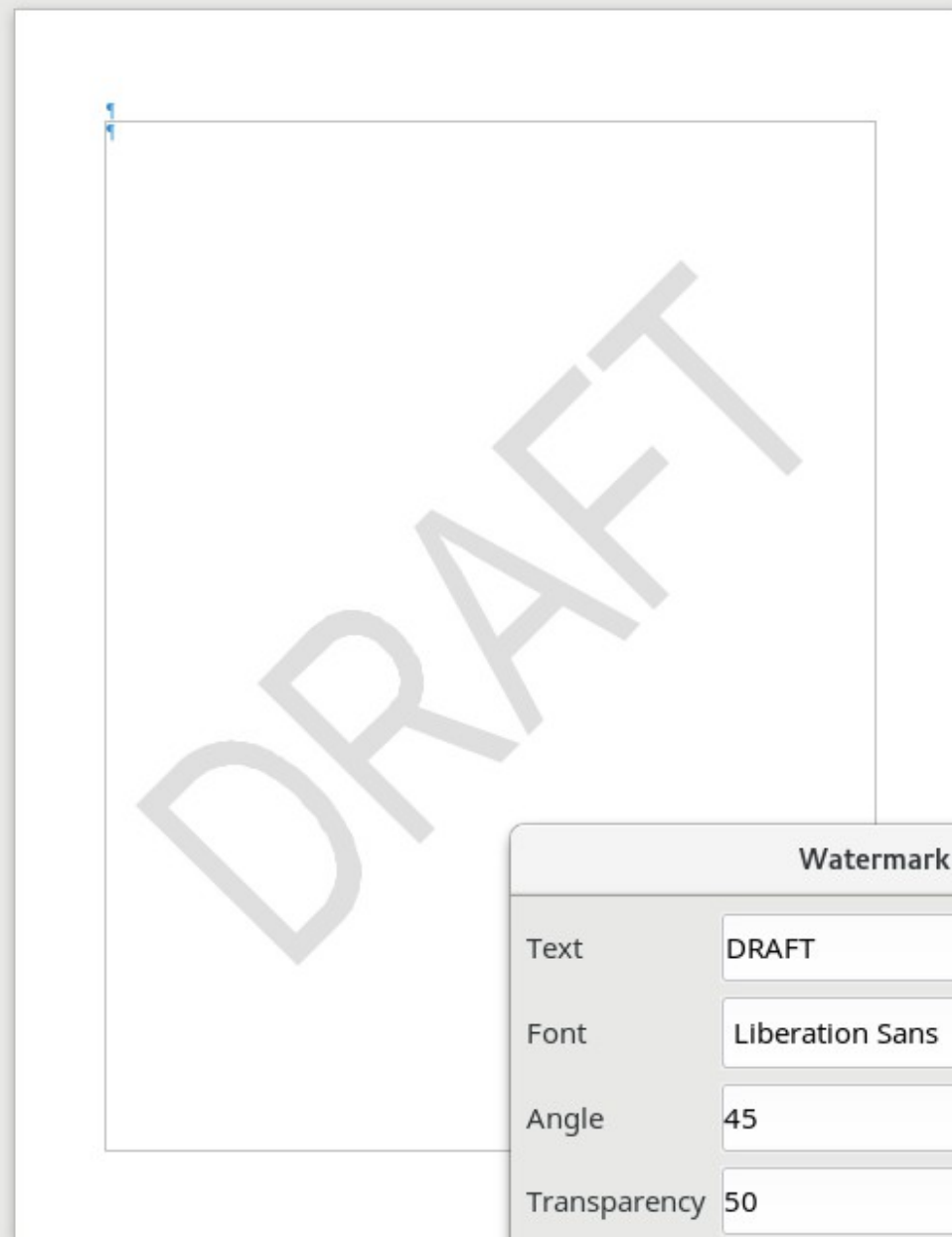
Liberation Sans 10

|   | A    | B          | C              | D                              | E | F | G | H |
|---|------|------------|----------------|--------------------------------|---|---|---|---|
| 1 | Type | Name       | Modified       | Modified By                    |   |   |   |   |
| 2 |      | tmp        | 30.12.99 00:00 | 2;#SHAREPOINT2013\mikekaganski |   |   |   |   |
| 3 | docx | 1.docx     | 30.12.99 00:00 | 2;#SHAREPOINT2013\mikekaganski |   |   |   |   |
| 4 | odt  | 1.odt      | 30.12.99 00:00 | 2;#SHAREPOINT2013\mikekaganski |   |   |   |   |
| 5 | docx | 2.docx     | 30.12.99 00:00 | 2;#SHAREPOINT2013\mikekaganski |   |   |   |   |
| 6 | xml  | owssvr.xml | 30.12.99 00:00 | 2;#SHAREPOINT2013\mikekaganski |   |   |   |   |
| 7 | xml  | rowset.xml | 30.12.99 00:00 | 2;#SHAREPOINT2013\mikekaganski |   |   |   |   |

# Feature: Insert Watermark

- Custom shape on page background (vector graphics)
- Fully interoperable with MS Word watermarks

(it was harder than we originally thought)



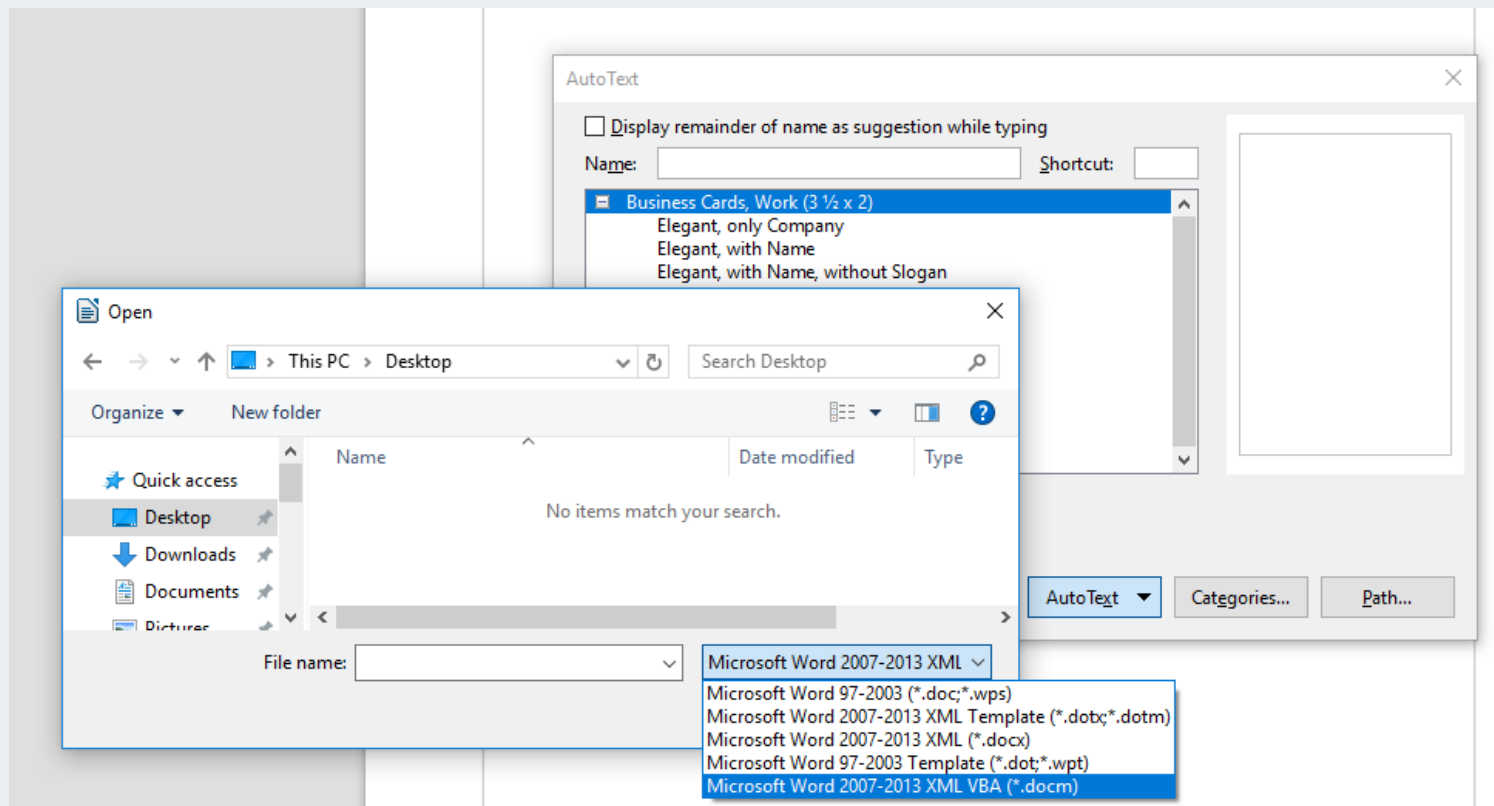
Watermark

|              |  |
|--------------|--|
| Text         | <input type="text" value="DRAFT"/>           |
| Font         | <input type="text" value="Liberation Sans"/> |
| Angle        | <input type="text" value="45"/>              |
| Transparency | <input type="text" value="50"/>              |
| Color        | <input type="text" value="#C0C0C0"/>         |

OK Cancel

# AutoText import from OOXML format

- Originally only .DOC/.DOT format was supported
- MS Word 2007 and newer saves AutoText in OOXML (.DOTM) format
- Clinicians – heavy users of complex AutoText





# Writer table as Mail Merge Data Source

- Similar feature existed in MS Word
- Collabora developed a data source driver for Writer tables based on the driver for Calc tables

The screenshot displays the Collabora Writer interface. On the left, a document is open with a mail merge field: "Dear <Salutation> <Name>," followed by "Thanks for using our product." The main window shows a table with the following data:

| Salutation | Name            |
|------------|-----------------|
| Mr.        | John Doe        |
| Ms.        | Jane Doe        |
| Prof. Dr.  | Albert Einstein |

The table is embedded within the document. The top right corner of the interface shows a preview of the data source table with the same three rows. The status bar at the bottom indicates "Page 1 of 1", "12 words, 60 characters", "Default Style", and "Hungarian".

# Mail Merge MS interop

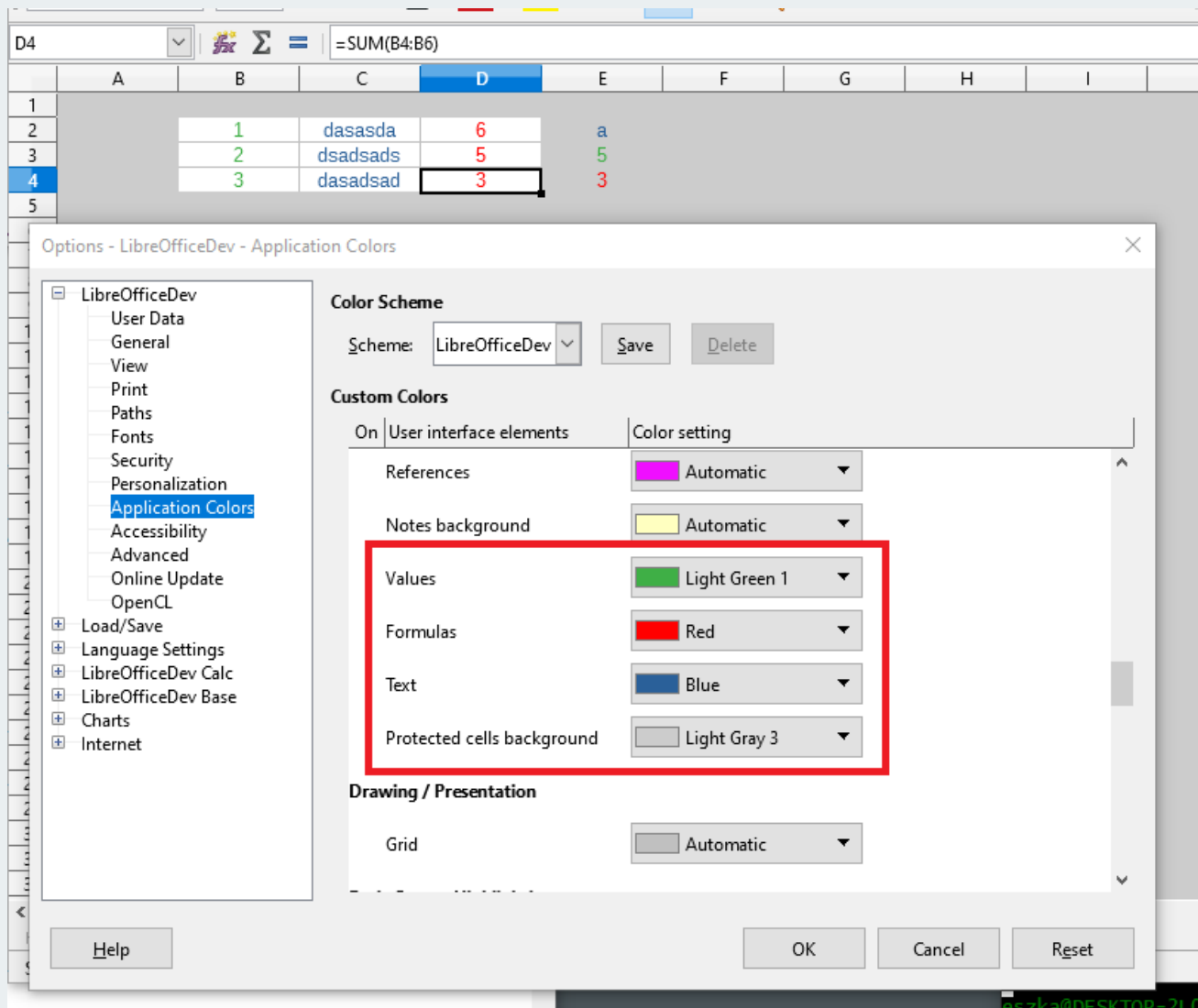
- Save Mail Merge fields as such into DOC/DOCX
  - A bug reported in 2013, inherited from OOo ([tdf#67207](#))
- Suppress printing of lines that have blank fields from Mail Merge database
  - With this change, Database fields that expand to empty values behave as if they were “Hidden Paragraph” fields.
  - A bug reported in 2011, inherited from OOo ([tdf#35798](#))
- Countless other Mail Merge fixes...
  - Show Mail Merge toolbar when opening document with embedded datasource
  - Do not keep ODB files of temporary DB connections

# Highlight colors customization for Calc

Value Highlighting mode (Ctrl + F8)

- Text – black
- Formulas – green
- Numbers – blue
- Protected cells – light gray background

If not customizable, can be a problem for color-blind people.

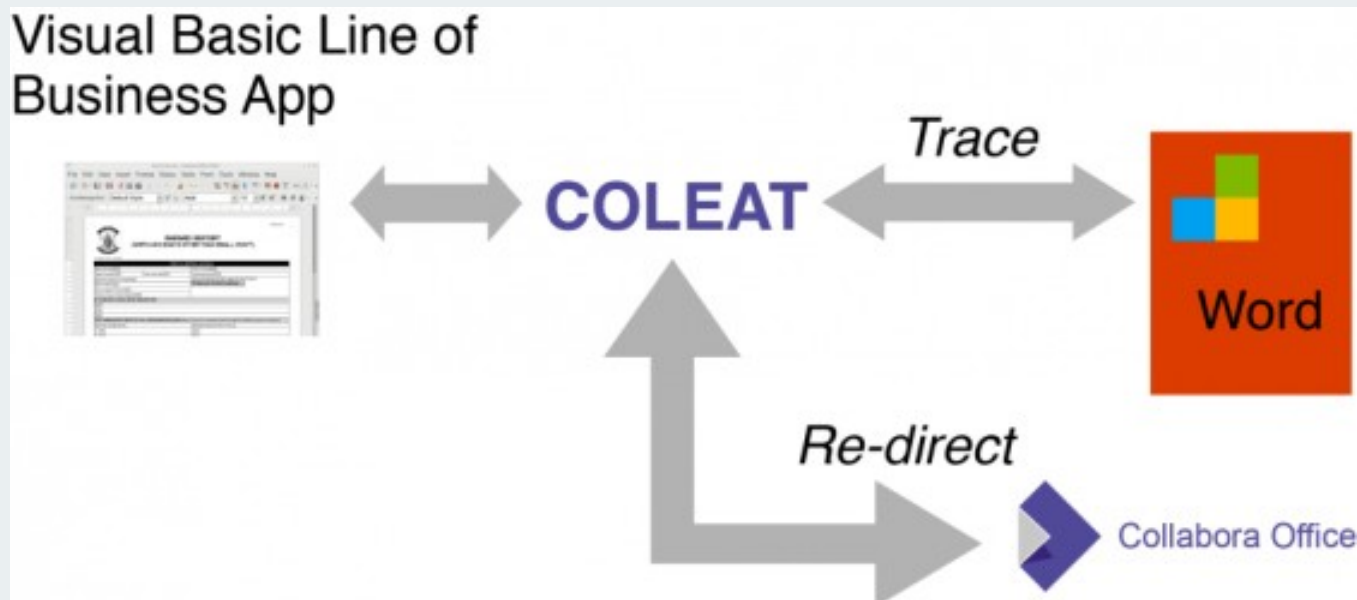


# VBA Interoperability

- How good is VBA support in Collabora Office (LibreOffice)?
- Realistic approach: implement missing pieces that customers need
  - FormatNumber function
  - OptionButton compatibility of Button
- Even WordBasic!
  - Improved ExistingBookmark() support
  - Side note:
    - WordBasic was replaced by Visual Basic for Applications (VBA) when Word 97 was released, 20 years old, deprecated technology is still around.

# COLEAT

- Trace COM calls from VB applications to Office
- Re-direct COM calls to Collabora Office
- Collabora Office can be a drop-in replacement of MS Office



# Crash reports / Proxy problems

- Crash reporting infrastructure existed, but was unused, because...
  - Proxy settings were disregarded for reporting crashes (Windows)
- Solution: Proxy Auto-Configuration (PAC) support
  - And many other proxy related fixes
- **RESULT:** Crash reporting is working from behind a proxy (typical setup in enterprises)

**Other interesting L3  
fixes in the past year**

# User data from Active Directory

- New configuration backend: WinUserInfoBe
- User data from Windows Active directory
  - Name, title, position, company, address, phone, etc.
- Option: lock-down with Group Policy Object
  - ADMX template provided by Collabora
    - <https://github.com/CollaboraOnline/ADMX/>



# MySQL connector

- MySQL Connector extension
  - Used a GPL licenced library (MySQL Connector/C++)
  - Problems with every major LibreOffice release (lack of testing)
- New, built-in MySQL/MariaDB database connector
  - In LibreOffice core
  - Using LGPL MariaDB client library

## Text on arc

- Font effect “transformation” support (improves interoperability with MS Office)
- Mapped to existing FontWork feature of LibreOffice

FontEffectArcUp

BEFORE

FontEffectArcUp

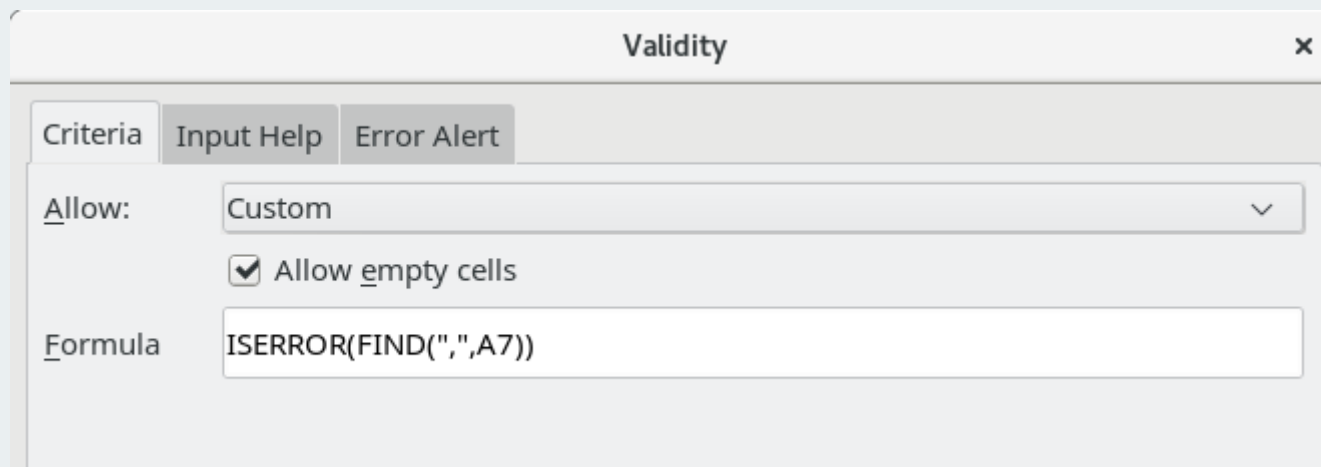
AFTER



# Custom data validation in Calc (by formula)

Data → Validity → Criteria → Custom

- A formula decides whether input is valid
  - e.g. do not allow comma in input (in cell A7)



MS Excel had this feature, already. ODF and XLSX export/import are implemented in LibreOffice / Collabora Office now.

# Many Thanks !

## Collabora is an open source company...

- Everything we do is contributed back to the whole community.
- Everything we do is funded by our customers.
- They are the real super-stars.

**Thanks to South Eastern Health and Social Care Trust, SUSE, PMG and others...**



Collabora Productivity

*“It has been a pleasure working with Collabora to fix our migration issues” -*

*Darren Henderson - ICT Operations  
Manager at South Eastern Health and  
Social Care Trust*

# Summary

- Bug squashing
- Feature development
- Outstanding support, regular product updates.
- Product Management interaction

By Andras Timar

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