

Member State  
Associate of the CGPM  
International organization

## State as on 16 October 2017

Acronyms are listed in the last page of this document.

Country	AUV				Mass and Related Quantities										Length			PR	T	TF	EM	
	A	W	V	Total	Mass 1	Dens 2	Pres 3	F 4	Torq 5	Visc 6	H 7	Grav 8	FF 9	Total	Laser	Dim Met	Total	Total	Total	Total	Total	Matrices
Albania					7									7								
Azerbaijan																						
Argentina	5		4	9	29	16	13	11					4	73	1	11	12	4	17	9	78	21
Australia	13		10	23	18	2	4	5						29		6	6	17	26	21	80	27
Austria	17		6	23	9	2	7	4		7	4	1	25	59	5	22	27	4	23	17	36	10
Bangladesh																						
Belarus	25			25	6		1			2	1			10	2	14	16	11	37	31	41	6
Belgium					10		2	0						12	3	11	14		20	4	7	3
Bolivia					17									17								
Bosnia and Herzegovina					8									8					9	15	26	23
Botswana																						
Brazil	57		31	88	27	15	14	5	1	22			4	88	8	19	27	11	11	13	66	29
Bulgaria	12		18	30	8		15			1				24	3	16	19	7	44	16	58	33
Canada	20	3	9	32	32	8	9						3	52	10	9	19	71	64	7	73	22
CARICOM																						
Chile					24			9						33		1	1		10		26	13
China	22	3	31	56	10	4	8	3	1	15	14		12	67	2	76	78	27	50	28	180	81
Chinese Taipei	21		18	39	9		12	4			3		21	49	3	55	58	45	27	9	49	20
Colombia						1								1					37	13		
Costa Rica					24								8	32					8	11	16	14
Croatia							10							10	3	19	22		32		21	12
Cuba													12	12					8		17	
Czech Republic	4		4	8	10		11	4	1				20	46	15	66	81	40	73	17	87	58
Denmark	29		2	31	7		14	4					36	61		14	14	8	28		54	8
Ecuador					20									20								
Egypt					7		6	4	1	5				23	2		2			4	2	1
ESA																						
Estonia																			4			
Finland	17		13	30	9	2	14	3	3			1	3	35	11	49	60	53	42	11	103	39
France	57		6	63	10	12	19	8	5	31			20	105	5	22	27	30	101	11	131	59
Georgia					5									5					9		16	2
Germany	18	5	53	76	10	22	23	11	4	67	24		42	203	4	92	96	83	117	25	164	57
Ghana																						
Greece					9								15	24	2	2	4		54		38	12
Hong Kong, China	15			15	9	6	6	4	3		6			34	2	11	13		30	29	66	43
Hungary	6			6	8	14	16	8			5		8	59	3	15	18	57	46	5	85	5
IAEA																						

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International organization

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	A	W	V	Total	Mass 1	Dens 2	Pres 3	F 4	Torq 5	Visc 6	H 7	Grav 8	FF 9	Total	Laser	Dim Met	Total	Total	Total	Total	Total	Matrices
India	23		11	34	16	2	17	6	1	6	3		3	54	2	45	47	14	4	11	74	32
Indonesia	15	12		27	24		3							27		5	5		15		20	10
Iran																						
Iraq																						
Ireland	4			4	7									7		13	13		33	7	36	23
Israel																						
Italy	23	2	17	42	8	7	14	7		0	15	1	16	68	7	35	42	23	97	12	119	53
Jamaica					22									22								
Japan	4		4	8	12	7	11	3	3	28	3		28	95	7	35	42	49	44	31	55	41
JRC																						
Kazakhstan					6						8			14	3	3	6		9	25	3	3
Kenya	3		6	9																		
Korea	33	4	19	56	9	8	11	5	2		8		7	50	6	35	41	41	74	24	90	36
Latvia					7									7		6	6				16	2
Lithuania					7		5						8	20		9	9		17	16	16	6
Luxembourg																						
Macedonia, the FYR					7								6	13					8			
Malaysia	8		13	21	7		8							15	4	3	7	8	6	4	33	10
Malta																						
Mauritius																						
Mexico	23	1	16	40	28	20	18	15	4	11			15	111	2	32	34		0		142	49
Moldova																			40			
Mongolia																						
Montenegro													1	1					18			
Namibia																						
Netherlands, The					7	2	5	0		40			30	84	9	63	72	32	76	26	206	42
New-Zealand					9	3	8							20	3	18	21	30	14	11	81	16
Norway					9									13	4	7	11	3	46		28	16
Pakistan																						
Oman																						
Panama					20									20						10	7	5
Paraguay					23		1							24								
Peru					19	1	2	1					7	30		1	1		43	4	12	5
Philippines					21									21					10			
Poland	15		33	48	8	5	8	4		31	4		10	70	7	43	50	15	69	30	48	30
Portugal			2	2	6	1	6	2		7			11	33	4	11	15	3	47		12	6
Qatar																						
Romania	8			8	9		7	3		7	4			30	1	20	21	17	44	9	39	20
Russia	35	7	30	72	8	2	13	18		11	9		6	67	1	22	23	110	143	36	326	10
Saudi Arabia																						
Serbia	12			12	10								13	23	3	12	15	11	37	12	40	20
Seychelles																						
Singapore					6		8	4			3		4	25	2	35	37	40	85	16	47	33
Slovakia					7		5			25			10	47	3	15	18	11	82	16	41	13
Slovenia					7		9						4	20	3	21	24		61	11	88	29
South Africa	15		29	44	24		11	10					5	50	1	30	31	60	34	8	112	
Spain	18		22	40	10	7	25	4	3				3	52	3	39	42	56	69	19	77	28
Sri Lanka																						
Sudan																						

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International organization

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Country	AUV				Mass and Related Quantities									Length			PR	T	TF	EM		
	A	W	V	Total	Mass 1	Dens 2	Pres 3	F 4	Torq 5	Visc 6	H 7	Grav 8	FF 9	Total	Laser	Dim Met	Total	Total	Total	Total	Total	Matrices
Sweden	20		13	33	11	8	14	4					23	60	3	38	41	29	54	19	143	26
Switzerland	21		3	24	10	16	8	4	2			1	10	51	3	67	70	53	23	12	101	46
Syrian Arab Republic																						
Thailand	18			18	8		11				3			22	2	31	33	5	40	8	21	16
Tunisia																				10	4	4
Turkey	16	1	8	25	8	3	12	6		47			10	86	5	71	76	9	50	20	119	52
Ukraine	30			30	5					2	1	1	3	12	2	25	27	6	63	30	57	11
United Arab Emirates																						
United Kingdom	0	11		11	9	8	11	6					13	47	10	45	55	136	62	12	173	55
United States	15	1	16	32	38	7	22	15			17		9	108	1	48	49	114	89	11	321	13
Uruguay					35	11							4	50		1	1		27			132
Viet Nam					6		3						4	13	2	7	9		4	5		
WMO																						
Yemen																						
Zambia																						
Zimbabwe																						
	697	50	447	1194	835	222	480	204	34	365	135	5	509	2789	187	1421	1608	1343	2564	761	4359	
<b>14618</b>	<b>1194</b>			<b>2789</b>											<b>1608</b>			<b>1343</b>	<b>2564</b>	<b>761</b>	<b>4359</b>	
<b>Total General Physics</b>	<b>Total AUV</b>			<b>Total M</b>											<b>Total L</b>			<b>Total PR</b>	<b>Total T</b>	<b>Total TF</b>	<b>Total EM</b>	

Member State
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International organization

Country	Ionizing Radiation				Chemistry (QM)															Total by country for all metrology areas	
	RI(I) 1	RI(II) 2	RI(III) 3	Total	QM / 1	QM / 2	QM / 3	QM / 4	QM / 5	QM / 6	QM / 7	QM / 8	QM / 9	QM / 10	QM / 11	QM / 12	QM / 13	QM / 14	QM / 15		Total
Albania																					7
Azerbaijan																					0
Argentina		48		48		5	6		3			3	3				15			43	293
Australia	15	32	2	49	68		3	11	18					13	11		4			128	379
Austria	52	100		152				9												9	350
Bangladesh																					0
Belarus	21	30		51				15		2	1									18	240
Belgium																					57
Bolivia										2										2	19
Bosnia and Herzegovina												1								1	59
Botswana																					0
Brazil	8	96	15	119	7	3	22	36	17	5	3				8	6	10			117	540
Bulgaria	7	16		23						5										5	226
Canada	10		1	11	27	1			39					32	35		36		9	179	508
CARICOM																					0
Chile																					70
China	17	176	2	195	230	68	102	201		4	3	11	18	42	139	9		3	6	836	1517
Chinese Taipei	7	78	4	89				7												7	372
Colombia										1	3									4	55
Costa Rica																					67
Croatia	2			2																	87
Cuba	13	63		76																	113
Czech Republic	7	104	12	123				23		3	3			0						29	504
Denmark	7			7						4	5									9	212
Ecuador																					20
Egypt	2			2			1											1		2	35
ESA																					0
Estonia																					4
Finland	30			30				6												6	370
France	82	206	15	303		13	22	40	7	4			4	10	18		7			125	896
Georgia																					30
Germany	88	158	20	266	25	34	17	82	26	7	5	159	43	35	18	3	41	22	7	524	1554
Ghana																					0
Greece	35			35	1				3					2	8					14	169
Hong Kong, China					4	3			6	1				1	12	20	2	13	2	64	251
Hungary	26	78		104				19		3	4									26	406
IAEA	26			26																	26

Member State
Associate of the CGPM
International organization

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	RI(I) 1	RI(II) 2	RI(III) 3	Total	QM / 1	QM / 2	QM / 3	QM / 4	QM / 5	QM / 6	QM / 7	QM / 8	QM / 9	QM / 10	QM / 11	QM / 12	QM / 13	QM / 14	QM / 15		Total		
India									1												1	239	
Indonesia																						94	
Iran																						0	
Iraq																						0	
Ireland																						100	
Israel																						0	
Italy	76	13	9	98				2			0	3	2	0	2						9	510	
Jamaica																						22	
Japan	29	217	13	259	86	42	12	152	22	6	1	3	13	10	115	9	71				542	1125	
JRC		110		110	31	9	11		4				9	5	6	2	17				94	204	
Kazakhstan								5		1											6	63	
Kenya															2						2	11	
Korea	14	189	11	214	5	35	50	288					18	20	87		4	5	2		514	1104	
Latvia																						29	
Lithuania																						78	
Luxembourg																						0	
Macedonia, the FYR																						21	
Malaysia	15			15																		109	
Malta																						0	
Mauritius																						0	
Mexico	6	45		51	62	37	66	26	12	6	2	15	5	4	16		78				329	707	
Moldova	2			2																		42	
Mongolia																						0	
Montenegro																						19	
Namibia																						0	
Netherlands, The	21	57		78	17		4	222	2						1		0				246	820	
New-Zealand																						177	
Norway	22			22																		132	
Pakistan																						0	
Oman																						0	
Panama																						37	
Paraguay																						24	
Peru						9			1	4	2				1		2				19	109	
Philippines																						31	
Poland	4	68		72				23		6	2										31	433	
Portugal	43			43				21														21	176
Qatar																						0	
Romania		37		37		7			4			4					4				19	224	
Russia	161	124	44	329	35	15	24	458	9	6	4	14	20	4	8		21	3			621	1727	
Saudi Arabia																						0	
Serbia								1														1	151
Seychelles																						0	
Singapore					9				9					12	9				3			42	292
Slovakia	30	37	9	76	7	35		38		5	2										87	378	
Slovenia	9	5		14					2			1		5	7				2		17	235	
South Africa	1	36		37		1	2	82				4			20		8			1	118	494	
Spain	52	107		159				31														31	545
Sri Lanka																						0	
Sudan																						0	

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Country	Ionizing Radiation				Chemistry (QM)															Total by country for all metrology areas	
	RI(I) 1	RI(II) 2	RI(III) 3	Total	QM / 1	QM / 2	QM / 3	QM / 4	QM / 5	QM / 6	QM / 7	QM / 8	QM / 9	QM / 10	QM / 11	QM / 12	QM / 13	QM / 14	QM / 15		Total
Sweden	23			23							2									2	404
Switzerland	3	21		24				14												14	372
Syrian Arab Republic																					0
Thailand							4	7	4				7	5	26	2			3	58	205
Tunisia																					14
Turkey		3		3	23	2		9	11			7		22	19	6	6	3		108	496
Ukraine		15		15	1			17		6	4									28	268
United Arab Emirates																					0
United Kingdom	22	116	42	180	28	26	8	325	13			1	6	23	17	1	7			455	1131
United States	24	497	8	529	10	73	149	135	21	9	3		9	160	19	33	1	14		636	1889
Uruguay									3	2					2					7	217
Viet Nam																					31
WMO								3												3	3
Yemen																					0
Zambia																					0
Zimbabwe																					0
	1012	2882	207	4101	676	418	499	2306	239	96	49	226	158	416	622	73	345	61	25	6209	Grand total
14618		4101		6209																	24928
Total General Physics		Total RI		Total Chemistry																	

### Acronyms used in this document

<b>AUV</b>	<b>Acoustics, Ultrasound and Vibration</b>
AUV A	Acoustics, Ultrasound and Vibration; <b>Sound in air</b>
AUV W	Acoustics, Ultrasound and Vibration; <b>Sound in water</b>
AUV V	Acoustics, Ultrasound and Vibration; <b>Vibration</b>
<b>EM</b>	<b>Electricity and Magnetism</b>
EM Matrices	Usage of the presentation in tables of uncertainty ranges
<b>L</b>	<b>Length</b>
L Laser	Length; <b>Laser</b>
L DimMet	Length; <b>Dimensional Metrology</b>
<b>M</b>	<b>Mass and Related Quantities</b>
M Mass 1	Mass and Related Quantities; <b>Mass Standards (Service Category No 1)</b>
M Dens 2	Mass and Related Quantities; <b>Density (Service Category No 2)</b>
M Pres 3	Mass and Related Quantities; <b>Pressure (Service Category No 3)</b>
M F 4	Mass and Related Quantities; <b>Force (Service Category No 4)</b>
M Torq 5	Mass and Related Quantities; <b>Torque (Service Category No 5)</b>
M Visc 6	Mass and Related Quantities; <b>Viscosity (Service Category No 6)</b>
M H 7	Mass and Related Quantities; <b>Hardness (Service Category No 7)</b>
M Grav 8	Mass and Related Quantities; <b>Gravity (Service Category No 8)</b>
M FF 9	Mass and Related Quantities; <b>Fluid Flow (Service Category No 9)</b>
<b>PR</b>	<b>Photometry and Radiometry</b>
<b>QM</b>	<b>Chemistry</b>
QM / 1	Chemistry; <b>High purity chemicals (Service Category No 1)</b>
QM / 2	Chemistry; <b>Inorganic solutions (Service Category No 2)</b>
QM / 3	Chemistry; <b>Organic solutions (Service Category No 3)</b>
QM / 4	Chemistry; <b>Gases (Service Category No 4)</b>
QM / 5	Chemistry; <b>Water (Service Category No 5)</b>
QM / 6	Chemistry; <b>pH (Service Category No 6)</b>
QM / 7	Chemistry; <b>Electrolytic conductivity (Service Category No 7)</b>
QM / 8	Chemistry; <b>Metal and metal alloys (Service Category No 8)</b>
QM / 9	Chemistry; <b>Advanced materials (Service Category No 9)</b>
QM / 10	Chemistry; <b>Biological fluids and materials (Service Category No 10)</b>
QM / 11	Chemistry; <b>Food (Service Category No 11)</b>
QM / 12	Chemistry; <b>Fuels (Service Category No 12)</b>
QM / 13	Chemistry; <b>Sediments, soils, ores, and particulates (Service Category No 13)</b>
QM / 14	Chemistry; <b>Other materials (Service Category No 14)</b>
QM / 15	Chemistry; <b>Surfaces, films, and engineered nanomaterials (Service Category No 15)</b>
<b>RI</b>	<b>Ionizing radiation</b>
RI(I) 1	Ionizing radiation; <b>Dosimetry (Service Category No 1)</b>
RI(II) 2	Ionizing radiation; <b>Radioactivity (Service Category No 2)</b>
RI(III) 3	Ionizing radiation; <b>Neutron measurements (Service Category No 3)</b>
<b>T</b>	<b>Thermometry</b>
<b>TF</b>	<b>Time and Frequency</b>

Note that one CMC involving  $n$  analytes measured in one matrix (multi-component CMC) is counted as  $n$  CMCs in the Tables above. The reason for this is that  $n$  values of uncertainties are given for this  $n$ -component CMC.