

Re: Flexible Floating-Point Standard Proposal

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John,

> *This is an interesting idea. Why is the committee dealing with IEEE
> 754 ignoring it?*

NIH = Not Invented Here. About a decade ago I was approached to coordinate the IEEE FP effort, My response "GREAT, now I can fix all of the problems it has!" "What Problems?" The next half hour was taken up with my explanation of its many problems. That was the end of THAT discussion. I probably should have just kept quiet until I had the position.

> *There is actually a simple reason. Although an interesting idea, it
> would require effort to implement. Thus, the fact that it exists as an
> alternative is not enough to lead to an effort to standardize it.*
>
> *The effort to create IEEE 754 resulted from a groundswell of demand
> among people using computers to perform numerical calculations, based
> on the fact that the floating-point offered on at least some
> architectures (i.e., the hexadecimal floating-point of the IBM 360
> series) was inadequate, and that gradual underflow was sorely needed.*
>
> *Some items, such as affine infinity, were dropped from IEEE 754 – they
> were implemented on the 8087, but not on its successors, therefore.*
>
> *If enough people who work with numbers think that something like your
> proposal is needed, then, once they take it up, this idea *will* go
> somewhere; but there has to be a real demand before it is felt that it
> is worth the effort.*

Here is the problem. Global Warming, outsourcing, the balance of trade, etc., are all things that are now being allowed because present simulations completely and hopelessly fail to predict their effects. Further, there is good reason that these fixes to FP would make much more reliable simulations possible. However, the people doing this don't represent 1% of the PC users. Seeing some of the logical traps that the VERY competent people on this forum fall into (e.g. using algorithms that don't pre