**General Regard for Each Guideline (Pre-draft)**

**Preamble**

This regard treats general items for each detail guideline.

**1. Applicability/ Effect (Force of constraint)**

All guidelines provide all members of TCTF community with useful information on CMC and calibration service. They can be used as a one of good references for evaluating Calibration and Measurement Capabilities. However, each organization has own individual systems, history and their customers. These conditions should be respected. Therefore, all guidelines can be appropriately amended in each organization if it is necessary.

**2. Frame (Structure)**

All guidelines are as follows.

\*General Regards for Each Guideline (Pre-draft)

(1) Frequency calibration

(2) Time interval

(3) Time scale difference

Supplemental guides

(a) Basic attention for frequency calibration

**3. Estimation of Calibration and Measurement Capabilities**

Combined standard uncertainty, *uCMC*, shall be calculated by obtaining root-sum-squared (RSS) of all sources of uncertainties. These uncertainties are classified into type A and type B uncertainty. Expanded standard uncertainty, *UCMC*, shall be obtained with coverage factor of *k*=2 if the effective degree of freedom is large enough to satisfy about a 95 % probability.

　　　　　　　　　　　　　(1)

　　 

 (2)

**4. Treatment for fluctuation of DUT**

Uncertainty caused by DUT fluctuation is excluded in CMC evaluation as shown in 3 and 4. This is compliant with the approval in the CCTF. The DUT uncertainty has to be counted in an actual calibration service with appropriate number of times for measurement. The supplemental guide “Basic attention for frequency calibration” provides the information on number of measurement and the effective degree of freedom.

It should be clearly mentioned that the effect of the DUT is included or excluded in the estimation.

**6. Uncertainty in calibration service**

Uncertainty in measurement of DUT (*uDUT*) is obtained from the experimental standard deviation. So combined standard uncertainty *u*CAL is derived from *uDUT* and *uCMC*.

 (3)

The uncertainty like source oscillator stability, the uncertainty related to measurement methods can be subtracted from *uCMC* since those are doubly counted.

Finally the expanded standard uncertainty, *UCAL*, shall be obtained with coverage factor of *k*=2 if the effective degree of freedom is large enough to satisfy about a 95 % probability.

 

 (4)