

Paul De Bièvre

## Is the classical metrology pyramid upside down?

© Springer-Verlag 2006

P. De Bièvre (✉)  
Duineneind 9,  
2460 Kasterlee, Belgium  
e-mail: paul.de.bievre@skynet.be  
Tel.: +32-14851338  
Fax: +32-14853908

There is a remarkable observation to be made on the international measurement scene: it is full of talk about 'high' metrology, the National Metrology Institutes position themselves at the *top* of the metrology pyramid. Also BIPM and the SI are proclaimed loudly to be located at that *top*. And all show so in pictures. Yet it is claimed that the SI is the *basis* for our measurement system, that NMIs *support* the international measurement infrastructure (and the national infrastructure as well), and that they need budget to exert this *supporting* function.

Which is all true.

Also, when we look at all the pictures representing our international infrastructure for measurement results, the SI is located at the *top* claiming that it forms the . . .yes, basis.

So, what is wrong?

When the statement is made that the SI is the *basis* of our international measurement infrastructure, that is correct, of course. It is meant to be the inspiration, the common ground for a rational and transparent measurement system and corresponding infrastructure. A real achievement on the international scene. The underlying idea is obvious: being unmoveable, no arbitrariness involved, in other words *supporting* everything *above* in any structure, by good solid *foundations* below in the same structure.

So far, all is well.

But why don't they *show* so?

When we look at the *pictures* of the metrology pyramid, and take away the *basis* in the picture, the field laboratories disappear, but the NMIs and the SI stay.

What for?

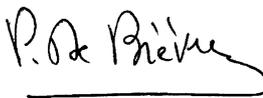
There is nothing to *support* anymore because those being supported, have disappeared. Such a picture does not seem very 'customer-oriented', or 'user-friendly', or, for that matter, not even 'fit-for-purpose', just to use a little modern speak.

Let us invert the pyramid, and let it point down. Now the SI is at the bottom, the NMIs above the SI, and the broad band of field laboratories high up. Immediate consequence: taking away the bottom forming the 'basis' or 'anchor' of the whole structure, makes the whole structure crumble. Quite rightly so! If one takes away a *basis* or an *anchor*, (in this case the point of the pyramid pointing down), of what one is structuring, the structure comes down. So it is with a pyramid pointing down. Cutting off the point of the inverted pyramid, makes the pyramid crumble. You can test it yourself experimentally.

We don't think that the NMIs really want to be on *top* of the pyramid (pointing up). They want to be seen at the bottom (at the point of the pyramid pointing down), thus being seen in a position of *servicing* the field laboratories located above them. They want to be seen in function of *servicing and supporting*, at the point of an inverted pyramid, thereby showing that the whole structure would crumble when they would be cut off.

Most importantly, it would carry that important message, so close to their hearts as they so assiduously claim, *visibly* to the field.

Too simple an idea for NMIs to show to the public their 'fundamental' role, their *servicing* function and . . . usefulness?



Editor-in-Chief