

## Toward a redefinition of the second: Criteria

Calonico D.<sup>1</sup>, Ido T.<sup>2</sup>, Weyers S.<sup>3</sup>, Bize S.<sup>4</sup>, Defraigne P.<sup>5</sup>, Donley E. A.<sup>6</sup>, Fujieda M.<sup>7</sup>,  
Gertsvolf M.<sup>8</sup>, Margolis H. S.<sup>9</sup>, Pottie P.-E.<sup>4</sup>, Rieck C.<sup>10</sup>, Tagliaferro G.<sup>11</sup>

<sup>1</sup>INRIM, Italy, <sup>2</sup>NICT, Japan, <sup>3</sup>PTB, Germany, <sup>4</sup>LNE-SYRTE, France, <sup>5</sup>ORB, Belgium, <sup>6</sup>NIST, USA, <sup>7</sup>NAOJ, Japan, <sup>8</sup>NRC, Canada, <sup>9</sup>NPL, UK, <sup>10</sup>RISE, Sweden, <sup>11</sup>BIPM, France

Email: d.calonico@inrim.it

In 2022, at its 27<sup>th</sup> meeting, the General Conference on Weights and Measures (CGPM) adopted Resolution 5 “On the future redefinition of the second”<sup>1</sup>. This Resolution notes that the Consultative Committee for Time and Frequency (CCTF) has prepared a roadmap toward the redefinition of the second. It encourages the International Committee for Weights and Measures (CIPM) to bring proposals to the 28<sup>th</sup> meeting of the CGPM for the choice of the preferred species, or ensemble of species, for a new definition. The CCTF roadmap is published in *Metrologia*<sup>2</sup>. To meet the request of the CGPM, the CCTF operates a Task Force for the redefinition of the second, composed of 3 subgroups respectively on Options, Criteria and Education.

This presentation will focus on the work of the subgroup devoted to criteria and their fulfillment level. The mission of this subgroup is to provide a continuous monitoring of the advances with respect to the fulfillment level of criteria required for a redefinition. This monitoring will also include the assessment of a fulfillment index for each criterion, updated each year.

To achieve those two targets, monitoring and assessment, the subgroup developed factsheets on each single criterion, documents that are supplied to CCTF members to support their own insight in the roadmap towards the redefinition. We will present the status of this work and seek feedback from the community. The interaction with the community should raise the general awareness of the steps that are required to meet an appropriate time schedule towards a possible redefinition, to recognize strengths and critical issues, and possibly to take action to achieve the expected advancements.

The CCTF task force on the roadmap for the redefinition of the SI second is led by the President of CCTF and by the Director of the time department of the BIPM.

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<sup>1</sup> Resolution 5 of the 27th CGPM (2022) “On the future redefinition of the second”. <https://www.bipm.org/en/cgpm-2022/resolution-5>.

<sup>2</sup> N. Dimarcq et al, *Roadmap towards the redefinition of the second*, *Metrologia* 61, 012001 (2024). Open access. <https://iopscience.iop.org/article/10.1088/1681-7575/ad17d2>.