Addendum to "Snap Rounding of Bézier Curves"

by Arno Eigenwillig, Lutz Kettner and Nicola Wolpert
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After our article went to press, we have discovered an error in the preprocessing and graph building phases of the algorithm: Trivial subcurves are discarded too early. Consider the example in Fig. 1(left). The preprocessing phase, as presented in the article, discards the curve in the upper right pixel (because it is not bcp-monotone but trivial) and retains one of its endpoints, say, the right one. Thus, the intersection with the other curve is lost. No subdivision occurs, not even in the conflict removal phase. Hence the output of our algorithm in its original form will be as depicted in Fig. 1(middle): The endpoint remaining of the first curve coincides after rounding with the middle control point of the other curve, but is disconnected from the other curve itself and the intersection has disappeared.

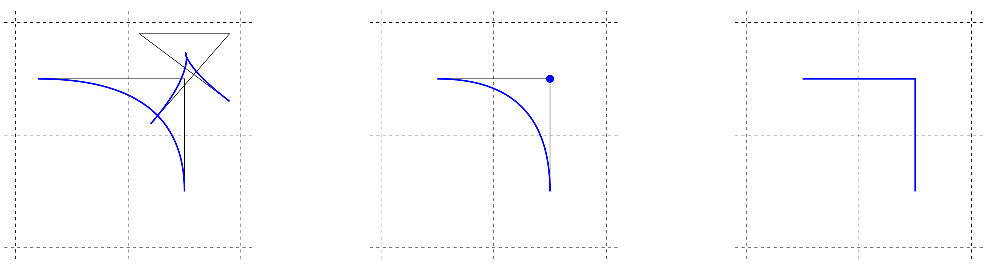

Figure 1: An example input (left), its incorrect (middle) and correct rounding (right).

The solution, as stated in the talk at the symposium, is to **defer the deletion of those trivial fragments that are non-bcp-monotone or involved in intersections to a separate step at the end of the graph building phase** – because they are still needed to trigger subdivisions of potential intersection partners. With this correction, our algorithm produces the correct rounding of the example above, see Fig. 1(right).

This correction changes the way the graph building phase works: It still produces a fat planar graph T as its result, but non-intersection of fat edges is no longer an invariant during the construction of T.

In the proof of Theorem 8, the words "easily verified by inspection of the algorithm" have to be changed to "easily verified by inspection of the corrected algorithm". The proofs of all other statements and thus the main contribution of our work remain unaffected.