

CCAUV.V-K1, CCAUV.V-K1.1, APMP.AUV.V-K1, EUROMET.AUV.V-K1, SIM.AUV.V-K1, EUROMET.AUV.V-K1.1, and APMP.AUV.V-K1.2

Key comparison CCAUV.V-K1

MEASURAND : Charge sensitivity

Frequency : 160 Hz

$x_i$ : result of measurement carried out by laboratory  $i$

$u_i$ : combined standard uncertainty of  $x_i$

Back-to-back (BB) accelerometer type 8305 S/N 1483337

Lab $i$ ↓	$x_i$ / [pC/(m/s <sup>2</sup> )]	$u_i/x_i$ / 10 <sup>-2</sup>
PTB	0.12664	0.05
BNM-CESTA	0.12670	0.25
CSIRO-NML	0.12660	0.15
CMI	0.12660	0.23
CSIR-NML	0.12660	0.25
CENAM	0.12660	0.25
NRC	0.12675	0.15
KRISS	0.12649	0.18
NMIJ	0.12660	0.22
VNIIM	0.12682	0.20
NIST	0.12650	0.15
NMI-VSL	0.12660	0.17

BNM-CESTA was a participant in the CIPM MRA at the time of the comparison.

CCAUV.V-K1, CCAUV.V-K1.1, APMP.AUV.V-K1, EUROMET.AUV.V-K1, SIM.AUV.V-K1, EUROMET.AUV.V-K1.1, and APMP.AUV.V-K1.2

Key comparison CCAUV.V-K1.1

MEASURAND : Charge sensitivity

Frequency : 160 Hz

$x_i$ : result of measurement carried out by laboratory  $i$

$2u_i$ : expanded uncertainty ( $k = 2$ ) of  $x_i$

$u_i$ : combined standard uncertainty of  $x_i$

Back-to-back (BB) accelerometer type 8305 designated as "B2B"

Lab $i$ ↓	$x_i$ / [pC/(m/s <sup>2</sup> )]	$2u_i/x_i$ / 10 <sup>-2</sup>
PTB	0.12606	0.10
NIM	0.12604	0.20
NPLI	0.12630	0.70
INMETRO	0.12603	0.24

CCAUV.V-K1, CCAUV.V-K1.1, APMP.AUV.V-K1, EUROMET.AUV.V-K1, SIM.AUV.V-K1, EUROMET.AUV.V-K1.1, and APMP.AUV.V-K1.2

Key comparison APMP.AUV.V-K1

MEASURAND : Amplified charge sensitivity

Frequency : 160 Hz

$x_i$ : result of measurement carried out by laboratory  $i$  participant in APMP.AUV.V-K1 only normalized through the linking coefficient 0.12710 pC/mV to the CCAUV.V-K1, see page 3 and page 8 of the Linkage Report.

$u_i$ : combined standard uncertainty of  $x_i$ .

Back-to-back (BB) accelerometer type 8305 S/N 1610202 with charge amplifier type 2626, S/N 1242511

Lab $i$ ↓	$x_i$ / [pC/(m/s <sup>2</sup> )]	$u_i/x_i$ / 10 <sup>-2</sup>
CMS/ITRI	0.12618	0.53
NML-SIRIM	0.12666	0.16

CCAUV.V-K1, CCAUV.V-K1.1, APMP.AUV.V-K1, EUROMET.AUV.V-K1, SIM.AUV.V-K1, EUROMET.AUV.V-K1.1, and APMP.AUV.V-K1

Key comparison EUROMET.AUV.V-K1

MEASURAND : Charge sensitivity

Frequency : 160 Hz

$x_i$ : result of measurement carried out by laboratory  $i$  in EUROMET.AUV.V-K1

$u_i$ : combined standard uncertainty of  $x_i$

Back-to-back (BB) accelerometer type 8305 S/N 2355677

Lab $i$ ↓	$x_i$ / [pC/(m/s <sup>2</sup> )]	$u_i/x_i$ / 10 <sup>-2</sup>
PTB	0.12801	0.05
BNM-CESTA	0.128	0.25
GUM	0.12782	0.30
DPLA	0.1279	0.102
INRIM	0.1279	0.17
SP	0.1284	0.2
INETI	0.1278	0.2
CMI	0.12785	0.25
UME	0.12799	0.25

Back-to-back (BB) accelerometer type 8305 S/N 606559

Lab $i$ ↓	$x_i$ / [pC/(m/s <sup>2</sup> )]	$u_i/x_i$ / 10 <sup>-2</sup>
PTB	0.12646	0.05
BEV	0.1262	0.28
CEM	0.1265	0.3
METAS	0.1258	0.338

BNM-CESTA was a participant in the CIPM MRA at the time of the comparison.

CCAUV.V-K1, CCAUV.V-K1.1, APMP.AUV.V-K1, EUROMET.AUV.V-K1, SIM.AUV.V-K1, EUROMET.AUV.V-K1.1, and APMP.AUV.V-K1.2

Key comparison SIM.AUV.V-K1

MEASURAND : Amplified charge sensitivity

Frequency : 160 Hz

$x_i$ : result of measurement carried out by laboratory  $i$  participant in SIM.AUV.V-K1

$u_i$ : combined standard uncertainty of  $x_i$ .

Back-to-back (BB) accelerometer type 8305 S/N 1687773 with charge amplifier type 2626, S/N 1662291

Lab $i$ ↓	$x_i$ / [pC/(m/s <sup>2</sup> )]	$u_i/x_i$ / 10 <sup>-2</sup>
NRC	0.1251	0.15
INMETRO	0.1251	0.25
CENAM	0.1252	0.25
INTI	0.1247	0.55
NIST	0.1251	0.15

CCAUV.V-K1, CCAUV.V-K1.1, APMP.AUV.V-K1, EUROMET.AUV.V-K1, SIM.AUV.V-K1, EUROMET.AUV.V-K1.1, and APMP.AUV.V-K1.2

Key comparison EUROMET.AUV.V-K1.1

MEASURAND : Charge sensitivity

Frequency : 160 Hz

$x_i$ : result of measurement carried out by laboratory  $i$  in EUROMET.AUV.V-K1.1

$2u_i$ : expanded uncertainty ( $k = 2$ ) of  $x_i$

$u_i$ : combined standard uncertainty of  $x_i$

Back-to-back (BB) accelerometer type 8305 S/N 2161771

Lab $i$ ↓	$x_i$ / [pC/(m/s <sup>2</sup> )]	$2u_i/x_i$ / %
PTB	0.12521	0.10
INETI	0.12549	0.32
BEV	0.12472	0.56
LNE	0.12526	0.60
NCM	0.12519	0.20

CCAUV.V-K1, CCAUV.V-K1.1, APMP.AUV.V-K1, EUROMET.AUV.V-K1, SIM.AUV.V-K1, EUROMET.AUV.V-K1.1, and APMP.AUV.V-K1.2

Key comparison APMP.AUV.V-K1.2

MEASURAND : Charge sensitivity

Frequency : 160 Hz

$x_i$ : result of measurement carried out by laboratory  $i$  in APMP.AUV.V-K1.2

$2u_i$ : expanded uncertainty ( $k = 2$ ) of  $x_i$

$u_i$ : combined standard uncertainty of  $x_i$

Back-to-back (BB) accelerometer type 8305 S/N 2440139

Lab $i$ ↓	$x_i$ / [pC/(m/s <sup>2</sup> )]	$2u_i/x_i$ / %
NIM	0.1280	0.5
KIM-LIPI	0.1278	0.68
NPLI	0.1284	0.7

CCAUV.V-K1, CCAUV.V-K1.1, APMP.AUV.V-K1, EUROMET.AUV.V-K1, SIM.AUV.V-K1, EUROMET.AUV.V-K1.1, and APMP.AUV.V-K1.2

MEASURAND : Charge sensitivity  
 Back-to-back (BB) accelerometer type 8305

Frequency : 160 Hz

Key comparison CCAUV.V-K1

The key comparison reference value,  $x_R$ , is computed as the weighted mean of the results of the twelve participants in CCAUV.V-K1. The combined standard uncertainty,  $u_R$ , of the key comparison reference value is obtained as the standard deviation of the weighted mean.

$$x_R = 0.12663 \text{ pC}/(\text{m/s}^2), u_R = 0.00005 \text{ pC}/(\text{m/s}^2) \text{ and } u_R/x_R = 0.04 \times 10^{-2}$$

The degree of equivalence of each laboratory with respect to the key comparison reference value is given by a pair of terms:  $D_i = x_i - x_R$ , and its expanded uncertainty ( $k = 2$ ),  $U_i = 2(u_i^2 - u_R^2)^{1/2}$ .

The degree of equivalence between two laboratories  $i$  and  $j$  is given by a pair of terms:

$$D_{ij} = x_i - x_j \text{ and its expanded uncertainty } (k = 2), U_{ij} = 2(u_i^2 + u_j^2)^{1/2}.$$

Linkage of other key comparisons to CCAUV.V-K1

Key comparison linked to CCAUV.V-K1	Common participant(s)	Reference for the computation of the linkage	Comments
CCAUV.V-K1.1	PTB	Section 8.2 on page 78 of the CCAUV.V-K1.1 Final Report	
APMP.AUV.V-K1	CSIRO-NML (now NMIA), KRISS, NMIJ, and PTB	Pages 3 and 4 of the APMP.AUV.V-K1 Linkage Report	Linkage computed only for frequency 160 Hz
EUROMET.AUV.V-K1	PTB, BNM-CESTA and CMI	Appendix A of the EUROMET.AUV.V-K1 Final Report	
SIM.AUV.V-K1	NRC and NIST	Section III-4 on page 84 of the SIM.AUV.V-K1 Final Report	Linkage computed only for frequency 160 Hz
EUROMET.AUV.V-K1.1	PTB	Section 8 of the EUROMET.AUV.V-K1.1 Final Report	
APMP.AUV.V-K1.2	NIM	Section 8 of the APMP.AUV.V-K1.2 Final Report	

The linkage processes make it possible to extend the graph of equivalence obtained for CCAUV.V-K1 (frequency: 160 Hz, Back-to-back accelerometer) to include results from the other key comparisons.

CCAUV.V-K1, CCAUV.V-K1.1, APMP.AUV.V-K1, EUROMET.AUV.V-K1, SIM.AUV.V-K1, EUROMET.AUV.V-K1.1, and APMP.AUV.V-K1.2

MEASURAND : Charge sensitivity

Frequency : 160 Hz

Back-to-back (BB) accelerometer type 8305

Degrees of equivalence relative to the CCAUV.V-K1 key comparison reference value

Lab *i* ↓

	$D_i$	$U_i$
	/ [pC/(m/s <sup>2</sup> )x10 <sup>-4</sup> ]	
PTB	0.1	0.8
BNM-CESTA	0.7	6.3
CSIRO-NML	-0.3	3.7
CMI	-0.3	5.7
CSIR-NML	-0.3	6.3
CENAM	-0.3	6.3
NRC	1.2	3.6
KRISS	-1.4	4.5
NMIJ	-0.3	5.4
VNIIM	1.9	5.0
NIST	-1.3	3.7
NMi-VSL	-0.3	4.2
NIM	-0.2	2.8
NPLI	2.4	9.0
INMETRO	-0.3	3.3

In red: Laboratories participant in CCAUV.V-K1 (2000 - 2001)

In pink: Laboratories participant in CCAUV.V-K1.1 only (2006 - 2007)

In green: Laboratories participant in APMP.AUV.V-K1 only (1996 - 1997)

In blue: Laboratories participant in EUROMET.AUV.V-K1 only (2003 - 2004)

In black: Laboratories participant in SIM.AUV.V-K1 only (1997 - 1999)

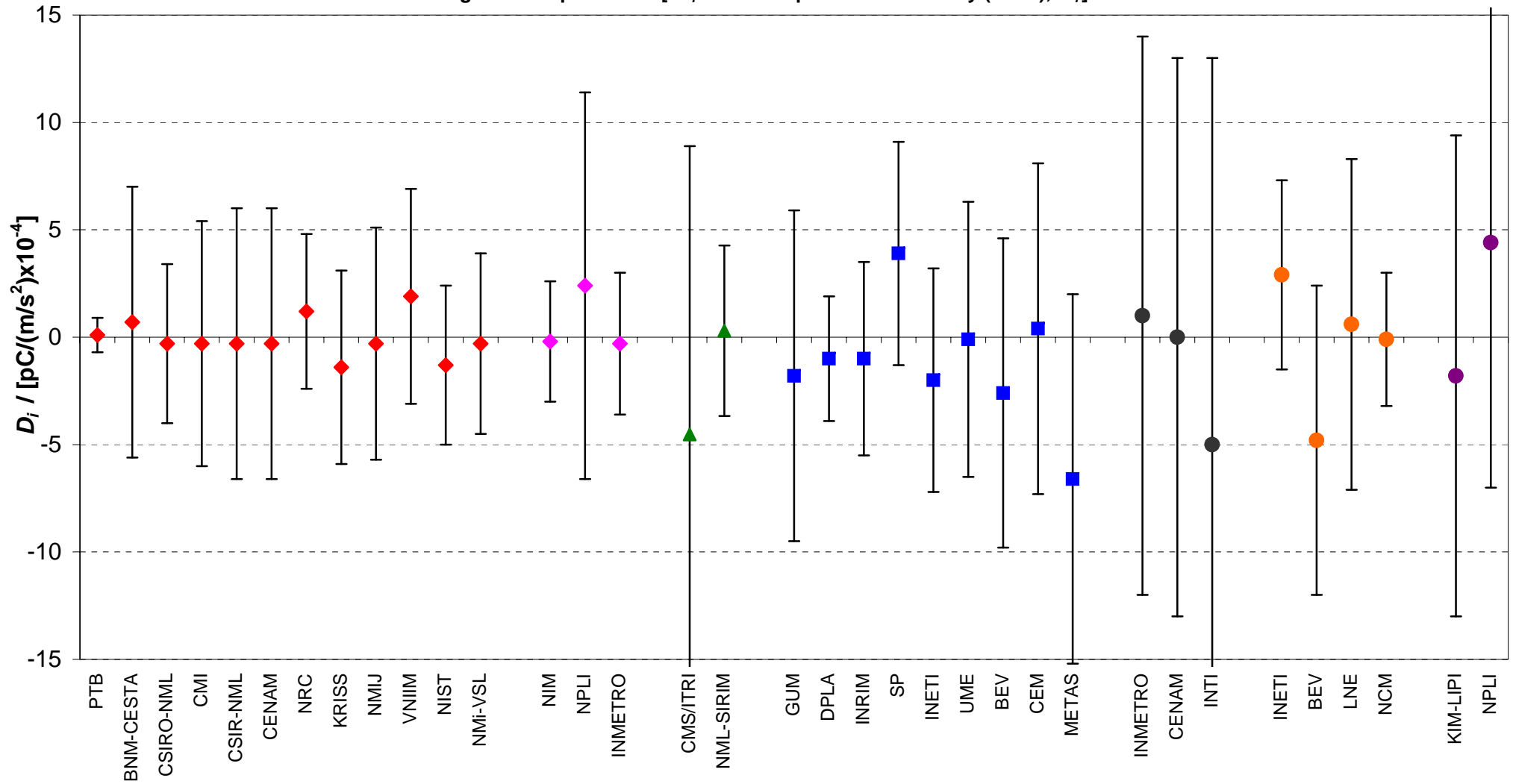
In orange: Laboratories participant in EUROMET.AUV.V-K1.1 only (2006)

In purple: Laboratories participant in APMP.AUV.V-K1.2 only (2009)

BNM-CESTA was a participant in the CIPM MRA at the time of these comparisons.

CMS/ITRI	-4.5	13.4
NML-SIRIM	0.3	4.0
GUM	-1.8	7.7
DPLA	-1	2.9
INRIM	-1	4.5
SP	3.9	5.2
INETI	-2	5.2
UME	-0.1	6.4
BEV	-2.6	7.2
CEM	0.4	7.7
METAS	-6.6	8.6
INMETRO	1	13
CENAM	0	13
INTI	-5	18
INETI	2.9	4.4
BEV	-4.8	7.2
LNE	0.6	7.7
NCM	-0.1	3.1
KIM-LIPI	-1.8	11.2
NPLI	4.4	11.4

**CCAUV.V-K1 & K1.1, APMP.AUV.V-K1 & K1.2, EUROMET.AUV.V-K1 & K1.1 and SIM.AUV.V-K1**  
**Charge sensitivity, BB accelerometer, frequency: 160 Hz**  
**Degrees of equivalence [  $D_i$  and its expanded uncertainty ( $k = 2$ ),  $U_i$  ]**



**Red diamonds:** participants in CCAUV.V-K1 (2000 - 2001)  
**Green triangles:** participants in APMP.AUV.V-K1 only (1996 - 1997)  
**Blue squares:** participants in EUROMET.AUV.V-K1 only (2003 - 2004)

**Pink diamonds:** participants in CCAUV.V-K1.1 only (2006 - 2007)  
**Black circles:** participants in SIM.AUV.V-K1 only (1997 - 1999)  
**Orange circles:** participants in EUROMET.AUV.V-K1.1 (2006)  
**Purple circles:** participants in APMP.AUV.V-K1.2 (2009)

CCAU.V-K1, CCAUV.V-K1.1, APMP.AUV.V-K1, EUROMET.AUV.V-K1, SIM.AUV.V-K1, EUROMET.AUV.V-K1.1, and APMP.AUV.V-K1.2

MEASURAND : Charge sensitivity

Frequency : 160 Hz

Back-to-back (BB) accelerometer type 8305

Matrix of equivalence

No pair-wise degrees of equivalence involving SIM.AUV.V-K1 participants have been computed

Lab <i>i</i> ↓			Lab <i>j</i> →															
	<i>D<sub>i</sub></i>	<i>U<sub>i</sub></i>	PTB		BNM-CESTA		CSIRO-NML		CMI		CSIR-NML		CENAM		NRC		KRISS	
			<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>
	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>		<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>	<i>/ pC/(m/s<sup>2</sup>)x10<sup>-4</sup></i>
PTB	0.1	0.8			-0.6	6.5	0.4	4.0	0.4	6.0	0.4	6.5	0.4	6.5	-1.1	3.9	1.4	4.7
BNM-CESTA	0.7	6.3	0.6	6.5			1.0	7.4	1.0	8.6	1.0	9.0	1.0	9.0	-0.5	7.3	2.1	7.8
CSIRO-NML	-0.3	3.7	-0.4	4.0	-1.0	7.4			0.0	7.0	0.0	7.4	0.0	7.4	-1.5	5.3	1.1	5.9
CMI	-0.3	5.7	-0.4	6.0	-1.0	8.6	0.0	7.0			0.0	8.6	0.0	8.6	-1.5	6.9	1.1	7.4
CSIR-NML	-0.3	6.3	-0.4	6.5	-1.0	9.0	0.0	7.4	0.0	8.6			0.0	9.0	-1.5	7.3	1.1	7.8
CENAM	-0.3	6.3	-0.4	6.5	-1.0	9.0	0.0	7.4	0.0	8.6	0.0	9.0			-1.5	7.3	1.1	7.8
NRC	1.2	3.6	1.1	3.9	0.5	7.3	1.5	5.3	1.5	6.9	1.5	7.3	1.5	7.3			2.6	5.9
KRISS	-1.4	4.5	-1.4	4.7	-2.1	7.8	-1.1	5.9	-1.1	7.4	-1.1	7.8	-1.1	7.8	-2.6	5.9		
NMIJ	-0.3	5.4	-0.4	5.6	-1.0	8.4	0.0	6.6	0.0	8.0	0.0	8.3	0.0	8.3	-1.5	6.6	1.1	7.1
VNIIM	1.9	5.0	1.8	5.2	1.2	8.1	2.2	6.3	2.2	7.7	2.2	8.1	2.2	8.1	0.7	6.3	3.3	6.8
NIST	-1.3	3.7	-1.4	4.0	-2.0	7.4	-1.0	5.4	-1.0	7.0	-1.0	7.4	-1.0	7.4	-2.5	5.3	0.1	5.9
NM-i-VSL	-0.3	4.2	-0.4	4.5	-1.0	7.7	0.0	5.7	0.0	7.2	0.0	7.7	0.0	7.7	-1.5	5.7	1.1	6.3
NIM	-0.2	2.8	-0.3	2.9	-0.9	6.9	0.1	4.6	0.1	6.4	0.1	6.9	0.1	6.9	-1.4	4.6	1.2	5.3
NPLI	2.4	9.0	2.3	9.0	1.7	10.9	2.7	9.7	2.7	10.6	2.7	10.9	2.7	10.9	1.2	9.7	3.8	10.0
INMETRO	-0.3	3.3	-0.4	3.4	-1.0	7.1	0.0	4.9	0.0	6.6	0.0	7.1	0.0	7.1	-1.5	4.9	1.1	5.5
CMS/ITRI	-4.5	13.4	-4.6	13.4	-5.2	14.8	-4.2	13.9	-4.2	14.6	-4.2	14.8	-4.2	14.8	-5.7	13.9	-3.1	14.1
NML-SIRIM	0.3	4.0	0.2	4.0	-0.4	7.4	0.6	5.4	0.6	7.0	0.6	7.4	0.6	7.4	-0.9	5.4	1.7	5.9
GUM	-1.8	7.7	-1.9	7.7	-2.5	9.9	-1.5	8.5	-1.5	9.6	-1.5	9.9	-1.5	9.9	-3.0	8.5	-0.4	8.9
DPLA	-1	2.9	-1.1	3.0	-1.7	6.9	-0.7	4.7	-0.7	6.4	-0.7	6.9	-0.7	6.9	-2.2	4.7	0.4	5.3
INRIM	-1	4.5	-1.1	4.5	-1.7	7.7	-0.7	5.8	-0.7	7.3	-0.7	7.7	-0.7	7.7	-2.2	5.8	0.4	6.3
SP	3.9	5.2	3.8	5.3	3.2	8.2	4.2	6.4	4.2	7.8	4.2	8.2	4.2	8.2	2.7	6.4	5.3	6.9
INETI	-2	5.2	-2.1	5.3	-2.7	8.1	-1.7	6.4	-1.7	7.8	-1.7	8.1	-1.7	8.1	-3.2	6.4	-0.6	6.8
UME	-0.1	6.4	-0.2	6.5	-0.8	9.0	0.2	7.4	0.2	8.6	0.2	9.0	0.2	9.0	-1.3	7.4	1.3	7.8
BEV	-2.6	7.2	-2.7	7.2	-3.3	9.5	-2.3	8.1	-2.3	9.2	-2.3	9.5	-2.3	9.5	-3.8	8.1	-1.2	8.5
CEM	0.4	7.7	0.3	7.8	-0.3	9.9	0.7	8.5	0.7	9.6	0.7	9.9	0.7	9.9	-0.8	8.5	1.8	8.9
METAS	-6.6	8.6	-6.7	8.6	-7.3	10.6	-6.3	9.4	-6.3	10.3	-6.3	10.6	-6.3	10.6	-7.8	9.4	-5.2	9.7
INETI	2.9	4.4	2.8	4.6	2.2	7.7	3.2	5.8	3.2	7.3	3.2	7.7	3.2	7.7	1.7	5.8	4.3	6.3
BEV	-4.8	7.2	-4.9	7.3	-5.5	9.6	-4.5	8.1	-4.5	9.3	-4.5	9.6	-4.5	9.6	-6.0	8.1	-3.4	8.5
LNE	0.6	7.7	0.5	7.8	-0.1	10.0	0.9	8.6	0.9	9.7	0.9	10.0	0.9	10.0	-0.6	8.6	2.0	9.0
NCM	-0.1	3.1	-0.2	3.3	-0.8	7.0	0.2	4.9	0.2	6.6	0.2	7.0	0.2	7.0	-1.3	4.9	1.3	5.5
KIM-LIPI	-1.8	11.2	-1.9	11.2	-2.5	11.6	-1.5	11.3	-1.5	11.5	-1.5	11.6	-1.5	11.6	-3.0	11.3	-0.4	11.4
NPLI	4.4	11.4	4.3	11.4	3.7	11.8	4.7	11.5	4.7	11.7	4.7	11.8	4.7	11.8	3.2	11.5	5.8	11.6

Lab i ↓			Lab j →													
			NMIJ		VNIIM		NIST		NMI-VSL		NIM		NPLI		INMETRO	
	$D_i$	$U_i$	$D_{ij}$	$U_{ij}$	$D_{ij}$	$U_{ij}$	$D_{ij}$	$U_{ij}$	$D_{ij}$	$U_{ij}$	$D_{ij}$	$U_{ij}$	$D_{ij}$	$U_{ij}$	$D_{ij}$	$U_{ij}$
	/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>	
PTB	0.1	0.8	0.4	5.6	-1.8	5.2	1.4	4.0	0.4	4.5	0.3	2.9	-2.3	9.0	0.4	3.4
BNM-CESTA	0.7	6.3	1.0	8.4	-1.2	8.1	2.0	7.4	1.0	7.7	0.9	6.9	-1.7	10.9	1.0	7.1
CSIRO-NML	-0.3	3.7	0.0	6.6	-2.2	6.3	1.0	5.4	0.0	5.7	-0.1	4.6	-2.7	9.7	0.0	4.9
CMI	-0.3	5.7	0.0	8.0	-2.2	7.7	1.0	7.0	0.0	7.2	-0.1	6.4	-2.7	10.6	0.0	6.6
CSIR-NML	-0.3	6.3	0.0	8.3	-2.2	8.1	1.0	7.4	0.0	7.7	-0.1	6.9	-2.7	10.9	0.0	7.1
CENAM	-0.3	6.3	0.0	8.3	-2.2	8.1	1.0	7.4	0.0	7.7	-0.1	6.9	-2.7	10.9	0.0	7.1
NRC	1.2	3.6	1.5	6.6	-0.7	6.3	2.5	5.3	1.5	5.7	1.4	4.6	-1.2	9.7	1.5	4.9
KRISS	-1.4	4.5	-1.1	7.1	-3.3	6.8	-0.1	5.9	-1.1	6.3	-1.2	5.3	-3.8	10.0	-1.1	5.5
NMIJ	-0.3	5.4			-2.2	7.4	1.0	6.6	0.0	6.9	-0.1	6.2	-2.7	10.5	0.0	6.4
VNIIM	1.9	5.0	2.2	7.4			3.2	6.3	2.2	6.7	2.1	5.7	-0.5	10.3	2.2	6.0
NIST	-1.3	3.7	-1.0	6.6	-3.2	6.3			-1.0	5.7	-1.1	4.6	-3.7	9.7	-1.0	4.9
NMI-VSL	-0.3	4.2	0.0	6.9	-2.2	6.7	1.0	5.7			-0.1	5.1	-2.7	9.9	0.0	5.3
NIM	-0.2	2.8	0.1	6.2	-2.1	5.7	1.1	4.6	0.1	5.1			-2.6	9.2	0.1	3.9
NPLI	2.4	9.0	2.7	10.5	0.5	10.3	3.7	9.7	2.7	9.9	2.6	9.2			2.7	9.3
INMETRO	-0.3	3.3	0.0	6.4	-2.2	6.0	1.0	4.9	0.0	5.3	-0.1	3.9	-2.7	9.3		
CMS/TRI	-4.5	13.4	-4.2	14.5	-6.4	14.3	-3.2	13.9	-4.2	14.1	-	-	-	-	-	-
NML-SIRIM	0.3	4.0	0.6	6.7	-1.6	6.3	1.6	5.4	0.6	5.7	-	-	-	-	-	-
GUM	-1.8	7.7	-1.5	9.4	-3.7	9.2	-0.5	8.5	-1.5	8.8	-	-	-	-	-	-
DPLA	-1	2.9	-0.7	6.2	-2.9	5.7	0.3	4.7	-0.7	5.1	-	-	-	-	-	-
INRIM	-1	4.5	-0.7	7.1	-2.9	6.7	0.3	5.8	-0.7	6.1	-	-	-	-	-	-
SP	3.9	5.2	4.2	7.6	2.0	7.2	5.2	6.4	4.2	6.7	-	-	-	-	-	-
INETI	-2	5.2	-1.7	7.6	-3.9	7.2	-0.7	6.4	-1.7	6.7	-	-	-	-	-	-
UME	-0.1	6.4	0.2	8.5	-2.0	8.1	1.2	7.4	0.2	7.7	-	-	-	-	-	-
BEV	-2.6	7.2	-2.3	9.0	-4.5	8.7	-1.3	8.1	-2.3	8.3	-	-	-	-	-	-
CEM	0.4	7.7	0.7	9.5	-1.5	9.2	1.7	8.5	0.7	8.8	-	-	-	-	-	-
METAS	-6.6	8.6	-6.3	10.2	-8.5	9.9	-5.3	9.4	-6.3	9.6	-	-	-	-	-	-
INETI	2.9	4.4	3.2	7.1	1.0	6.7	4.2	5.8	3.2	6.2	-	-	-	-	-	-
BEV	-4.8	7.2	-4.5	9.1	-6.7	8.8	-3.5	8.1	-4.5	8.4	-	-	-	-	-	-
LNE	0.6	7.7	0.9	9.5	-1.3	9.2	1.9	8.6	0.9	8.8	-	-	-	-	-	-
NCM	-0.1	3.1	0.2	6.4	-2.0	5.9	1.2	4.9	0.2	5.3	-	-	-	-	-	-
KIM-LIPI	-1.8	11.2	-1.5	11.5	-3.7	11.4	-0.5	11.3	-1.5	11.4	-	-	-	-	-	-
NPLI	4.4	11.4	4.7	11.7	2.5	11.7	5.7	11.5	4.7	11.6	-	-	-	-	-	-

CCAU.V-K1, CCAUV.V-K1.1, APMP.AUV.V-K1, EUROMET.AUV.V-K1, SIM.AUV.V-K1, EUROMET.AUV.V-K1.1, and APMP.AUV.V-K1.2  
 MEASURAND : Charge sensitivity Frequency : 160 Hz **Back-to-back (BB) accelerometer type 8305**  
 Matrix of equivalence - continued

Lab i ↓			Lab j →											
	$D_i$	$U_i$	CMS/ITRI		NML-SIRIM		GUM		DPLA		INRIM		SP	
	/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		$D_{ij}$	$U_{ij}$	$D_{ij}$	$U_{ij}$	$D_{ij}$	$U_{ij}$	$D_{ij}$	$U_{ij}$	$D_{ij}$	$U_{ij}$	$D_{ij}$	$U_{ij}$
PTB	0.1	0.8	4.6	13.4	-0.2	4.0	1.9	7.7	1.1	3.0	1.1	4.5	-3.8	5.3
BNM-CESTA	0.7	6.3	5.2	14.8	0.4	7.4	2.5	9.9	1.7	6.9	1.7	7.7	-3.2	8.2
CSIRO-NML	-0.3	3.7	4.2	13.9	-0.6	5.4	1.5	8.5	0.7	4.7	0.7	5.8	-4.2	6.4
CMI	-0.3	5.7	4.2	14.6	-0.6	7.0	1.5	9.6	0.7	6.4	0.7	7.3	-4.2	7.8
CSIR-NML	-0.3	6.3	4.2	14.8	-0.6	7.4	1.5	9.9	0.7	6.9	0.7	7.7	-4.2	8.2
CENAM	-0.3	6.3	4.2	14.8	-0.6	7.4	1.5	9.9	0.7	6.9	0.7	7.7	-4.2	8.2
NRC	1.2	3.6	5.7	13.9	0.9	5.4	3.0	8.5	2.2	4.7	2.2	5.8	-2.7	6.4
KRISS	-1.4	4.5	3.1	14.1	-1.7	5.9	0.4	8.9	-0.4	5.3	-0.4	6.3	-5.3	6.9
NMIJ	-0.3	5.4	4.2	14.5	-0.6	6.7	1.5	9.4	0.7	6.2	0.7	7.1	-4.2	7.6
VNIIM	1.9	5.0	6.4	14.3	1.6	6.3	3.7	9.2	2.9	5.7	2.9	6.7	-2.0	7.2
NIST	-1.3	3.7	3.2	13.9	-1.6	5.4	0.5	8.5	-0.3	4.7	-0.3	5.8	-5.2	6.4
NMi-VSL	-0.3	4.2	4.2	14.1	-0.6	5.7	1.5	8.8	0.7	5.1	0.7	6.1	-4.2	6.7
NIM	-0.2	2.8	-	-	-	-	-	-	-	-	-	-	-	-
NPLI	2.4	9.0	-	-	-	-	-	-	-	-	-	-	-	-
INMETRO	-0.3	3.3	-	-	-	-	-	-	-	-	-	-	-	-
CMS/ITRI	-4.5	13.4			-4.8	13.9	-	-	-	-	-	-	-	-
NML-SIRIM	0.3	4.0	4.8	13.9			-	-	-	-	-	-	-	-
GUM	-1.8	7.7	-	-	-	-			-0.8	8.1	-0.8	8.8	-5.8	9.2
DPLA	-1	2.9	-	-	-	-	0.8	8.1			0.0	5.1	-5.0	5.8
INRIM	-1	4.5	-	-	-	-	0.8	8.8	0.0	5.1			-5.0	6.7
SP	3.9	5.2	-	-	-	-	5.8	9.2	5.0	5.8	5.0	6.7		
INETI	-2	5.2	-	-	-	-	-0.2	9.2	-1.0	5.7	-1.0	6.7	-6.0	7.2
UME	-0.1	6.4	-	-	-	-	1.7	10.0	0.9	6.9	0.9	7.7	-4.1	8.2
BEV	-2.6	7.2	-	-	-	-	-1.0	10.5	-1.8	7.7	-1.8	8.4	-6.8	8.8
CEM	0.4	7.7	-	-	-	-	2.1	10.9	1.3	8.2	1.3	8.9	-3.7	9.3
METAS	-6.6	8.6	-	-	-	-	-5.0	11.6	-5.8	9.0	-5.8	9.7	-10.8	10.1
INETI	2.9	4.4	-	-	-	-	-	-	-	-	-	-	-	-
BEV	-4.8	7.2	-	-	-	-	-	-	-	-	-	-	-	-
LNE	0.6	7.7	-	-	-	-	-	-	-	-	-	-	-	-
NCM	-0.1	3.1	-	-	-	-	-	-	-	-	-	-	-	-
KIM-LIPI	-1.8	11.2	-	-	-	-	-	-	-	-	-	-	-	-
NPLI	4.4	11.4	-	-	-	-	-	-	-	-	-	-	-	-

Lab <i>i</i> ↓	Lab <i>j</i> →															
			INETI		UME		BEV		CEM		METAS		INETI		BEV	
	<i>D<sub>i</sub></i>	<i>U<sub>i</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>
	/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>	
PTB	0.1	0.8	2.1	5.3	0.2	6.5	2.7	7.2	-0.3	7.8	6.7	8.6	-2.8	4.6	4.9	7.3
BNM-CESTA	0.7	6.3	2.7	8.1	0.8	9.0	3.3	9.5	0.3	9.9	7.3	10.6	-2.2	7.7	5.5	9.6
CSIRO-NML	-0.3	3.7	1.7	6.4	-0.2	7.4	2.3	8.1	-0.7	8.5	6.3	9.4	-3.2	5.8	4.5	8.1
CMI	-0.3	5.7	1.7	7.8	-0.2	8.6	2.3	9.2	-0.7	9.6	6.3	10.3	-3.2	7.3	4.5	9.3
CSIR-NML	-0.3	6.3	1.7	8.1	-0.2	9.0	2.3	9.5	-0.7	9.9	6.3	10.6	-3.2	7.7	4.5	9.6
CENAM	-0.3	6.3	1.7	8.1	-0.2	9.0	2.3	9.5	-0.7	9.9	6.3	10.6	-3.2	7.7	4.5	9.6
NRC	1.2	3.6	3.2	6.4	1.3	7.4	3.8	8.1	0.8	8.5	7.8	9.4	-1.7	5.8	6.0	8.1
KRISS	-1.4	4.5	0.6	6.8	-1.3	7.8	1.2	8.5	-1.8	8.9	5.2	9.7	-4.3	6.3	3.4	8.5
NMIJ	-0.3	5.4	1.7	7.6	-0.2	8.5	2.3	9.0	-0.7	9.5	6.3	10.2	-3.2	7.1	4.5	9.1
VNIIM	1.9	5.0	3.9	7.2	2.0	8.1	4.5	8.7	1.5	9.2	8.5	9.9	-1.0	6.7	6.7	8.8
NIST	-1.3	3.7	0.7	6.4	-1.2	7.4	1.3	8.1	-1.7	8.5	5.3	9.4	-4.2	5.8	3.5	8.1
NMi-VSL	-0.3	4.2	1.7	6.7	-0.2	7.7	2.3	8.3	-0.7	8.8	6.3	9.6	-3.2	6.2	4.5	8.4
NIM	-0.2	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NPLI	2.4	9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
INMETRO	-0.3	3.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CMS/ITRI	-4.5	13.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NML-SIRIM	0.3	4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GUM	-1.8	7.7	0.2	9.2	-1.7	10.0	1.0	10.5	-2.1	10.9	5.0	11.6	-	-	-	-
DPLA	-1	2.9	1.0	5.7	-0.9	6.9	1.8	7.7	-1.3	8.2	5.8	9.0	-	-	-	-
INRIM	-1	4.5	1.0	6.7	-0.9	7.7	1.8	8.4	-1.3	8.9	5.8	9.7	-	-	-	-
SP	3.9	5.2	6.0	7.2	4.1	8.2	6.8	8.8	3.7	9.3	10.8	10.1	-	-	-	-
INETI	-2	5.2			-1.9	8.2	0.8	8.8	-2.3	9.3	4.8	10.0	-	-	-	-
UME	-0.1	6.4	1.9	8.2			2.7	9.6	-0.4	10.0	6.7	10.8	-	-	-	-
BEV	-2.6	7.2	-0.8	8.8	-2.7	9.6			-3.0	10.4	4.0	11.1	-	-	-	-
CEM	0.4	7.7	2.3	9.3	0.4	10.0	3.0	10.4			7.0	11.4	-	-	-	-
METAS	-6.6	8.6	-4.8	10.0	-6.7	10.8	-4.0	11.1	-7.0	11.4			-	-	-	-
INETI	2.9	4.4	-	-	-	-	-	-	-	-	-	-	-	-	7.7	8.1
BEV	-4.8	7.2	-	-	-	-	-	-	-	-	-	-	-7.7	8.1		
LNE	0.6	7.7	-	-	-	-	-	-	-	-	-	-	-2.3	8.5	5.4	10.3
NCM	-0.1	3.1	-	-	-	-	-	-	-	-	-	-	-3.0	4.7	4.7	7.4
KIM-LIPI	-1.8	11.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NPLI	4.4	11.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lab <i>i</i> ↓	Lab <i>j</i> →									
			LNE		NCM		KIM-LIPI		NPLI	
	<i>D<sub>i</sub></i>	<i>U<sub>i</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>	<i>D<sub>ij</sub></i>	<i>U<sub>ij</sub></i>
/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		/ pC/(m/s <sup>2</sup> )x10 <sup>-4</sup>		
PTB	0.1	0.8	-0.5	7.8	0.2	3.3	1.9	11.2	-4.3	11.4
BNM-CESTA	0.7	6.3	0.1	10.0	0.8	7.0	2.5	11.6	-3.7	11.8
CSIRO-NML	-0.3	3.7	-0.9	8.6	-0.2	4.9	1.5	11.3	-4.7	11.5
CMI	-0.3	5.7	-0.9	9.7	-0.2	6.6	1.5	11.5	-4.7	11.7
CSIR-NML	-0.3	6.3	-0.9	10.0	-0.2	7.0	1.5	11.6	-4.7	11.8
CENAM	-0.3	6.3	-0.9	10.0	-0.2	7.0	1.5	11.6	-4.7	11.8
NRC	1.2	3.6	0.6	8.6	1.3	4.9	3.0	11.3	-3.2	11.5
KRISS	-1.4	4.5	-2.0	9.0	-1.3	5.5	0.4	11.4	-5.8	11.6
NMIJ	-0.3	5.4	-0.9	9.5	-0.2	6.4	1.5	11.5	-4.7	11.7
VNIIM	1.9	5.0	1.3	9.2	2.0	5.9	3.7	11.4	-2.5	11.7
NIST	-1.3	3.7	-1.9	8.6	-1.2	4.9	0.5	11.3	-5.7	11.5
NMi-VSL	-0.3	4.2	-0.9	8.8	-0.2	5.3	1.5	11.4	-4.7	11.6
NIM	-0.2	2.8	-	-	-	-	-	-	-	-
NPLI	2.4	9.0	-	-	-	-	-	-	-	-
INMETRO	-0.3	3.3	-	-	-	-	-	-	-	-
CMS/ITRI	-4.5	13.4	-	-	-	-	-	-	-	-
NML-SIRIM	0.3	4.0	-	-	-	-	-	-	-	-
GUM	-1.8	7.7	-	-	-	-	-	-	-	-
DPLA	-1	2.9	-	-	-	-	-	-	-	-
INRIM	-1	4.5	-	-	-	-	-	-	-	-
SP	3.9	5.2	-	-	-	-	-	-	-	-
INETI	-2	5.2	-	-	-	-	-	-	-	-
UME	-0.1	6.4	-	-	-	-	-	-	-	-
BEV	-2.6	7.2	-	-	-	-	-	-	-	-
CEM	0.4	7.7	-	-	-	-	-	-	-	-
METAS	-6.6	8.6	-	-	-	-	-	-	-	-
INETI	2.9	4.4	2.3	8.5	3.0	4.7	-	-	-	-
BEV	-4.8	7.2	-5.4	10.3	-4.7	7.4	-	-	-	-
LNE	0.6	7.7			0.7	7.9	-	-	-	-
NCM	-0.1	3.1	-0.7	7.9			-	-	-	-
KIM-LIPI	-1.8	11.2	-	-	-	-			-6.2	12.5
NPLI	4.4	11.4	-	-	-	-	6.2	12.5		