Annual report of DFM to CCM 2021
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1. Introduction
This report describes the activities carried out by DFM in the field of mass in the period from May 2019 to April 2021.

2. Scientific research and development
DFM has developed and implemented a measurement design that eliminates weighing position errors detected on an automatic 32 kg mass comparator during calibration of mass standards in the range 2 kg – 20 kg.

DFM has participated in CCM Task Group on the Phases for the Dissemination of the kilogram following redefinition (CCM-TGPID-kg).

3. Key comparisons
DFM participated in the comparison EURAMET.M.M-K4.2015 and was member of the support group set up for this comparison. The Final report was published in March 2020 [11].

DFM was a member of the support group for the key comparison CCM.M-K8.2019 [12].

<table>
<thead>
<tr>
<th>Key comparison ID</th>
<th>Period</th>
<th>Measurement standards</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>EURAMET.M.M-K4.2015</td>
<td>2015-2020</td>
<td>1 kg</td>
<td>Final report</td>
</tr>
</tbody>
</table>

Table 1. Key comparisons on calibration of mass standards in which DFM has actively participated in the period May 2019 to April 2021.

4. Relevant publications
[8] Nielsen L 2015 Improving traceability to the international prototype of the kilogram Metrologia 52 538-51
[8] Nielsen L 2015 Transferring the unit of mass between weights kept in air and in vacuum, DFM-2015-R03

Metrologia 53 A95-113

[10] Nielsen L 2016 Disseminating the unit of mass from multiple primary realisations Metrologia 53 1306-16
