

## **Annex E: Information sheets sent by the laboratories**

The informations contained in this annex were directly transmitted by the laboratories during the calibration campaign.

### **1 Data from OP**

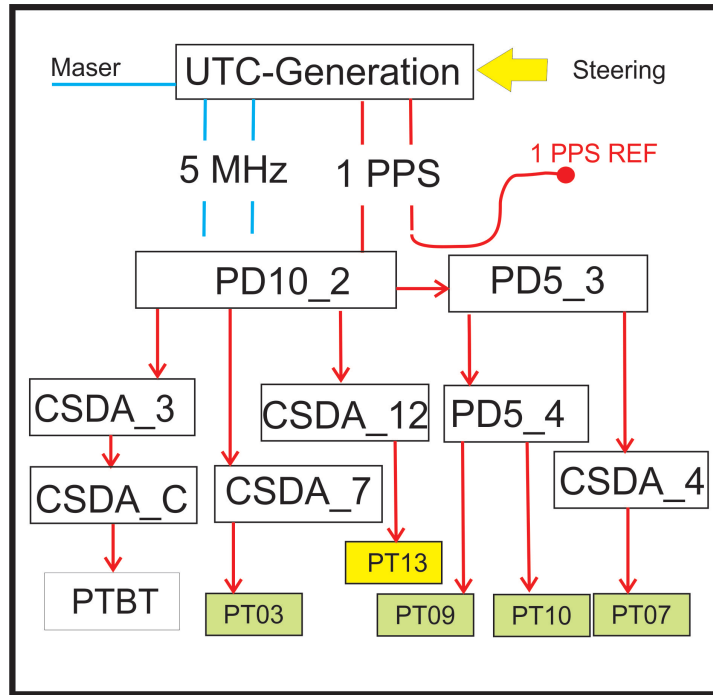
**BIPM Information Sheet**

Laboratory	LNE-SYRTE / OP	
Date and hour beginning of measurements	2019-01-26 (MJD58509) 00h00min00s	
Date and hour end of measurements	2019-02-09 (MJD58523) 23h59min59s	
<b>Information on the system</b>		
	<b>Local</b>	<b>Traveling</b>
4-character BIPM code	OP71	OPM3/OPM7
Receiver maker and type	Septentrio PolaRx4	Septentrio PolaRx4
Receiver serial number	3 102 320	3102285 / 3001164
1 PPS trigger level /V	1.0	1.0
Antenna cable maker and type	Andrew FSJ2P-50	HY 400 UF
Phase stabilized cable (Y/N)	N	N
Cable length outside building /m	≈ 6	≈ 6
Antenna maker and type	Leica AR25	Ashtech Choke-Ring
Antenna serial number	725498	6200828009
Temperature if stabilized /°C		
<b>Measured delays / ns</b>		
	<b>Local</b>	<b>Traveling</b>
Delay from local UTC(k) to receiver 1 PPS_IN	na	na
Delay from 1 PPS_IN to internal reference (see Annex 1)	na	na
Delay from local UTC(k) to internal reference	191.70 PPS_OUT – UTC(OP)	243.8 (OPM3) 254.4 (OPM7)
Antenna cable delay	128.70	218.6
Splitter delay		
Additional cable delay		
<b>Data used for the generation of CGGTTS files</b>		
	<b>Local</b>	<b>Traveling</b>
INT DLY (GPS) /ns	55.2 (P1) 53.8 (P2) Ca_Id # 1001-2018	
INT DLY (GLONASS) /ns		
CAB DLY /ns	128.70	
REF DLY /ns	191.70	
Coordinate reference frame	ITRF	
Latitude or X /m	+ 4 202 779.899	
Longitude or Y /m	+ 171 370.766	
Height or Z /m	+ 4 778 660.819	
<b>General information</b>		
Rise time of local UTC pulse	2.0 ns	
Air conditioning (Y/N)	Y (but issues on the system to be changed soon)	
Set temperature value and uncertainty	22 ± 2 °C	
Set humidity value and uncertainty		

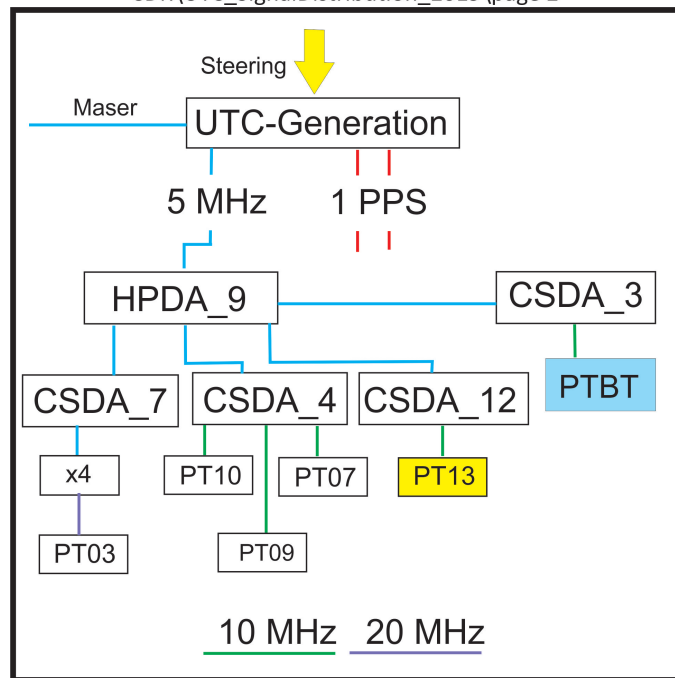
**BIPM Information Sheet**

Laboratory	LNE-SYRTE / OP	
Date and hour beginning of measurements	2019-07-17 (MJD58681) 00h00min00s	
Date and hour end of measurements	2019-07-28 (MJD58692) 23h59min59s	
<b>Information on the system</b>		
	<b>Local</b>	<b>Traveling</b>
4-character BIPM code	OP71	OPM3/OPM7
Receiver maker and type	Septentrio PolaRx4	Septentrio PolaRx4
Receiver serial number	3 102 320	3102285 / 3001164
1 PPS trigger level /V	1.0	1.0
Antenna cable maker and type	Andrew FSJ2P-50	HY 400 UF
Phase stabilized cable (Y/N)	N	N
Cable length outside building /m	≈ 6	≈ 6
Antenna maker and type	Leica AR25	Ashtech Choke-Ring
Antenna serial number	725498	6200828009
Temperature if stabilized /°C		
<b>Measured delays / ns</b>		
	<b>Local</b>	<b>Traveling</b>
Delay from local UTC(k) to receiver 1 PPS_IN	na	na
Delay from 1 PPS_IN to internal reference (see Annex 1)	na	na
Delay from local UTC(k) to internal reference	191.70 PPS_OUT – UTC(OP)	203.9 (OPM3) 194.5 (OPM7)
Antenna cable delay	128.70	218.6
Splitter delay		
Additional cable delay		
<b>Data used for the generation of CGGTTS files</b>		
	<b>Local</b>	<b>Traveling</b>
INT DLY (GPS) /ns	55.2 (P1) 53.8 (P2) Ca_Id # 1001-2018	
INT DLY (GLONASS) /ns		
CAB DLY /ns	128.70	
REF DLY /ns	191.70	
Coordinate reference frame	ITRF	
Latitude or X /m	+ 4 202 779.899	
Longitude or Y /m	+ 171 370.766	
Height or Z /m	+ 4 778 660.819	
<b>General information</b>		
Rise time of local UTC pulse	2.0 ns	
Air conditioning (Y/N)	Y (but issues on the system to be changed soon)	
Set temperature value and uncertainty	22 ± 2 °C	
Set humidity value and uncertainty		

## 2 Data transmitted by PTB



CDR\UTC\_SignalDistribution\_2019\page 2



CDR\UTC\_SignalDistribution\_2019\page3

**BIPM Information Sheet**

Laboratory	PTB	
Date and hour beginning of measurements	58534 (20-02-2019)	
Date and hour end of measurements	58540 (26-02-2019)	
<b>Information on the system</b>		
	<b>Local</b>	<b>Traveling</b>
4-character BIPM code	PT02 (PTBB)	OPM3/OPM7
Receiver maker and type	Ashtech ZXII3T	Septentrio PolaRx4 TR
Receiver serial number		3102285/3001164
1 PPS trigger level /V	1.0	1.0
Antenna cable maker and type	na	HY 400 UF
Phase stabilized cable (Y/N)		N
Cable length outside building /m	na	na
Antenna maker and type	ASH700936E	Ashtech Choke-Ring
Antenna serial number		6200828009
Temperature if stabilized /°C		
<b>Measured delays / ns</b>		
	<b>Local</b>	<b>Traveling</b>
Delay from local UTC(k) to receiver 1 PPS_IN	na	na
Delay from 1 PPS_IN to internal reference (see Annex 1)	na	na
Delay from local UTC(k) to internal reference	73.9	180.9 (OPM3) 191.5 (OPM7)
Antenna cable delay	301.7	218.6
Splitter delay		
Additional cable delay		
<b>Data used for the generation of CGGTTS files</b>		
	<b>Local</b>	<b>Traveling</b>
INT DLY (GPS) /ns	304.5 (P1) 319.8 (P2)	
INT DLY (GLONASS) /ns	na	
CAB DLY /ns	301.7	
REF DLY /ns	73.9	
Coordinate reference frame	ITRF	
Latitude or X /m	3844059.82	
Longitude or Y /m	709661.55	
Height or Z /m	5023129.78	
<b>General information</b>		
Rise time of local UTC pulse	4.0 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	21 ± 2 °C	
Set humidity value and uncertainty		

**BIPM Information Sheet**

Laboratory	PT07	
Date and hour beginning of measurements	58534 (20-02-2019)	
Date and hour end of measurements	58540 (26-02-2019)	
<b>Information on the system</b>		
	<b>Local</b>	<b>Traveling</b>
4-character BIPM code	PT07	OPM3/OPM7
Receiver maker and type	DICOM GTR50	Septentrio PolaRx4 TR
Receiver serial number	806901	3102285/3001164
1 PPS trigger level /V	1.0	1.0
Antenna cable maker and type	na	HY 400 UF
Phase stabilized cable (Y/N)		N
Cable length outside building /m	na	na
Antenna maker and type	NOV702GG	Ashtech Choke-Ring
Antenna serial number		6200828009
Temperature if stabilized /°C		
<b>Measured delays / ns</b>		
	<b>Local</b>	<b>Traveling</b>
Delay from local UTC(k) to receiver 1 PPS_IN	na	na
Delay from 1 PPS_IN to internal reference (see Annex 1)	na	na
Delay from local UTC(k) to internal reference	43.5	180.9 (OPM3) 191.5 (OPM7)
Antenna cable delay	245.8	218.6
Splitter delay		
Additional cable delay		
<b>Data used for the generation of CGGTTS files</b>		
	<b>Local</b>	<b>Traveling</b>
INT DLY (GPS) /ns	-36.9 (P1) -24.3(P2)	
INT DLY (GLONASS) /ns	na	
CAB DLY /ns	245.8	
REF DLY /ns	43.5	
Coordinate reference frame	ITRF2000	
Latitude or X /m	3844062.43	
Longitude or Y /m	709659.03	
Height or Z /m	5023128.06	
<b>General information</b>		
Rise time of local UTC pulse	4.0 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	21 ± 2 °C	
Set humidity value and uncertainty		

**BIPM Information Sheet**

Laboratory	PT09	
Date and hour beginning of measurements	58534 (20-02-2019)	
Date and hour end of measurements	58540 (26-02-2019)	
<b>Information on the system</b>		
	<b>Local</b>	<b>Traveling</b>
4-character BIPM code	PT09	OPM3/OPM7
Receiver maker and type	Septentrio PolaRx4 TR	Septentrio PolaRx4 TR
Receiver serial number	3001148	3102285/3001164
1 PPS trigger level /V	1.0	1.0
Antenna cable maker and type	na	HY 400 UF
Phase stabilized cable (Y/N)		N
Cable length outside building /m	na	na
Antenna maker and type	NOV750.R4	Ashtech Choke-Ring
Antenna serial number		6200828009
Temperature if stabilized /°C		
<b>Measured delays / ns</b>		
	<b>Local</b>	<b>Traveling</b>
Delay from local UTC(k) to receiver 1 PPS_IN	na	na
Delay from 1 PPS_IN to internal reference (see Annex 1)	na	na
Delay from local UTC(k) to internal reference	182.6	180.9 (OPM3) 191.5 (OPM7)
Antenna cable delay	198.7	218.6
Splitter delay		
Additional cable delay		
<b>Data used for the generation of CGGTTS files</b>		
	<b>Local</b>	<b>Traveling</b>
INT DLY (GPS) /ns	55.9 (P1) 55.1 (P2)	
INT DLY (GLONASS) /ns	na	
CAB DLY /ns	198.7	
REF DLY /ns	182.6	
Coordinate reference frame	ITRF	
Latitude or X /m	3844057.34	
Longitude or Y /m	709663.82	
Height or Z /m	5023131.76	
<b>General information</b>		
Rise time of local UTC pulse	4.0 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	21 ± 2 °C	
Set humidity value and uncertainty		

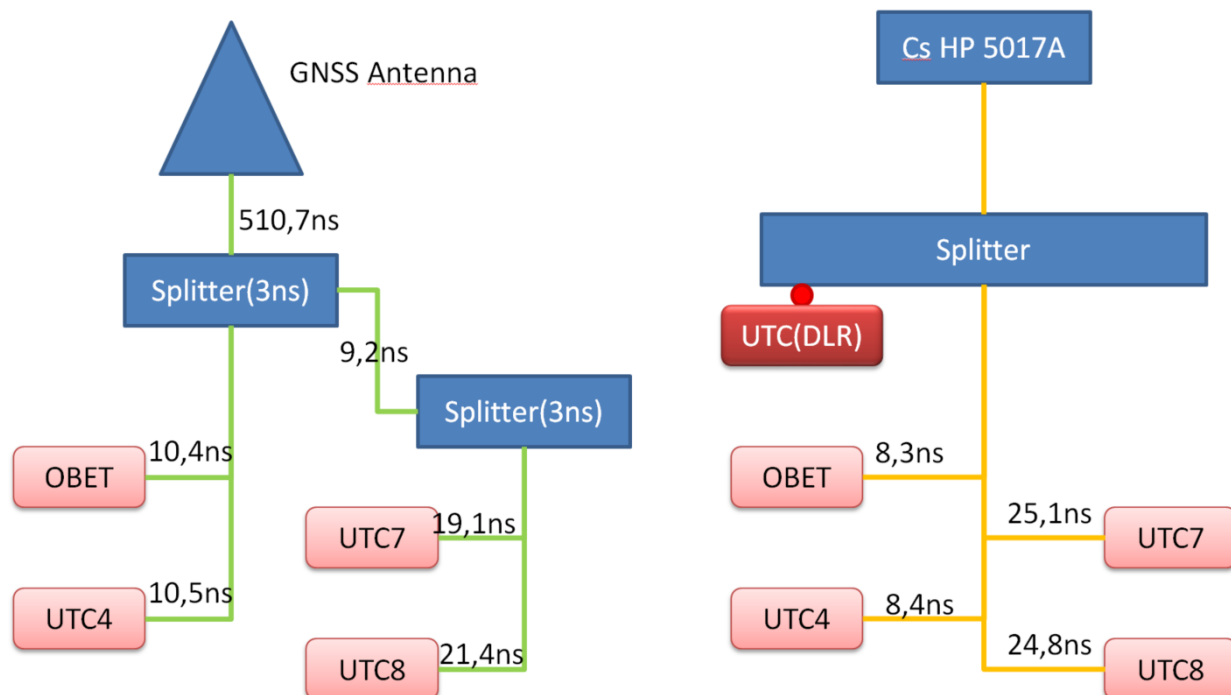
**BIPM Information Sheet**

Laboratory	PT10	
Date and hour beginning of measurements	58534 (20-02-2019)	
Date and hour end of measurements	58540 (26-02-2019)	
<b>Information on the system</b>		
	<b>Local</b>	<b>Traveling</b>
4-character BIPM code	PT10	OPM3/OPM7
Receiver maker and type	DICOM GTR51	Septentrio PolaRx4 TR
Receiver serial number	1308042	3102285/3001164
1 PPS trigger level /V	1.0	1.0
Antenna cable maker and type	na	HY 400 UF
Phase stabilized cable (Y/N)		N
Cable length outside building /m	na	na
Antenna maker and type	NAX3G+C	Ashtech Choke-Ring
Antenna serial number		6200828009
Temperature if stabilized /°C		
<b>Measured delays / ns</b>		
	<b>Local</b>	<b>Traveling</b>
Delay from local UTC(k) to receiver 1 PPS_IN	na	na
Delay from 1 PPS_IN to internal reference (see Annex 1)	na	na
Delay from local UTC(k) to internal reference	52.0	180.9 (OPM3) 191.5 (OPM7)
Antenna cable delay	250.0	218.6
Splitter delay		
Additional cable delay		
<b>Data used for the generation of CGGTTS files</b>		
	<b>Local</b>	<b>Traveling</b>
INT DLY (GPS) /ns	-26.3 (P1) -32.9 (P2)	
INT DLY (GLONASS) /ns	na	
CAB DLY /ns	250.0	
REF DLY /ns	52.0	
Coordinate reference frame	ITRF	
Latitude or X /m	3844056.64	
Longitude or Y /m	709664.25	
Height or Z /m	5023131.88	
<b>General information</b>		
Rise time of local UTC pulse	4.0 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	21 ± 2 °C	
Set humidity value and uncertainty		



### **3 Data transmitted by DLR**

## Diagram of the experiment set-up:



## Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	DLR	
Date and hour of the beginning of measurements:		
Date and hour of the end of measurements:		
Information on the system		
	Local:	Travelling:
4-character BIPM code	OBET	OPM3/OPM7
• Receiver maker and type: Receiver serial number:	PolaRx4TR Pro 3007660	PolaRx4TR
1 PPS trigger level /V:	1	
• Antenna cable maker and type: Phase stabilised cable (Y/N):	SSB ECOFLEX 15 (N)	
Length outside the building /m:	15	
• Antenna maker and type: Antenna serial number:	Novatel GNSS750 NMBJ13490005V	
Temperature (if stabilised) /°C	no	
Measured delays /ns		
(if needed fill box "Additional Information" below)		
	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	8.3 ns	na
Delay from 1 PPS-in to internal Reference (if different): <small>(see section 2 for details)</small>	149.0 ns	REFDELAY OPM3 208.6 REFDELAY OPM7 219.2
• Antenna cable delay:	510.7 ns	(1) 218.6 /218.6
Splitter delay (if any):	3.0 ns	(1)
Additional cable delay (if any):	10.4 ns	(1)
Data used for the generation of CGGTTS files		
• INT DLY (GPS) /ns:	57.8 ns (P1), 56.11 ns (P2)	
• INT DLY (Galileo) /ns:		
• INT DLY (GLONASS) /ns:		
• CAB DLY /ns:	524.1 ns (510.7+3+ 10.4) ns	
• REF DLY /ns:	160.6	
• Coordinates reference frame:	ITRF05 (2016.30 (years))	
Latitude or X /m:	+ 4186708.561m	
Longitude or Y /m:	+ 834902.584 m	
Height or Z /m:	+ 4723667.310 m	
General information		
• Rise time of the local UTC pulse:		
• Is the laboratory air conditioned:	yes	
Set temperature value and uncertainty:	(21+/-0.5)°C	
Set humidity value and uncertainty:	no	

(1) For a trip with closure, not needed if the traveling equipment is used in the same set-up throughout.

## Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	DLR	
Date and hour of the beginning of measurements:		
Date and hour of the end of measurements:		
Information on the system		
	Local:	Travelling:
4-character BIPM code	UTC4	OPM3/OPM4
• Receiver maker and type: Receiver serial number:	PolaRx4TR Pro 3001354	PolaRx4TR
1 PPS trigger level /V:	1	
• Antenna cable maker and type: Phase stabilised cable (Y/N):	SSB ECOFLEX 15 (N)	
Length outside the building /m:	15	
• Antenna maker and type: Antenna serial number:	Novatel GNSS750 NMBJ13490005V	
Temperature (if stabilised) /°C	no	
Measured delays /ns		
(if needed fill box "Additional Information" below)		
	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	8.4 ns	na
Delay from 1 PPS-in to internal Reference (if different): <small>(see section 2 for details)</small>	146.4 ns	REFDELAY OPM3 208.6 REFDELAY OPM7 219.2
• Antenna cable delay:	510.7 ns	(1) 218.6/218.6
Splitter delay (if any):	3.0 ns	(1)
Additional cable delay (if any):	10.5 ns	(1)
Data used for the generation of CGGTTS files		
• INT DLY (GPS) /ns:	58.3 ns (P1), 56.7 ns (P2)	
• INT DLY (Galileo) /ns:		
• INT DLY (GLONASS) /ns:		
• CAB DLY /ns:	524.2 ns (510.7+3+10.5) ns	
• REF DLY /ns:	139.7 ns	
• Coordinates reference frame:	ITRF05 (2016.30 (years))	
Latitude or X /m:	+ 4186708.561m	
Longitude or Y /m:	+ 834902.584 m	
Height or Z /m:	+ 4723667.310 m	
General information		
• Rise time of the local UTC pulse:		
• Is the laboratory air conditioned:	yes	
Set temperature value and uncertainty:	(21+/-0.5)°C	
Set humidity value and uncertainty:	no	

(1) For a trip with closure, not needed if the traveling equipment is used in the same set-up throughout.

## Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory:	DLR	
Date and hour of the beginning of measurements:		
Date and hour of the end of measurements:		
Information on the system		
	Local:	Travelling:
4-character BIPM code	UTC7	OPM3/OPM7
• Receiver maker and type: Receiver serial number:	PolaRx5TR Pro 470122	PolaRx4TR
1 PPS trigger level /V:	1	
• Antenna cable maker and type: Phase stabilised cable (Y/N):	SSB ECOFLEX 15 (N)	
Length outside the building /m:	15	
• Antenna maker and type: Antenna serial number:	Novatel GNSS750 NMBJ13490005V	
Temperature (if stabilised) /°C	no	
Measured delays /ns		
(if needed fill box "Additional Information" below)		
	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	25.1 ns	
Delay from 1 PPS-in to internal Reference (if different): <small>(see section 2 for details)</small>	39.8	REFDELAY OPM3 208.6 REFDELAY OPM7 219.2
• Antenna cable delay:	510.7 ns	(1) 218.6/218.6
Splitter delay (if any):	3.0 ns +3.0 ns	(1)
Additional cable delay (if any):	9.2 ns + 19.1 ns	(1)
Data used for the generation of CGGTTS files		
• INT DLY (GPS) /ns:	0 ns (P1), 0 ns (P2)	
• INT DLY (Galileo) /ns:		
• INT DLY (GLONASS) /ns:		
• CAB DLY /ns:	545.0 ns (510.7+3+3+9.2+19.1) ns	
• REF DLY /ns:		
• Coordinates reference frame:	ITRF05 (2016.30 (years))	
Latitude or X /m:	+ 4186708.561m	
Longitude or Y /m:	+ 834902.584 m	
Height or Z /m:	+ 4723667.310 m	
General information		
• Rise time of the local UTC pulse:		
• Is the laboratory air conditioned:	yes	
Set temperature value and uncertainty:	(21+/-0.5)°C	
Set humidity value and uncertainty:	no	

(1) For a trip with closure, not needed if the traveling equipment is used in the same set-up throughout.

## Annex A - Information Sheet

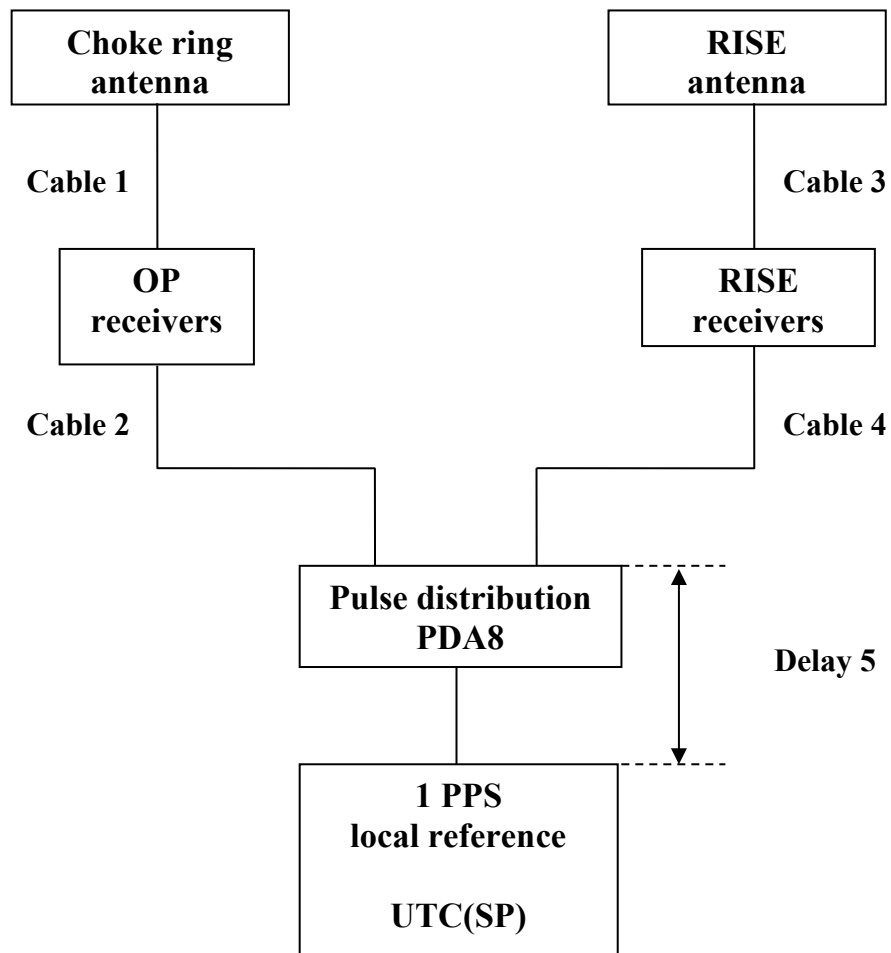
(to be repeated for each calibrated system)

Laboratory:	DLR	
Date and hour of the beginning of measurements:		
Date and hour of the end of measurements:		
Information on the system		
	Local:	Travelling:
4-character BIPM code	UTC8	OPM3/OPM7
• Receiver maker and type: Receiver serial number:	PolaRx5TR Pro 3022508	PolaRx4TR
1 PPS trigger level /V:	1	
• Antenna cable maker and type: Phase stabilised cable (Y/N):	SSB ECOFLEX 15 (N)	
Length outside the building /m:	15	
• Antenna maker and type: Antenna serial number:	Novatel GNSS750 NMBJ13490005V	
Temperature (if stabilised) /°C	no	
Measured delays /ns		
(if needed fill box "Additional Information" below)		
	Local:	Travelling:
• Delay from local UTC to receiver 1 PPS-in:	24.8 ns	na
Delay from 1 PPS-in to internal Reference (if different): <small>(see section 2 for details)</small>	43.0 ns	REFDELAY OPM3 208.6 REFDELAY OPM7 219.2
• Antenna cable delay:	510.7 ns	(1)218.6/218.6
Splitter delay (if any):	3.0 ns +3.0 ns	(1)
Additional cable delay (if any):	9.2 ns + 21.4 ns	(1)
Data used for the generation of CGGTTS files		
• INT DLY (GPS) /ns:	0 ns (P1), 0 ns (P2)	
• INT DLY (Galileo) /ns:		
• INT DLY (GLONASS) /ns:		
• CAB DLY /ns:	547.3 ns (510.7+3+3+9.2+21.4) ns	
• REF DLY /ns:		
• Coordinates reference frame:	ITRF05 (2016.30 (years))	
Latitude or X /m:	+ 4186708.561m	
Longitude or Y /m:	+ 834902.584 m	
Height or Z /m:	+ 4723667.310 m	
General information		
• Rise time of the local UTC pulse:		
• Is the laboratory air conditioned:	yes	
Set temperature value and uncertainty:	(21+/-0.5)°C	
Set humidity value and uncertainty:	no	

(1) For a trip with closure, not needed if the traveling equipment is used in the same set-up throughout.

## 4 Data transmitted by RISE

## Diagram of the experimental set-up:



Cable 1 (including power splitter) = UNKNOWN ns

Cable 2 [OPM3] = ?? ns, Cable 2 [OPM7] = ?? ns (Please refer to results obtained from the automatic script prepared by OP)

Cable 3 (including power splitter) = UNKNOWN ns

Cable 4 [SP01] = N/A, Cable 4 [SP02] = N/A

Delay 5 [Delay from UTC(SP) to the outputs of PDA8] = 21.3 ns



## BIPM Information Sheet

Laboratory	RISE	
Date and hour beginning of measurements	30/03/2019 00:00	
Date and hour end of measurements	07/04/2019 24:00:00	
Information on the system		
	Local	Traveling
4-character BIPM code	RIT1	OPM3/OPM2
Receiver maker and type	SEPT POLARX5TR	
Receiver serial number	3018492	
1 PPS trigger level /V	1.0 V	
Antenna cable maker and type	Andrew Helix FSJ1-50A	
Phase stabilized cable (Y/N)	Y	
Cable length outside building /m	About 70 m but all below ground or inside antenna pillar	
Antenna maker and type	LEIAR25.R4 NONE	
Antenna serial number	???	
Temperature if stabilized /°C	N/A	
Measured delays / ns		
	Local	Traveling
Delay from local UTC(k) to receiver 1 PPS_IN	N/A	
Delay from 1 PPS_IN to internal reference (see Annex 1)	N/A	OPM3 122.8 OPM2 153.9
Antenna cable delay	N/A	210.5
Splitter delay	N/A	
Additional cable delay	NA	
Data used for the generation of CCGTTS files		
	Local	Traveling
INT DLY (GPS) /ns	P1: 275.2 P2: 271.8	
INT DLY (GLONASS) /ns	0	
CAB DLY /ns	N/A	
REF DLY /ns	N/A	
Coordinate reference frame	ITRF	
Latitude or X /m	3328988.29	
Longitude or Y /m	761918.19	
Height or Z /m	5369032.01	
General information		
Rise time of local UTC pulse	< 1 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	23.0 ± 0.5 °C	
Set humidity value and uncertainty	45 ± 10 %	

## BIPM Information Sheet

Laboratory	RISE	
Date and hour beginning of measurements	30/03/2019 00:00	
Date and hour end of measurements	07/04/2019 24:00:00	
Information on the system		
	Local	Traveling
4-character BIPM code	SP05	OPM3 / OPM12
Receiver maker and type	SEPT POLARX5TR	
Receiver serial number	3014102	
1 PPS trigger level /V	1.0 V	
Antenna cable maker and type	Andrew Helix FSJ1-50A	
Phase stabilized cable (Y/N)	Y	
Cable length outside building /m	0.2 m	
Antenna maker and type	JAVRINGANT_DM JVDM	
Antenna serial number	758	
Temperature if stabilized /°C	N/A	
Measured delays / ns		
	Local	Traveling
Delay from local UTC(k) to receiver 1 PPS_IN	N/A	
Delay from 1 PPS_IN to internal reference (see Annex 1)	N/A	OPM3 122.8 OPM12 <del>218.6</del> 163.9
Antenna cable delay	N/A	218.6
Splitter delay	N/A	
Additional cable delay	NA	
Data used for the generation of CGGTTS files		
	Local	Traveling
INT DLY (GPS) /ns	P1: 203.1 P2: 197.8	
INT DLY (GLONASS) /ns	0	
CAB DLY /ns	N/A	
REF DLY /ns	N/A	
Coordinate reference frame	ITRF	
Latitude or X /m	3328961.86	
Longitude or Y /m	761868.28	
Height or Z /m	5369060.13	
General information		
Rise time of local UTC pulse	< 1 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	23.0 ± 0.5 °C	
Set humidity value and uncertainty	45 ± 10 %	

## BIPM Information Sheet

Laboratory	RISE	
Date and hour beginning of measurements	30/03/2019 00:00	
Date and hour end of measurements	07/04/2019 24:00:00	
Information on the system		
	Local	Traveling
4-character BIPM code	SP01	OPM3 / OPM2
Receiver maker and type	Javad E_GGD	
Receiver serial number	0212	
1 PPS trigger level /V	1.0 V	
Antenna cable maker and type	Andrew Heliac LDF2-50A	
Phase stabilized cable (Y/N)	Y	
Cable length outside building /m	About 50 m but all below ground or inside antenna pillar	
Antenna maker and type	JNSCR_C146-22-1 NONE	
Antenna serial number	275	
Temperature if stabilized /°C	About 20–27 °C	
Measured delays / ns		
	Local	Traveling
Delay from local UTC(k) to receiver 1 PPS_IN	N/A	
Delay from 1 PPS_IN to internal reference (see Annex 1)	N/A	OPM3 122.8 OPM2 153.9
Antenna cable delay	N/A	218.5
Splitter delay	N/A	
Additional cable delay	NA	
Data used for the generation of CGGTTS files		
	Local	Traveling
INT DLY (GPS) /ns	P1: 237.4 P2: 253.1	
INT DLY (GLONASS) /ns	0	
CAB DLY /ns	N/A	
REF DLY /ns	N/A	
Coordinate reference frame	ITRF	
Latitude or X /m	3328984.40	
Longitude or Y /m	761910.47	
Height or Z /m	5369033.95	
General information		
Rise time of local UTC pulse	< 1 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	23.0 ± 0.5 °C	
Set humidity value and uncertainty	45 ± 10 %	

## BIPM Information Sheet

Laboratory	RISE	
Date and hour beginning of measurements	30/03/2019 00:00	
Date and hour end of measurements	07/04/2019 24:00:00	
Information on the system		
	Local	Traveling
4-character BIPM code	SP02	OPM3 / OPM2
Receiver maker and type	Javad E_GGD	
Receiver serial number	0247	
1 PPS trigger level /V	1.0 V	
Antenna cable maker and type	Andrew Heliax LDF2-50A	
Phase stabilized cable (Y/N)	Y	
Cable length outside building /m	About 50 m but all below ground or inside antenna pillar	
Antenna maker and type	JNSCR_C146-22-1 NONE	
Antenna serial number	275	
Temperature if stabilized /°C	About 20–27 °C	
Measured delays / ns		
	Local	Traveling
Delay from local UTC(k) to receiver 1 PPS_IN	N/A	
Delay from 1 PPS_IN to internal reference (see Annex 1)	N/A	OPM3 122.8 OPM2 163.9
Antenna cable delay	N/A	218.6
Splitter delay	N/A	
Additional cable delay	NA	
Data used for the generation of CGGTTS files		
	Local	Traveling
INT DLY (GPS) /ns	P1: 237.8 P2: 252.0	
INT DLY (GLONASS) /ns	0	
CAB DLY /ns	N/A	
REF DLY /ns	N/A	
Coordinate reference frame	ITRF	
Latitude or X /m	3328984.40	
Longitude or Y /m	761910.47	
Height or Z /m	5369033.95	
General information		
Rise time of local UTC pulse	< 1 ns	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	23.0 ± 0.5 °C	
Set humidity value and uncertainty	45 ± 10 %	

## 5 Data transmitted by ROA

## Annex A - Information Sheet

(to be repeated for each calibrated system)

Laboratory	<b>ROA</b>	
Date and hour beginning of measurements	12-04-2019, 12:00 UTC	
Date and hour end of measurements		
<b>Information on the system</b>		
	<b>Local</b>	<b>Traveling</b>
4-character BIPM code	RO_5	OPM3/OPM7
Receiver maker and type	DICOM GTR50	Septentrio PolaRx4TR
Receiver serial number	0601012 V1.6.1	
1 PPS trigger level /V	1 V	1V
Antenna cable maker and type	LDF1RK-50	
Phase stabilized cable (Y/N)		
Cable length outside building /m	Approximately 18 m	N/A
Antenna maker and type	LEICA AR25	Ashtech Choke Ring
Antenna serial number	S/N 725233	
Temperature if stabilized /°C	N/A	N/A
<b>Measured delays / ns</b>		
	<b>Local</b>	<b>Traveling</b>
Delay from local UTC(k) to receiver 1 PPS_IN	306.9	N/A
Delay from 1 PPS_IN to internal reference (see Annex 1)	N/A	N/A
Antenna cable delay	70.0	N/A
Splitter delay	7.0	N/A
Additional cable delay	14.5	N/A
<b>Data used for the generation of CGGTTS les</b>		
	<b>Local</b>	
INT DLY (GPS) /ns	8.0 ns (GPS P1), 26.0 ns (GPS P2)	
INT DLY (GLONASS) /ns	N/A	
CAB DLY /ns	91.5	
REF DLY /ns	306.8	
Coordinate reference frame	ITRF	
Latitude or X /m	5105581.91	
Longitude or Y /m	-555193.47	
Height or Z /m	3769704.64	
<b>General information</b>		
Rise time of local UTC pulse	< 1 ns	
Air conditioning (Y/N)	Y	

Set temperature value and uncertainty	$(23 \pm 2) \text{ }^{\circ}\text{C}$
Set humidity value and uncertainty	< 70 %

## Annex A - Information Sheet

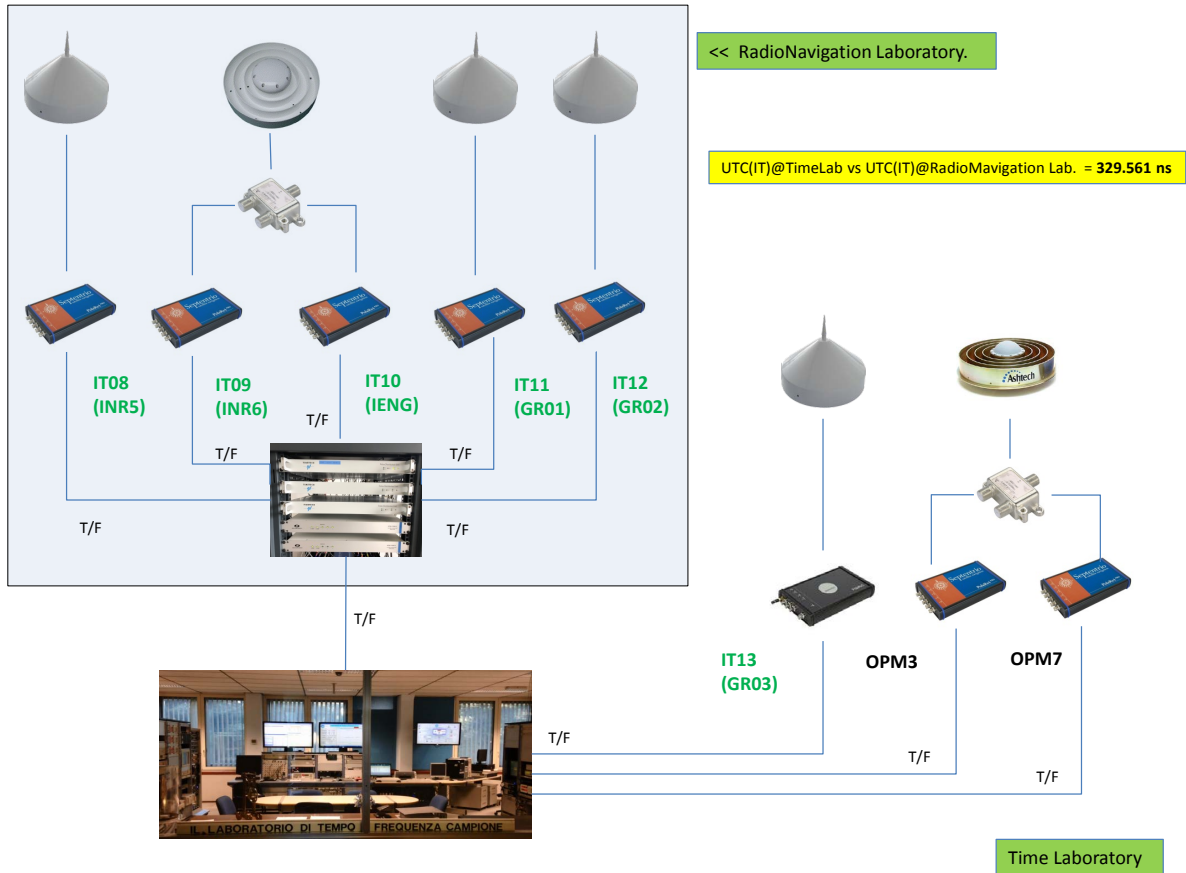
(to be repeated for each calibrated system)

Laboratory	<b>ROA</b>	
Date and hour beginning of measurements	12-04-2019, 12:00 UTC	
Date and hour end of measurements		
<b>Information on the system</b>		
	<b>Local</b>	<b>Traveling</b>
4-character BIPM code	RO_6	OPM3/OPM7
Receiver maker and type	Septentrio PolaRx3eTR	Septentrio PolaRx4TR
Receiver serial number	200805 v2.1	
1 PPS trigger level /V	1 V	1V
Antenna cable maker and type	LDF1RK-50	
Phase stabilized cable (Y/N)		
Cable length outside building /m	Approximately 18 m	N/A
Antenna maker and type	LEICA AR25	Ashtech Choke Ring
Antenna serial number	S/N 725233	
Temperature if stabilized /°C	N/A	N/A
<b>Measured delays / ns</b>		
	<b>Local</b>	<b>Traveling</b>
Delay from local UTC(k) to receiver 1 PPS_IN	292.4	N/A
Delay from 1 PPS_IN to internal reference (see Annex 1)	192.5	N/A
Antenna cable delay	70.0	N/A
Splitter delay	7.0	N/A
Additional cable delay	5.0	N/A
<b>Data used for the generation of CGGTTS les</b>		
	<b>Local</b>	
INT DLY (GPS) /ns	54.7 ns (GPS P1), 53.5 ns (GPS P2)	
INT DLY (GLONASS) /ns	N/A	
CAB DLY /ns	82.0	
REF DLY /ns	484.9	
Coordinate reference frame	ITRF14	
Latitude or X /m	5105581.91	
Longitude or Y /m	-555193.47	
Height or Z /m	3769704.64	
<b>General information</b>		
Rise time of local UTC pulse	< 1 ns	
Air conditioning (Y/N)	Y	



Set temperature value and uncertainty	$(23 \pm 2) \text{ }^\circ\text{C}$
Set humidity value and uncertainty	$< 70 \%$

## 6 Data transmitted by INRIM



**BIPM Information Sheet**

Laboratory	IT	
Date and hour beginning of measurements	58606 (03/05/2019)	
Date and hour end of measurements	58611 (08/05/2019)	
<b>Information on the system</b>		
	<b>Local</b>	<b>Traveling</b>
4-character BIPM code	IT11 (GR01)	OPM3/OPM7
Receiver maker and type	Septentrio PolaRx4-TR	Septentrio PolaRx4-TR
Receiver serial number	3008032	3102285/3001164
1 PPS trigger level /V	1 V	1 V
Antenna cable maker and type	60 m low loss RF cable	50 m Antenna cable HY 400 UF
Phase stabilized cable (Y/N)	(RG214)	
Cable length outside building /m	5 m	10 m
Antenna maker and type	SEPCHOKE_B3E6	Ashtech choke-ring antenna
Antenna serial number	5025	6200828009
Temperature if stabilized /°C	NA	NA
<b>Measured delays / ns</b>		
	<b>Local</b>	<b>Traveling</b>
Delay from local UTC(k) to receiver 1 PPS_IN	NA	NA
Delay from 1 PPS_IN to internal reference (see Annex 1)	NA	NA
Delay from local UTC to receiver reference REFDLY	483.8	247.8 (OPM3) 258.7 (OPM7)
Antenna cable delay	298.6	218.6
Splitter delay	NA	NA
Additional cable delay	NA	NA
<b>Data used for the generation of CGGTTS les</b>		
	<b>Local</b>	<b>Traveling</b>
INT DLY (GPS) /ns	56.965 (P1), 55.019 (P2)	NA
INT DLY (GLONASS) /ns	NA	NA
CAB DLY /ns	298.6	NA
REF DLY /ns	483.8	NA
Coordinate reference frame	ITRF (IGb08)	NA
Latitude or X /m	4476537.727	NA
Longitude or Y /m	600441.720	NA
Height or Z /m	4488754.845	NA
<b>General information</b>		
Rise time of local UTC pulse	500 ps	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	22 °C +- 1 °C (RadioNavigation Laboratory)	
Set humidity value and uncertainty	Not Controlled. Measured as: 60% RU +- 10% RU	

**BIPM Information Sheet**

Laboratory	IT	
Date and hour beginning of measurements	58606 (03/05/2019)	
Date and hour end of measurements	58611 (08052019)	
Information on the system		
	Local	Traveling
4-character BIPM code	IT12 (GR02)	OPM3/OPM7
Receiver maker and type	Septentrio PolaRx4-TR	Septentrio PolaRx4-TR
Receiver serial number	3008032	3102285/3001164
1 PPS trigger level /V	1 V	1 V
Antenna cable maker and type	60 m low loss RF cable	50 m Antenna cable HY 400 UF
Phase stabilized cable (Y/N)	(RG214)	
Cable length outside building /m	5 m	10 m
Antenna maker and type	SEPCHOKE_B3E6	Ashtech choke-ring antenna
Antenna serial number	5004	6200828009
Temperature if stabilized /°C	NA	NA
Measured delays / ns		
	Local	Traveling
Delay from local UTC(k) to receiver 1 PPS_IN	NA	NA
Delay from 1 PPS_IN to internal reference (see Annex 1)	NA	NA
Delay from local UTC to receiver reference REFDLY	483.6	247.8 (OPM3) 258.7 (OPM7)
Antenna cable delay	0.0 (not measured)	218.6
Splitter delay	NA	NA
Additional cable delay	NA	NA
Data used for the generation of CGGTTS les		
	Local	Traveling
INT DLY (GPS) /ns	353.666 (P1), 353.135 (P2)	NA
INT DLY (GLONASS) /ns	NA	NA
CAB DLY /ns	0.0	NA
REF DLY /ns	483.6	NA
Coordinate reference frame	ITRF (IGb08)	NA
Latitude or X /m	4476534.535	NA
Longitude or Y /m	600442.576	NA
Height or Z /m	4488757.911	NA
General information		
Rise time of local UTC pulse	500 ps	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	22 °C +- 1 °C (RadioNavigation Laboratory)	
Set humidity value and uncertainty	Not Controlled. Measured as: 60% RU +- 10% RU	

**BIPM Information Sheet**

Laboratory	IT	
Date and hour beginning of measurements	2019 May 2 <sup>nd</sup> – 16:44:00 UTC	
Date and hour end of measurements	2019 May 13 <sup>th</sup> – 23:59:30 UTC	
Information on the system		
	Local	Traveling
4-character BIPM code	IT13 (GR03)	OPM3/OPM7
Receiver maker and type	Septentrio PolaRx5-TR	Septentrio PolaRx4-TR
Receiver serial number	3047010	3102285/3001164
1 PPS trigger level /V	1 V	1 V
Antenna cable maker and type	60 m low loss RF cable	50 m Antenna cable HY 400 UF
Phase stabilized cable (Y/N)	(RG214)	
Cable length outside building /m	5 m	10 m
Antenna maker and type	SEPCHOKE_B3E6	Ashtech choke-ring antenna
Antenna serial number	5586	6200828009
Temperature if stabilized /°C	NA	NA
Measured delays / ns		
	Local	Traveling
Delay from local UTC(k) to receiver 1 PPS_IN	NA	NA
Delay from 1 PPS_IN to internal reference (see Annex 1)	NA	NA
Delay from local UTC to receiver reference REFDLY	210.5	247.8 (OPM3) 258.7 (OPM7)
Antenna cable delay	0.0 (not measured)	218.6
Splitter delay	NA	NA
Additional cable delay	NA	NA
Data used for the generation of CGGTTS les		
	Local	Traveling
INT DLY (GPS) /ns	283.041 (P1), 280.360 (P2)	NA
INT DLY (GLONASS) /ns	NA	NA
CAB DLY /ns	0.0	NA
REF DLY /ns	210.5	NA
Coordinate reference frame	ITRF (IGb08)	NA
Latitude or X /m	4476543.861	NA
Longitude or Y /m	600409.719	NA
Height or Z /m	4488742.368	NA
General information		
Rise time of local UTC pulse	500 ps	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	22 °C +- 1 °C (Time Laboratory)	
Set humidity value and uncertainty	Not Controlled. Measured as: 60% RU +- 10% RU	

**BIPM Information Sheet**

Laboratory	IT	
Date and hour beginning of measurements	58606 (03/05/2019)	
Date and hour end of measurements	58611 (08/05/2019)	
<b>Information on the system</b>		
	<b>Local</b>	<b>Traveling</b>
4-character BIPM code	IT10 (IENG)	OPM3/OPM7
Receiver maker and type	Septentrio PolaRx4-TR	Septentrio PolaRx4-TR
Receiver serial number	3002220	3102285/3001164
1 PPS trigger level /V	1 V	1 V
Antenna cable maker and type	60 m low loss RF cable	50 m Antenna cable HY 400 UF
Phase stabilized cable (Y/N)	(RG214)	
Cable length outside building /m	5 m	10 m
Antenna maker and type	SEPCHOKE_MC NONE	Ashtech choke-ring antenna
Antenna serial number	5261	6200828009
Temperature if stabilized /°C	NA	NA
<b>Measured delays / ns</b>		
	<b>Local</b>	<b>Traveling</b>
Delay from local UTC(k) to receiver 1 PPS_IN	NA	NA
Delay from 1 PPS_IN to internal reference (see Annex 1)	NA	NA
Delay from local UTC to receiver reference REFDLY:	483.7	247.8 (OPM3) 258.7 (OPM7)
Antenna cable delay	128.8	218.6
Splitter delay	0.7 (shared with IT09)	NA
Additional cable delay	1.0	NA
<b>Data used for the generation of CGGTTs les</b>		
	<b>Local</b>	<b>Traveling</b>
INT DLY (GPS) /ns	54.919 (P1), 55.320 (P2)	NA
INT DLY (GLONASS) /ns	NA	NA
CAB DLY /ns	130.5	NA
REF DLY /ns	483.7	NA
Coordinate reference frame	ITRF (IGb08)	NA
Latitude or X /m	4476537.275	NA
Longitude or Y /m	600431.705	NA
Height or Z /m	4488761.547	NA
<b>General information</b>		
Rise time of local UTC pulse	500 ps	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	22 °C +- 1 °C (RadioNavigation Laboratory)	
Set humidity value and uncertainty	Not Controlled. Measured as: 60% RU +- 10% RU	

**BIPM Information Sheet**

Laboratory	IT	
Date and hour beginning of measurements	58606 (03/05/2019)	
Date and hour end of measurements	58611 (08/05/2019)	
<b>Information on the system</b>		
	<b>Local</b>	<b>Traveling</b>
4-character BIPM code	IT08 (INR5)	OPM3/OPM7
Receiver maker and type	Septentrio PolaRx4-TR	Septentrio PolaRx4-TR
Receiver serial number	3002130	3102285/3001164
1 PPS trigger level /V	1 V	1 V
Antenna cable maker and type	60 m low loss RF cable	50 m Antenna cable HY 400 UF
Phase stabilized cable (Y/N)	(RG214)	
Cable length outside building /m	5 m	10 m
Antenna maker and type	SEPCHOKE_B3E6	Ashtech choke-ring antenna
Antenna serial number	5410	6200828009
Temperature if stabilized /°C	NA	NA
<b>Measured delays / ns</b>		
	<b>Local</b>	<b>Traveling</b>
Delay from local UTC(k) to receiver 1 PPS_IN	NA	NA
Delay from 1 PPS_IN to internal reference (see Annex 1)	NA	NA
Delay from local UTC to receiver reference REFDLY	484.1	247.8 (OPM3) 258.7 (OPM7)
Antenna cable delay	0.0 (not measured)	218.6
Splitter delay	NA	NA
Additional cable delay	NA	NA
<b>Data used for the generation of CGGTTS les</b>		
	<b>Local</b>	<b>Traveling</b>
INT DLY (GPS) /ns	310.001 (P1), 309.123 (P2)	NA
INT DLY (GLONASS) /ns	NA	NA
CAB DLY /ns	0.0	NA
REF DLY /ns	484.1	NA
Coordinate reference frame	ITRF (IGb08)	NA
Latitude or X /m	4476532.120	NA
Longitude or Y /m	600443.149	NA
Height or Z /m	4488760.246	NA
<b>General information</b>		
Rise time of local UTC pulse	500 ps	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	22 °C +- 1 °C (RadioNavigation Laboratory)	
Set humidity value and uncertainty	Not Controlled. Measured as: 60% RU +- 10% RU	

**BIPM Information Sheet**

Laboratory	IT	
Date and hour beginning of measurements	58606 (03/05/2019)	
Date and hour end of measurements	58611 (08/05/2019)	
Information on the system		
	Local	Traveling
4-character BIPM code	IT09 (INR6)	OPM3/OPM7
Receiver maker and type	Septentrio PolaRx4-TR	Septentrio PolaRx4-TR
Receiver serial number	3002240	3102285/3001164
1 PPS trigger level /V	1 V	1 V
Antenna cable maker and type	60 m low loss RF cable	50 m Antenna cable HY 400 UF
Phase stabilized cable (Y/N)	(RG214)	
Cable length outside building /m	5 m	10 m
Antenna maker and type	SEPCHOKE_MC NONE	Ashtech choke-ring antenna
Antenna serial number	5261	6200828009
Temperature if stabilized /°C	NA	NA
Measured delays / ns		
	Local	Traveling
Delay from local UTC(k) to receiver 1 PPS_IN	NA	NA
Delay from 1 PPS_IN to internal reference (see Annex 1)	NA	NA
Delay from local UTC to receiver reference REFDLY	484.1	247.8 (OPM3) 258.7 (OPM7)
Antenna cable delay	128.8	218.6
Splitter delay	0.7 (shared with IT10)	NA
Additional cable delay	1.0	NA
Data used for the generation of CGGTTs les		
	Local	Traveling
INT DLY (GPS) /ns	55.601 (P1), 55.761 (P2)	NA
INT DLY (GLONASS) /ns	NA	NA
CAB DLY /ns	130.5	NA
REF DLY /ns	484.1	NA
Coordinate reference frame	ITRF (IGb08)	NA
Latitude or X /m	4476537.275	NA
Longitude or Y /m	600431.705	NA
Height or Z /m	4488761.547	NA
General information		
Rise time of local UTC pulse	500 ps	
Air conditioning (Y/N)	Y	
Set temperature value and uncertainty	22 °C +- 1 °C (RadioNavigation Laboratory)	
Set humidity value and uncertainty	Not Controlled. Measured as: 60% RU +- 10% RU	