## Percentage height calculation of content in a table cell implemented incorrectly in strict mode

Let's have a look at the following example in strict mode:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">
<html>
    <body>
        <table style="border: 1px solid blue" border="1px">
            <tr>
            <td>
            1
            </td>
            <td>
            <div style="width: 40px;"> 2 </div>
            </td>
            </tr>
            <tr>
            <td>
            <div style="height: 40px;"> 3 </div>
            </td>
            <td style="height: 20px; width: 20px">
            <div style="height:100%; width: 100%; border:1px solid red;"> 4 </div>
            </td>
            </tr>
            </table>
```

</body>
</html>
IE


So there is table with four cells. Cell " 4 " which defines a width and a height of " 20 px ". Table cell " 2 " expands the defined width of cell 4 by its pushing content. Table cell " 3 " expands the height of cell 4 by its pushing content.

Table cell " 4 " contains a DIV HTML tag (red border) which has $100 \%$ height and width set. As we can see all common browsers behave differently.
WebKit adjust the DIV's dimensions to the actual painted borders of the table cell. IE seems to adjust the DIV's dimensions to an internal calculated box with 20px in a square. Mozilla behaves like WebKit in the width dimension and behaves like IE in the height dimension.

The question is if the correct behavior is in the W3C specification specified and if "yes" which is the right behavior?
Is it
a) the internal calculated box related to the given height and width property or
b) the actual rendered/painted dimensions
of the table cell?

The Spec http://www.w3.org/TR/CSS2/visudet.html says for the width [chap 10.2] and the "height" [chap 10.5] that a content which has a percentage width is calculated with respect to its containing block

> "<percentage> Specifies a percentage width. The percentage is calculated with respect to the width of the generated box's containing block..." ... " $\leq$ percentage $>$ Specifies a percentage height. The percentage is calculated with respect to the height of the generated box's containing block..."

## But what is the containing block?

Chapter 9.1.2 says
"In CSS 2.1, many box positions and sizes are calculated with respect to the edges of a rectangular box called a containing block In general, generated boxes act as containing blocks for descendant boxes; we say that a box "establishes" the containing block for its descendants. The phrase "a box's containing block" means "the containing block in which the box lives," not the one it generates."

So it is the content area is provided by its parent. But how it is calculated?

The specification paper CSS2 and CSS3 ( http://www.w3.org/TR/css3-box/ in chapter "4.2 Block-level boxes, containing blocks, flows and anonymous boxes") says
"... The containing block of other boxes is the rectangle formed by the content edge of their nearest ancestor box that is blocklevel."

So it is a rectangle formed by the "content edge". But what is the "content edge" ? Specification http://www.w3.org/TR/CSS2/box.html says in chapter 8.1

## content edge or inner edge

The content edge surrounds the rectangle given by the width and height of the box, which often depend on the element's rendered content. The four content edges define the box's content box. ...

The dimensions of the content area of a box - the content width and content height - depend on several factors: whether the element generating the box has the 'width' or 'height' property set, whether the box contains text or other boxes, whether the box is a table, etc. Box widths and heights are discussed in the chapter on visual formatting model details.

When looking in the specified boxes and edges in CSS3 and CSS2 the following graphic is given


The various areas and edges of a typical box

In this box/edge graphic we see that the content edge is adjusted to the padding edge which is again adjusted to the border edge. The border edge of a table cell " 4 " in the given example above is clearly drawn.

So the content edge's dimension is not the dimension only given by the "width" or "height" property ... it is the rendered or drawn rectangle which is depended on various factors.

As a conclusion we see that

1) The behavior is specified and can be derived from the W3C specification
2) WebKit has implemented the W3C specification correctly (width and height)
3) IE did not implemented the W3C specification correctly (width and height)
4) Mozilla only implemented the width aspect according to the W3C specification

This discussion is obviously not new because we there are community threads which discuss the problem as well and came to the same conclusion.

