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**Datasheet for the decision  
of 20 October 2017**

**Case Number:** T 0477/12 - 3.5.07

**Application Number:** 05105354.4

**Publication Number:** 1645972

**IPC:** G06F17/24

**Language of the proceedings:** EN

**Title of invention:**

One click conditional formatting method and system for software programs

**Applicant:**

Microsoft Technology Licensing, LLC

**Headword:**

Conditional formatting/MICROSOFT TECHNOLOGY LICENSING

**Relevant legal provisions:**

EPC Art. 56

**Keyword:**

**Decisions cited:**

T 0641/00, T 0643/00, T 1741/08



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Case Number: T 0477/12 - 3.5.07

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.07**  
**of 20 October 2017**

**Appellant:** Microsoft Technology Licensing, LLC  
(Applicant) One Microsoft Way  
Redmond, WA 98052 (US)

**Representative:** Grünecker Patent- und Rechtsanwälte  
PartG mbB  
Leopoldstraße 4  
80802 München (DE)

**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted on 26 September  
2011 refusing European patent application No.  
05105354.4 pursuant to Article 97(2) EPC.

**Composition of the Board:**

**Chairman** R. Moufang  
**Members:** M. Jaedicke  
R. de Man

## Summary of Facts and Submissions

I. The applicant (appellant) appealed against the decision of the Examining Division refusing European patent application No. 05105354.4. The application claims a priority date of 27 September 2004.

II. In the course of the appeal proceedings, the application was transferred to Microsoft Technology Licensing, LLC, which thereby acquired the status of appellant.

III. In the contested decision, the Examining Division refused the application for lack of inventive step, Articles 52(1) and 56 EPC, in respect of the subject-matter of independent claim 1 of the main request and of the first to fourth auxiliary requests over the Microsoft Excel spreadsheet program, which was described in the following documents D1 to D3:

D1: Anonymous: "Conditional Formatting", online publication, 3 August 2004, retrieved by the EPO on 28 May 2008 from the internet via web archive using the URL:  
<http://web.archive.org/web/20040803153634/http://www.cpearson.com/excel/cformatting.htm>;

D2: Stein, J. D.: "Spreadsheet Smarts", AICPA Journal of Accountancy, vol. 189, no. 1, January 2000 (2000-01), retrieved by the EPO from the internet on 28 May 2008 using the URL:  
<http://www.aicpa.org/pubs/jofa/jan2000/stein.htm>;

D3: Friedman, M. et al.: "Creating an Excel-based executive support system", Journal of Corporate

Accounting & Finance, vol. 15, no. 5, 18 June 2004 (2004-06-18), retrieved by the EPO from the internet on 28 May 2008 using the URL:  
<http://www3.interscience.wiley.com/journal/109083852/abstract>.

The Examining Division considered some of the claimed features to be related to non-technical user requirements.

In an *obiter dictum* the Examining Division provided further comments, according to which none of the further claims of the five requests defined inventive subject-matter.

IV. In its decision, the Examining Division also cited the following prior-art documents:

D4: Anonymous: "Introduction to Microsoft Word97 For Windows 95/98 - A Guide to Basic Features", online publication, September 1997 (1997-09), retrieved by the EPO from the internet on 28 May 2008 using the URL: <http://www.unt.edu/training/Word97/Word97Intro.PDF>;

D5: EP 0 619 549 A1 published on 12 October 1994;

D6: US 6 085 202 A published on 4 July 2000;

D7: Beaudouin-Lafon, M.: "Instrumental Interaction: An Interaction Model For Designing Post-WIMP User Interfaces", CHI 2000 Conference Proceedings, Conference on Human Factors in Computing Systems, The Hague, Netherlands, 1 to 6 April 2000, pages 446 to 453.

- V. With the statement of grounds of appeal, the appellant requested that the decision be set aside and that a patent be granted on the basis of either the main request or the auxiliary request submitted with the grounds of appeal.
- VI. In a communication under Article 15(1) RPBA accompanying a summons to oral proceedings, the Board *inter alia* expressed its provisional opinion that the subject-matter of claim 1 of both requests lacked inventive step in view of document D1.
- VII. With a letter dated 20 September 2017, the appellant submitted a new "main request" replacing all earlier substantive requests.
- VIII. Oral proceedings were held as scheduled. At the end of the oral proceedings, the chairman pronounced the Board's decision.
- IX. The appellant's final request was that the contested decision be set aside and that a patent be granted on the basis of the sole request, i.e. the "main request" filed with letter of 20 September 2017.
- X. Claim 1 of the sole request reads as follows:
- "A method of conditionally formatting of a spreadsheet, the method comprising:  
selecting a range of cells within the spreadsheet, wherein the cells comprise cell values;  
selecting an object (104, 106, 108);  
automatically applying temporarily a condition called by the selected object and default values for the selected object to a displayed spreadsheet view, wherein only displayed spreadsheet cell values are

modified in accordance with the default values and a format for the selected object;  
modifying the default values;  
immediately applying the modified default values to the displayed spreadsheet view; and  
if the modified default values are acceptable to a user, applying the modified default values to make the modified default values permanent in the spreadsheet."

The further claims are not relevant to the Board's decision.

- XI. The appellant's arguments relevant to the decision are discussed in detail below.

### **Reasons for the Decision**

1. The appeal complies with the provisions referred to in Rule 101 EPC and is therefore admissible.
2. *The invention*

The application relates to the formatting of data in a spreadsheet application such as Microsoft Excel. A spreadsheet is an interactive computer application for the organisation, analysis and storage of data in tabular form. The application operates on data entered in cells of a table. Each cell may contain either numeric or text data, or the results of formulas that automatically calculate and display a value based on the contents of other cells. A spreadsheet might contain a tremendous amount of data for presentation to a user. To aid the readability of a spreadsheet, cell formatting may be conditionally applied to data. For

example, when the value of a cell is greater than 100, the cell may be displayed in red.

According to the application (see page 1, lines 14 to 17 and 20 to 25, of the description as originally filed), conditional formatting functionality in known spreadsheets was limited in use. It was not widely used, because it was not easily accessed and could be difficult to use. Typically the user needed to create a complex conditional formula that returned true or false, a task that was beyond the average spreadsheet user. Moreover, conditional formatting in products was usually limited to Boolean expressions and a single format (if the condition is true for a given cell, apply the format to the data in the cell; if it is false, do not apply the format). Finally, the rules for conditional formatting had to be applied in order to see their effect, i.e. the effect was not immediately visible in the displayed spreadsheet.

To overcome the limitations of known spreadsheet programs, the application proposes new types of conditional format, where a cell is formatted according to the relative value of its data. A user can select predefined conditional formatting rules to be applied to a selection of cells using a graphical user interface presenting simple dialogues for customising rules using predefined conditions and formats. Changes to formatting rules are applied as a temporary preview to the selected cells so that the user can immediately see the effect of any changes. Once the user approves a new conditional formatting rule, the program applies this new formatting rule to the selected cells in the spreadsheet.

### **Sole request**

3. Claim 1 of the sole request relates to "[a] method of conditionally formatting of a spreadsheet", which comprises the following features itemised by the Board:
- (a) selecting a range of cells within the spreadsheet, wherein the cells comprise cell values;
  - (b) selecting an object (104, 106, 108);
  - (c) automatically applying temporarily a condition called by the selected object and default values for the selected object to a displayed spreadsheet view, wherein only displayed spreadsheet cell values are modified in accordance with the default values and a format for the selected object;
  - (d) modifying the default values;
  - (e) immediately applying the modified default values to the displayed spreadsheet view; and
  - (f) if the modified default values are acceptable to a user, applying the modified default values to make the modified default values permanent in the spreadsheet.

### **Admission**

4. Since the current set of claims is a response to the preliminary opinion of the Board and can be dealt with without adjournment of the oral proceedings, the Board admits it into the appeal proceedings (Article 13(3) RPBA).

### **Clarity**

5. The Board has doubts that the wording of claim 1 is clear enough to comply with Article 84 EPC. However, since the appellant was prepared to carry out suitable amendments, the Board interprets the claim in the light



of the description for the purpose of assessing inventive step.

### **Inventive step**

#### 6. *Interpretation of claim 1*

- 6.1 The claimed method aims at conditional formatting of cells in a spreadsheet, which are first selected in step (a) of claim 1. Consequently, in the light of the description, the Board agrees with the appellant that the further steps have to be interpreted as meaning that the conditional formatting is not applied to other, non-selected cells.
- 6.2 The Board interprets the word "object" in step (b) of claim 1 as an element of a graphic user interface that can be selected by a user, for example a selectable graphical element to open a dialogue for creating a rule (see description, page 2, lines 7 to 8).
- 6.3 Moreover, the expression "a condition called by the selected object" in step (c) is interpreted in line with the description, page 15, lines 3 to 4, as "a condition called for by the selected object".
- 6.4 Steps (c) and (e) are interpreted as implementing a preview of the conditional formatting (see description, page 2, lines 10 to 12: "Any changes that the user makes in the dialog box will immediately be previewed in the spreadsheet [...]"). which is defined by steps (b) and (d) of the claimed method. This preview should provide the user with an updated view of the displayed cells of the spreadsheet, where the update correctly reflects the application of the conditional formatting rule to those cells selected according to step (a)

which are visible in the currently displayed part of the spreadsheet. In the Board's interpretation, the actual spreadsheet data as represented in the computer's memory is modified only in the final step (f), when the user is satisfied with the preview and accepts the created conditional formatting. In this final step the selected spreadsheet cells (displayed or not) are modified, to make the conditional formatting permanent. By contrast, steps (c) and (e) modify only the displayed spreadsheet cell values, but do not modify the data representing the spreadsheet cells in memory. In the Board's view this is clearly expressed in the following passage of the original description, page 15, lines 3 to 6, which the appellant cited as a basis for the present wording of feature (c) (underlining added by the Board):

"In operation 516, the condition called for by the selected object and the default values for that object are applied to the displayed spreadsheet view. No changes are made to the stored spreadsheet. Only the displayed spreadsheet cell values are modified in accordance with the default values and format."

- 6.5 In its steps (e) and (f), the claimed method refers to the "modified default values". This could be interpreted as meaning that the user has replaced the default values that appear each time the conditional formatting dialogue is selected by the user. However, this is not supported by the description (see e.g. page 15, lines 15 to 21), which refers to "different" or "changed" values), so that this expression is interpreted in the sense of modified values, i.e. the user replaces the default values merely for the creation of a specific new conditional formatting rule,

but leaves the default values unchanged for future uses of the conditional formatting dialogue.

7. *Inventive step over document D1*

7.1 In its decision the Examining Division used document D1, an internet disclosure, as the starting point for assessing inventive step for the claimed invention. Since the Examining Division provided a dated version of document D1 from the web archive, the Board recognises document D1 as valid prior art for the present case, noting that this was not disputed by the appellant.

7.2 Document D1 describes a method of conditionally formatting a display of data in a spreadsheet for Microsoft Excel 2000 (see D1, page 1, paragraphs 1 to 5, and the Figure on the same page). D1 discloses feature (a) of claim 1 on page 2, first paragraph, where it explains that a user can select a range of cells to which conditional formatting is to be applied. D1 explains that the user can then create a rule comprising a format and a condition using a selected dialogue as shown in the Figure on page 1 (see D1, page 2, paragraph 1). Hence, D1 also discloses step (b) of the method of claim 1. Using this dialogue the user can create or modify the created rule by modifying its default values for the condition and the format (see D1, the figure on page 1; page 2, paragraphs 1 and 2: "change the *between* operation to which ever operation you want"; page 3, paragraph 1: available options for the condition include the use of a custom formula). This dialogue also shows a preview of the format that the program applies when the condition of the rule is true (see the figure on page 1 of D1). The created or modified rule is then applied to the selected cells in

the spreadsheet when the user clicks on the OK button in the dialogue. As a result the selected cells are displayed in conditional formatting according to the created or modified rule. Consequently, document D1 discloses steps (d) and (f) of claim 1.

- 7.3 D1 does not disclose that a predetermined conditional formatting rule is automatically applied to the spreadsheet view as defined in step (c) of claim 1. Rather, using the dialogue the user has to create a rule from a set of predetermined options for the condition and the format of the rule. Moreover, D1 does not disclose that the modified values are applied immediately to the selected cells in order to generate a preview, i.e. before the user accepts the modified values in step (f), as specified in step (e) of claim 1.
- 7.4 Hence, D1 discloses all features of claim 1 except for steps (c) and (e).
- 7.5 These differences provide the user with a preview of the application of a default (step (c) of claim 1) or modified (step (e) of claim 1) conditional formatting rule to the selected cells only in the displayed spreadsheet view, when the conditional formatting dialogue is selected (step (c) of claim 1) or when the user has modified the (default) parameters defining the conditional formatting rule (step (e) of claim 1).
- 7.6 The mere wish to provide a preview functionality of a default or a modified conditional formatting rule relates to the user's subjective preferences for the functionality expected of a spreadsheet application. For example, whether or not the user appreciates the preview with a default rule for conditional formatting

which might be irrelevant to the problem he is actually facing might depend on how experienced he is with the conditional formatting function. Hence, this functionality is regarded as a non-technical requirement which can legitimately be added to the technical problem to be solved (see decision T 641/00, OJ EPO 2003, 352). However, the limitation of the temporary application of the conditional formatting to the displayed spreadsheet cell values constitutes a specific implementation which has the additional advantage of being more efficient, as the computer resources for applying the conditional formatting to non-displayed spreadsheet cells are saved.

- 7.7 Consequently, the objective technical problem can be formulated as how to implement, in the spreadsheet application of D1, a preview function which shows the effect of the conditional formatting rule immediately (while the user is still in the conditional formatting rule creation dialogue).
- 7.8 The Board considers that preview functions were well known in the area of user interfaces (see e.g. document D1, figure on page 1 disclosing the preview of the format, and document D4, figure on page 36). In general, a preview function in the context of a user interface is to be understood as an on-screen view of content as it will look when finalised or printed. In the case of conditional formatting that means that the preview should demonstrate what the spreadsheet would look like if the conditional formatting rule being created were to be permanently applied to the spreadsheet. A skilled person facing the objective problem would therefore consider as one possible implementation option that it was sufficient to limit the temporary application of conditional formatting to

the displayed spreadsheet cell values. This is obvious, as the skilled person knows that the user is often prevented from changing the view of the spreadsheet while a dialogue box, such as the conditional formatting dialogue box shown in the Figure on page 1 of D1, is open. To prepare a preview of the whole spreadsheet, i.e. to provide the result of the application of the conditional formatting rule to all selected cells of the spreadsheet, is another implementation option. The Board considers both alternatives to be obvious.

In the present case the desired functionality of the preview does not prevent the skilled person from considering limiting the preview to the displayed content, i.e. to the displayed spreadsheet cells. Such limitation is generally possible, as the conditional formatting rule can be applied to each selected cell in the spreadsheet independently of its application to other spreadsheet cells as in the prior art (see D1, pages 1 and 2: the cell value is used as input for the application of the conditional formatting rule, not the cell's formatting).

8. As to the issue of technicality of previews, in the statement of grounds of appeal the appellant argued that the preview functionality did not relate to non-technical user requirements and referred to decision T 643/00 of 16 October 2003. According to the appellant, the Board of Appeal stated in that decision that "an arrangement of menu items or images on a screen may be determined by technical considerations and that such considerations might be intended to enable the user to manage a technical task such as searching and retrieving images stored in an image processing apparatus in a more efficient or faster

manner, even if an evaluation by the user on a mental level was involved". That decision could be applied to the present case, as the immediate preview also made it possible to search or identify cells with a certain value in a more efficient, faster manner. Hence, the distinguishing features were technical features.

9. However, as already held in decision T 1741/08 of 2 August 2012, reasons 2.1, lowering the cognitive burden is not of itself a technical effect. In that decision, T 643/00 was distinguished in the following way (point 2.1.13): "Therefore, in the board's view the technicality in T 643/00 comes from the technical character of images and their resolution, and the technical effect is the ability to display several images simultaneously if low resolution versions of the image are used. In the present case, there is no analogy to the technical feature of an image resolution".

As the method of present claim 1 lacks a technical feature comparable to the use of image resolutions, T 643/00 is equally not applicable to the case at hand.

10. As to the obviousness of the solution, during the oral proceedings the appellant argued essentially that the skilled person would not have modified document D1 to arrive at the claimed method, as it was neither disclosed nor suggested in D1 or in any of the further prior-art documents on file to implement a preview function for a spreadsheet limited to cells of the displayed spreadsheet view. In other words, it was not obvious to apply the conditional formatting only to the viewable part of the spreadsheet. Document D7 concerned not spreadsheets or formats, but the replacement of strings in a text editor, where all occurrences of the

search string were searched, not only those occurrences in the displayed part of the edited text. Document D4 concerned a document editor (Microsoft Word97), not spreadsheets. Documents D2 and D3 disclosed conditional formatting in spreadsheets, but did not disclose a preview of the conditional formatting.

Moreover, the appellant argued that the Microsoft Excel application as described in document D1 stored the condition together with the result of the condition's evaluation in the cell values. This considerably increased the computational costs of the preview when adding a new conditional formatting to spreadsheet cells. Hence, the present invention, which limited the temporary application of the conditional formatting to only those selected cells which were actually displayed, considerably decreased the complexity of the preview operation and thus made it practically viable to provide a preview function for the conditional formatting, whereas D1 limited the preview merely to a preview of the formatting, which was a comparatively simple operation.

11. The Board agrees with the appellant that none of the prior-art documents discloses the implementation of a preview function where the application of conditional formatting is limited to the part of the content present on the display. The Board considers that, at least for the text editor of document D7 and the word processor of document D4, such a limited functionality would not be useful: in D7 the task is to search and replace a search string in the full document and not only in the displayed part. D4 concerns the formatting of a document and it is well known that changes to the format on passages of the document not displayed can also affect the layout/format of the passages



displayed. Hence, a temporary application of formatting to only a part of the edited document is usually unsatisfactory. However, as stated above, a spreadsheet application generally has no constraints for the conditional formatting that would make it necessary to compute the conditional formatting for the whole spreadsheet.

With respect to the appellant's argument that the spreadsheet application of D1 immediately evaluates the condition and stores the format to be applied in a spreadsheet cell when a conditional formatting rule is applied permanently to a cell, the Board finds that there is no evidence on file in support of that argument. However, even assuming that the appellant's argument correctly reflects the functioning of the spreadsheet software described in D1, this argument is not persuasive: There is no reason why the alleged technical functioning of the spreadsheet application would not allow the skilled person to consider restricting the generation of the preview to the displayed part of the spreadsheet. To the contrary, it would rather provide the skilled person with a further motivation to reduce the resources needed to implement a preview. In fact, D1 already provides an explicit hint for this motivation on page 1, penultimate paragraph, where it discloses the following: "Remember that Conditional Formatting is the same as adding one or more formulas to each cell in which you use it, so applying Conditional Formatting to a large number of cells may cause performance degradations. Use caution when applying to to [sic] large ranges." Consequently, when starting from D1, one way of reducing the resource requirements for the preview was for the skilled person at the priority date obviously to limit the temporary application of conditional formatting to only the

displayed part of the spreadsheet, as this is the part the user can actually see on his display and as there are no constraints on limiting the preview to a subset of the spreadsheet cells.

12. It follows from the above that claim 1 lacks inventive step (Article 52(1) EPC in combination with Article 56 EPC).

### **Conclusion**

13. As the appellant's sole request cannot form the basis for the grant of a patent, the appeal is to be dismissed.

### **Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:



I. Aperribay

R. Moufang

Decision electronically authenticated